



Solutions for biomass fuel market barriers and raw material availability - IEE/07/777/SI2.499477

Different criteria for sustainability and certification of biomass and solid, liquid and gaseous biofuels - D 4.4.2

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Preface

This publication is part of the EUBIONET III Project (Solutions for biomass fuel market barriers and raw material availability - IEE/07/777/SI2.499477, www.eubionet.net) funded by the European Union's Intelligent Energy Programme. EUBIONETII is coordinated by VTT and other partners are Danish Technological Institute, DTI (Denmark), Energy Centre Bratislava, ECB (Slovakia), Ekodoma (Latvia), Fachagentur Nachwachsende Rohstoffe e.V., FNR (Germany), Swedish University of Agricultural Sciences, SLU (Sweden), Brno University of Technology, UPEI VUT (Czech), Norwegian University of Life Sciences, UMB (Norway), Centre wallon de Recherches agronomiques, CRA-W (Belgium), BLT-HBLuFA Francisco Josephinum, FJ-BLT (Austria), European Biomass Association, AEBIOM (Belgium), Centre for Renewable Energy Sources, CRES (Greece), Utrecht University, UU (Netherlands), University of Florence, UNIFI (Italy), Lithuanian Energy Institute, LEI (Lithuania), Imperial College of Science, Imperial (UK), Centro da Biomassa para a Energia, CBE (Portugal), Energy Restructuring Agency, ApE (Slovenia), Andalusian Energy Agency, AAE (Spain). EUBIONET III project will run 2008 – 2011.

The main objective of the project is to increase the use of biomass based fuels in the EU by finding ways to overcome the market barriers. The purpose is to promote international trade of biomass fuels to help demand and supply meet each other, while at the same time the availability of industrial raw material is to be secured at reasonable price. The EUBIONET III project will in the long run boost sustainable, transparent international biomass fuel trade, secure the most cost efficient and value-adding use of biomass for energy and industry, boost the investments on best practice technologies and new services on biomass heat sector and enhance sustainable and fair international trade of biomass fuels.

This publication includes sustainability criteria collected by EUBIONET III partners. Aino Martikainen and Jinke van Dam have written descriptions of international systems. The report is divided into 4 parts:

1. Initiatives or systems to guarantee sustainability of biomass feedstock from forest
2. Initiatives or systems to guarantee sustainability of biomass feedstock from agriculture
3. Initiatives or systems to guarantee sustainability of bioenergy from heat and power
4. Initiatives or systems to guarantee sustainability of biofuels for transportation

In addition to this report also evaluation report of all criteria is published (see D4.4.1).

Aino Martikainen and Eija Alakangas, October 2010

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Part 1 – Initiatives or systems to guarantee sustainability of biomass feedstock from forest

1 UKWAS (UK) - Rocio A Diaz-Chavez

General characteristics:		
Initiator system:	UKWAS UK Woodland Assurance Standards	
Coordinating party:	FSC, PEFC	
Initiation – duration:	The first edition of this standard was developed by a broadly based Technical Working Group and launched in May 1999. A not-for-profit company, "United Kingdom Woodland Assurance Standard (UKWAS)", was established in 2003 to own and manage the standard.	
Grade of integration	Meta Standard	
Geographical coverage:	National level	
Scope (feedstock included):	To define appropriate and effective woodland management in the UK context.	
Value chain	Cultivation	
Mission or objective:		
The UKWAS is an independent certification standard for verifying sustainable woodland management.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
Forestry Commission		
Current status of system:		
The standard was amended in 2008 adding the woodland category: this incorporates the previous Small Woodland category of 100 hectares or under and extends it to include woodlands being managed at a low intensity using a definition based on harvested volumes..		
Planned activities:		
It is under revision 2009 -2011		
Structure of the system or initiative:		
Stakeholder participation:	The UKWAS is formed by a Steering Group formed by members of different organisations including forestry practitioners, state forest enterprises, environmental organisations, forest user organisations, industry and traders, local and national government agencies, forestry standard and labelling groups, education, research and training organisations.	
Commitment:	Voluntary but in compliance to the Forestry Commission.	
Stakeholder integration:	It also has an Interpretation Panel, a permanent standard committee and Task Groups.	
Monitoring performance:	Certification is normally valid for up to five years and is subject to periodic surveillance to ensure continued conformance with the standard.	
Chain of custody mechanism:	Not specified but includes three aspects: MP Management Planning BAP Biodiversity Action Plan FRM Forest Reproductive Material Regulations	

Verification mechanisms:	Vary according to the principle and the criteria.
Further information:	
Removal of trade barriers	Unknown, but expected to be Yes
Costs:	Medium; possible to get a group certification.
List of principles included:	
1	Compliance with the law and conformance with the requirements of the certification standard
2	Management planning
3	Woodland design: creation, felling and replanting
4.	Operations
5.	Protection and maintenance
6	Conservation and enhancement of biodiversity
7.	The community
8	Forestry workforce
References:	
Website:	http://www.ukwas.org.uk/index.html

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
1.1 Compliance and conformance	1.1.1 – 1.1.8 Compliance with different regulations: Law, codes, ownership, land tenure and commitment to the certification.	Different forms of verification such as titles, certificated documents, All documentation including procedures, work instructions and contracts meet legal requirements	
1.2 Protection from illegal activities		Evidence of response to actual current problems. • Evidence of a pro-active approach to potential and actual problems.	
2.1 Documentation	2.1.1 – 2.1.3 Evidence of all documentation related to the MP and BAP.	Evidence should be adequate to : - The size of the woodland • Its environmental and social sensitivity • The intensity of management • The likely impact of the operations planned • Context in the landscape • UKBAP priority woodland and non-woodland habitats and species.	
2.2 Productive Potential	2.2.1 – 2.2.4 The planning of woodland management operations shall: a) Take fully into account the environmental, social and economic impacts of proposed operations. b) Aim to secure the necessary investment to maintain the ecological value of the woodland Also includes technical details of the production: Yields, Woodland composition and structure; • Flora and fauna (e.g. those in the UK Biodiversity Action Plan).	Evidence of documentation such as harvesting records and chain of custody.	
2.3 Implementation and revision of the plan	2.3.1-2.3.6 The implementation of the work shall be in close agreement with the details included in the management planning documentation.	There should be monitoring of issues such as: - Economic, environmental and social aspects • Harvesting yield • Woodland composition and structure • Flora and fauna (e.g. those in the UK Biodiversity Action Plan). Documented monitoring records • Information from studies in similar woodlands • Analysis of information collected	

Criteria	Indicators:	Methodology used:	Databases used:
3.1 Assessment of environmental impacts	3.1.1-3.1.3 The environmental impacts of new planting and other woodland plans shall be assessed before operations are implemented, in a manner appropriate to the scale of the operations and the sensitivity of the site. The impacts of woodlands in landscape Incorporate the results of the impacts in the planning system.	Brief environmental appraisals for planting or felling which might affect sites recognised for cultural, landscape, hydrological or ecological value <ul style="list-style-type: none"> • Ecological assessments of ancient seminatural woodland and projections of their response to management and natural processes • Specific assessments for unusual and/or extensive operations 	
3.2 Location and design	3.2.1-3.2.4 New woodlands shall be located and designed in ways that will maintain or enhance the visual, cultural and ecological value and character of the wider landscape. The new planting should consider future diversity and do not affect or jeopardise neighbouring woodland.	Evidence should include: <ul style="list-style-type: none"> Management plans Design plans, Maps Evidence of discussion with other owners Field observation 	
3.3 Species selection	Selection of species should be according to area and objective of new woodlands.	Evidence should include: <ul style="list-style-type: none"> Management plans Field observation 	
3.4 Silvicultural Systems	Silvicultural system shall be adopted which is designed to meet the management objectives and which stipulates soundly-based planting, establishment, thinning, felling and regeneration plans.	Consider issues such as management, <ul style="list-style-type: none"> - Landscape scale • Current plantation design • Archaeological features • Wildlife habitat 	
3.5 Conversion to non-forest land	The new land use will be more ecologically valuable than the woodland in terms of the UK Biodiversity Action Plan. This shall be demonstrated by a transition plan which complies with the UK Forestry Standard and the UK Woodland Assurance Standard and includes monitoring	EIA may be required.	
4.1 General	Planning, permissions, impacts from the operation system.	Evidence of: <ul style="list-style-type: none"> - Transition plan • Management planning documentation for area after felling • Records of planning process and discussions • Consultation with interested parties • Monitoring records • Environmental impact assessment process documentation. 	

Criteria	Indicators:	Methodology used:	Databases used:
4.2 Harvesting operations	Harvesting operations shall conform to all relevant guidelines	Guidance to avoid: - Damage to soil and water courses during felling, extraction and burning • Damage to standing trees during felling, extraction and burning • Timber degrade.	
4.3 Forest roads	All new roads should comply with the relevant permits. Roads and timber extraction tracks and associated drainage shall be designed, created, used and maintained in a manner that minimises their environmental impact	Evidence of: - Documented plans for the design and creation of permanent roads and tracks • Control systems for the creation and use of temporary tracks and extraction routes • Field observation.	
5.1 Planning	Planting and restructuring plans shall be designed to minimise the risk of damage from wind, fire, pests and diseases	Plans and actions related to plant health ecology should be appropriate to the scale and composition of the woodland and to plant health hazards	
5.2 Pesticides, biological control agents and fertilizers	The owner/manager shall prepare and implement an effective strategy for minimising the use of pesticides and biological control agents,	-COSHH assessments • FEPA records • Waste transfer notes • Discussions with the owner/manager, staff and contractors • Field observation, particularly in respect to storage, application sites, protective clothing and warning signs	The Forest Stewardship Council produces a definitive list of 'highly hazardous' pesticides. These pesticides cannot be used unless a specific UK derogation has been granted.
5.3 Genetically modified organisms	Genetically modified organisms (GMOs) shall not be used		
5.4 Fencing	Where appropriate, wildlife management and control shall be used in preference to fencing		
5.5 Pollution	Waste disposal shall be in accordance with current waste management legislation and regulations	- Waste includes: • Surplus chemicals • Chemical containers • Plastic waste • Fuels and lubricants. Plastic tree shelters should not be allowed to create a litter problem at the end of their effective life.	

Criteria	Indicators:	Methodology used:	Databases used:
6.1 Protection of rare species, habitats and natural resources	<p>The areas and features of particular significance for:</p> <p>i. biodiversity including sites important for endangered but mobile species, and/or ii. natural processes in critical situations shall be identified by reference to statutory designations at national or regional level and/or through field survey of the woodland.</p> <p>b) The identified special areas, species and features shall be maintained and, where possible, enhanced.</p> <p>c) There shall be evidence of communication and/or consultation with statutory bodies, local authorities, wildlife trusts and other relevant organisations.</p>	<p>These areas and features include:</p> <ul style="list-style-type: none"> • Areas designated as: Special Areas for Conservation Special Protection Areas Biological Sites of Special Scientific Interest or Areas of Special Scientific Interest Ramsar Sites National Nature Reserves • Ancient semi-natural woodland and plantations on ancient woodland sites • Areas supporting priority habitats and species listed in the UK Biodiversity Action Plan. 	
6.2 Maintenance of biodiversity and ecological functions	<p>When preparing management planning documentation, woodland owners/managers shall draw upon those requirements of this standard which relate to the maintenance and enhancement of biodiversity</p>	<p>Verification should be through Management Plans.</p>	
6.3 Conservation of semi-natural woodlands and plantations on ancient woodland sites	<p>a) Woodland identified in section 6.1.1 shall not be converted to plantation or non-forested land.</p> <p>b) Enhancement and/or restoration shall be a priority in ancient semi-natural woodlands and other semi-natural woodlands.</p> <p>c) Adverse ecological impacts of non-native species shall be monitored in ancient semi-natural woodlands and other seminatural woodlands.</p> <ul style="list-style-type: none"> • Monitoring records. 	<p>Means of verification</p> <ul style="list-style-type: none"> • Field observations • Discussions with the owner/manager • Management planning documentation including FC or DARD approved management plan and restocking plans 	
6.4 Game management	<p>Hunting, game rearing and shooting and fishing shall be carried out in accordance with licence conditions, where they are in force, and the recommendations and codes of practice produced by relevant associations</p>	<p>Evidence of:</p> <ul style="list-style-type: none"> - Management planning documentation and specific game management plans • Field inspection. - List of animal species 	

Criteria	Indicators:	Methodology used:	Databases used:
7.1 Consultation	<p>Local people and relevant organisations and interest groups shall be made aware that:</p> <ul style="list-style-type: none"> • New or revised management planning documentation, is being produced • A new or revised FC or DARD scheme application and associated documents are available for inspection • High impact operations are planned • The woodland is being evaluated for certification 	<p>Evidence of:</p> <ul style="list-style-type: none"> • Consultation with FC or DARD • Evidence that users of the woodland are informed about high impact operations (e.g. signs, letters or other appropriate means <p>- A list of interested parties</p>	
7.2 Woodland access and recreation including traditional and permissive use rights	<p>All existing permissive or traditional uses of the woodland shall be sustained except when such uses can be shown to threaten the integrity of the woodland or the achievement of the objectives of management.</p>	<p>Evidence of:</p> <ul style="list-style-type: none"> -Documentation or maps of all existing permissive and traditional uses of the woodland • Discussions with interested parties • Field observation of public rights of way • Evidence presented to justify any restriction of permissive or traditional uses. 	
7.3 Rural economy	<p>a) Owners/managers shall promote the integration of woodlands into the local economy. b) Management and marketing operations shall encourage making the best use of the woodland's potential products consistent with other objectives</p>	<p>Means of verification Evidence of:</p> <ul style="list-style-type: none"> • Reasonable provision for local employment and suppliers • Local or specialist market opportunities • Promoting or encouraging enterprises to strengthen and diversify the local economy. 	
7.4 Minimising adverse impacts	<p>Sites and features of special cultural significance shall be identified and discussed with interested local people, the relevant authorities and interest groups and measures shall be taken to protect them. This also includes risks to public health</p>	<p>Means of verification All woodlands:</p> <ul style="list-style-type: none"> • Any known features mapped and/or documented • Discussions with the owner/manager demonstrate rationale for management of relevant sites. <p>Non-SLIM woodlands:</p> <ul style="list-style-type: none"> • Records of consultation with statutory bodies, local authorities and interest groups to identify features • Documented plans. 	

Criteria	Indicators:	Methodology used:	Databases used:
8.1 Health and safety	a) Compliance with health and safety legislation. b) Conformance with associated codes of practice. c) Contingency plans for any accidents.	Means of verification All woodlands: <ul style="list-style-type: none"> • Field observation that health and safety legislation and codes of practice are being implemented • Discussions with staff and contractors demonstrate that they are aware of relevant requirements and have access to appropriate AFAG codes of practice • Contracts specifying health and safety requirements • Records maintained and up to date (e.g. accident book, site risk assessments, chemical record book, tree safety reports). Non-SLIM woodlands: <ul style="list-style-type: none"> • Documented health and safety policy and consideration of issues in all procedures and work instructions. 	
8.2 Training and continuing development	Only those with relevant qualifications, training and/or experience shall be engaged to carry out any work unless working under proper supervision if they are currently undergoing training.	Means of verification All woodlands: <ul style="list-style-type: none"> • Copies of appropriate certificates of competence • Discussions with staff and contractors • System to ensure that only contractors who are appropriately trained or supervised work in the woodland • No evidence of personnel without relevant training, experience or qualifications working in the woodland. Non-SLIM woodlands: <ul style="list-style-type: none"> • Documented training programme for staff • Documented system to ensure that only contractors who are appropriately trained or supervised work in the woodland • Training records for all staff. 	
8.3 Workers' rights	Employees and other workers shall not be deterred from joining a trades union or employee association.	Means of verification <ul style="list-style-type: none"> • Discussions with employees and other workers do not suggest that they have been discouraged. 	
8.4 Insurance	Requirement Owners/managers, employers and contractors shall hold adequate public liability and employer's liability insurance.	Means of verification <ul style="list-style-type: none"> • Insurance documents 	

2 Waldprogramm von Walddialog (Austria) (forest program forest dialogue) - Josef Rathbauer

General characteristics:		
Initiator system:	Austrian Ministry for agriculture and forestry, environment and water management	
Coordinating party:	Austrian Ministry for agriculture and forestry, environment and water management	
Initiation – duration:	Ongoing process since 2003	
Grade of integration		
Geographical coverage:	national	
Scope (feedstock included):	Sustainable forest management	
Value chain		
Mission or objective:		
The Forest Dialogue serves the purpose of strengthening sustainable management, tending and protection of Austrian forests as per Section 1 of the 2002 Forest Act Amendment and Resolution H1 (General Guidelines for the Sustainable Management of Forests in Europe) of the Ministerial Conference for the Protection of Forests in Europe. The Austrian Forest Dialogue thus addresses the economic, ecological and social aspects of forests as three equal pillars of sustainable forest management.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
2002 Forest Act Amendment and Resolution H1 (General Guidelines for the Sustainable Management of Forests in Europe), Intergovernmental Panel on Forests (IPF) of the United Nations and the pan-European Ministerial Conference for the Protection of Forests in Europe,		
Current status of system:		
The Work Programme is a living document that keeps a continuous record of the implementation and further development of the Forest Programme by means of concrete measures		
Planned activities:		

Structure of the system or initiative:	
Stakeholder participation:	AgrarMarktAustria (AMA) Arbeiterkammer (AK) Arbeiterkammer Salzburg Austropapier - Vereinigung der Österreichischen Papierindustrie Biosphäre Austria (BIOISA) - Verein für dynamischen Naturschutz

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Bundes Jugendvertretung
Bundesamt und Forschungszentrum für Wald (BFW)
Bundeskammer der Architekten und Ingenieurkonsulenten
Bundesländervertreter Naturschutz
BZÖ - Bündnis Zukunft Österreich
Die Grünen
Einforstungsverband
Fachverband der Holzindustrie Österreichs
Fachverband der Seilbahnen Österreichs
Forschungsinstitut für Wildtierkunde und Ökologie
Forstverwaltung Grafenegg
FPÖ - Freiheitliche Partei Österreich
Global 2000
Greenpeace Österreich
H. R. Fürst Starhemberg´sche Familienstiftung Vaduz
Höhere Bundeslehranstalt für Forstwirtschaft Bruck/Mur
Holzcluster Steiermark GmbH
Industriellenvereinigung (IV)
Kuratorium Wald
Land & Forst Betriebe Österreich
Landesforstdirektion Burgenland
Landesforstdirektion Kärnten
Landesforstdirektion Niederösterreich
Landesforstdirektion Oberösterreich
Landesforstdirektion Salzburg
Landesforstdirektion Steiermark
Landesforstdirektion Tirol
Landesforstdirektion Vorarlberg
Landesforstdirektion Wien (MD - Stadtbaudirektion)
Landeshauptleutekonferenz (Bundesländervertreter)
Landwirtschaftskammer für Tirol
Landwirtschaftskammer Österreich
Landwirtschaftskammer Wien
MA 49 - Forstamt und Landwirtschaftsbetrieb
Magistratsabteilung der Stadt Wien
Naturfreunde Österreich
Naturschutzbund Österreich
Ökobüro – Koordinationsstelle österr. Umweltorganisationen
Ökosoziales Forum
Österreichische Akademie der Wissenschaften (ÖAW)
Österreichische Arbeitsgem. für Alm Weide (ÖAGAW)
Österreichische Bischofskonferenz
Österreichische Bundesforste AG (ÖBF AG)
Österreichische Energieagentur
Österreichische Vereinigung für Agrar-, Lebens- und
Umweltwissenschaftliche Forschung
Österreichischer Alpenverein (ÖAV)
Österreichischer Bauernbund
Österreichischer Forstverein

	<p> Österreichischer Gemeindebund Österreichischer Gewerkschaftsbund (ÖGB) Österreichischer Landarbeiterkammertag ÖVP - Österreichische Volkspartei Papierholz Austria GmbH SPÖ – Sozialdemokratische Partei Österreichs Städtebund Stiftung Fürst Lichtenstein Technische Universität Graz -Institut für Ressourcenschonende und Nachhaltige Systeme Umweltbundesamt (UBA) Umweltdachverband Universität für Bodenkultur (BOKU) Verband Österreichischer Förster (VÖF) Verein zur Erhaltung und Verbesserung des Schutzwaldes Waldverband Österreich WIFO-Österreichisches Institut für Wirtschaftsforschung Wildbach- und Lawinenverbauung Salzburg (WLV) Wirtschaftskammer Österreich (WKÖ) WWF Österreich (World Wide Fund for Nature) Zentralstelle des Landesjagdverbandes Österreich </p>
Commitment:	national
Stakeholder integration:	<p> Participation in the Forest Dialogue is open to all groups, institutions and interested parties concerned with the Austrian forests. Around 80 state and private organisations representing the interests of environment and nature protection, sports, forestry and agriculture, wood-based and paper industries, employees and consumer protection, hunting, the church, development cooperation, youth, science, education, energy, Federal Provinces and public administration participated in the elaboration of the present Forest Programme. Participation in the Forest Dialogue is open to all groups, institutions and interested parties concerned with the Austrian forests. Around 80 state and private organisations representing the interests of environment and nature protection, sports, forestry and agriculture, wood-based and paper industries, employees and consumer protection, hunting, the church, development cooperation, youth, science, education, energy, Federal Provinces and public administration participated in the elaboration of the present Forest Programme the participants during the elaboration process and, upon approval by the Round Table, have been made available to the general public on the Internet. Furthermore, information has been distributed widely to the public in a Forest Dialogue Newsletter which informs on the state and the results of the Forest Dialogue on a permanent basis. </p>
Monitoring performance:	<p> The Process Management Group is responsible for the planning, controlling and coordination of the entire Forest Dialogue. The process management is taken care of by the Federal Ministry of Agriculture, Forestry, Environment and Water Management and is supported by external scientific consultants. </p>
Chain of custody mechanism:	non

Verification mechanisms:	The BMFLUW provides for interim evaluations of the procedural aspects of the Forest Dialogue. A summary report on the state of the Forest Dialogue process and its results (Austrian Forest Programme) is prepared at regular intervals (approx. every other year). In addition, the implementation of results at the contents level shall be evaluated at regular intervals. The information gained from this evaluation shall be the subject of the further Forest Dialogue process.
Further information:	
Removal of trade barriers	non
Costs:	No information available on this topic.
List of principles included:	
1	Preservation of the vitality and adaptability of forests that enable them to act as a carbon sink
2	Best-possible mitigation of greenhouse gas emissions in the atmosphere, in particular those from fossil sources
3	Promotion of renewable and locally produced energy sources, raw materials and products
4	Sustainable conservation of operating forest ecosystems and of all forest functions
5	Best possible protection of forests against biotic and abiotic risks
6	Medium and long-term improvement of degraded forest soils, to comply with environmental quality goals to be established
7	Reduction of air-pollution emissions and climate-relevant gases to an extent tolerated by the forest and with due regard to the precautionary principle
8	Securing durable income and the creation of value for companies from sustainable forest management, with special attention to family forestry
9	Sustainable supply of the economy with forest products and services
10	Increasing the competitive capacity of the wood, pulp and paper industries as well as other wood-based enterprises (processing and manufacturing of wood and wood products) with special attention to small and medium-sized enterprise structures
11	Conservation, protection and, if necessary, improvement or restoration and sustainable use of forest biological diversity on genetic, species, ecosystem and landscape levels
12	Enhanced cooperation between forest management and nature conservation
13	Increased use of contractual nature conservation and market instruments (e.g. eco-sponsoring). Sound balance of user interests and, as far as necessary, securing of the protection objectives in a relevant regulation

14	Conservation and protection of native forest biotope types and related plant and animal species and their genetic diversity, with special attention to the goal agreed upon on the international level: "Stop the loss of biological diversity in Austria by 2010"
15	Increasing the functionality of object-protection forests as an efficient and cheap protection against natural hazards in the long run, in particular for the protection of settlement areas and infrastructure facilities
16	Necessary stabilization and timely regeneration of protection forests and removal of elements that impede regeneration, especially in forests of high protective capacity, as an essential basis for sustainable hazard prevention
17	Conservation and rehabilitation of soil functions in order to ensure the protective function
18	Sustainable use and maintenance of drinking water resources
19	Ensuring and increasing the filtering effects of the forest
20	Taking advantage of potential synergies in all areas when it comes to develop financing strategies
21	Securing the forest and wood industries in Austria and their contribution to Austria's economic balance, and strengthening the importance of the forest sector and its share in the total assets for the national economy, considering also natural resources.
22	Optimization of sustainable forest management and of wood processing and manufacturing as important elements of economic and employment policies in rural areas: securing job potentials and quality of working conditions.
23	Increased creation of value and productivity through partnership cooperation between the forest sector and the tourist and leisure industries, preserving the principle of an open forest and secured ownership.
24	Exploiting all relevant knowledge sources including experience in forest history as an essential part of innovations in forest-related policy domains.
25	Illustrating the historical and present concepts of sustainability, in particular with regard to forest education and public relations.
26	Aiming at a globally effective protection of forests, sustainable forest management and at fair competitive conditions.
27	Promoting international networking, partnerships, cooperation and responsible economic activities of private and state institutions.
28	Further development and appropriate implementation of the concept of ecosystem-based management approaches in compliance with existing international models and with due regard to the on-going international harmonization with the principles of sustainable forest management.
References:	
Website:	http://www.walddialog.at/

List of criteria and indicators:

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(1) Increased utilisation of wood as a renewable raw material (material and energetic use) – best possible substitution of fossil fuels	<i>(MCPFE 3.1) – Increment and fellings: Balance between net annual increment and annual fellings of wood on forest available for wood supply</i>		
	<i>(MCPFE 6.7) – Wood consumption: Consumption per head of wood and products derived from wood</i>		
	<i>(MCPFE 6.9) – Energy from wood resources: Share of wood energy in total energy consumption, classified by origin of wood</i>		
	<i>Coverage of the roundwood demand (of the wood processing industry) from Austrian forests in %</i>		
(2) Expansion of forest areas in regions with low forest cover, paying attention to ecological, economic and social compatibility and special respect to provisions of forest land-use planning	<i>(MCPFE 1.1) – Forest area: Area and other wooded land, classified by forest type and by availability for wood supply, and share of forest and other wooded land in total land area</i>		
	<i>(MCPFE 4.7) – Landscape pattern: Landscape-level spatial pattern of forest cover</i>		
(3) Improved knowledge in climate impact research, in particular, and further research on possible impacts of global climate change on the Austrian forest, its health and functions	<i>(MCPFE B.11 K6) – Research, training and education</i>		
	<i>Annual financial volume for climate impact research and related adaptation measures</i>		
(4) Enhanced dissemination of information, motivation, and strengthening of measures for active climate protection in all relevant fields in compliance with international agreements binding on Austria	<i>(MCPFE 1.4) – Carbon stock: Carbon stock of woody biomass and of soils on forest and other wooded land</i>		
	<i>(MCPFE B.10 K6) – Public awareness and participation</i>		
(5) Increased use and enlarged possibilities for the use of wood (long-living wood products), and assessment of possible accountability of carbon stocks in wood products	<i>(MCPFE 6.7) – Wood consumption: Consumption per head of wood and products derived from wood</i>		
	<i>Quantity of wood used in construction (building industry)</i>		
(6) Stabilisation of forest ecosystems in the face of pending climate change by promoting and, where necessary, improving sustainable forest management as well as development and implementation of appropriate adaptation measures	<i>(MCPFE 1.3) – Age structure and/or diameter distribution: Age structure and/or diameter distribution of forest and other wooded land, classified by forest type and by availability for wood supply</i>		
	<i>(MCPFE 4.3) – Naturalness: Area of forest and other wooded land, classified by "natural" ("undisturbed by man"), by "semi-natural" or by "plantations", each by forest type (detailed classification according to the hemeroby study)</i>		

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(7) Application of ecosystem-oriented (silvicultural) management methods (particularly adapted to specific site and stand conditions) in the framework of sustainable forest management (including appropriate planning and execution)	(MCPFE 2.2) – Soil condition: Chemical soil properties (pH, CEC, C/N, organic C, base saturation) on forest and other wooded land related to soil acidity and eutrophication, classified by main soil types		
	(MCPFE 4.3) – <i>Naturalness: Area of forest and other wooded land, classified by "natural" ("undisturbed by man"), by "semi-natural" or by "plantations", each by forest type (detailed classification according to the hemeroby study)</i>		
	(MCPFE 2.4) – <i>Forest damage: Forest and other wooded land damage, classified by primary damaging agent (abiotic, biotic and human induced) and by forest type</i>		
	(MCPFE 3.5) – <i>Forests under management plans: Proportion of forest and other wooded land under a management plan or equivalent</i>		
	(MCPFE 4.1) – <i>Tree species composition: Area of forest and other wooded land, classified by number of tree species occurring and by forest type</i>		
	(MCPFE 4.2) – <i>Regeneration: Area of regeneration within even-aged stands and uneven-aged stands, classified by regeneration type</i>		
	<i>Fragmentation of forests by roads and paths [km/km²]</i>		
(8) Sound balance of requirements for forest protection, game stock density, pasture management and of private and public interests in forests, taking into account forest land-use planning	<i>Existence of wildlife ecology land-use planning harmonised across sectors (% of district area)</i>		
	<i>Existence of species of potentially natural vegetation "key for the forest community": crown cover of key species in % on the regeneration area – indicator en development</i>		
	<i>Number of peeled stems according to AFI (there of newly peeled ones)</i>		
	<i>Results according to game damage monitoring</i>		
(9) Consistent execution of existing laws of relevance to air pollution control and further development of the statutory protective provisions regarding forest-damaging air pollutants based on scientific expert opinions	(MCPFE 2.1) – <i>Deposition of air pollutants: Deposition of air pollutants on forest and other wooded land, classified by N, S and base cations</i>		
	(MCPFE 2.2) – <i>Soil condition: Chemical soil properties (pH, CEC, C/N, organic C, base saturation) on forest and other wooded land related to soil acidity and eutrophication, classified by main soil types</i>		
	<i>Exceedance of legal air pollution thresholds according to the Annual Report of Air-quality Measuring in Austria</i>		
	<i>Number of measuring points representative of a comprehensive protection against forest damaging air pollutants</i>		
(10) Enforcement of forest site mapping in order to implement the provisions of the Alpine Convention according to existing relevant recommendations, periodic realisation of a forest soils survey and further development towards a monitoring of soils across land-use options	<i>Number and area of current site mapping projects of recognised organisations</i>		

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(11) Maintaining and improving the resistance of forests against abiotic and biotic risks	<i>(MCPFE 1.3) – Age structure and/or diameter distribution: Age structure and/or diameter distribution of forest and other wooded land, classified by forest type and by availability for wood supply</i>		
	<i>(MCPFE 2.1) – Deposition of air pollutants: Deposition of air pollutants on forest and other wooded land, classified by N, S and base cations</i>		
	<i>(MCPFE 2.2) – Soil condition: Chemical soil properties (pH, CEC, C/N, organic C, base saturation) on forest and other wooded land related to soil acidity and eutrophication, classified by main soil types</i>		
	<i>(MCPFE 2.3) – Defoliation: Defoliation of one or more main tree species on forest and other wooded land in each of the defoliation classes “moderate”, “severe” and “dead”</i>		
	<i>(MCPFE 2.4) – Forest damage: Forest and other wooded land damage, classified by primary damaging agent (abiotic, biotic and human induced) and by forest type</i>		
(12) Best possible reduction of emissions according to the state-of-the-art in the fields of transport, industrial plants and household fuels in Austria and, in particular, in the countries whose air pollutants reach Austria due to long-distance transport	<i>NOx, NH3, VOC, SO2- and heavy metal emissions (Austria, Europe)</i>		
(13) Strengthening close-to-nature forest management and improving the use of site-conforming technologies of utilisation	<i>(MCPFE 4.1) – Tree species composition: Area of forest and other wooded land, classified by number of tree species occurring and by forest type</i>		
	<i>(MCPFE 4.3) – Naturalness: Area of forest and other wooded land, classified by “natural” (“undisturbed by man”), by “semi-natural” or by “plantations”, each by forest type (detailed classification according to the hemeroby study)</i>		
	<i>Share of wood utilisation and timber logging variants according to the Timber Felling Rep</i>		
(14) Maintaining and sustainably improving wood supply while conforming to generally accepted framework conditions	<i>(MCPFE 3.1) – Increment and fellings: Balance between net annual increment and annual fellings of wood on forest available for wood supply</i>		
	<i>(MCPFE 6.8) – Trade in wood: Imports and exports of wood and products derived from wood</i>		
(15) Optimised value chain	<i>(MCPFE 3.2) Roundwood: Value and quantity of marketed roundwood</i>		
	<i>(MCPFE 6.3) – Net revenue: Net revenue of forest enterprises</i>		
	<i>Quantity of wood accepted according to ÖNORM L1021</i>		
	<i>Number of enterprises using photo-optical measuring systems (electronic protocols) for acceptance of roundwood</i>		
	<i>Development of prices for roundwood and sawn timber</i>		
	<i>Share of sawn timber in the harvest assortments according to the Timber Felling Report</i>		

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(16) Improved cooperation between and across sectors (forest – wood – energy – tourism – water – education – research – agriculture – nature conservation – hunting etc.)	<i>Number of forest management associations and of their members, including the forest area they represent</i>		
	<i>Number and area of cross-sector pilot projects</i>		
(17) Improved productivity in sustainable forestry and in wood processing and manufacturing industries through product diversification, new marketing lines and promotion of new income sources	<i>(MCPFE 3.2) Roundwood: Value and quantity of marketed roundwood</i>		
	<i>(MCPFE 3.3) – Non-wood goods: Value and quantity of marketed non-wood goods from forest and other wooded land</i>		
	<i>(MCPFE 3.4) – Services: Value of marketed services on forest and other wooded land</i>		
	<i>(MCPFE 6.2) – Contribution of forest sector to GDP: Contribution of forestry and manufacturing of wood and paper products to gross domestic product</i>		
	<i>(MCPFE 6.3) – Net revenue: Net revenue of forest enterprises</i>		
	<i>Number of forest management associations and of their members, including the forest area they represent</i>		
(18) Intensification of education and vocational training, research, economic monitoring programmes and further employment of tools of forest and related land-use planning	<i>(MCPFE 6.5) – Forest sector workforce: Number of persons employed and labour input in the forest sector, classified by gender and age group, education and job characteristics</i>		
	<i>Gross domestic product expenditure for research and development [% of the GDP] EU structural indicator 5</i>		
	<i>Education: Number of graduates from BOKU University (forest and wood-based sector), forestry schools, FAST etc.</i>		
	<i>Further education: Number of participants in forest facilities (BOKU, forestry school, BFW, LWK, LFI, Pichl, Rotholz)</i>		
(19) Strategic partnerships between rural and urban areas with special emphasis on preserving small and medium-sized enterprise structures	<i>Quantity and representative character of networks of reference enterprises ("forest economic monitoring") in small-scale forest and in enterprises</i>		
(20) Developing local strategies based on public-private partnerships, with a view to securing employment and innovation	<i>(MCPFE 6.5) – Forest sector workforce: Number of persons employed and labour input in the forest sector, classified by gender and age group, education and job characteristics</i>		
	<i>Description of strategies and pilot projects with integrative approach for employment and economic improvement (rural development) per Federal Province</i>		
(21) Development and implementation of a national monitoring programme for biological diversity	<i>Number and forest area surveyed in current and well established biodiversity monitoring projects</i>		

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(22) Orientation of forest management according to the potentially natural forest community while safeguarding the stability of the forest ecosystem concerned	<i>(MCPFE 4.1) – Tree species composition: Area of forest and other wooded land, classified by number of tree species occurring and by forest type</i>		
	<i>(MCPFE 4.2) – Regeneration: Area of regeneration within even-aged stands and uneven-aged stands, classified by regeneration type</i>		
	<i>(MCPFE 4.3) – Naturalness: Area of forest and other wooded land, classified by "natural" ("undisturbed by man"), by "semi-natural" or by "plantations", each by forest type (detailed classification according to the hemeroby study)</i>		
	<i>(MCPFE 4.4) – Introduced tree species: Area of forest and other wooded land dominated by introduced tree species</i>		
	<i>Share of structured stands (one or two layers, multi-storied) of the forest area by forest type</i>		
	<i>Percentage share of old-growth forest stands</i>		
(23) Participatory development of strategies for the protection of forests (in and outside protected areas), including species protection programmes in connection with other relevant national programme developments	<i>(MCPFE 4.5) – Deadwood: Volume of standing deadwood and of lying deadwood on forest and other wooded land classified by forest type</i>		
	<i>(MCPFE 4.6) – Genetic resources: Area managed for conservation and utilisation of forest tree genetic resources (in situ and ex situ gene conservation) and area managed for seed production</i>		
	<i>(MCPFE 4.8) – Threatened forest species: Number of threatened forest species, classified according to IUCN Red List categories in relation to total number of forest species (completed by PEFC list of threatened species and Red Lists of endangered biotope types and species by categories of threat)</i>		
	<i>(MCPFE 4.9) – Protected forests: Area of forest and other wooded land protected to conserve biodiversity, landscapes and specific natural elements, according to MCPFE Assessment Guidelines</i>		
(24) All types of forests occurring in Austria are to be recorded in a representative system of protected areas and tended in a coordinated manner	<i>Share of forest types identified in Austria, which are identified in the Natural Forest Reserves Programme of the Federal Government or of the Federal Provinces, as national parks, biosphere parks, Natura 2000 areas and which are taken care of through forest-related management plans or similar programmes.</i>		
(25) Maintenance and promotion of traditional types of forest management and silvicultural systems	<i>Area of forests with special forms of traditional management (high forest management, coppice forest management)</i>		

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(26) Preserving and enhancing rare and endangered native tree and shrub species and responsible dealing with invasive exotic species in compliance with relevant, agreed strategies	<i>(MCPFE 4.4) – Introduced tree species: Area of forest and other wooded land dominated by introduced tree species</i>		
	<i>(MCPFE 4.6) – Genetic resources: Area managed for conservation and utilisation of forest tree genetic resources (in situ and ex situ gene conservation) and area managed for seed production</i>		
	<i>(MCPFE 4.8) – Threatened forest species: Number of threatened forest species, classified according to IUCN Red List categories in relation to total number of forest species (completed by PEFC list of threatened species and Red Lists of endangered biotope types and species by categories of threat)</i>		
	<i>Area share of shrubs in forest stands</i>		
(27) Integrating ecologically relevant elements into forest land-use planning and using them as an important basis of forest political decisions or to reach objectives relating to biodiversity	<i>Number of forest land-use plans (thereof accepted plans), which relate to rare or specially valuable forest biotopes</i>		
(28) Increased impartial assessment of the protective effects, causes of impairment and of the need of restoration and action, with regard to risk situations, the present forest condition and protection objects (categories of protection objects), by means of a universal and comprehensible catalogue of criteria; optimisation of resources distribution	<i>Existence of a recognised set of criteria and indicators (C&I-Set) for the protective functions of forests (yes/no), and forest area in ha evaluated according to this C&I set</i>		
(29) Raising of problem awareness, in particular at local and regional level, and in close cooperation with the people concerned and decision-makers (protection forest platforms; learning by operating models)	<i>Number of protection forest platforms (incl. protection forest partner communities) and the number of events organised by them</i>		
	<i>(MCPFE B.10 K6) – Public awareness and participation</i> <i>Number of protection forest platforms (incl. protection forest partner communities) and the number of events organised by them</i>		
(30) Offering targeted education and vocational training to all participants in forest protection strategies and the interested public	<i>Number of protection forest platforms (incl. protection forest partner communities) and the number of events organised by them</i>		
(31) Remuneration for special measures of preserving and improving protection forests that go beyond the general legal framework based on the real costs accrued and the related activities	<i>Support in EURO in the framework of area-wide projects for areas in ha for the period x; subsidies for protection forests within the Directive on Rural Development in EURO for areas in ha for the year xy, payment by beneficiaries</i>		

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(32) Developing integrative concepts for the management of protection forests paying special attention to the minimum requirements for fulfilling protective functions in the best way considering the different natural hazard processes	<i>(MCPFE 5.1) – Protective forests – soil, water and other ecosystem functions: Area of forest and other wooded land designated to prevent soil erosion, to preserve water resources, or to maintain other forest ecosystem functions, part of MCPFE Class “Protective Functions”</i>		
	<i>(MCPFE 5.2) – Protective forests – infrastructure and managed natural resources: Area of forest and other wooded land designated to protect infrastructure and managed natural resources against natural hazards, part of MCPFE Class “Protective Functions”</i>		
	<i>Support in EURO in the framework of area-wide projects for areas in ha for the period x; subsidies for protection forests within the Directive on Rural Development in EURO for areas in ha for the year xy, payment by beneficiaries</i>		
(33) Better adaptation of game management to ecological, and silvicultural requirements, in particular, in order to maintain all forest functions, particularly the protective function	<i>(MCPFE 2.4) – Forest damage: Forest and other wooded land damage, classified by primary damaging agent (abiotic, biotic and human induced) and by forest type</i>		
	<i>(MCPFE 4.2) – Regeneration: Area of regeneration within even-aged stands and uneven-aged stands, classified by regeneration type</i>		
(34) Applying forest land-use planning and area-related planning across sectors, especially in problem areas	<i>Number of forest plans relating to protection forest (thereof accepted plans)</i>		
(35) Rehabilitation of degraded forest soils in order to preserve the protective effects of forests	<i>Support in EURO in the framework of area-wide projects for areas in ha for the period x; subsidies for protection forests within the Directive on Rural Development in EURO for areas in ha for the year xy, payment by beneficiaries</i>		
	<i>(MCPFE 5.1) – Protective forests – soil, water and other ecosystem functions: Area of forest and other wooded land designated to prevent soil erosion, to preserve water resources, or to maintain other forest ecosystem functions, part of MCPFE Class “Protective Functions”</i>		
(36) Adaptive management of forests in water protection and other protection areas, while maintaining the principle of equal balance of interests	<i>Number and extension in ha of forest areas identified in water protection and close areas (according to the Water Act)</i>		
(37) Reduction of protection forest areas in need of restoration, and improvement of the potential capacity of fulfilling protective functions	<i>Support in EURO in the framework of area-wide projects for areas in ha for the period x; subsidies for protection forests within the Directive on Rural Development in EURO for areas in ha for the year xy, payment by beneficiaries</i>		
(38) Optimisation of forest use and forest cover taking into account economic, ecological and social framework conditions (integrative planning)	<i>(MCPFE 1.1) – Forest area: Area and other wooded land, classified by forest type and by availability for wood supply, and share of forest and other wooded land in total land area</i>		
	<i>(MCPFE 1.2) – Growing stock: Growing stock on forest and other wooded land, classified by forest and by availability for wood supply</i>		
	<i>Fragmentation of forests by roads and paths [km/km²]</i>		

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(40) Strengthening of incentive and voluntary approaches (benchmarking, compensation and promotion, public relations, communication, counselling, etc.) and sound integration into an efficient regulatory framework	<i>Subsidies in EURO for public relations work (forestry from the LE Programme)</i>		
(41) Guarantee of a fair balance of interests with regard to all forest functions, harmonisation of public and private interests, socially compatible coordination of the statutory principle of global ownership protection with public interests and preservation of existing legal claims	<i>(MCPFE 6.1) – Forest holdings: Number of forest holdings, classified by ownership categories and size classes</i>		
	<i>(MCPFE 6.4) – Expenditures for services: Total expenditures for long-term sustainable services from forests other wooded land protected to conserve biodiversity, landscapes and specific natural elements, according to MCPFE Assessment Guidelines</i>		
(42) Promoting participatory approaches (exchange of information, strategy development etc.) for the sake of a balance of interests	<i>Existence of a permanent Forest Forum (yes/no). (Ongoing talks about current issues in forest policy, protection of forests and implementation of the Forest Programme)</i>		
(43) Strengthening modern knowledge management (monitoring, data management, research, education and vocational training, public relations etc.)	<i>Satisfaction of employers and employees (enterprises, authorities) with the quality of education (forest worker, forest manager, forest guard, forester, graduated forester) – indicator in development</i>		
	<i>(MCPFE B.11 K6) – Research, training and education</i>		
(44) Increasing employment in rural areas in forestry and wood-based industries in the best possible way	<i>(MCPFE 6.5) – Forest sector workforce: Number of persons employed and labour input in the forest sector, classified by gender and age group, education and job characteristics</i>		
	<i>(MCPFE 6.6) – Occupational safety and health: Frequency of occupational accidents and occupational diseases in forestry</i>		
(45) Forest culture: innovative management of traditional and historical knowledge in forestry including also social and cultural aspects of sustainable forest management; conservation of important objects and equipment of forest culture	<i>(MCPFE 6.11) – Cultural and spiritual values: Number of sites within forest and other wooded land designated as having cultural or spiritual values</i>		
(46) Improved forest-related education programmes for the general public which take place in the forest, in particular programmes of forest education illustrating practical approaches to sustainable development	<i>Programme and number of participants of events organised by certified forest educators, per year</i>		
	<i>Number of certified forest educators in Austria</i>		
(47) Further development towards globally comparable standards for sustainable forest management in the framework of regional and global forest-related processes	<i>Number and budget of development cooperation projects relating to “sustainable forest management” (further development of criteria and indicators at international level)</i>		
(48) Creation of an independent, globally-binding instrument for the protection and maintenance of sustainable forest management (e.g. Global Convention on Forests)	<i>Austria's activities relating to the development of standards for a sustainable forest management</i>		
	<i>Existence of a global legally-binding forest instrument (yes/no)</i>		

Criteria - Aims	Indicators:	Methodology used:	Databases used:
(49) Enhanced integration of sustainable forest management as a contribution to higher-level development objectives (poverty alleviation, rural development) in development cooperation	<i>Number and budget of development cooperation projects relating to "sustainable forest management" (further development of criteria and indicators at international level)</i>		
(50) Expansion and active support of international transfer of knowledge and technology related to sustainable forest management in the fields of administration, research, education and vocational training as well as in the framework of international economic activities	<i>Number and total project volume (person days) of international forest-related projects with participation of Austrian enterprises and consultants</i>		
	<i>Number of Austrian experts incorporated/employed by international forest-related organisations and committees (classified according to the most important and best known organisations and committees such as World Bank, IBRD, EBRD, FAO, UNECED etc.</i>		
(51) Controlling illegal logging, destruction and degradation of forest ecosystems as well as the associated timber trade in an effective and sustainable manner	<i>Share of wood from illegal logging according to official statistics</i>		
	<i>Quantity of certified timber (m3), processed and treated in Austria on the first level (paper, board, sawmill)</i>		
	<i>Number of forest products from sustainable production and relevant certificate (e.g. eco-label)</i>		
(52) Contributing to the further development of criteria and indicators for sustainable forest management at international level and implementation of forest-related international agreements in Austria	<i>Number of agreements with relevant partner states concerned in the framework of FLEGT</i>		
	<i>Number and budget of development cooperation projects relating to "sustainable forest management" (further development of criteria and indicators at international level)</i>		

3 Belgian system of reference for forest certification (BSRFC) (Belgium) - Nora Pieret

General characteristics:		
Initiator system [24, 25]:	WoodNet association was created in 1997 and was the Belgian representative in the PEFC COUNCIL. It worked on the Belgian PEFC coordination and promotion. It supervised the BSRFC revision and became PEFC Belgium association in 2007. Walloon Regional Standards definition started in 2000 with the work of the "Société Royale forestière de Belgique" (SRFB, private owners' representative) and the "Département Nature et Forêts" of the public administration (DNF, public owners' representative). A Regional Forum was created in 2000 to draw up standards.	
Coordinating party [24]:	PEFC Belgium.	
Initiation – duration [24]:	The BFSMCR was adopted by PEFC Belgium in 2001 and recognized by PEFC COUNCIL in 2002. The actual standards version is valid until 2011.	
Grade of integration [25]:	Meta-standard approach. The BSRFC is based on: <ul style="list-style-type: none"> - PEFC COUNCIL Technical Document and appendixes - Pan-European criteria and indicators for sustainable forests; management (MCPFE, Lisbon, 1998, Annex 1 of resolution L2); - Pan-European Operational Level Guidelines for sustainable forest management (MCPFE, Lisbon, 1998, Annex 2 of resolution L2); - Improved Pan-European criteria and indicators (as adopted by the MCPFE Expert Level Meeting 7 and 8th October 2002, Vienna, Austria); - Conventions n°29, 87, 98, 100, 105, 111 and 138 of the International Work Organization (IWO). 	
Geographical coverage [26]:	Regional implementation but in use all over Belgium.	
Scope (feedstock included) [24]:	Forest management and chain of custody certification.	
Value chain	Forests management, wood and wood-based products trade.	
Mission or objective:		
The BSRFC was created to assure that Belgian forests are managed in the respect of some standards by a verification procedure implementation. It describes and defines references and rules to respect, to obtain Belgian sustainable management certificate or PEFC Chain of custody certificate in firm and PEFC logo use [24].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies) [24]:		
The BSRFC was implemented to be approved by the PEFC COUNCIL, in the respect of the PEFC COUNCIL technical document. The BSRFC is developed at federal level but as forest management, environment, agriculture and urbanism are regional political matters, standards are consequently implemented at the regional level. In 2007, Flemish region started only to work on the standards definition and there was no asking to develop standards in Brussels-Capital Region. Consequently, only Walloon standards will be presented in this report.		

A Belgian forest is mainly located in Walloon region (82%), Walloon standards are the most major.
Current status of system [24, 37, 28]:
In use: 281,052 ha of the Walloon public forest as regional certification, 180 C-O-C certificates; 383 Walloon private owners certified; 195 Walloon public owners certified; 233 Walloon certified firms; 184 certified suppliers in Belgium; 215 PEFC logo users in Belgium; 639 certified products in Belgium; 254 records in chain of custody certification in Belgium.
Planned activities:
-

Structure of the system or initiative:	
Stakeholder participation [25]:	The Regional Forum in charge of the standards definition was opened to each party interested in taking part to the process. The Forum has to show a balanced formation between targeted groups: owners, forest managers, searchers, workers and wood industry sectors, environmental associations, forest users. Standards and their implementation are updated at least each 5 years to take into account new research results, practical issues. PEFC Belgium is the responsible body for these revisions that <u>have to be participative, fair and opened.</u>
Commitment [25]:	The unit to certify is a Region (Wallonia) delimited by geographical borders. The regional certification gives to public and private owners included in this area an access to certification based on a voluntary step.
Stakeholder integration [26]:	Each forest owner accepts to sign a charter presenting management standards he agrees to apply, the BSRFC standards. He has to give a free access to documents needed for the audit and to his property.
Monitoring performance [26]:	Two types of audits are achieved: internal and external audits. Internal audit are achieved by SRFB (private owners representative) and DNF (public owners representative, public forest administration). After signing the charter, Owners have to draw up a management plan in the respect of charter criteria and send it to their representative for approval.
Chain of custody mechanism [24]:	Track and trace.
Verification mechanisms [26]:	Accreditations are decided by BELAC (The Belgian accreditation organism) and current accredited bodies are ECOPASS, M. A. Grosfils, Veritas Certification Belgium Office, SGS Belgium NV, Control Union Belgium. Bodies accredited at the international level and members of the IAF are competent too. Internal audits are led by the SRFB and the DNF. When an owner has signing the charter, he is likely to be audit within the next 6 years. External audit are led by accredited bodies on a smaller sample than internal audit.

Further information:	
Removal of trade barriers	-
Costs [26, 37]:	A subscription has to be paid by owner to their regional representative, for the interne audit expenditure. The amount is fixed by the representative and it's currently equal to 5 € + 0.5 €/ha with a maximum of 250 €. External audits are quite expensive: 800 €/day.

List of principles included: Helsinki principles [27]	
1	National laws, regulations and programs have to be respected
2	Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycles
3	Maintenance of forest ecosystem health and vitality
4	Maintenance and encouragement of productive functions of forests (wood and non-wood)
5	Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems
6	Maintenance and appropriate enhancement of protective functions in forest management (notably soil and water)
7	Maintenance of other socioeconomic and cultural functions and conditions

References: [24, 25, 26, 27, 28]	
Website:	www.pefc.be

List of criteria and indicators:

Criteria [27]	Indicators:	Methodology used:	Databases used:
Regional progress plan: standards of the BSRFC 2007-2011	Gaps between Lisbon recommendations and Walloon forest management state, prioritization of problems based on Lisbon recommendations and improvement objectives definition to solve it.		
Objective 1. Drawing up a global sustainable forest management plan, based on integrated information sources and multifunctional management plans.	1.A. To draw a Regional forest plan and submit it to the Walloon Government approval.		
	1.B. To put at stakeholders' disposal a free data source: alphanumeric and cartographic integrated data.		
	1.C. To keep on management plans development or integrated management documents.		
Objective 2. Popularized sustainable forests management and sustainable development principles for public and administrations	2.A. To organize information campaigns on sustainable forests management for public and at school.		
	2.B. To promote the use of certified wood in long term uses by organizing information campaigns on the environmental benefit of this behavior.		
Objective 3. Adapt inheritance tax system to specific sustainable forests management constraints	3.A. To propose to the concerned Minister an inheritance tax exemption and growing stock settlement systems, to make forestry decisions independent of inheritance taxation.		
	3.B. To propose to the concerned Minister an inheritance tax adaptation system to give access to action 3A result to each forest owner included non-resident ones.		
Objective 4. Improve the equilibrium wood / game animals	4. A. Implement a regional action plan to promote balance between forest and game animals and submit it to the concerned Minister.		
	4.B. Implement a regional action plan with the available means		
Objective 5. Maintain or improve the forests ecosystems health and vitality, based on climate change impact among others	5.A. Implement a strategy based on relations existing between climate change and forest ecosystems and submit it to the concerned Minister.		
	5.B. Implement a forest health and forest ecosystems vitality observatory.		
	5.C. Improve the genetic diversity in the new regeneration with suitable species to the station.		
	5.D. Favor the installation and maintain mixed populations.		
	5.E. Update the Ecological File of species and the Walloon forest stations plantation guide.		

Criteria [27]	Indicators:	Methodology used:	Databases used:
Objective 6. Ensure a better knowledge of the allochthonous species use impact and a better control	6.A. Take part to the identification of the allochthonous species and ecotypes representing a high risk level.		
	6.B. Take in hand new species or allochthonous ecotypes plantations and to heighten owners awareness.		
Objective 7. Identify preservation objectives to promote for some forest ecosystems and main biotopes, included traditional management systems	7.A. Inventory and map habitats with high biological value and in particular, identify the remaining old forest network.		
	7.B. Identify preservation objectives to promote in the case of the forest ecosystems and main biotopes, including traditional management systems, in the forest property.		
Objective 8. Improve the biodiversity integration in the forest management practices	8.A. Write a biodiversity and forest management guide for private forest owners.		
	8.B. Make private owners and forest managers sensitive to the Biodiversity Circular and Biodiversity guide implementation.		
	8.C. Study the socio-economic and environmental feasibility of the biodiversity circular application in local forests.		
Objective 9. Improve the work quality in forest	9.A. Study the feasibility of the forestry developer and contractor professions access implementation.		
	9.B. Implement training programs and information sessions about exploitation methods and works ensuring sustainable management and safety during work.		
	9.C. Improve exploitation requirements and promote their use.		
	9.D. Plan training sessions for owners-managers.		
Objective 10. Improve wood chain integration	10.A. Support the forest chain plate-form.		
	10.B. Ensure a coherent management of the carbon cycle in the forest chain.		
Objective 11. Improve slow tourism access in forest	11.A Simplify pathways status and their accessibility.		
	11.B. Promote consultation between owners and users to favor forest itineraries coherence.		
11. Charter to sign owner : standards of the BSRFC 2007-2011			
1. Regulation:	Respect laws, decrees, and regulations applied to the owned forest		
2. Information-formation	<ul style="list-style-type: none"> - Follow trainings and courses about sustainable forests management - Use the PEFC charter implementation guide and updates. - Inform people involved in the owned forest management about PEFC standards. 		

Criteria [27]	Indicators:	Methodology used:	Databases used:
3. Management document and management plan	<ul style="list-style-type: none"> - Private owner: to draw up a management document and send it next year with the signed charter to the Belgian Royal Forest Society, based on the PEFC template - Public owner: to draw up a management plan periodically reviewed and integrating at least a description of the initial forest property land state, taking into account whole forest functions, indentifying preservations areas for water, soils, rare facies, objectives prioritization and planning in space and time management steps. 		
4. Adapted forestry	Apply an adapted forestry to preserve growing stock to an acceptable level based on economical, ecological and social issues when it is possible regarding the property size.		
5. Regeneration	<ul style="list-style-type: none"> - Ensure forest renewal by natural regeneration or lantations with species suitable with the station. Origins will be mentioned in the Walloon commendable origins dictionary. Preference will be given to origins mentioned in the Walloon basis material catalogy. - Take account of the presence of remarkable trees to eventually collect seeds. - GMO's are forbidden in plantations. 		
6. Mixes	- When it is possible, diversify forest by using a species mix in composition, age, structure. Maintain rare species.		
7. Enrichments	<ul style="list-style-type: none"> - Pesticides can be used only when it is the only solution. Pesticides are forbidden in a distance less than 12 m from the streams, ponds, lakes and water sources. - Use enrichments based on soil analyses results proving it is necessary for the health of the trees. - Chemically compound enrichments are forbidden. 		
8. Wet areas	<ul style="list-style-type: none"> - Reduce the heavy vehicle use during frost or drought periods. - No new drainages. - Renew planting with broad-leaved species 		
9. Specific area for biodiversity	<ul style="list-style-type: none"> - Preserve or restore the interesting areas for biodiversity (forest edgings, glades, ponds). - Take care of the old forests (never transformed in farm lands). 		
10. Dead wood and trees interesting for biology	<ul style="list-style-type: none"> - Maintain a wood trees network, old trees to an acceptable level regarding phytosanitary concerns. - When it is possible keep old islands in the forest. 		

Criteria [27]	Indicators:	Methodology used:	Databases used:
11. Falling	<ul style="list-style-type: none"> - Keep a balance between forest increase and fallings when property size allows it. - Use general requirements for exploitation to reduce damages to pathways, trees, soils and streams. - Wastes abandonment is forbidden and security instructions have to be applied. - Open falling surface will be adapted to reduce soil erosion in slopes, avoid destabilization of remaining forests, a water level ascent or an impact on the landscape. Not exceed a surface of 5 ha in one piece (minimal distance between open fallings achieved the same year: 50 m, minimum time limit between adjoining fallings: 3 years) except in particular conditions justified near the Forum. 		
12. Balance forest-game animals	<ul style="list-style-type: none"> - Ensure a well-balanced management between forest and game animals by, when it is possible, regulating game population with hunting (Stags shouting plan) and improve the shelter capacity with some specific management actions. 		
13. Social role of the forest	<ul style="list-style-type: none"> - Don't hold up public pathways access crossing the property except for a temporary period and for security purposes - Allow sometimes free access to private pathways under permission for cultural activities and in the forests ecosystems respect - In addition to the official regulation, motorized events are forbidden out of pathways - Take into account the historical, cultural and landscaped elements in the management plan. 		
14. Audit and cancellation	<ul style="list-style-type: none"> - Accept accredited body visit during which respect of the engagements will be checked. - In case of the PEFC voluntary agreement cancellation, it will be possible to be PEFC certified again only with the Forum agreement. 		

4 National Forest Stewardship Standard for the Czech Republic (FSC Česká Republika)(Czech Republic) - Jiří Kropáč

General characteristics:	
Initiator system:	Forest Stewardship Council A. C. (FSC)
Coordinating party:	FSC Working Group Czech Republic (FSC WG CZ)
Initiation – duration:	Since August 2006
Grade of integration	
Geographical coverage:	Czech Republic
Scope (feedstock included):	Timber (products)
Value chain	

Mission or objective:		
FSC's main idea is to support environmentally responsible, socially beneficial, and economically viable management of forests worldwide, and thereby to help protect the disappearing, threatened, and devastated forests of this world.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
No specific requirement		
Current status of system:		
52 387 ha of forest management certificates; 36 wood-processing companies certificated		
Planned activities:		
-		

Structure of the system or initiative:	
Stakeholder participation:	The FSC Working Group Czech Republic consists of three expert sections – Economic, Environmental and Social – each having an equal vote. Members of FSC WG CZ develop and revise the Czech FSC Standard via the Standardization Committee of the association. FSC Working Group Czech Republic is open to new members and observers.
Commitment:	
Stakeholder integration:	
Monitoring performance:	
Chain of custody mechanism:	
Verification mechanisms:	

Further information:	
Removal of trade barriers	
Costs:	

List of principles included:	
1	Compliance with laws and FSC Principles
2	Tenure and use rights and responsibilities
3	Indigenous peoples' rights
4	Community relations and worker's rights
5	Benefits from the forest
6	Environmental impact
7	Management plan
8	Monitoring and assessment
9	Maintenance of high conservation value forests
10	Plantations

References:	
Website:	www.czechfsc.cz

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
1.1 Forest management shall respect all national and local laws and administrative requirements.	I. The owner has at his disposal all applicable laws and ordinances related to forest management, and is familiar with them II. There is no evidence of violation of applicable laws or of non-fulfilment of the duties related to forest management.	interviews, review of documents, field inspection	
1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.	I. All legally prescribed fees are paid and there is no evidence of payment indiscipline (fees are fully paid within specified periods).	review of documentation, interview with national authorities (possibly revision of fiscal audit outcome)	
1.3 In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.	I. There is no evidence that the international agreements ratified by the Czech Republic have been violated on the part of the Owner.	interviews with employees and representatives of stakeholders	
1.4 Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and the involved or affected parties.	I. The owner shall inform the certification body of all conflicts between existing laws and regulations and the Czech FSC Standard. II. If possible conflicts between existing laws and regulations and the Czech FSC Standard cannot be resolved by certification body, the owner shall report them to the FSC WG CZ Dispute Resolution Committee.	interviews with managers, review of documentation	
1.5 Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities.	I. The owner of a forest area of over 500 ha shall apply for the establishment of a forest guard. II. The forest guard or the owner keeps records and resolves all kinds of observed offences against the existing legislation.	interviews with staff and representatives of national authorities, review of documentation, field inspection	
1.6 Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.	I. The owner shall acknowledge FSC Principles and Criteria and make a written commitment to long-term conformation to them. II. The owner of a forest area of over 500 ha makes his obligation to conform to the Czech FSC Standard public. III. If any forest operations are carried out by contractors, the owner contractually ensures contractors' adherence to the requirements of the Czech FSC Standard. IV. The owner notifies the affected employees of the requirements and limitations regarding the use of the FSC logo, both in communication and advertising, but especially in the labelling of products, and he respects these conditions.	review of documentation, review of agreements with contractors, interview with employees	
2.1 Clear evidence of long-term forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated.	I. The legal subject that cultivates the certified property has an appropriate licence for business operations, and documentation of its foundation and establishment. II. The forest owner provides maps demarcating the property in his use and the property designated for certification. III. The forest owner provides evidence of demarcated property as recorded in the land register, and documentation specifying the tenure and use rights (e.g. contracts with hunting associations, defined extraction areas, or previously-defined mineral extraction rights).	review of maps and documentation	

Criteria	Indicators	Methodology used	Database used
2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.	I. Local joint forest owners (municipalities, associations, fellowships, associations of owners) shall designate with free and informed consent a person or a legal subject to ensure protection of their right to control the forest management.	review of documentation, interview with the owner's agent	
2.3 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.	I. The owner keeps records of all disputes over tenure or use rights, including documentation of all steps that have been undertaken in order to resolve these disputes. II. Should there be a dispute over tenure or use rights the owner and the affected party agree on steps towards the resolution of the dispute. The owner adheres to the agreed procedure.	review of documentation and correspondence, interviews with representatives of local stakeholders	
3.1 Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.	According to the definition by the United Nations, there are no indigenous peoples in the Czech Republic that would feel or define themselves as such. Therefore, the principle in this form is not applicable. Criteria 3.1-3.4 can be considered to be inapplicable in the case of the Czech Republic. Aspects of this principle, which are logically related to the interests of the local population, are covered under Principle 2 (customary rights) and Principle 4 (community interests).		
3.2 Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.			
3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.			
3.4 Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.			

Criteria	Indicators	Methodology used	
4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.	<p>I. The owner keeps track of local workers, suppliers and contractors. The requirements and conditions of tender do not disadvantage local contractors.</p> <p>II. Only contractors qualified to pursue works in question are hired.</p> <p>III. Should the employees be from non-EU countries, the employer shall prove They hold valid work permits.</p> <p>IV. The employees are supported in continuing their education and extending their proficiency by the employer.</p> <p>V. The owner, where appropriate and possible, allows local schools or other organisations to use the forest for the purposes of further education</p>	review of documentation, interview with employees and representatives of local stakeholders	
4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.	<p>I. All forest operations are organised and carried out in accordance with existing Health and Safety legislation, especially in accordance with provisions regarding the use of protective clothing and equipment.</p> <p>II. Relevant safety training of employees is to be carried out. Employees attendance at these educational courses and trainings is considered a part of their work</p> <p>III. A number of Workplace Safety Personnel (or an individual) appropriate to the size of the workplace are designated responsible for the regular checking of employees adherence to work safety regulations and use of protective clothing and equipment.</p> <p>All employees are familiar with the designated staff (individual).</p> <p>IV. All machines, instruments and tools designated for use are in good technical condition so as to ensure their safe use.</p> <p>V. The owner documents work injuries, evaluates their causes and takes measures to prevent them.</p>	review of documentation, training records, field inspection, interviews with employees	
4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organisation (ILO).	<p>I. There is no evidence that the existing social welfare laws and regulations as well as the Convention of International Labour Organisation (ILO) and provisions of FSC policy on FSC Certification and ILO convention have been violated.</p> <p>II. All employees can assert their right to form trade unions and other labour organisations, and make collective wage agreements, following the wage agreements of higher degrees, without any infringements on the employer's part. The employees attest that they do not fear sanctions on the employer's part when they organise in trade unions.</p> <p>III. Employers respect the applicable basic pay and collective wage agreements negotiated between employers' associations and trade unions, or between the employee and the owner.</p> <p>IV. Prior to commencement of the certification process the owner of a forest area of over 500 ha informs his trade union, or, if it does not exist, union association, about certification, the opportunities it offers, and its impact on communication and the social sphere.</p>	contact with representatives of local stakeholders in particular with trade unions and their associations and with the Bureau of Work Safety, review of documentation, interviews with employees	

Criteria	Indicators	Methodology used	
4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups (both men and women) directly affected by management operations.	<p>I. The owner of a forest area of over 500 ha documents and evaluates changes in employment levels and workforce structure.</p> <p>II. Whenever possible, employees are employed year-round layoffs must be justified by the enterprise, and are carried out after consultation with trade unions.</p> <p>III. Representatives of local stakeholders (both men and women), civil associations and other partners are identified, and their initiatives and discussions with them are documented.</p> <p>IV. Neighbouring property owners and affected stakeholders are kept informed of forest operations that materially affect them. Their remarks are considered. Their participation in negotiations must be approved.</p> <p>V. When taking decisions concerning forest management, the owner respects sites of special cultural or religious significance.</p> <p>VI. At company meetings or similar events, employees are kept informed about business changes that affect their social situation. The employer supports and keeps records of consultations with employees.</p>	review of documentation, interviews with local and affected stakeholders representatives, interviews with employees without the presence of their superiors	
4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.	<p>I. The owner keeps records of, and resolves all complaints from, other parties regarding damage from forest operations affecting property, legal or customary rights, or natural resources resulting from his management activities. The owner takes measures to prevent such damage.</p> <p>II. The owner of a forest area of over 500 ha designates a person responsible for decisions on complaints and compensation for damage.</p>	review of documents, interviews with management and local stakeholders	
5.1 Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.	<p>I. If comparable profits can be achieved, the owner chooses environmentally and socially friendlier technologies and methods.</p> <p>II. The financial plan of the forest owner ensures sufficient profits and other financial resources to cover all necessary costs.</p>	field inspection, interviews, review of documentation– financial plan (budgets, annual accounting statements)	
5.2 Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.	I. With respect to local and regional economic needs, the owner produces and places on the market a wide range of high quality forest products.	interviews with management, review of documentation	

Criteria	Indicators	Methodology used	
5.3 Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.	<p>I. The owner chooses such methods of tree harvesting and transportation that lead to the elimination of loss and damage of timber.</p> <p>II. The owner chooses technologies and methods of tree harvesting and transportation that prevent damage to advanced growths, surrounding stands, and other forest resources.</p> <p>III. Following the harvesting, all damage is monitored and measures to prevent its recurrence are employed. These measures must be considered when planning forest operations and included in agreements with contractors.</p>	field inspection, review of documentation, interviews with employees	
5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.	I. The owner communicates with regional enterprises and small processing enterprises about their specific needs (small or specific orders).	interviews with management (possibly with local partners or stakeholders)	
5.5 Forest management operations shall recognize, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.	<p>I. On the basis of the available information and following consultation with the public, and according to the scale and intensity of forest management, the owner identifies all society functions of the forest. The identification of all-society functions of specific vegetation will be considered when developing forest management planning.</p> <p>II. When managing forest and building barriers in a stream, the owner creates conditions for functional and ecologically-balanced runoff conditions in the drainage area.</p> <p>III. Systematic drainage is not carried out, nor is existing drainage maintained. Only temporary drainage of disaster areas is permissible, to enable forest regeneration.</p> <p>IV. Any aesthetically noteworthy natural objects and structures are preserved by the owner when carrying out any forest operations, even when these are not designated as natural monuments.</p> <p>V. The owner does not consent to organised mass gatherings when there is a wellfounded assumption that these could damage the forest ecosystem.</p> <p>VI. Game populations permit the natural regeneration of appropriate tree species stands. Should there be apparent damage from game, the owner, employing all existing legal measures, must strive to reduce game populations.</p> <p>VII. The influence of game populations on the forest and its economic impact are evaluated at least annually. If damage is identified, then the outcome of the evaluation justifies the steps taken to reduce game populations and claims for compensation.</p>	field inspection, interview, review of documentation of consultations and management planning	

Criteria	Indicators	Methodology used	
<p>5.6 The rate of harvest of forest products shall not exceed levels which can be permanently sustained.</p>	<p>I. The volume of harvesting and its composition must not exceed a given harvesting level in order to permanently prevent the reduction of forest resources and other forest functions.</p> <p>II. No negative impact of the collection of non-timber forest products on forest ecosystems is identified. Should any apparent negative impact be identified, the owner takes measures to eliminate it.</p> <p>III. Christmas tree plantations may be established on 5% of the managed area at most.</p>	<p>management planning, review of documentation, field inspection</p>	
<p>6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources – and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.</p>	<p>I. Prior to the commencement of site-disturbing operations, the owner evaluates their potential impact on the environment, affected resources and landscape. Should there be any doubt regarding the degree of impact of the intended operations, or if any doubts are put forward by local residents or stakeholders, an expert survey, appropriate to the scale of the operations, must be carried out.</p> <p>II. Prior to the commencement of forest operations, the owner* of a forest area of over 500 ha or a responsible person must consider - according to the scale and intensity of these interventions - their environmental impact, particularly the impact on highly-protected plant and animal species, endangered ecosystems (biotopes), and on the water regime and soil.</p> <p>III. The owner of a forest area of over 500 ha designates a person or a group of persons who based on the indicator 6.1.I. a 6. 1. II., suggest and assign the completion of a biological evaluation, and is responsible for carrying out and controlling of the suggestions proposed in the biological evaluation.</p> <p>IV. When the management plan is being developed, the environmental impact of suggested measures is also considered at landscape level. The rationale of suggested measures is incorporated into the management plan.</p>	<p>inspection of documentation, interviews, field inspection, forest management plan</p>	

Criteria	Indicators	Methodology used	
<p>6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.</p>	<p>I. Forest management operations shall respect the habitats of highly-protected and endangered plant and animal species*. In these areas, forest management operations shall be carried out only to an extent and in such a way as to ensure the maintenance or enhancement of populations and habitats of given species.</p> <p>II. Natural forest-free areas of forest land are maintained in their natural condition (in particular, these areas are not afforested).</p> <p>III. Wetlands, spring areas, pools, watercourses and bodies of water are given attention leading to the maintenance and enhancement of their biodiversity and regeneration of their functions in the future.</p> <p>IV. Trees with cavities (den trees) are left to age and decay naturally.</p> <p>V. The owner* keeps records and documentation of trees with nests of big highly protected birds. In the course of nesting no disturbing forest operations shall be pursued (harvesting, in particular) within a radius of 100 metres.</p> <p>VI. The owner does not hunt or tolerate the hunting of highly-protected animal species, poaching, inappropriate hunting, fishing, or gathering.</p>	<p>review of documentation, filed inspection, interviews</p>	
<p>6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:</p> <p>A. Forest regeneration and succession.</p>	<p>I. The natural regeneration of forest stands of site and regionally appropriate tree species is given priority, and conditions for this regeneration are developed.</p> <p>II. In pursuit of forest regeneration, small area regeneration components are given priority.</p> <p>III. In cases where clearings are created by salvage felling, the naturally seeding tree species are used as a preliminary (protective) stand.</p> <p>IV. Shelterwood and selection system, or possibly a system using selection methods, is given priority.</p> <p>V. The mechanical cultivation of soil is tolerable solely when carried out to encourage natural regeneration, and these cases must be well documented and substantiated. Even then it is carried out only in small areas and without the overall removal of top soil horizons.</p> <p>VI. As a matter of principle, clear cuttings* should be avoided. In substantiated cases clear cuttings up to one third of the maximum permitted principal felling according to the forest management plan is permissible. In these cases, the maximum area of the clear cutting is 0,5 ha.</p>	<p>field inspection, review of documentation (management plan, plan of regeneration), interviews</p>	

Criteria	Indicators	Methodology used	
<p>6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including: B. Genetic, species, and ecosystem diversity.</p>	<p>VII. In every regenerated stand it is necessary to employ - with respect to the specific conditions of a given site - a minimum proportion of ecologically stabilizing tree species (EsD) VIII. The minimum percentage of EsD according to the table in Appendix 6 shall not be reduced by tending. IX. In stands established before the effective certification date, the percentage of EsD is increased through tending, or beating up, if their character (especially their age, closeness, species composition) enables the employment of such an approach. X. On afforestation sites, clump or group mixture is preferred to integral wideranging blocks of EsD. XI. Forest margins bordering non-forestland are regenerated predominantly through individual selection; deciduous tree species and shrubby ecotones enhancing stability of the stand and the ecotone effect are promoted. XII. Larch (<i>Larix decidua</i>) can be cultivated solely as an admixed tree species. XIII. Interventions into riparian stands are carried out only as necessary resulting from the duties of the river administrator. XIV. In alluvial plains of permanent watercourses and ponds no clear cuttings are carried out in associated vegetation within a distance equal to its height.</p>	<p>field inspection, review of documentation (management plan)</p>	
<p>6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including: C. Natural cycles that affect the productivity of the forest ecosystem.</p>	<p>XV. The owner of a forest area of over 500 ha works out a directive for the identification and leaving of fractures, snags, windthrows, trees with cavities, and selected full-grown trees to age and decay in maturity-approaching and mature stands, and adheres to this directive. The volume of the wood left to decay is at least 5 trees per hectare in a stand, and 30 m³ per hectare of maturity-approaching and mature stands in the forest property. XVI. The owner of a forest area of below 500 ha leaves at least 5 trees per hectare to decay. XVII. When the trees left are not in compliance with health and safety regulations and forest preservation, the forest manager is obliged to select alternate trees immediately fulfilling in a similar way the ecological functions of the removed trees. XVIII. The burning of felling debris is not permissible. The exceptional utilization of this method is possible in cases of the disastrous occurrence of pests living under the bark. XIX. The owner shall not employ the tree felling method, the only exception applies to clearing due to salvage felling.</p>	<p>field inspection, interview, review of documentation</p>	

Criteria	Indicators	Methodology used	
<p>6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.</p>	<p>I. The owner of a forest area of over 500 ha defines at least 2 %, in the case of municipal property 3% and in the case of state property 5% of the forest area as reference sites. II. Larger areas are preferred for definition as reference sites. III. Reference sites must be represented on maps and should be demarcated in the field as well. IV. Reference sites are monitored at least once a decade, and the owner utilizes the results of the monitoring in the introduction of new procedures for forest management. V. The reference sites must be permanently removed from intensive forest use and serve as examples of forest ecosystems with natural dynamics of development. Only interventions leading to the enhancement of the natural state are carried out. VI. Stands or their parts in natural condition that are included in reference sites are kept up in a non-intervention management.</p>	<p>field inspection, review of documentation, interviews with employees</p>	
<p>6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.</p>	<p>I. The owner shall prepare a guideline, which includes provisions mentioned in Appendix 7, to control erosion, minimize vegetation damage during harvesting, transportation of wood, construction of roads, and to control other mechanical disruptions of the soil and to conserve water resources. II. The provisions of the guideline are respected and utilized when formulating the management plan and when executing forest operations.</p>	<p>review of documentation, filed inspections</p>	

Criteria	Indicators	Methodology used	
<p>6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.</p>	<p>I. In principle, chemical biocides and repellents are not employed. The utilization of herbicides for pest control is only permissible in exceptional cases when ordered by national authorities. Exceptions are also granted in cases when the owner substantiates the claim that the relief can not be achieved through alternate methods (particularly in the case of the necessary elimination of invasive species). Such cases must be documented by the owner.</p> <p>II. Non-degradable biocides shall not be used, especially World Health Organisation Type 1A and 1B biocides, substances mentioned in FSC policy on chemical pesticides, chlorinated hydrocarbon pesticides, pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain; as well as any pesticides banned by international agreements.</p> <p>III. Fertilisation of timber land to increase yield is not applied.</p> <p>IV. The owner keeps records of synthetic chemicals applications. The records must include at least the name of the products, the location of its application, the extent of the treated area, the application method, the date of commencement and finalisation of the application, the total amount of the chemical utilized, and the rationale for the utilization of the synthetic chemical.</p> <p>V. When biocides are utilized, the owner must provide training for employees to eliminate health and environmental risks. The owner shall keep training records.</p> <p>VI. Liming is not permitted.</p>	<p>review of documentation, interviews with employees and interested groups, field inspection</p>	
<p>6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.</p>	<p>I. Chemicals, containers, fluid and solid non-organic wastes should be chosen and handled in a manner to prevent possible damage to the environment, and their disposal is carried out in an environmentally considerate manner on sites designated for this purpose, outside the forest.</p> <p>II. Dumping grounds are not established and tolerated in the forest. Wastes (except for biomass) associated with forest operations (e. g. wrappings) are carried away from the forest on the acceptance of the work at the latest.</p> <p>III. In compliance with legal regulations, the owner keeps documentation of waste, and if forest operations are carried out on contract, the responsibility for keeping records of waste is unequivocally specified in the contract.</p>	<p>field inspection, review of documentation of wastes, possibly review of contract with suppliers of work and provided services.</p>	

Criteria	Indicators	Methodology used	
6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.	I. Neither genetically modified organisms, nor products made of such organisms are used. II. If biological control agents are employed to regulate forest weed or pests, the owner or supplier of works conforms to all applicable laws and regulations as well as internationally accepted protocols. The owner consistently and regularly controls and documents the employment of such agents and monitors their impact on the ecosystem. III. The employment of introduced (non-autochthonous) biological control agents is not permitted.	review of documentation, interview with employees, possibly field inspection, statement of the forest manager	
6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts	I. The owner controls and monitors the incidence of introduced plant and animal species to avoid adverse ecological impacts. Species which behave invasively in the environment are gradually eliminated from the stands. II. When restocking stands, it is permissible to plant introduced tree species to a maximum proportion of 5 %. III. The natural regeneration of introduced tree species is tolerable when its proportion does not exceed 10 %.	field inspection, interviews with employees and representatives of local stakeholders, review of documentation (management plan)	
6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: A. entails a very limited portion of the forest management unit	I. The owner may approve the temporary or permanent claim of forest land only if it is in the public interest associated with public constructions, and if this resolution is well substantiated as the most appropriate alternative, as far as environmental impacts are concerned.	review of documentation, interviews with representatives of local stakeholders	
6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: B. does not occur on high conservation value forest areas	II. Forest conversion to non-forest land is not permissible in high conservation value forests.	review of documentation, interviews with representatives of local stakeholders	
6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: C. will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.	III. The owner may approve the temporary or permanent claim of forest land when it will lead to clear, secure, substantial, long term conservation benefits.	review of documentation	
7.1 The management plan and supporting documents shall provide: A. Management objectives.	I. The management plan defines management objectives including long-term objectives the fulfilment of which goes beyond the validity of the management plan.	review of the forest management general section	

Criteria	Indicators	Methodology used	
7.1 The management plan and supporting documents shall provide: B. Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.	II. The management plan includes a description of natural conditions, and forest resources in the possession of the owner. III. Land register documents that serve as a means of identification of forest property, are included in the management plan.	review of management plan and other documentation (e. g. OPRL – Regional Plan of Forest Development)	
7.1 The management plan and supporting documents shall provide: C. Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.	IV. The owner of a forest area of over 50 ha incorporates an ecologically substantiated description of the management method and management system into the management plan.	management regulations, OPRL (Local Plan of Forest Development), data in the general section of the FMP, attitude of national authorities	
7.1 The management plan and supporting documents shall provide: D. Rationale for rate of annual harvest and species selection.	V. The owners of a forest area of over 50 ha incorporate information on the definite maximum volume of harvested timber and on the extent of tending into the management plan. VI. The owners of a forest area of over 50 ha incorporate information on medium-term management provisions that are based on the identified conditions of forest ecosystems.	review of management plan	
7.1 The management plan and supporting documents shall provide: E. Provisions for monitoring of forest growth and dynamics.	VII. The management plan of the owners of forest areas over 50 ha is based on regularly identified data on forest conditions.	general section of the FMP, information from interested parties	
7.1 The management plan and supporting documents shall provide: F. Environmental safeguards based on environmental assessments.	VIII. The owner of a forest area of over 50 ha respects the statements of environment conservation bodies and other participants in the primary examination of the conception of the management plan. When developing and implementing the FMP, the owner shall fulfil the resulting requirements, which are mentioned in the primary protocol.	documentation of development of the FMP	
7.1 The management plan and supporting documents shall provide: G. Plans for the identification and protection of rare, threatened and endangered species.	IX. When monitoring and identifying the stands of highly-protected and endangered plant and animal species, the owner co-operates with expert bodies, environment conservation bodies, and stakeholders	interviews with representatives of local stakeholders and national authorities	

Criteria	Indicators	Methodology used	
<p>7.1 The management plan and supporting documents shall provide: H. Maps describing the forest resource base including protected areas, planned management activities and land ownership.</p>	<p>X. The owner provides stand and profile maps for the period of the management plan applicability. The owner prepares the map of intended management interventions proportionately to the extent of the works and with regard to the annual harvest plan and silvicultural operations. XI. The owner of forest land of over 50 ha provides an ecological map showing the location of high conservation value areas and their protective zones, designated natural monuments, reference sites, elements of the territorial system of ecological stability, forests with a high conservation value, and other ecologically vulnerable localities, such as bodies of water, wetlands, spring areas, outcrops, and slide rocks</p>	<p>review of maps</p>	
<p>7.1 The management plan and supporting documents shall provide: I. Description and justification of harvesting techniques and equipment to be used.</p>	<p>XII. The owner of a forest area of over 500 ha specifies harvesting technologies and techniques of skidding.</p>	<p>management guidelines</p>	
<p>7.2 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.</p>	<p>I. During the periodical redevelopment (every ten years) of the management plan of owners of a forest area of over 500 ha the following information will be utilized and taken into account: a) the results of forest condition assessment, monitoring of reference sites, and monitoring of highly-protected or endangered plant and animal species. b) new technical and scientific information, documents of land use planning. c) up-to-date information on social and economic circumstances acquired through consultation and through the process of public consultations II. During the periodical redevelopment (every ten years) of the management plan of owners of a forest area of under 500 ha the following information will be utilized and taken into account: a) the results of forest condition assessment, monitoring of reference sites, and monitoring of highly-protected or endangered plant and animal species. b) documents of land use planning.</p>	<p>review of documentation, interviews</p>	

Criteria	Indicators	Methodology used	
7.3 Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.	I. The employees receive adequate training to ensure the proper implementation of intended management measures. II. A person must always be designated responsible for the supervision of the conformance to the management measures, and the monitoring of operations. III. The owner strives to achieve high quality performance of the employees through the utilization of a system of corrective and preventive measures.	review of the training records, interviews with the employees, review of documentation (agreements)	
7.4 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.	I. The management plan for forest in public ownership is available to the public. For other forest areas over 50 ha, a summary of the management plan, including requirements listed in criterion 7.1, is made publicly available. II. The owner of forest area over 50 ha allows all known local stakeholders to participate in the revision of the management plan, if they explicitly show their interest participating in this process.	review of documentation, interviews with representatives of local stakeholders	
8.1 The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.	I. The owner of a forest area of over 500 ha shall introduce a system of internal controls, whereby he/she regularly checks all aspects of forest management. II. The owner of a forest area of below 500 ha shall introduce a system of controls appropriate to the size of the property, intensity of management, and silvicultural system. III. The owner has introduced a system that enables him to archive the results of the monitoring chronologically, and to keep them available for further utilization.	review of documentation, interviews with management, as well as with forest workers	
8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: A. Yield of all forest products harvested.	I. The owner observes the forest management documentation to get information on yield of all forest products harvested.	review of forest management documentation	
8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: B. Growth rates, regeneration, and condition of the forest	II. The redevelopment of the management plan of the owner of forest area of over 50 ha is based on the evaluation of regularly identified data on forest condition (in accordance with criterion 6.3, 7.1).	review of documentation, general section of the FMP	
8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: C. Composition and observed changes in the flora and fauna	III. The owner of a forest area of over 500 ha continuously monitors the impact of the management on the incidence of highly-protected plant and animal species (see 7.1 G). IV. The owner allows research institutes to conduct a non-destructive forest research.	interviews with the owner, review of documentation, interviews with research institutes	

Criteria	Indicators	Methodology used	
8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: D. Environmental and social impacts of harvesting and other operations.	V. For the purpose of monitoring social impact, the owner has knowledge at least of abodes and validity of employment agreements of the employees operating in the forest, and he/she keeps records of employees' working injuries. VI. The owner regularly meets representatives of stakeholders for collective negotiations on the social and environmental impact of the forest management. VII. In co-operation with local authorities and stakeholders, monitoring programmes focused on common problems (e.g. conservation of water resources) are prepared.	review of documentation, interviews with representatives of local stakeholders, the minutes of the meetings	
8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: E. Costs, productivity, and efficiency of forest management.	VIII. The owner keeps accounts which provide an overview of the amount of the costs and incomes of the forest management. The owner has processed basic information on the economy of the enterprise.	review of documentation – accounting books or audit	
8.3 Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody."	I. The owner employs a functioning system to ensure that the certificated products sold are clearly and unequivocally labelled. II. The owner keeps unequivocal and non-interchangeable documentation of products, which includes at least date, origin, type of product, amount of products and the registration code of the valid FSC certificate. III. As long as the certified forest products remain the property of the owner, they must be clearly identified with non-interchangeable labels or logos or/and are stored separately from non-certified products. IV. The owner designates a person responsible for adherence to the requirements of the FSC Chain of Custody.	interviews with employees, review of documentation and field inspection	
8.4 The results of monitoring shall be incorporated into the implementation and revision of the management plan.	I. The owner of a forest area of over 50 ha documents the results of monitoring and check-ups and when developing a new management plan he utilizes them as one of the basic sources of documentation.	review of documentation, interviews, documentation of results of control operations	
8.5 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.	I. The results of monitoring, especially when it is carried out in compliance with Criterion 8.2, are available to the public, e.g. as a part of publicly accessible summary of FMP, with the exception of confidential information (see also 7.1).	review of documentation, interviews with representatives of local stakeholders	
9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.	I. The owner identifies characteristic attributes of high conservation value forests and selects all significant growths with these attributes. II. The owner of a forest area of over 500 ha provides a document which includes identified characteristic attributes of high conservation value forest and a list of selected growths with these attributes.	review of documentation, field inspection	

Criteria	Indicators	Methodology used	
9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.	I. The owner of a forest area of over 500 ha makes the document mentioned under 9.1 II. public. II. The owner discusses identified characteristic attributes and the list of significant growths with a high conservation value with representatives of local stakeholders and other partners. III. The owner documents all remarks resulting from discussion with stakeholders and other partners. Also, it must be clear whether these remarks influenced the inclusion of the stands among forests with a high conservation value.	review of documentation, interviews	
9.3 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.	I. In forests with a high conservation value only management measures maintaining or enhancing the applicable characteristic conservation attributes of these forests may be carried out. II. These management measures are incorporated in the management plan on the basis of conservation attributes. III. Management measures in forests with a high conservation value respect the precautionary approach in order to maintain the characteristic conservation attributes of these forests.	field inspection, interviews with management and representatives of local stakeholders, review of documentation	
9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.	I. The owner of a forest area of over 500 ha shall have developed and utilized programmes for the annual monitoring of the condition of forest with a high conservation value, including assessment of the effectiveness of the measures employed in these forests.	review of documentation	
10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.	Plantations are planted, even-aged pure stands. They are not the goal of close-to-nature sustainable forest management in the Czech Republic. Their ecological impact is often negative. The growing and continued establishment of plantations is not acceptable according to these standards. Forest tree nurseries, seed orchards, and other areas providing material necessary for forest regeneration are not considered plantations, but instrumental areas of forest management. The Principle in this form is not applicable in the Czech Republic. Therefore, Criteria 10.1 – 10.9 are considered to be not applicable in the conditions of the Czech Republic.		
10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods, shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands found within the natural landscape.			

Criteria	Indicators	Methodology used	
<p>10.3 Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.</p>			
<p>10.4 The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.</p>			
<p>10.5 A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover.</p>			
<p>10.6 Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.</p>			
<p>10.7 Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.</p>			

Criteria	Indicators	Methodology used	
<p>10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.</p>			
<p>10.9 Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly of such conversion.</p>			

5 Czech Forest Certification Scheme (CFCS) (Czech Republic) - Jiří Kropáč

General characteristics:	
Initiator system:	PEFC (Programme for the Endorsement of Forest Certification Schemes)
Coordinating party:	National Certification Centre of the Forest Management Institute
Initiation – duration:	Since June 2001
Grade of integration	
Geographical coverage:	Czech Republic
Scope (feedstock included):	Forest
Value chain	

Mission or objective:		
Criteria and indicators for sustainable forest management define the system of forest management by means of critical control points. The criteria and indicators are determined for the regional and individual levels and stem particularly from conclusions of Ministerial Conferences on Forest Protection in Europe (Helsinki 1993, Lisbon 1998) and state forest policy of the Czech Republic from 1994.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
No specific requirement		
Current status of system:		
-		
Planned activities:		
-		

Structure of the system or initiative:	
Stakeholder participation:	PEFC Czech Republic is professional, voluntary and independent association of legal entities acting within the Czech Republic, which owns woodland or use it or use the products coming from forest land in direct or indirect way or deal with them otherwise: Lesy České republiky, s.p. Sdružení majitelů a podnikatelů v lesním hospodářství Sdružení vlastníků obecních a soukromých lesů v ČR Správa Krkonošského národního parku Vojenské lesy a statky, s.p. Asociace českého papírenského průmyslu Česká asociace podnikatel v lesním hospodářství Společenstvo dřevozpracujících podniků Stora Enso Timber Ždírec s.r.o. Svaz zaměstnavatelů dřevozpracujícího průmyslu Česká lesnická společnost Česká zemědělská univerzita Mendelova zemědělská a lesnická univerzita v Brně - Lesnická a dřevařská fakulta Odborový svaz pracovníků dřevozpracujícího odvětví, lesního a vodního hospodářství v ČR Sdružení taxačních kanceláří
Commitment:	
Stakeholder integration:	
Monitoring performance:	
Chain of custody mechanism:	
Verification mechanisms:	

Further information:	
Removal of trade barriers	
Costs:	

List of principles included:	
1	Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycles.
2	Maintenance of forest ecosystem health and vitality.
3	Maintenance and encouragement of productive functions of forests.
4	Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems.
5	Maintenance and appropriate enhancement of protective functions of forests (especially soil-conservation and water-conservation functions).
6	Maintenance of other socio-economic functions of forests.

References:	
Website:	www.pefc.cz

List of criteria and indicators:

Criteria	Indicators:	Databases used:
1.1 All forest land and other lands of PUPFL must be preserved and sensibly utilized. For forest lands, the preservation of their current area or their progressive increasing by afforestation of non-forest land must be ensured within the region	1.1.1a: Existence administrative and economic protection PUPFL (yes/no). 1.1.1b: Development of forest land area (ha). 1.1.1c: Changes in area of forest land (ha, %). 1.1.2a: Declaration or limitation for fulfilling the functions of a forest on PUPFL is based on decision of SSL.	Act No. 289/1995 Coll., on forests, as amended; MZe; CSÚ; forest inventory, Owner's information.
1.2 Conversion of adequate non-forest land to forests.	1.2.1a: Performed afforestation of non-forest lands (ha/year). 1.2.1b: Existence of support system for afforestation of non-forest lands (yes/no). 1.2.2a: Afforestation of appropriate non-forest lands of an owner is carried out by suitable species composition according to the purpose of afforestation based on afforestation project. 1.2.2b: Afforested non-forest lands are transformed to PUPFL.	owner's information; SSL; MZe.
1.3 Management in forests must guarantee the preservation of the amount and quality of forest resources both in short- and long-term perspective in such a way that it will keep balance between forest stand felling intensity and average increment taking into account economic, ecological and social functions of the forest. Optimisation of existing timber resources in forests tending to balanced age-class distribution or all-aged forest stands facilitates maintenance or enhancement of carbon resource fixed in wood and forest land.	1.3.1a: Total wood mass resource (m ³). 1.3.1b: Total wood mass resource per ha (m ³ /ha). 1.3.1c: Balance of clear-cut areas (ha). 1.3.1d: Carbon resource in timber biomass and in soil on forest land. 1.3.1e: Forest age structure acc. to age class (ha, %), or proportion of all-age stands (ha, %). 1.3.2a: Maximum total cut (m ³) defined by approved LHP or by protocol accepted LHO is unsurpassable limit. An owner having no by protocol accepted LHO carries out a felling only on agreement of OLH or irrecusable felling project SSL.	MZe; CSO; forest inventory; owner's information; SSL.
1.4 For natural forest area, long term plans shall be elaborated – Regional forest development plans (OPRL) that are basic documents for regional implementing of state forestry policy and general recommendation for elaborating forest management plans and forest management schemes. OPRL provides information on wood-producing and non-wood-producing function of the forest within a given area.	1.4.1a: Forest area for which OPRL are prepared (ha, % of the total area). 1.4.2a: LHP development takes into account a valid OPRL. 1.4.2b: Owner allows authorized personnel to update OPRL.	LHP; OPRL; owner's information.
1.5 Management in forests has to be based on mapping, forest resources inventory and forest planning. Forest management plans or their equivalents have to be periodically updated. Forestry planning has to be based on valid laws.	1.5.1a: Forest area with valid FMP or its equivalent (ha, %). 1.5.2a: Valid FMPO approved/adopted SSL. 1.5.2b: Owner has to keep forest management evidence.	IDC ÚHÚL; owner's information.

Criteria	Indicators	Database used
2.1 Used methods of forest protection give priority to environmentally-friendly technologies – especially suitable methods of forest biological control. Use of pesticides and other chemicals is possible only in technically reasoned cases, and only pesticide can be use.	2.1.1a: Types and amount of chemicals used in respect of forest management. 2.1.1b: Used methods of biological control of forest stands. 2.1.2a: Types and amount of chemicals used in respect of forest management. 2.1.2b: Used methods of biological control of forest stands. 2.1.2c: Method of disposing packages and residuals of chemicals.	MZe – „ List of permitted pesticides for forest protection“; MZe – permission of pesticides for forest protection not mentioned in annex to „ List of permitted pesticides for forest protection“; owner’s information.
2.2 Use of fertilizers and liming is regulated and their application takes into account all aspects environment protection. Fertilizing is not used to enhancement of timber production; alternative methods of biological additional fertilizing are used.	2.2.1a: Extent of forest stands fertilization and liming (ha, % of total area). 2.2.2a: Fertilization and liming of stands in order to stands regeneration is carried out based on analysis of territorial conditions followed by professional assessment of impacts.	owner’s information; MZe.
2.3 In managing the forest, environmentally-friendly refining, logging and felling technologies damaging trees/soils at minimum have to be used when non-reversible disturbance of soil surface must not occur (to parent rock) as well as occurrence of concentrated runoff. Forestry technologies and procedures must not damage and impair watercourses and forest roads.	2.3.1a: Supervision of observance of Forest Act – not to damage forest by inconsiderate technologies. 2.3.1b: Existence of support system for environmentally-friendly refining, logging and felling technologies. 2.3.2a: Spot damages corresponding to use of environmentally-friendly technologies. 2.3.2b: Use of biological degradable oils and hydraulic liquids.	MZe – SSL (2.3.1a); MZe (2.3.1b); owner’s information.
2.4 Health and vitality of forests are systematically monitored particularly with respect to crucial biotic and abiotic factors which could adversely affect health and vitality of forest ecosystems such as pests, diseases, game overpopulation, forest fires and damages caused by climatic factors, air pollution and logging operations in forests. Such measures are carried out to prevent the effects of harmful factors on the forest.	2.4.1a: Total extent of salvage felling and according to individual factors (m ³ /year, %). 2.4.1b: Records on harmful factors (yes/no). 2.4.1c: Assurance of forest protection service (yes/no). 2.4.1d: Preventive measures against harmful agents (ha/year). 2.4.1e: Preventive measures against the origin of forest fires (ha/year, CZK/year). 2.4.1f: Monitoring the health status of forests and leaf cast. 2.4.1g: Forest damage extent according to individual factors. 2.4.2a: Total extent of salvage felling (m ³ /year, %). 2.4.2b: Records on harmful factors (yes/no). 2.4.2c: Measures taken against harmful agents (ha/year).	MZe; VÚLHM; annual report on harmful agents; owner’s information.
2.5 Forest stands have to be regenerated using site-suitable species and tended in time and systematically in order to improve their condition, increase stability and enhance the fulfilment of forest functions.	2.5.1a: Typology mapping has been carried out (yes/no). 2.5.1b: General management recommendations elaborated for management sets of stands (yes/no). 2.5.2a: Suitable educational measures in stands under 40 years have been carries out.	OPRL; approved FMP; accepted FMS; owner’s information.

Criteria	Indicators	Database used
3.1 Forestry planning and management has to guarantee sustainable yield production to ensure quality, preservation and improvement of forest resources and fulfilment of forest functions.	3.1.1a: CPP a CBP (m ³ /year, m ³ /ha). 3.1.1b: Total cut actual (m ³ /year). 3.1.1c: Average rotation (years, years/forest category). 3.1.1d: Average stand density. 3.1.1e: Proportion of natural reforestation on total reforestation (ha/year, %). 3.1.2a: Meeting regulatory requirements relating to felling (unauthorized cut up to 80 years, cutting size and assignment, reduction of stand density). 3.1.2b: Afforestation genetically and site-typed by suitable woody species of corresponding amount and quality, including required proportion of MZD. 3.1.2c: Afforestation and providing stands is varied out in statutory time limits, including minimal proportion of MZD during providing stands. 3.1.2d: Support of forest natural reproduction and rare native species of woods.	MZe; OPRL; approved FMP; owner's information; LHE; afforestation projects.
3.2 Forest management has to produce commercial type of wood raw material of extent that does not exceed the sustainable level and worsen quality and forest resource status.	3.2.1a: Quality and quantity of commercial unhewn timber, import and export of wood and products based on wood (m ³ , CZK). 3.2.1b: Proportion of energy from wood on total energy consumptions in classification according to wood origin. (%).	CSO
3.3 Forestry ensures production of non-wood products and services in such a way that it does not exceed the sustainable level and does not worsen the quality and conditions of forest sources.	3.3.1a: Production of individual species of non-wood products and services (i.e. – technical units). 3.3.2a: Production of individual species of non-wood products does not impair stability of stands even if meeting another functions of forest.	MZe; ČZÚ; owner's information.
3.4 Respective infrastructure is planned such as roads, skidding trails and bridges, their construction and maintenance are ensured so that effective transport of goods and provision of forest functions are supplied. At the same time, attention is paid to decreasing their negative effects on the environment.	3.4.1a: Density of forest transportation network (m/ha). 3.4.1b: Existence of support system for opening up of forests. 3.4.2a: Transport development of stands is planned and realized in accordance with legislation in force and based on long term needs. 3.4.2b: Corresponding maintenance of road network and objects on roads is carried out.	OPRL; MZe; owner's information.
4.1 Forest regeneration and reforestation/afforestation have to be carried out in such a way to achieve the condition of forest stands and forest environment that maintain their biodiversity, resistance to adverse influence and preserves stability of ambient ecosystems.	4.1.1a: Proportion of natural regeneration in the total regeneration (ha/year, %). 4.1.1b: Proportion of individual species – total (ha, %). 4.1.1c: Proportion of individual species in forest regeneration (ha, %). 4.1.2a: Providing stands if carried out in statutory time limit and the natural forest regeneration is supported. 4.1.2b: MZD being introduced to stand at least according regulatory provisions of FMP. 4.1.2c: Support of added and disseminated native wood species. 4.1.2d: Cultures are preserved or stock of game is regulated so that neither destruction nor devastation of forest plantation or natural reproduction occurs.	SSL; afforestation projects; CSO; FMP/FMS; forest inventory; owner's information.

Criteria	Indicators	Database used
4.2 Introduced species, provenances or varieties are applied only after the thorough evaluation of their impact on ecosystem and genetic integrity of native species and local provenances.	4.2.1a: Representation of introduced species in forests and field of application of introduced species in forest regeneration. 4.2.2a: Use of introduced species in accordance with approved FMP or accepted FMS. 4.2.2b In NP, CHKO and NPR, utilization of geographically allochthonous species based on statutory exception of Act on nature and landscape protection.	OPRL; CSO; MZe; approved FMP/FMS; LHP; standpoint of FAO and economic commission of UN for Europe
4.3 For the purposes of maintaining and reinforcing the organism population relating to ageing and dead wood, leave share of trees of natural species according to particular conditions and possibilities in stand to self-decomposition of wooden mass. Measures need to be applied in accordance with necessity for forest protection especially against species impending mass outbreak.	4.3.1a: Leaving selected specimens of natural generic composition especially den trees for natural dying and breakdown of wooden mass (m ³ /ha, %). 4.3.2a: Leaving selected specimens of natural generic composition especially den trees for natural dying and breakdown of wooden mass (ha, %).	field survey; ÚHÚL; MŽP; owner's information.
4.4 Sources of reproduction material of forest tree species have to be evaluated, recorded and appropriately protected and utilized. To afforest lands designed to fulfil a forest function, only reproduction stock of individual forest tree species meeting conditions of transfer to specific place of planting and having arrested origin can be used.	4.4.1a: Existence of valid legislation (yes/no). 4.4.1b: Number of licences justifying to handle the reproduction material of forest tree species. 4.4.1c: Exchange of recognized sources of reproduction material according to type and stock of wood (m ³ /ha, %). 4.4.1d: Exchange of generic bases according to stock of wood (m ³ /ha, %). 4.4.2a: Evidence of recognized sources of reproduction material (yes/no, area). 4.4.2b: Evidence of origin of reproduction material of forest tree species (yes/no). 4.4.2c: Method of management in recognized sources and generic bases. 4.4.2d: Utilization of genetically suitable reproduction material for regenerated stands.	Act No. 289/1995 Coll., on forests, as amended; Act No. 149/2003 Coll., as amended; MZe; VÚLHM; owner's information.
4.5 To enhance an aesthetic value of a country, an owner leaves owing to principals of forest protection and economic conditions old, aesthetically impressive trees with interesting forms, namely on places with landscape enhancement value, such as border lines of forest, cross-roads, observation points etc.	4.5.2a: Leaving aesthetically impressive trees according to stand possibilities.	field survey; owner's information.
4.6 Number of existing and threatened forest species classified according effective legislation and national red lists.	4.6.1a: Number of endangered species the occurrence of which is recorder within the region by relevant authorities for nature protection related to individual groups of species and threat categories. 4.6.2a: Number of endangered species the occurrence of which and the requirements on management method are notified to a land owner in an appropriate manner and in advance by relevant authorities for nature protection and which relate to individual organism groups and threat categories. 4.6.2b. Maintenance of protective conditions.	MŽP; MO; AOPK ČR; KÚ; ČSO; military domains; owner's information.

Criteria	Indicators	Database used
<p>4.7 Area of forest and other afforested land (%/ha) of a total area included in s scheme of specially protected area including region of scheme "Natura 2000" that consists of European relevant natural habitats listed in national program for conservation of natural habitats and relevant vegetative and animal species and infamous bird territory.</p> <p>Territory that is covered by preliminary protection of European natural habitats within the meaning of § 45b Act on nature and landscape protection can be considered as protected territory within the meaning of the criterion.</p>	<p>4.7.1a: Area of especially protected territory classified to categories "ZCHÚ".</p> <p>4.7.1b: Area of European relevant habitats of the scheme "Natura 2000".</p> <p>4.7.1c: Area of approved bird's territory of the scheme "Natura 2000".</p> <p>4.7.2a: Area of forest land within the scheme of specially protected areas classified according to categories of ZCHÚ and meeting their protective conditions by an owner.</p> <p>4.7.2b: Area of European relevant habitats of the scheme "Natura 2000" and meeting their protective conditions by an owner.</p> <p>4.7.2c: Area of approved bird territory of the scheme "Natura 2000" and meeting their protective conditions by an owner.</p>	<p>SSL; MŽP; MO; AOPK ČR; KÚ; military domains; owner's information.</p>
<p>5.1 Forestry planning and management in forests have to ensure preservation and increasing protection functions of forests for the benefit of society (particularly soil-protection roles).</p>	<p>5.1.1a: Area of protective forests (ha, % of total area).</p> <p>5.1.2a: Management of protective forests so as to maintain their protective functions.</p>	<p>ÚHÚL; owner's information; SSL.</p>
<p>6.1 Forest-management planning respects various functions of forests and their importance for human society. The importance of forests for the development of countryside and particularly new possibilities of occupation should be taken into consideration.</p>	<p>6.1.1a: Number of forest owners and their structure.</p> <p>6.1.1b: Proportion of FM and woodworking industry to GDP (CZK, %).</p> <p>6.1.1c: Level of employment in FM and consecutive branches (especially woodworking (number, %)).</p> <p>6.1.1d: Costs on meeting long-term sustainable functions of forests (CZK/ha).</p> <p>6.1.2a: Support of a region through utilization of local sources of labour force and process plants.</p>	<p>CSO; owner's information.</p>
<p>6.2 Forests classified as special-purpose forests have to be registered, mapped, protected and managed according to methods corresponding to their importance. Category of special purpose could include forests where public interest in improvement and protection of environment or another lawful interest for meeting non-wood-producing functions of the forest requires different management method.</p>	<p>6.2.1a: Area of forests with special purpose function according to subcategories (ha, % of total area).</p> <p>6.2.2a: Forest management of special purpose in compliance with declaration of special purpose.</p>	<p>ÚHÚL; owner's information; SSL.</p>

Criteria	Indicators	Database used
6.3 Forest managers, business subjects, forest personnel and forest owners should have information on principles of sustainable forest management, have appropriate education; relevant information is regularly updated.	6.3.1a: Education structure of employees in forestry management (listing). 6.3.1b: Number of forestry schools (listing acc. to types). 6.3.1c: Number of graduates of professional forestry schools (listing acc. to types). 6.3.1d: Range of subsequent education, courses etc. (number of persons, CZK / year) 6.3.1e: Number of licences of professional foresters. 6.3.1f: Extent of financial means intended for research according to particular financial sources (CZK/year) 6.3.1g: Existence of conceptual material on forestry research and definition of priority research fields (yes/no). 6.1.2a: Owner has forest manager with which he/she consults management activities in forest. 6.1.2b: Owner takes care of his/her employee's education.	MZe; owner's information.
6.4 In the course of managing in forests, principles of occupational health and safety are observed including inspection and removing defects in working procedures, machines and equipment.	6.4.1a: Accident rate in forestry (number of accidents). 6.4.1b: Records on work safety inspections. 6.4.1c: Records on training in work safety. 6.4.1d: Records on preventive and periodical inspections. 6.4.2a: Recognizing and observing acts and government decrees, including code of work safety in forest, including the right of employee representatives to carry out inspections and to require removal of defects and drawbacks in working procedures, machines and equipment. 6.4.2b: Participation in training is considered part of the work. 6.4.2c: Provision of preventive medical care.	Trade union of workers in timber, forest and water management; Unions of employers; Forest owners; Czech statistical office.
6.5 Structures of employees, their free decision to associate and take part in activities of the employer are respected	6.5.1a Existence of the collective agreement of a higher level. 6.5.1b Ways of supporting collective negotiations. 6.5.1c Number of subjects with their own trade unions. 6.5.1d Number of subjects with their own company collective agreement (area of forests). 6.5.1e Number of subjects involved in the collective agreement of a higher level. 6.5.2a: Employees can associate and organize on the basis of their own free decision. 6.5.2b: As the employer is concerned, no limitations are applied to use this right. 6.5.2c: Structures of the employee representatives are respected. 6.5.2d: Rights of employees are respected to give information, negotiate and co-decide in matters concerning employees within the valid legal regulations. 6.5.2e: Employers will observe all respective laws being bound by valid collective agreements for their employees or the collective agreement of a higher level. 6.5.2f: Employers will respect the requirement of employees to conclude a collective agreement within a law on collective negotiations.	Trade union of DLV; Unions of employers, Forest owners.

Criteria	Indicators	Methodology used	Database used
6.6 Everybody has a right to come in the forest at one's own risk and to gather forest fruits for personal use as well as dry brushwood from the ground and use them for its recreation.	6.6.1a: Existence legal regulation for general use of forests (yes/no). 6.6.1b: Forest area with prevailing recreation function (ha, %). 6.6.1c: Forest area in accessible for public (ha, %, reason). 6.6.1d: Visit rate in forest (per ha, per inhabitants). 6.6.2a: Free access to forests (yes/no – reason). 6.6.2b: Existence leisure centres (number, CZK).		Act No. 289/1995 Coll., on forests, as amended; ÚHÚL; MZe; LF ČZÚ; owner's information.
6.7 Places of a special historical, cultural or spiritual importance declared within categorization of forests are managed according to methods corresponding to their importance.	6.7.1a: Number of places on forest and other wood land declared as places of cultural and spiritual values. 6.7.2a: Management of places of special cultural and spiritual value according the purpose of their declaration.		owner's information; SSL; OPRL.

6 The Danish PEFC Certification Scheme for sustainable forest management (Denmark) - Jørgen Hinge

General characteristics:		
Initiator system:	Members of PEFC Denmark	
Coordinating party:	PEFC Denmark	
Initiation – duration:	Initiated I 1999	
Grade of integration	Fully implemented	
Geographical coverage:	Denmark	
Scope (feedstock included):	Biomass from Danish forests	
Value chain	Entire chain from the forest to the end-user	
Mission or objective:		
-to document and promote sustainable management of the forest - to ensure traceability of the certified timber through the entire product chain from the forest to the end-user	Principles included:	Y/N
	Criteria included:	Y/N
	Indicators included:	Y/N
Context (i.e. legal requirement, related policies):		
No specific legal requirement		
Current status of system:		
Fully implemented		
Planned activities:		

Structure of the system or initiative:	
Stakeholder participation:	PEFC Denmark is organized and run by its members/stakeholders
Commitment:	Not mandatory
Stakeholder integration:	PEFC is a membership-based, self-governing and legally independent association, which owns and is responsible for the development and maintenance of the Danish scheme
Monitoring performance:	No information available
Chain of custody mechanism:	Physical separation method, percentage based method
Verification mechanisms:	No information available
Further information:	
Removal of trade barriers	No information available
Costs:	No information available

List of principles included:	
1	Regeneration of the forest
2	Structure of the forest
3	Management of the forest – wood production and traditional management activities
4	Management of the forest – protection of nature, game, outdoor lift, culture history and other interests
5	Social economic functions and conditions of the forests

References:	
Website:	www.pefc.dk

7 Finnish Forest Certification System (FFCS) - Eija Alakangas & Auvo Kaivola)

General characteristics:		
Initiator system:	Suomen Metsäsertifiointi ry	
Coordinating party:	Suomen Metsäsertifiointi ry	
Initiation – duration:	as of 1999 – (upgrading every 5 year, upgrading in 2008-2009)	
Grade of integration	95%	
Geographical coverage:	Finland (group certification)	
Scope (feedstock included):	Forest biomass for industrial and energy use	
Value chain	Production in forest	
Mission or objective:		
The scope of the PEFC certification covers all forest-based products – i.e. timber for mechanical and pulping industry, but also wood-based biomass fuels. The requirements for the forest management process are similar regardless of the final product. The recently revised PEFC forest management standard covers – among other topics – also the special questions of energy wood harvesting (Criterion #5 Energy wood is harvested in a sustainable manner). The certification requirements are listed in 29 criteria, which together define the standard for ecologically, socially, culturally and economically sustainable forest management in PEFC certified forests.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Criteria and indicators are based on the Finnish legislation which are stated in new standards PEFC FI 1002:2009 and PEFC FI 1003:2009		
Current status of system:		
First implemented in 1999, 13 certificates granted including 310 000 forest owners and almost 21 million hectares. 74 forest companies are certified according to FFCS.		
Planned activities:		
The revised criteria and other system documents will be sent to the international PEFC in October 2009 for evaluation and re-endorsement. The revised standards will be implemented in forest management after the PEFC endorsement and independent certification bodies will assess the conformity to it in the audits of the year 2011.		

Structure of the system or initiative:	
Stakeholder participation:	<p>FINBIO Finnish Bioenergy Association (FINBIO – Suomen Bioenergiayhdistys)</p> <ul style="list-style-type: none"> - Federation of the Printing Industry (Graafinen teollisuus ry) - KTT Finnish printing industry's employers union (Kirjapainoteollisuuden työnantajaliitto ry KTT) - Ecclesiastical Board / Church of Finland (Kirkkohallitus) - Trade Association of Finnish Forestry and Earth Moving Contractors (Koneyrittäjien Liitto ry) - League of Organic Farming (Luomuliitto ry) - L&T Biowatti Oy - Central Union of Agricultural Producers and Forest Owners MTK - METO - Forestry Experts Association (METO - Metsäalan Asiantuntijat ry) - Timber Truck Transport Entrepreneurs (Metsäalan Kuljetusyrittäjät ry) - State Enterprise Metsähallitus - Metsäliitto Group (Metsäliitto Osuuskunta) - Society of Finnish Professional Foresters (Metsänhoitajaliitto ry) - Hunters' Central Organization (Metsästäjien Keskusjärjestö) - Finnish Forest Industries Federation (Metsäteollisuus ry) - Reindeer Herders' Association (Paliskuntain yhdistys) - Finnish Paper Workers' Union (Paperiliitto ry) - Finnish Wood Energy Association (Puuenergia ry) - Wood and Allied Workers Union (Puu- ja erityisalojen Liitto) - Association of Finnish Furniture and Joinery Industries (Puusepäniteollisuuden Liitto ry) - Wood Working Entrepreneurs (Puuteollisuusyrittäjät ry) - Finnish Hardware Association, DIY (RASI ry) - Sámi Parliament (Saamelaiskäräjät) - Sawing Entrepreneurs (Sahayrittäjät ry) - Stora Enso Oyj, Forest (Stora Enso Oyj Metsä) - Finnish Consumers' Association (Suomen Kuluttajaliitto ry) - Association of Finnish Local and Regional Authorities (Suomen Kuntaliitto) - Finnish Ski Track (Suomen Latu ry) - Finnish Nature-based Entrepreneurship Association (Suomen luontoyrittäjyys- verkosto ry) - Finnish Hunters' Federation (Suomen Metsästäjäliitto ry) - Finnish Society of Forest Science (Suomen metsätieteellinen seura) - Association of Finnish Forest Estate Owners (Suomen metsätilanomistajien liitto ry) - Finnish Sawmills (Suomen Sahat ry) - Finnish Orienteering Federation (Suomen Suunnistusliitto) - Finnish 4 H Federation (Suomen 4H-liitto) - Central Union of Swedish Speaking Agricultural Producers and Forest Owners SLC - Tornator Oy - UPM-Kymmene Oyj, Forest - Finnish Union of Environmental Professionals FUEP (Ympäristöasiantuntijoiden Keskusliitto YKL ry)
Commitment:	Voluntary
Stakeholder integration:	Multi-stakeholder approach (group certification)
Monitoring performance:	Third party auditing

Chain of custody mechanism:	Track the wood raw material flows from certified and non-certified forests through the transport and production process and on to the final end-use
Verification mechanisms:	According standards
Further information:	
Removal of trade barriers	
Costs:	<p>PEFC certification in Finland is carried out as regional group certification. "Regional" means that the geographical operating area of a Regional Forestry Centre defines a maximum coverage of one PEFC forest management certificate in Finland. On each of the thirteen Forestry Centre areas the "group" means that all forest owners (owners of private family forests, company, municipality and parish owned forests as well as state owned forests have access to the certification group on voluntary basis.</p> <p>Forestry Centres and other forestry organizations have internal data collection systems to demonstrate and verify the quality of forest management activities on an area of a regional group certificate. Costs of this internal data collection are difficult to measure precisely because these activities are carried out in a decentralized manner by several organizations and because in addition to forest certification the data is used also for other monitoring purposes. It can be estimated that the costs of internal data collection are about as big as the costs of external audits.</p> <p>External third-party audit includes (i) inspection of internal data collecting procedures, (ii) visits to offices of organizations and (iii) sample-based site-level inspections in forests that owned by forest owners that are enrolled as members of regional group certification. The cost of external audit is in the range of 30 000 to 60 000 € per one region per year. One regional group certificate covers on an average some 1.5 mill. hectares of forested land. The cost of a surveillance audit is some less because its scope is more limited than in the certification audit.</p>
List of principles included:	
	See criteria
References:	
Website:	www.pefc.fi Contact person: Auvo Kaivola, Secretary General of the PEFC Finland Tel: +358 400 765 437, auvo.kaivola@pefc.fi

List of criteria and indicators:

Criteria	Indicators:	Definitions
<p>1 Requirements enacted by legislation are complied with</p> <p>Forest management activities shall comply with the forest, environmental and labour legislation in force and the related international agreements that Finland has ratified.</p> <p>However, in Åland Province applies the legislation of Åland and orders of respective authority when under the jurisdiction of the autonomy of Åland Province.</p>	<p>Forest organisations¹⁾ are obliged to inform when requested by the certification body (external auditor) the court resolutions and authority decisions²⁾, of the cases where the activity of forest actor or forest organisation has been deemed to breach the forest, environmental or labour legislation during the validity of the certificate.</p>	<p><u>Forest organisations</u> consist of forestry centres, forest management associations, forest industry enterprises, Metsähallitus (state forest manager), and other organisations committed to forest certification.</p> <p><u>Court or competent authority</u> has found in its <u>resolution with a right to appeal</u> that forestry actor or forest organisation has acted contrary to the forest, environmental and labour legislation or to those relevant international agreements that Finland has ratified. The authority decisions contain, e.g. Rural bureau's (maaseutuvirasto) order on establishing a new tree stand enacted by Section 20, subsection 2 of the Forest Act (1093/1996) Rural bureau's (maaseutuvirasto) resolution on the claim for recovery by Section 15, subsection 3 of the Act on financing of sustainable forestry (1094/1996); Regional environmental authority's order enacted by Section 57, subsection 1 of the Nature Conservation Act (1096/1996) Order of authority on occupational safety enacted by Section 15 of the Act on Occupational Safety and Health Enforcement and Cooperation on Occupational Safety and Health at Workplaces (44/2006) or prohibition notice enacted by Section 16 of the Act.</p>
<p>2 Forest stand shall be preserved as a healthy carbon sink *)</p> <p>The level of sustainable allowable cut³⁾ shall not be exceeded in the (certified) area during the five-year cycle⁴⁾ preceding the audit.</p> <p>The timber volume cut⁵⁾ during the five-year cycle can, as a consequence of natural damage, exceed the sustainable allowable cut.</p> <p>This criterion shall not be used in certification of one or a group of forest management associations.</p>	<p>The timber volume cut during the five-year cycle shall be compared to the sustainable allowable cut determined by the Finnish Forest Research Institute.</p>	<p><u>Sustainable allowable cut</u> is the valid estimate of the proportioned average of a five-year cycle as estimated by the Finnish Forest Research Institute for the regional forestry target programme (regional forest programme). During this period the amount of carbon accumulated in tree stand (stem) is higher than the amount of carbon removed in timber harvests.</p> <p><u>The actual cut</u> includes the annual cut of <u>roundwood</u> i.e. logs, pulpwood and the fuel wood used by small properties. (<i>Finnish Statistical Yearbook of Forestry 2007</i>, p. 175, Table 4.15. Removals by Forestry Centre)</p>

Criteria	Indicators:	Definitions
<p>3 Health of the stand shall be attended The spreading of the infection of root rot (<i>Heterobasidion parviporum</i> attacking spruce and <i>Heterobasidion annosum</i> attacking pine) shall be prevented during the harvest of risk sites⁶⁾. The control of root rot shall be done with user-safe methods⁷⁾. During forest harvest, damages to remaining trees and soil that may deteriorate the growing conditions of the remaining stand, shall be avoided. Measures shall be taken to prevent insect damages in the storage of industrial and energy wood.</p>	<p>The proportion of control measures of root rot in the harvested area of risk sites⁸⁾ shall cover at least 85 %. The average share of damaged trees in industrial and energy wood thinning⁹⁾ shall not exceed 4 % of the number of trees left growing⁹⁾. The share of damaged trees is annually calculated as a five-year period moving average of harvesting trace review results¹⁰⁾. In intermediate thinnings on mineral soils¹¹⁾, the average share of depressed traces⁹⁾ caused by harvesting machines shall not exceed 4% of the length of the extract traces. The share of depressed trails shall be calculated annually as a five-year period moving average of harvesting trace review results¹⁰⁾. Contracting party⁵³⁾ shall have the guidelines of the pre-cut clearing of the undergrowth that might hamper the harvesting. The storage of industrial and energy wood shall comply with the Act on Control of Damages Caused by Insects and Fungi (263/1991). A competent authority has not imposed a conditional fine defined in Section 9 nor has pronounced a sentence defined in Section 12 of the Act related to the neglect of control of insects in the interval storage of industrial and energy wood.</p>	<p><u>Risk sites</u> refer to harvested sites located to the south from the northern borders of the operational areas of the forestry centres of Northern Karelia, Northern Savo, Central Finland and Southern Ostrobothnia, if harvesting is carried out between May 1st and October 31st. <u>User-safe methods</u> refer to treating coniferous stumps with liquid <i>Phanerochaete gigantea</i> or urea solution and the removal of coniferous stumps causing the spreading of infection of fungal diseases from regeneration area. Regeneration areas from where stumps have been removed in order to prevent the spread of root rot are included in the area under control measures. <u>The share of control measures</u> is calculated as a proportion of treated area to the total logged area in areas at risk. The calculation is based on the information collected from forest organisations active in a forestry centre area. <u>Damaged tree, tree left growing and depressed trace</u> and other terms used in measuring damage are defined (what comes to thinning) in the land inspection guidelines of the harvest trace of thinning and energy wood thinning specified by the Development Centre of Forestry Tapio.</p> <p>Harvesting trace reviews produce separate estimates for the proportions of damages and trace depressions in pulp- and energy wood thinning. The share of stand damages and trail depressions referred to in the criterion, is calculated based on the weighted average of the total area of annual pulp and energy wood thinnings. All thinning where canopy biomass is collected is considered to be energy wood thinning regardless of the fact that also pulp wood may be harvested on the site.</p> <p>Harvested sites are divided into sites of mineral soil and peatlands. Sites where the peat layer is below 30 cm is classified as a mineral soil areas.</p>
<p>4 Finnish native tree species shall be used in forest regeneration Forest regeneration shall be done with tree species native to Finland¹²⁾ except for special cases¹³⁾.</p>	<p>A summary of the area regenerated with species other than those native to Finland is calculated annually.</p>	<p>Siberian larch (<i>Larix sibirica</i>) is considered equal to <u>tree species native to Finland</u>.</p> <p><u>Special cases</u> include the establishment of urban forest stand, growing Christmas trees, production of conifer branches, forest stands and trees planted for landscape purposes and cultivation of hybrid aspen (<i>Populus tremula</i>).</p>

Criteria	Indicators:	Definitions
<p>5 Energy wood shall be harvested in a sustainable manner</p> <p>When removing canopy biomass and stumps from harvested sites the applied methods shall take into consideration the wood production capacity of the site, its biodiversity as well as the aspects related to water protection.</p> <p>Harvest of energy wood shall not substantially deteriorate the protection values of protected areas or areas belonging to Natura 2000 network nor endanger the preservation of monuments of antiquity specified in the Act on Ancient Monuments (295/1963).</p> <p>The features of valuable habitats and the known habitats of endangered species shall be safeguarded in harvesting of energy wood.</p> <p>Peatlands in their natural state shall not be transferred to energy wood cultivations</p>	<p>The organisation harvesting energy wood shall have in use guidelines¹⁴⁾ prepared by actors and research bodies operating in the field. The guidelines shall address sustainable harvest of energy wood in final harvesting and thinning sites. The guidelines shall specify, among others:</p> <ul style="list-style-type: none"> the selection criteria for harvest sites the minimum target amount of biomass left in the sites of final harvest the water protection measures needed. <p>The harvest of energy wood in the area has been done according to the criterion when</p> <p>The proportion of sites considered as excellent or good in relation to the above-mentioned evaluation criteria (selection of harvest sites, minimum amount of biomass left in final harvest areas and water protection measures) shall be at least 90 % of the total harvest area based on the results from the monitoring of the quality of nature management;</p> <p>The protection values of protected areas defined in Criterion 2.9 have been safeguarded in a manner specified in the criterion;</p> <p>The features of valuable habitats defined in Criterion 2.10 have been preserved in a manner specified in the criterion;</p> <p>The previously known habitats of endangered species specified have been preserved according to Criterion 2.12; and</p> <p>Peatlands that are in their natural state have not been drained for energy wood cultivations.</p>	<p>The guideline specified in the criterion can be e.g. Harvest of energy wood –guidebook published by the Forestry Development Centre Tapio in 2006.</p>

Criteria	Indicators:	Definitions
<p>6 Forest management planning shall promote sustainable use and management of forests</p> <p>The coverage of holding-level forest management plans¹⁵⁾ shall be at least 50% of the total forestry land area of forest holdings¹⁶⁾ or estates exceeding 20 hectares in size. In regional forest management planning, holding-level forest management plans are provided also to the holdings remaining under 20 hectares in size, but paying the annual forestry levy. The new forest management plans shall include known valuable natural sites and monuments of antiquity¹⁷⁾ in addition to wood production aspects, and the plans shall consider alternative uses of forests¹⁸⁾ according to the management objectives of the forest owner</p>	<p>The area of valid¹⁹⁾ holding-level forest management plans is compared with the corresponding area of forestry land belonging to the total area of forest holdings exceeding 20 hectares in the area</p>	<p><u>Holding-level forest management planning</u> contains the forest resource data of the forest stand specific inventory and of holding specific data drawn from the regional summary data on forest resources. This data is compiled into a holding level forest management plan.</p> <p>Continuously updated <u>holding-level forest management plans</u>, which have annually been updated according to completed measures and other relevant information, are included in the area of holding-level forest management planning. Web-based forest management plan is also considered as a holding-level forest management plan. Holding-level forest management plan must include, as forest production factors, stand specific data on trees and soil, needs of silvicultural treatments, and allowable cut.</p> <p><u>Forest holding</u> is an estate consisting of forest stands owned by a forest owner.</p> <p><u>Natural sites and monuments of antiquity</u> included in forest management plans are:</p> <p>Natura 2000 areas, Valuable habitats of forest nature as defined in Criterion 2.10 and previously known habitats of endangered species as defined in Criterion 2.12, Nature management and environmental sites funded by the State, and Monuments of antiquity registered in the respective register and which have reliable site specific data on their location.</p> <p>Important areas from the point of view of <u>alternative forest uses</u> contain e.g.:</p> <p>Important game management areas, e.g. capercaillie mating sites, and Trails for outdoor recreation and hiking.</p> <p><u>The validity time of the forest management plans</u> which are not under continuous updating, referred to in this criterion, is 15–20 years in Upper Lapland and 10 years in other parts of the country.</p>

Criteria	Indicators:	Definitions
<p>7 Seedling stands shall be tended to safeguard wood production Annually at least 60% of the regional annual tending need of seedling stands²⁰⁾ shall be completed.</p>	<p>Finnish Forest Research Institute's statistics on tended areas of seedling stands are compared with the estimated tending needs of a similar area as defined in national forest inventory (NFI).</p>	<p><u>The area of seedling stands needing tending</u> is the area defined and proposed in NFI, (areas where tending works are delayed and where they should be implemented in the following 5-year period.) for a forestry centre and valid in the beginning of certification period Estimation of the tending need of seedling stands in forest management association specific certification is based on stand specific tending proposals documented in forest management plans and proportioned to the whole area. The following tasks are included in the tending of seedling stands: cleaning of seedling stand, tending of seedling stand and management of sapling stands and young forest.</p>
<p>8 First commercial thinnings and delivery logging shall be promoted in order to improve the growing conditions of forest stands in private forests *) The action plans²²⁾ to promote first commercial thinning and delivery logging²¹⁾ in the area shall be reviewed during the revision of the regional forest programmes. This criterion shall not be used in certification at the level of a forest management association.</p>	<p>The action plans have been reviewed and approved by the regional forest certification committee as part of the regional forest programme. Regional certification committees follow the implementation of the programme and action plans on a yearly basis.</p>	<p><u>Delivery logging</u> made by forest owner is the harvesting carried out by the forest owner, a member of his/her family or by a logger occasionally employed by the forest owner. <u>Action plan for promoting first commercial thinnings</u> is a list of measures that contribute to favourable preconditions for first thinnings. <u>Action plan for delivery logging</u> is a list of measures that contribute to favourable preconditions for delivery logging made by forest owners.</p>
<p>9 Conservation values of protected areas shall be safeguarded Conservation value of protected areas²³⁾ or areas belonging to Natura 2000 network shall not be deteriorated by forestry measures.</p>	<p>Forest authorities and forest organizations operating in the area are aware of the locations of protected areas and areas belonging to Natura 2000 network. Other actors committed to forest certification have the site information as deemed relevant. Regional environmental authorities have not registered significant deterioration of conservation values of protected areas originating from forestry operations taking place outside protected areas. Regional environmental authorities have not registered significant deterioration originating from forestry operations of conservation values of Natura 2000 areas. Forestry operations in Natura areas are bound by the law under which the Natura area is established. In addition, the use and management plan, or equivalent, prepared by an environmental authority together with land owner shall be complied with.</p>	<p><u>Protected areas</u> referred to in the criterion are the nature conservation areas established according to the Nature Conservation Act.</p>

Criteria	Indicators:	Definitions
<p>10 Typical features of valuable habitats shall preserved Forest management measures shall be planned and carried out respecting the following requirements: The forest-covered natural habitat types defined in Section 29 of the Nature Conservation Act (1096/1996) being in their natural state or equivalent to natural state, of which forest owner has been informed by a environmental authority according to Section 30 of the Nature Conservation Act, shall not be altered in such a way that endangers the preservation of their characteristic features. The management measures on sites in natural state or equivalent to natural state and habitats of special importance which can be recognized easily from their surroundings and defined in Section 10 of the Forest Act (1093/1996) shall be carried out in such a way that preserves the typical features of these sites. The measures on sites, for which forest authority has given a permit based on Section 11 of the Forest Act, are allowed.</p> <p>In addition, the most important features of the biological diversity in the habitats with high conservation value, listed below, shall be preserved in forest management operations in the majority of the habitat area. Regarding the most typical features the habitats shall be in their natural state and be distinctly observable and recognizable in field.</p> <p>Habitats that are smaller than one hectare and that meet the requirements of the criterion shall be covered in their full extend by operational restrictions. Of the sites that are larger than one hectare, an area of one hectare shall be covered by operational restrictions.</p> <p>If the share of the valuable habitats specified in this criterion, covers over 5 percent of the total area of forest and scrub land that a forest owner has in the area covered by a forest certificate, the operational restriction do not apply on the area exceeding the above mentioned minimum surface areas.</p>	<p>The preservation of valuable habitats in forestry operations: a) Court decisions on the cases, where the preservation of characteristic features of the sites based on the Nature Conservation Act, Section 29, have been endangered. b) Court decisions on the cases, where the typical features of habitats of special importance based on the Forest Act, Section10, have not been preserved.</p> <p>In points a) and b) the characteristic features are not preserved according to the criterion if operations carried out violate either on purpose or by negligence the Nature Conservation Act or the Forest Act.</p> <p>Habitats of high conservation value specified in point c) have remained unchanged or nearly unchanged based on the results of the monitoring of the quality of nature management. "Nearly unchanged" means that the most important features to be preserved in the habitats listed in point c) have been preserved in more than 90% of the total area of sites.</p> <p>Regarding the forest owners that have over 10 000 hectares of certified forests in the certified region, all forests fulfilling the above mentioned features of old-growth forest are considered as old growth regardless of stand size. Protection of old-growth forests as defined in this criterion does not apply if the share of protected forests exceeds 5per cent of the area of a forest holding owned or managed by an owner.</p>	<p>The criterion covers undrained pruce mires and those ditched spruce mires where no draining effect prevails any more. Broad-leave dominated hearb rich forests is a forest where the share of broad leaved species exceeds 50% of the stand volume. <u>Northern Finland</u> includes Kainuu, North Ostrobothnia and the operational areas of forestry centres in Lapland. <u>Southern Finland</u> includes the operational areas of other forestry centres.</p>

The habitats of high conservation value listed in point c), their most important typical features and the measures to be taken for preserving these features are the following:

1. Kettle holes and treeless or sparsely treed sunny eskers

The kettle holes referred to in the criterion shall be at least 10 meters in depth and the micro climate in the lower parts shall be distinctly moist and cool (cellar microclimate). Vegetation typical to the special micro climate and distinct from the surrounding vegetation is the most important feature to be preserved. Logging shall be limited only to the uppermost part of the edges of the kettle hole.

The treeless or sparsely treed sunny eskers referred to in the criterion situate in the South-East, South, South-West and West slopes of eskers. Typical species is the feature to be preserved on these sites. The sites shall not be reforested .

2. Undrained hardwood-spruce swamp - korvet

The natural depth of water table shall be maintained as the typical feature in undrained, usually spruce dominated swamp which have at least 20 cubic meters per hectare of decaying and dead wood. The protection measures shall not limit to the swamps protected by the Forest Act, Section 10 on habitats of special importance. Water table level is maintained by restraining from any ditching on these sites. Allowed harvesting methods include thinnings and removal of individual trees.

3. Undrained eutrophic fens

In eutrophic fens the typical features to be preserved include alteration of flark and hummock formations as well as the nutrient content of peat. These are maintained by restraining from ditching and forestry activities on eutrophic fens.

4. Undrained eutrophic fens in the province of Lapland

High nutrient content in peat, natural water tables and diverse peatland vegetation are the main typical features of treeless or sparsely wooded, undrained fens in calciferous areas and in areas of high water table in the province of Lapland. These fens shall be protected by restraining from ditching in these areas.

5. Herb-rich Forests

Diversity of hardwood species ²⁵⁾ is the most important typical feature to protect in the herb-rich forests exceeding the age of a sapling stands. The hardwood dominance shall be maintained through the intermediate harvesting.

6. Old-growth forests

An old-growth forest is a forest that has the following characteristics:

I The age of the dominant tree stand exceeds by 1.5 the upper age limit recommended for final harvesting;

II The tree stand is composed of trees of different size or of several canopy layers and tree species or it is a spruce stand of a late succession stage;

III The tree stand has not been treated with selective cutting, intermediate thinning or preparatory felling for the past 60 years. Earlier, selective cutting, intermediate thinning or preparatory felling have not changed the natural stand structure and the number of stumps originating from these felling operations do not exceed 20 stumps per hectare;

IV The stand is composed of old board-leaved species and includes also decaying wood, dead wood and ground wood at least 15% of the stand volume in Southern Finland²⁶⁾ and 20% in Northern Finland²⁶⁾;

Restraining from forestry operations on these sites preserves the typical features.

7. Alluvial forests and flood meadows in their natural state
Annual flooding cycle characterize the alluvial forests and flood meadows under the criterion. Natural variation of surface water level caused by flooding of sea, lakes, rivers and streams is the most important typical feature of alluvial forests and flood meadows. This feature is maintained by restraining from ditching on these sites. Wood stand can be harvested by thinning and shelter wood harvesting and by removing individual stems while safeguarding the presence of decaying wood.

Criteria	Indicators:	Definitions
<p>11 Peatland nature shall preserved The survival of peatland types in their natural state²⁷⁾ and rare peatland types²⁸⁾ shall be safeguarded.</p>	<p>First-time draining is not carried out on peatlands in their natural state²⁹⁾. Ditch cleaning and supplementary ditching are implemented only in the areas, where ditching has increased significantly the tree growth³⁰⁾. The rare peatland types and the possibility of their restoration into a natural state are especially taken into consideration in drainage maintenance as well as in other arrangements related to water table levels.</p>	<p>A <u>peatland type in its natural state</u> is a peat accumulating ecosystem, where there are no human induced changes on the natural water balance or any other significant traces of human activities. The site is peatland if the ground is covered with a peat layer, or if over 75% of the ground vegetation consists of peatland vegetation. Forests, regularly tended by thinnings, and not included in the habitats of special importance as defined in Criterion 2.10, are not considered as natural peatlands as defined in this criterion. <u>Rare peatland types</u> refer to peatland types that are listed in Annex 3 of the Environmental Guidelines to Practical Forest Management (from year 2004) of Metsähallitus (Annex 1 of the standard). Ditching of new (first-time ditching) areas does not include opening of isolated main drainage ditch on peatlands in their natural state due to reasons related to drainage techniques. Sections of undrained peatlands can be drained if it is essential for organizing the water level management in the drained area and if it does not hamper significantly the biodiversity of peatlands and forests. The criterion does not restrict the management of water table level if required under Forest Act to ensure good forest regeneration on a peatland site. It does not either restrict the ditching needs identified according to the law on support to land restitution (24/1981). Ditch cleaning and supplementary ditching (drainage maintenance) must be economically efficient and take into consideration the nutrient content, heat sum (number of growing degree days) and the volume of tree stand. Appropriate drainage maintenance sites are the sites that fulfill the valid legal requirements for financing sustainable forestry (Degree 44/2001, Section 7 by the Ministry of Agriculture and Forestry).</p>
<p>12 Known habitats of endangered species shall be safeguarded Forest management procedures shall safeguard, the known habitats of strictly protected species³¹⁾, if they are demarcated and informed to the land owner/ manager by the Regional Environment Centre, the known habitats of other endangered species³¹⁾ by taking them into consideration according to the site specific instructions³²⁾ of regional environmental authority.</p>	<p>The habitats of the strictly protected species that the Regional Environment Centre has demarcated and informed to the landowner and/or manager according to Section 47 of the Nature Conservation Act, and the related management guidelines or recommendations provided to the land owner and /or manager. The site specific guidelines³²⁾ issued by the environmental authority to protect the known habitats of other endangered species have been implemented in harvest and forest management operations</p>	<p>A list of species under strict protection and other endangered species is specified in Annex 4 of the Council of State decree (913/2005) on changing the nature protection decree. Site specific guidelines that the regional environmental authority has informed the owner and/or manager of the site.</p>

Criteria	Indicators:	Definitions
<p>13 Retention trees and decaying wood shall be left in forest operations</p> <p>Retention trees³³⁾ and decaying wood³⁴⁾ shall be left on site in thinning and regeneration harvesting to safeguarding the biodiversity of forest nature.</p>	<p>The average number of retention and decaying trees left in forest regeneration sites in the certified area 5 -10 trees per hectare. The importance of retention trees and decaying wood for biodiversity protection is communicated to forest owners and forestry professionals.</p>	<p>Larger trees and trees with special form from previous tree generation as well as broad-leaved woods, nest trees of raptorial birds, large junipers, larger aspen, treelike willows, and trees with fire scars and decaying wood are <u>preferred as retention trees</u>.</p> <p>If trees with the above mentioned qualities are not present on site, retention trees may include trees with biodiversity values that exceed 10 cm in diameter at breast height and have a good potential to develop into old trees. These trees shall be standing, alive at the time of harvesting and belong to the natural species of the country.</p> <p>Retention trees are primarily left in groups, in close vicinity to the habitats of special importance listed in the criterion 2.10 and in the bufferzones of water ecosystems. Soil is not scarified under the groups of retention trees. Retention trees must not be left in close vicinity to important constructions, such as traffic lanes or electric and telephone lines nor on monuments of antiquity. A share of retention trees can be made into man-made snags. Retention trees are not removed from the site in any future harvesting.</p> <p>The trees left on buffer zones defined in the criterion 2.17 are counted to the total number of retention trees. Trees with biodiversity value, e.g., larger trees from previous tree generation, trees with unexpected form, as broad-leaved woods, large alder trees and other broadleaved species.</p> <p>Decaying wood includes snags with a diameter at breast height exceeding 20cm and other dead standing trees, hollow trees and ground wood. The decaying wood under this criterion does not include standing snags that are dried for commercial purposes or dead conifer trees that should be harvested based on the Act on Control of Damages Caused by Insects and Fungi (263/1991).</p>
<p>14 Genetically modified seed and plant material shall not be used</p> <p>Genetically modified material or other material, which is not approved by the authority³⁵⁾, shall not be used in seeding and planting</p>	<p>Information from the authorities responsible for the enforcement of the Act on Trade of Forest Reproductive Material (241/2002) indicates that gene modified material has not been used in seeding and planting.</p>	<p>The <u>authority</u> responsible for monitoring of trade of forest cultivation material and approval of forest cultivation material in Finland is the Finnish Food Safety Authority (Evira).</p>

Criteria	Indicators:	Definitions
<p>15 Forest road plans shall include an environmental impact assessment The plans for new, permanent forest roads³⁶⁾ drafted by forest organisations¹⁾ include a study on environmental values. The forest road network master plan, in which the traffic needs and the environmental impacts have been evaluated, is taken into consideration in construction of new, permanent forest roads.</p>	<p>The environmental impact assessment must include: An assessment of the impacts of road construction on the preservation of the characteristic features of the following sites protected areas; habitats of special importance (Criterion 2.10) habitats of endangered species (Criterion 2.12) sites reserved and demarcated on forest owner's decision or in municipal planning for game management, recreation, etc. An assessment of the impacts of road construction on water ecosystems in the area of impact and the necessary water protection measures.</p>	<p><u>Forest road</u> is a private road, which is constructed mainly for the purpose of forestry related transportation and to be used throughout the year. Cutting and winter trails are not forest roads as referred to in this criterion</p>
<p>16 Biodiversity of nature shall be promoted through controlled use of fire The habitats of species dependent on forest fires shall be maintained through prescribed rehabilitation burnings. Forest owners shall be informed³⁷⁾ on the opportunities for prescribed burning. This criterion shall not be applied in the Åland Province.</p>	<p>The annual area³⁸⁾ and number³⁹⁾ of prescribed rehabilitation burnings in the certified area reaches at least, the average annual level of the burnings during the past five-year period. In case weather conditions for prescribed burning have been unexceptionally unfavourable, this will be taken into consideration when estimating the conformity to the required level of prescribed burnings. Forestry organizations have informed forest owners about prescribed burning as a measure to safeguard biodiversity in forests and on the opportunity to receive state financial support for prescribed burning</p>	<p><u>Information</u> channels are e.g. newspaper articles, bulletins, and contacts with forest owners, who have suitable sites for prescribed burnings. Prescribed burning of sunny eskers, regeneration and retention tree groups as well as slash and burn, forest fires and rehabilitation burnings on protected areas are included in the <u>area</u> managed with prescribed burning. The number of areas with prescribed burning includes the above mentioned area based burnings except forest fires. Their number is not included into the number of areas with prescribed burning.</p>

Criteria	Indicators:	Definitions
<p>17 All operations taking place close to watercourses and small water bodies shall safeguard water protection</p> <p>A buffer-zone is left along watercourses and small water bodies⁴⁰⁾ for capturing solid and nutrient run-off.</p> <p>Tree harvesting is allowed on buffer-zones, but retention trees as defined in the criterion 2.13, must not be removed. Seedling and sapling stand tending works are allowed on buffer-zones.</p> <p>Soil scarification for regeneration, fertilization, stump removal, clearing of coppice layer⁴¹⁾ or use of pesticides or herbicides⁴²⁾ shall not take place on buffer-zones. Canopy biomass is removed from buffer-zones, if possible</p>	<p>Buffer-zone is considered to be preserved as required by the criterion when the soil is undisturbed on over 90 per cent of a buffer-zone with a minimum width of 5 meters.</p>	<p><u>Watercourses</u> include seas, lakes, ponds and rivers. <u>Small water bodies</u> in this criterion are streams, brooks and springs.</p> <p>The bush layer along water courses may be cleared for esthetic reasons</p> <p>Pesticides and herbicides are products that contain one or several active agents and that have been developed to (i) protect plants or plant products from damaging agents, (ii) influence in plant metabolism (in other forms than nutrients), (iii) destroy harmful plant species or plant parts or (iv) prevent unintentional, harmful plant growing (Act on plant protecting agents 1259/2006, Section 4).</p>
<p>18 Water protection shall be safeguarded in drainage maintenance sites</p> <p>Forest organisations' plans for drainage maintenance shall include a water protection plan. The planned water protection measures shall be implemented as appropriate.</p>	<p>Guidelines for planning of drainage maintenance require the elaboration of a water protection plan. The water protection plan contains among other: impacts of the measures related to ditch cleaning and supplementary ditching on the water levels of watercourses; consideration of valuable habitats as defined in the criterion 2.10 and consideration of peatland habitats that are rare and that have become rare as defined in the criterion 2.11; risks for erosion in ditch cleaning and supplementary ditching; slope if the terrain and water conduct away from ditch cleaning and supplementary ditching area; and water protection measures and their extent.</p> <p>Adequate information⁴³⁾ on plans for water protection have, if needed, been delivered to regional environmental authority for its possible statement.</p>	<p>The delivery of <u>information</u> and its content is agreed upon between forest organisations and environmental authorities in the region.</p>

Criteria	Indicators:	Definitions
<p>19 Quality of groundwater shall be safeguarded in forest operations Chemical pesticides shall not be used⁴⁵⁾ in groundwater areas that are important (Class 1) or suitable (Class 2) sources of water supply⁴⁴⁾. Fertilizers shall not be used in groundwater areas that are important (Class 1) sources of water supply. Stumps shall not be removed in Class I groundwater areas.</p>	<p>The forest organisations¹⁾ use or have access to the information on the locations of the groundwater areas that are important (Class 1) and suitable (Class 2) sources of water supply. The restrictions on the use of pesticides and herbicides as well as fertilizers have been taken into consideration in the working instructions and recommendations of forest organisations. The monitoring of the quality of nature management has not encountered stump removal in Class I groundwater areas.</p>	<p><u>Groundwater</u> in Finland is classified as an important source of water supply (Class 1), suitable source of water supply (Class 2) and other ground water area (Class 3) based on their suitability and protection needs. Treatment of seedlings in nurseries with pesticides against pine weevil is not considered to be the <u>use</u> of pesticides as referred to in this criterion. The same also applies to the use of chemical or biological stump treatment to prevent rootrot infections. Any treatment shall be done according to the instructions given by the Finnish Food Safety Authority (Evira).</p>
<p>20 Forest management shall be implemented only with biodegradable pesticides and herbicides Only biodegradable⁴⁶⁾ pesticides and herbicides⁴²⁾ shall be used in forest management and wood harvesting. Broad-leaved coppice shall not be treated, in forest regeneration areas or in seedling and sapling stands with chemical foliage sprays, unless it is required to control the fungal diseases infecting young Scots pine stands from aspen coppice. No chemical pesticides or herbicides shall be used in valuable habitats defined in Criterion 2.10. Chemical pesticides or herbicides shall be used only when unavoidable as, for instance, for the control of ground vegetation on forest regeneration areas, for stump treatment of broadleaved trees and for controlling the pine weevil and for treatment of coniferous timber storages in the vicinity of forest areas to prevent spreading of insect damages into the forests. The use of control agents in stump management for prevention the spreading of rootrot is allowed in general but not in the valuable habitats specified in Criterion 2.10. Pesticides and herbicides are used in conformity to the official guidelines.</p>	<p>The guidelines and instructions of forest organizations include the recommended use of chemical pesticides and herbicides in different forestry operations.</p>	<p>Evira (Finnish Food Safety Authority) approves all pesticides and herbicides in the market and it's approval also includes, among other, the assessment of product's biodegradability. In this context the products approved by Evira for a specific defined purpose are considered as biodegradable</p>

Criteria	Indicators:	Definitions
<p>21 Employees' competence to work shall be safeguarded Employees' adequate professional competence shall be ensured.</p>	<p>Employer⁴⁷⁾ shall have a document or another piece of evidence which indicates that employer has been assured on the required and adequate professional competence⁴⁸⁾ of the employee for the task needed, and that the employer has taken care of the capacity building during the employment. Contracting party shall have a procedure to ensure that his employees have an adequate professional competence and ability to work in each designated task. Contractors/employees shall have access to the general guidelines needed in the work. Contractors/employees shall be given site specific, task related guidelines that include quality, environmental and other requirements⁴⁹⁾.</p>	<p><u>Employer</u> refers to an employer registered in Trade Register. The information on the registered employers is available in Finnish Business Information System (BIS), (www.ytj.fi). <u>Adequate professional competence</u> can be achieved by either professional education or work experience. Other requirement includes, among other, removal of canopy biomass from those hiking paths, which are defined in the agreement between land owner and the party maintaining the hiking route.</p>
<p>22 Work safety, well-being and equal opportunities at work shall be attended Contractors and employees shall be are provided with the means for safe and a high quality work.</p>	<p>Employer⁵⁰⁾ shall make sure that contractor/employee has the general safety guidelines related to the work in use; contractor/employee is aware of the aspects and field sites possibly endangering the work safety at a work site; the guidelines related to work are given in the language the worker understands⁵¹⁾, and when needed, a worker has an access to a person who speaks a common language and can interpret in work related issues; Employer has documents on the first and check-up examinations as stipulated in the Act on Occupational Health Service (1383/2001) in organisation's occupational health and safety documentation. Activities appropriate to the conditions and aiming at maintaining the ability to work, are arranged in forest organizations employing at least⁵²⁾ 10 employees</p>	<p>The term <u>employer</u> refers to either an employer or a contracting party listed in the Trade Register, a manager of timber harvesting site or an employer to a subcontractor. Information on the registered employers is available in the Finnish Business Information System (BIS), www.ytj.fi. When employer is the public employer or contracting party as defined in the Language Act (423/2003) the Act applies and in the Sámi homeland, the Sámi Language Act (1086/2003) applies. Number of employees <u>on duty</u> on December 31st</p>

Criteria	Indicators:	Definitions
<p>23 Statutory obligations of employers are adhered to</p> <p>Employers and contracting parties⁴³⁾ shall comply with labor/ employment legislation, collective labor agreements and legislation in force on employment of foreign labour and require also the compliance from their sub-contractors and companies renting workers to work for third parties.</p> <p>Employers and contracting parties shall provide local shop stewards with the information requested in the Act on the Contractor's Obligations and Liability when Work is Contracted Out⁵⁴⁾</p> <p>Employers and contracting parties shall pay taxes, social security fees and employment pension fees and shall expect their sub-contractors to do the same.</p>	<p>Employer is aware of the binding regulations in collective agreements, labor and employment legislation and legislation on the use of foreign labor when relevant. Employer has procedures that ensure the conformity to the legislation in force. The documentation of working hours is organized according regulations of the Working Hours Act (605/1996) for the employees covered by the Act.</p> <p>Employee and employer organizations are requested to give statements on possible regional violations of collective labour agreements⁵⁵⁾ or on the above mentioned legislation⁵⁶⁾.</p> <p>Contracting parties shall have guidelines on service contracting and documents providing evidence that they have annually verified that their sub-contractors belong to the prepayment register. Contractors shall also have documents on paid taxes and employment pension fees of their subcontractors.</p> <p>Employers/contracting parties⁵³⁾ shall make the contract⁵⁷⁾ or work agreements in a written form and file them.</p> <p>Employers/contracting parties⁵³⁾ have a register on those subcontractors they have purchased forestry services⁵⁷⁾ during the previous two years</p> <p>Contracting parties inform their subcontractors on the significant bans in contract work or production decreases they are aware of. The information is given early enough before the initiation of the work.</p>	<p>The terms <u>employer/contracting party</u> refer to employers registered in the Trade Register. Information on the registered employers is available in the Finnish Business Information System (BIS), www.ytj.fi.</p> <p>Act on the Contractor's Obligations and Liability when Work is Contracted Out (<u>1233/2006</u>)</p> <p><u>Collective labour agreements</u> refer to collective labour agreements effective in Finland.</p> <p><u>Legislation</u> refers to Finnish legislation.</p> <p><u>Contract</u> agreement refers to an agreement made in one or many pieces and is worth more than 8500 Euros per year.</p>

Criteria	Indicators:	Definitions
<p>24 Forest owners' know-how shall be improved The number of persons participating in supplementary training, personal or group information sessions, intended for the region's forest owners shall be equivalent to at least 20% of the total number of forest owners in the region⁵⁸⁾.</p>	<p>Statistics on training sessions, personal⁵⁹⁾ and group guidance⁶⁰⁾ organized for local forest owners by the regional forestry centre, forest management associations, forest owners' union, forest industry companies as well as forestry colleges. The statistics must include the number of participants in trainings and extensions⁶¹⁾.</p>	<p>The <u>number of forest owners</u> is equivalent to the number of forest holdings paying the forest management fee in the region applying for a certificate. <u>Personal guidance</u> includes, among others, site visits with a forestry professional, or a corresponding visit to forest holding, forest management planning and extension in implementation of forestry works with a forestry professional. <u>Group guidance</u> includes training courses, forest excursions and forest work demonstrations organized for forest owners by the parties listed in the indicator. Forest owners and other persons involved in forestry operations on the holding are counted as <u>participants in the training/extension</u> indicated in this criterion.</p>
<p>25 Knowledge on forests shall be increased among children and adolescents *) There shall be an up-to-date action programme to promote the forest based knowledge among children and adolescents in the region. The criterion is not applicable in the certification at the level of a forest management association</p>	<p>On the initiative of regional forestry centre the significant forestry organisations⁶²⁾ in the region review together with the forestry sector youth and training organizations the action programme within a year from the issuance of the certificate. Cooperation with other interested and locally operating parties is sought in the implementation of the action programme. The action programme includes a plan to increase the awareness of forest ecosystem, silviculture and forestry among children and adolescents to arrange practicing and apprenticeship opportunities for adolescents aiming at a forestry profession or already studying in the field. The targets defined in the action programs are monitored annually. The parties committed to forest certification and the other parties involved in the preparation of the action plan compile and submit the information on the sessions they have organized to the regional forestry centre.</p>	<p><u>Significant forestry organizations in the region</u> referred to in the criterion are among others, regional forestry centre, Metsähallitus, forest management associations, forest owners' union and timber harvesting organizations as well as entrepreneur and employee organizations.</p>

Criteria	Indicators:	Definitions
<p>26 Everyman´s rights shall be safeguarded Opportunities for free access to and stay in forests and for picking of forest products according to everyman´s rights⁶³⁾ shall be safeguarded.</p>	<p>There is not a significant amount of verified unjustified restrictions on the everyman´s rights.</p>	<p><u>Everyman´s rights</u> include among others e.g. walking, skiing or bicycling temporary camping on other person´s land gathering of berries, mushrooms and some other nature products gathering of dried twigs, brushwood, fallen cones and nuts The following activities are not included in everyman´s rights: setting fire damaging trees or bushes driving in motor vehicles on terrain gathering of protected plants, lichens and mosses making feeding places for game damaging seedling stands and cultivated land littering the environment</p> <p>Nesting boxes for birds and artificial nests may be placed in forests only with the permission of land owner. Everyman´s rights can be limited based on legal grounds. Everyman´s rights are not limited on private roads or forest roads. Act on Private Roads (358/1962) enacts on the use rights and restrictions on private roads. Regarding the use of forest roads the decision of the Supreme Court 1991/819 shall be taken into consideration</p>

Criteria	Indicators:	Definitions
<p>27 The preconditions for multipurpose use of forests shall be promoted Accessibility on recreational trails ⁶⁴⁾, possibilities for hunting and game management and agreement based collection of organic forest products shall be enhanced in order to safeguard the preconditions for multiple use of forests.</p>	<p>No soil scarification or stump removal shall take place on recreational trails. Canopy biomass shall not be left on the trails. Any permanent constructions on the trails shall be safeguarded in forestry operations. When the monitoring of the quality of nature management indicates that 90 per cent of the trail length is intact (in forestry operations), the accessibility on the trails is taken into consideration as required by the criterion. Forestry organizations inform forest owners on the significance of hunting and game management in protecting seedling and sapling stands from game damages and in safeguarding biodiversity in forests. Forestry and hunting organizations⁶⁵⁾ give additional information on integration of game management into forest management planning and forest use. Information on the use of fertilizers, pesticides and herbicides required in collection of organic products is available for those estates where forest owners or the person he/she has authorized have made an agreement on the compliance with the guidelines for production of organic products.</p>	<p>Recreational trails established officially or by an agreement with a land owner according to the act on recreation (606/1973) <u>Hunting organizations</u> include game management districts, associations, clubs and the Union of Hunters in Finland and the Central Union of Hunters <u>The information needed</u> includes (i) the location of the fertilized sites for which state financing have been issued based on the Act on the Financing of Sustainable Forestry (1094/1996) and (ii) the location of fertilized sites in the forests managed by Metsähallitus or forest companies. Forest management association or forestry centre provides the information on private family forests and the corresponding information from other forests is given by the owner or manager.</p>
<p>28 Preconditions for reindeer husbandry shall be safeguarded</p> <p>Forest management activities in the state forests, under the administration of Metsähallitus, and reindeer husbandry shall be integrated in a local level cooperation so that the conditions for reindeer husbandry are safeguarded in forest management activities on a broad and long-term basis in the region designated for reindeer herding.</p>	<p>To reach this target Metsähallitus should cooperate with the representatives of reindeer husbandry when carrying out such activities that might have a significant impact on reindeer herding. The significant activities and need for cooperation shall be determined in cooperation so that the target will be achieved. The cooperation observes the Agreement⁶⁷⁾ signed 27 February 2002 by Metsähallitus and the Reindeer Herders' Association as well as the sections of Metsähallitus natural resources planning addressing the integration of forestry and reindeer husbandry.</p>	<p>The Agreement from 2002, however, does not apply in the Sámi homelands. The content and scope of the agreement may be changed on the basis of the mutual agreement between Reindeer Herders' Association and Metsähallitus. This criterion refers to the agreement valid at the time.</p>

Criteria	Indicators:	Definitions
<p>29 Preconditions for Sámi culture and for the traditional means of livelihood shall be safeguarded in Sámi homelands in accordance with Sámi definition of sustainable development</p> <p>In the Sámi⁶⁸⁾ homelands the management and use of areas and natural resources administered by the State shall be organized in such a way that they ensure the facilities for Sámi culture and traditional livelihoods.</p>	<p>In the management of state forests the compliance to international laws, article 8j in Biodiversity Convention⁶⁹⁾ and the rights of Sámi as defined in the Constitution as well as the engagement of Sámi Parliament in preparation and decisions on the issue.</p> <p>2) Sámi cultural landscapes and heritage sites are taken into consideration and protected in forestry operation consulting the Sámi Parliament and Skolt Council in the region of skolt people.</p> <p>3) Sámi Parliament and Skolt Council negotiate on the nature resource plans and the level of sustainable allowable cut is negotiated. Local natural conditions and Sámi culture and livelihoods are taken into consideration when defining the level of the allowable cut. Nature resource plans include measures to implement sustainable development, the proposals of Sámi and how these are taken into consideration in the plan. The levels of allowable cut, and harvesting plans are calculated and reviewed at the levels of reindeer herding cooperatives and municipalities.</p> <p>4) The interests of reindeer herding are integrated in forest use according to the consultations with Sámi Parliament, reindeer herding associations and their siidas/ local units of reindeer herding cooperatives. Harvesting operations shall not cause significant harm to reindeer herding. Soil scarification is not applied on dry heath types or barren heath type soils. On other lichen pastures soil scarification is avoided when possible and the lightest measures possible complying with the Forest Act are used.</p> <p>The forest management regimes applied are defined in negotiations between Sámi Parliament, Skolt Council and Metsähallitus.</p> <p>5) Manager of state forests makes the forest management plans in Sámi Homeland. The plans include the most important horse hair lichen and lichen pasture lands of reindeer herding cooperatives and their local units as well as relevant trails and constructions.</p> <p>6) The manager of state forests maintains reindeer maps and statistics on lichen lands by herding cooperatives and develop reporting on other areas important for Sámi reindeer herding.</p> <p>7) Environmental impact assessment of forest road construction includes in Sámi Homeland an estimate on the impacts of construction to Sámi culture and traditional livelihoods. Construction of forest roads on Sámi Homeland shall be integrated with the interests of Sámi culture, livelihoods and nature values as consulted with Sámi Parliament, and in skolt region with Skolt Council.</p> <p>8) Manager of state forests shall not prevent reindeer herding in Sámi area by fencing if reindeer herding cooperative has not given its consent on fencing.</p> <p>9) Travel expenses are compensated to the representatives of Sámi Parliament and Skolt Council and to the reindeer herders that participate in the preparation of nature resource plans or plans for reindeer herding cooperatives.</p> <p>10) Sámi Parliament and Skolt Council shall be always consulted in forest certification audits</p>	<p>Sámi people referred to in the criterion include the persons that comply with the definitions of the Act on Sámi Parliament (section 3), the municipalities belonging to the Sámi Homeland are listed in the section 4 and in the section 2 to the Act on Skolt Traditional Sámi livelihoods include the livelihoods listed in the section 17, article 3 in the Finnish Constitution Biodiversity Convention 8j: .in conformity to the national legislation respect, protect and maintain such knowledge, inventions, practices of indigenous people and local communities that make part of significant traditional ways of living and that enhance their implementation under the permission and cooperation of the societies referred to as well as encourage the fair distribution of benefits gained from knowledge, inventions and practices.</p>

8 Keurhout – Duurzaam (The Netherlands) - Jinke van Dam)

General characteristics:		
Initiator system:	Keurhout (KH)	
Coordinating party:	Keurhout Organization, headed by a Management Authority [27]	
Initiation – duration:	Established in 1996.	
Grade of integration	Meta-standard: Accepts FSC and PEFC certificates	
Geographical coverage:	Sourcing: international. Use: domestic (Netherlands)	
Scope (feedstock included):	Timber (products)	
Value chain	Forest production, trade and processing	
Mission or objective:		
<p>Keurhout is a Dutch initiative to assess and validate certificates and certification systems with respect to timber (products) from legal origin and/or sustainable forest management (SFM). The following validation protocols were established by the Netherlands Timber Trade Association (NTTA) : a) KH-SFM, for Sustainable Forest Management (1996), b) KH-LET, for LEqual origin Timber (2004) and c) KH-SYS, for Certification SYStems (2005) [27].</p> <p>The above Protocols are used in relevant combinations to cover aspects concerning legal and sustainable forest management, Chain-of-Custody, Certification Body and Certification Systems [27].</p>	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
<p>The SFM Standard is originally based on the so-called minimum requirements of the Dutch Government for certificates for sustainably produced timber, as included in the government communiqué <i>Houtcertificering en Duurzaam Bosbeheer</i> (Timber Certification and Sustainable Forest Management), 1997, and derived from: the ITTO definition of Sustainable Forest Management, the Forest Principles (UNCED, Rio de Janeiro 1992) and the FSC principles [27].</p>		
Current status of system:		
In implementation		
Planned activities:		
<p>Based on the general international recognition of FSC and PEFC for government procurement and the increasing number of KH-Sustainable admitted PEFC endorsed systems, in April 2009 the Keurhout Management Authority took the decision to admit all FSC and PEFC systems and certificates to the KH-Sustainable system [27].</p>		

Structure of the system or initiative:	
Stakeholder participation:	Requirements for Certification Standards sets in criterion 3.1 that "the standard setting and decision making process is fair, transparent and public: Standard setting and decision making is not to be dominated by the interest of one stakeholder category and information is made publicly available [27].
Commitment:	Voluntary
Stakeholder integration:	Criterion 4.4 on SFM requires that "stakeholders are consulted and given the opportunity to participate on basis of prior and informed consent".
Monitoring performance:	An internal monitoring system at the FMU is required. External monitoring through surveillance audits check the compliance with the Keurhout criteria [27]
Chain of custody mechanism:	CoC can be implemented in two ways [27]: Physical segregation, b) On the basis of a credit system (volume based): the minimum amount of certified material is 70%
Verification mechanisms:	At least one annual surveillance audit is required by an independent Certification Body. This includes on-site inspections, checking documents, consultation with stakeholders (e.g. governments to check existing legal documents) [27].
Further information:	
Removal of trade barriers	-
Costs:	-

List of principles included (based on standard for Sustainable Forest Management) [27]:	
1	The organization responsible for the management of the forest shall act according to the law.
2	Socio-cultural forest functions and utilization by indigenous and other people living in and around the forest shall be respected. The participation of the local population shall be ensured.
3	The social and economic well-being of the local population and employees shall be ensured
4	The organization responsible for the management of the forest shall have a forest management system based on long-term vision and specification of objectives.
5	The regulatory functions of the forest shall be preserved.
6	The biodiversity of the various ecosystems shall be preserved.
7	The timber production capacity of the forest shall be preserved.
8	The production capacity of non-timber forest products (NTFP's) shall be preserved.

References:	
Website:	www.keurhout.nl

List of criteria and indicators (based on principles for SFM) [27]:

Criteria	Indicators:	Methodology used:	Databases used:
1.1 All relevant local and national laws and regulations and ratified international treaties are complied with.	<p>Labourers are employed according to the relevant social and labour legislation and regulations, including those on health and safety.</p> <p>The laws pertaining to fauna management and protected animals are respected and protected animals are not captured or hunted.</p> <p>Regulations pertaining to environmental pollution, biological control and soil- and water conservation are adhered to.</p> <p>Laws and regulations pertaining to forest management planning and operations (including forest practices codes) are adhered to.</p> <p>Legislation allowing for other land use in the area is respected.</p> <p>Implications stemming from ratified international treaties and conventions are translated into management actions.</p>	Compliance to Laws and Regulations	
1.2 Legislative instruments and regulations are known	<p>An up-to-date register of national and local legislation and relevant international agreements is maintained. Staff and contractors are aware of all implications of legislation, regulations and relevant international agreements.</p> <p>All relevant parties have knowledge of the relevant local legislation and regulations. An active policy ensures that relevant local legislation and regulations are understood and put into practice.</p> <p>There is a clear system for imposing sanctions if these rules are not complied with, which is applied transparently by an independent arbitration board.</p>	Availability of register and system for imposing sanctions. Personnel informed.	
2.1 Customary hunting and collecting rights, such as traditional use of NTFP's are known and tolerated or recognized and respected.	<p>The forest manager has identified the local communities whose livelihoods are likely to be effected by its activities and has established agreements with them providing details on access and use of the area by the communities and compensation for adverse effects of the management and/or harvesting activities.</p> <p>Management plans, operational plans and harvesting operations show evidence of minimizing and where appropriate compensating adverse impacts on the ability to exercise customary rights by the communities.</p> <p>The rights of the local inhabitants to gather NTFP's in the forest are respected and well regulated with the parties involved. The zones, within which such activities may occur, are clearly indicated in the management plan.</p> <p>The legal regulations concerning use and harvesting of NTFP's are known to the relevant parties. An active policy ensures that the local forest legislation is understood and put into practice, where relevant.</p> <p>Sanctions are imposed in a transparent manner by an independent arbitration board if these rules are not complied with.</p>	Local communities identified. Actions to be taken in management plan.	
2.2 Land-use rights are acknowledged and respected.	<p>The (traditional) land-use rights of all the different stakeholders, including those related to forest management, are known and respected. These rights have been documented and included in the management plan, if relevant.</p> <p>Ancestral domain claims of indigenous peoples are taken into account.</p> <p>Maps indicating formal land use rights (e.g. mining) and actual other land uses (e.g. agriculture) are available with the forest manager.</p> <p>Formal land use rights are not disputed.</p>	Documentation and maps of land-use rights.	

Criteria	Indicators:	Methodology used:	Databases used:
2.3 The religious or cultural areas of importance are known and respected.	Sites of religious or cultural importance are known and clearly indicated on maps, in the management plan, and in the field. If necessary, such sites are surrounded by a buffer zone for protection and are excluded from the regular forest management (no-go area for harvesting) The forest management is applied in such a way that damage to the landscape and cultural values of the FMU is minimized.	Sites indicated in maps	
3.1 Job opportunities are provided to the local population.	The management ensures that job opportunities are filled by local people, as much as possible.		
3.2 Opportunities exist for profit sharing and/or development of the local economy.	The management ensures that the activities of the various parties are incorporated in the management plan, where possible. There is an active policy to develop local processing capacity of both NTFP's and wood, using appropriate technologies. The forest management may support development of local economy. Other development activities are stimulated, which do not conflict with management objectives. These could include privatization and decentralization of certain management activities or improvement of market opportunities for locally manufactured products.	Availability of policy.	
3.3 Compensation is given for damage caused.	If negative impacts of forest management occur there is a clear system for the compensation of damage caused (deprived income, damaged property, limitation of services or products provided) If the local legislation is considered insufficient, additional regulations may be formulated.	System for damage compensation. Local legislation.	
3.4 Working conditions are conform national laws and international guidelines.	The MB ensures that the personnel are provided with the appropriate insurance(s) and are registered with the competent authority. Local medical care, of a sufficient standard, is available. The MB provides the appropriate equipment for the given working conditions, unless otherwise agreed, and ensures that the personnel are able to perform their work without being exposed to high risks. The MB ensures that the personnel have access to the appropriate safety equipment required to conduct their work in a safe manner in line with local and international (ILO) guidelines. The MB audits contractors have established safety and health protocols which cover all legal requirements, including proper registration of (near) accidents. Employees are aware of the health and safety rules and use the safety equipment appropriately. The MB stringently stipulates and monitors the use of protective clothing and safety techniques.	Equipment available. Protocols developed.	ILO International Guidelines
4.1 A management body is responsible for the management and considers it as an on-going cyclic process for all products and services of the FMU	The MB is qualified to manage the forest and is responsible for the quality of forest management for a reasonable period. The various functions of the FMU in the national or regional land- use planning context are known and recognized. The MB considers the management as an on-going cyclic process.		

Criteria	Indicators:	Methodology used:	Databases used:
<p>4.2 The management body applies a systematic forest management approach.</p>	<p>The forest management system covers the relevant planning, operational control, and monitoring and improvement aspects. The MB operates according to ISO 9001 or ISO 14001 or a comparable systematic approach.</p> <p>The organization has a clear management structure with a clear definition of roles and responsibilities of its personnel with respect to forest management activities and ensures emergency preparedness. The MB ensures that operational procedures are established and implemented.</p> <p>The MB provides adequate internal communication processes, documents key parts of the forest management system and ensures that these documents are adequately controlled.</p> <p>A monitoring system of sufficient quality is implemented. It includes compliance with applicable legislation and operational plans, effects on environmental functions (e.g. water quality), effects on ecosystems (e.g. wildlife populations, red list species), natural regeneration. The MB identifies non-conformities with measures and performance requirements and takes appropriate corrective and preventive actions. Activities of third parties in the management area are documented. The MB has developed an approach for reviewing its management system, of which the adequacy and efficiency can be evaluated. If necessary, the system is adapted.</p>	<p>Clear management structure, outline of communication processes, monitoring system, records.</p>	<p>ISO 9001 or ISO 14001. Monitoring system: Reference is made to ITTO & IUCN (Guidelines for the Conservation and Sustainable Use of Biodiversity in tropical timber production forests, 2008), CIFOR and indicators as suggested by Ghazoul and Hellier (International Forestry Review 2(4), 2000)</p>
<p>4.3 A management plan exists which demonstrates that attention has been paid to the integrity of ecological functions and the continuity of the socio-economic and socio-cultural functions of the forest.</p>	<p>There is up-to-date management plan + supporting documents which includes elements as:</p> <p>A description of the forest resources, environmental limitations, socio-economic conditions and information on the surrounding lands.</p> <p>Maps of the management area, indicating management area, zoning, protected areas, road network, planned activities and landownership.</p> <p>The national and regional functions of the management unit.</p> <p>The management objectives and the means of achieving these objectives.</p> <p>References to (inter)national legislation and to any relevant treaties.</p> <p>A description of the silvicultural approach to be applied, with its rationale, based on information gathered through inventories.</p> <p>The annual rate of harvesting and a description and justification of the harvesting techniques applied.</p> <p>Choice of species (incase of planted forest)</p> <p>Provisions for monitoring forest growth and dynamics.</p> <p>Plans for identification and protection of rare, endangered and threatened (redlist) species.</p>	<p>Existence of management plan and underlying documents (e.g. with maps, records)</p>	<p>Red List Species.</p>

Criteria	Indicators:	Methodology used:	Databases used:
4.4 Stakeholders are consulted and given the opportunity to participate on basis of prior and informed consent	The stakeholders are consulted in the process of developing and implementing the management plan. They are given the possibility to effectively influence the management policy, goals and exploitation, depending on the land use and ownership of the land. The various parties and their interests are into account in the process of development and implementation of the management plan.	Stakeholder consultation	
4.5 The management body ensures that trained personnel conduct the forest management and related operations.	All employees have the appropriate qualifications and receive additional training, if necessary. External contractors meet the same requirements as the company personnel. The personnel are trained in the use of machinery, chemicals and first aid, in order to ensure their optimal functioning and safety. When new machinery or techniques are introduced, the personnel are appropriately trained. Customized training is available and can be repeated, when necessary. The need for training is regularly evaluated by the management and personnel. A sufficient number of workers have been trained in first aid techniques. This training is available to all relevant personnel.	Qualifications of personnel	
4.6 The coordinating organization for group certification has the relevant organizational skills and capacity.	There is an administrative body responsible for the management, appropriate documentation and administration. A management system, operating according to ISO 9001 or ISO 14001 or based on a comparable systematic approach is used. A management plan, formulated with participation by members, and related guidelines are available. Regular monitoring and evaluation on compliance of group members is conducted in conjunction with the associated forest owners and results in a coherent adjustment of forest management when applicable.	Management system and plan including guidelines, documentation	ISO 9001 or ISO 14001
4.7 The individual forest owners are committed to the forest management system and enable its implementation and control.	The forest owner is committed to the guidelines and management requirements that come from the management plan and objectives at the higher level. The forest owner is committed to help with monitoring and evaluation.		
5.1 Soil quality is maintained and erosion is avoided.	Important soil characteristics are preserved. The risk of soil pollution is kept to a minimum. Waste products are disposed of in an environmentally sound manner. In erosion-sensitive areas practices are applied to prevent erosion, e.g. particular harvesting practices, road construction practices or buffer zones. Buffer zones and steep slopes are marked as protected areas in the management plan, on management maps and in the field and are excluded from regular management. Relevant guidelines on road and infrastructure construction are available and applied. Waterway crossings are kept to a minimum and the necessary infrastructure is of appropriate quality. Harvesting is done during the season when the risk of erosion is lowest and/or takes into consideration weather conditions.	Guidelines and practices in the field	

Criteria	Indicators:	Methodology used:	Databases used:
5.2 Quality and quantity of the ground and surface water regime is maintained.	<p>Storage of waste products occurs in specially designated containment areas where leakage into groundwater is not possible.</p> <p>The impact of forest management practices and construction of infrastructure on quality and quantity of groundwater, waterways and water elements in and outside the management unit is kept to a minimum.</p> <p>Management plans and maps identify water retention areas</p> <p>Buffer zones are placed in the vicinity of waterways and are managed appropriately. The buffer zones are wide enough to protect the water courses and based on Best Management Practices for the region in question.</p> <p>EIA's are implemented in case infrastructures might cause disruption to the environment. E.g. infrastructural works in areas where the groundwater regime results in a site-specific ecosystem and such works could irreversibly alter the specific conditions of the ecosystem.</p>	Management plans, maps, practices in the field. EIA.	
6.1 The main ecosystem(s) and species found on site have been identified.	<p>The locations of special ecosystems within the management unit are indicated in the management plan.</p> <p>Redlist species and their habitats have been identified.</p>	Special ecosystems are defined as valuable/ vulnerable/ rare ecosystems to be protected by national and international legislation.	Red list species refer to national red list species and/or species on the global IUCN red list.
6.2 Measures are taken for the conservation, protection, management and restoration of special ecosystems and red list species.	<p>Zoning is elaborated and implemented.</p> <p>Conservation areas are identified. The size of these areas is a reasonable part (e.g. 5 %) of the total surface of the management unit, based on the presence of special ecosystems or species and the minimum area required to preserve these.</p> <p>The management respects the national and international lists of protected areas and species (red lists, CITES)</p> <p>Specific management practices are implemented for special ecosystems. No-go areas for harvesting are identified.</p> <p>Tree species listed by CITES are marked as such during inventories and follow the CITES protocol incase of export.</p> <p>Adequate provisions are taken to prevent poaching, hunting or trading protected animals in the license area, by any party including Government Agencies.</p>	Conservation areas identified.	CITES protocol
6.3 Viable populations of wildlife are maintained	<p>Wildlife populations are maintained in balance with other forest functions.</p> <p>The impact of hunting on wildlife populations is monitored.</p> <p>Measures are taken to prevent poaching.</p>	Practices in field	

Criteria	Indicators:	Methodology used:	Databases used:
7.1 Growth and yield data are documented, including tree species composition.	Records of the mean annual increment and standing stock are maintained per planning unit and harvest planning is based on these growth and yield records. Periodic inventories are made of tree species composition.	Records and inventories	
7.2 The harvesting system is aiming at maintaining existing forest ecosystem types.	In Old Growth forests harvesting systems aim at maintaining existing forest ecosystem types. In predominantly man-made forests harvesting systems may aim at developing more diverse forest. The natural regeneration capacity of the management area is promoted		
7.3 The damage caused by harvesting is minimized.	The harvesting system is such that minimal damage is caused to the residual stand, by the application of Reduced Impact Logging (RIL) Special attention is given to avoid damage to protected trees. The harvesting is conducted in a way that is suitable to the site-specific conditions; areas that are sensitive to the harvesting techniques applied are not harvested or are harvested in a more suitable way. Operational activities have no negative impact on the terrain conditions that are of special importance for the management goals of the residual stand. The personnel or contractor conducting the harvest are trained in techniques that are aimed at minimizing the damage to the forest. Additional training and refresher courses are offered. Harvesting is planned in such a way that it occurs in the most efficient manner, taking into consideration ecological and social restrictions. The harvesting operations are continuously monitored and improved, where necessary.	Practices in the field.	
8.1 The management of NTFPs is integrated in the forest management plan.	Harvest and management data on important NTFP's are registered. The NTFP harvest level does not jeopardize its production capacity. Hunting and fishing are regulated and controlled Information about the species that can be hunted is made available to the personnel and the general public. Where relevant, training on the preservation and management of those species is given.		

9 PEFC (Slovenia)(not entirely implemented) - Ivo Blaznik, Jan Jereb

General characteristics:		
Initiator system:	Kmetijsko gozdarska zbornica in Gospodarsko interesno združenje gozdarstva	
Coordinating party:	Zavod za certifikacijo gozdov (Forest Certification Institute)	
Initiation – duration:	Established in November 2004.	
Grade of integration	PEFC	
Geographical coverage:	Domestic use (Slovenia), International source	
Scope (feedstock included):	Forestry	
Value chain	All	
Mission or objective:		
The objectives of certification are [1]: monitoring and continuous improvement of sustainable forest management, promoting the use of wood as a renewable source, the creation of market-based instrument for the sale of timber and products manufactured from sustainable derived raw materials, ensure customers that the wood is marked with the PEFC logo, obtained from areas where forests managed according to the principles of sustainability	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
<p>Certain legal requirements and related policies meet Certification body which carries out the certification of the suitability of forest management may be accredited by a national accreditation body, which covers the management of forests as a special field of activity; Certification body carries out the method of certification of forest management as part of a quality management system (SIST EN ISO 9001:2000), Environmental Management Systems (ISO 14001) or environmental management systems and controls, which is defined in the Regulation of the European Commission No. 761/2000 can obtain accreditation of the national accreditation body, covering the standards listed in this specific area.</p> <p>For defining indicators[2]: Pan-European criteria and indicators for sustainable forest management (Lisbon Resolution L2 / 1, Third Ministerial Conference on the Protection of Forests in Europe, Lisbon, 1998), Pan-European operational guidelines for sustainable forest management (Lisbon Resolution L2 / 2, Third Ministerial Conference on the Protection of Forests in Europe, Lisbon, 1998), Improved pan-European indicators for sustainable forest management (MCPFE Expert Level Meeting, Vienna, 2002), Forest Development Program in Slovenia (Official Gazette of RS, no. 14/96), Law on Forests (Official Gazette of RS, no. 30/1993, 13/1998 Odl.US: UI-53/95, 24/1999 Skl.US: UI-51/95, 56/1999 (31/2000 -- corr.), 67/2002, 110/2002), Regulations on the Protection of Forests (Official Gazette of RS, no. 92/00), Safety and health in forestry work, ILO 1998), Regulations on forest management and silvicultural plans (Official Gazette of the Republic. 5 / 98), Expert documents for Slovenia in the pan-European forest certification scheme (GIS, Ljubljana, 2002), Other international commitments taken by Slovenia and other documents that have an impact on forest management in Slovenia, Criteria and indicators for assessing sustainable forest management in Austria (PEFC Austria, 1999), Criteria and Indicators for Sustainable Forest Management (CFCs 1002/2001, PEFC Czech Republic, 2001).</p>		

Current status of system:	
Currently in Slovenia is only one company with PEFC certificate. Only company that has a chair in Slovenia with PEFC certificate is Alpe papir d.o.o. (other companies are subsidiaries of foreign companies)	
Planned activities:	
/	

Structure of the system or initiative:	
Stakeholder participation:	In year 1999, eleven representatives of European countries with the support of various associations of forest owners, bringing together over 15 million forest owners, timber industry and timber merchants established organization PEFC (Program for certification of the certification scheme) for the purpose of promoting and improving sustainable forest management.
Commitment:	PEFC is an independent, non-profit and non-governmental organization that promotes sustainable forest management taking into account production, ecological and social aspects of management. The highest authority of the PEFC is PEFC Council, which now included 32 countries from around the world between them since 2004, including Slovenia. Slovenia received a confirmed scheme 3.8. 2007 th
Stakeholder integration:	In November 2004, the Slovenian Chamber of Agriculture and Forestry and the Economic Interest Grouping established the Institute for forestry certification of forests. Department of Forest certification is the national governing body PEFC (Program for the confirmation of certification) for Slovenia, and is organized as private non-profit institute that develops, adopts and maintains Slovenian PEFC certification scheme. The highest authority of the Council of the Institute, which has five members - four representatives of the founders and one representative of service users. In March 2005 the Department for certification of forests became a full member of the PEFC Council and has signed a contract for the presentation of the Program to confirm the certification scheme in Slovenia.
Monitoring performance:	Monitoring is carried out through indicators.
Chain of custody mechanism:	N/A
Verification mechanisms:	N/A
Further information:	
Removal of trade barriers	Certification has been allowed by PEFC in 2007. In Slovenia will be possible only after payment of MAFF (Ministry of Agriculture, Forestry and Food) Slovenian accreditation and end their operations in the summer 2010. So it is envisaged that the PEFC entered in the manner and through the regional chambers through a region of farmers and other owners. What will interest the predicted weight and depending on the demand for certified timber from the mills on the market.
Costs:	N/A

List of principles included:	
1	Maintaining and strengthening of suitable forest funds and their contribution to global carbon circuit.
2	Maintaining health and vitality of forest Ecosystem.
3	Preservation and promotion of wood and production of non-timber functions of forests.
4	Conservation, protection and appropriate increase in biodiversity in forest ecosystems.
5	Maintain and enhance appropriate protective functions in the management of trees (especially soil and water).
6	Maintenance of other socio-economic functions and conditions.

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
1.1 Size and structure of forest property	<p>Planning and forest management on forest property must be directed towards maintaining adequate forest cover and to maintain and improve ecological, social and productive functions of forests and to prevent fragmentation of forest land. Wooded areas and functions of forests must be properly marked on the map. Grubbing-up of forests for agricultural purposes is only possible in areas where no the ecological or social functions of forests present in the first stage emphasis. Overgrown areas should be left to natural development towards forest in all organic granted for fragile or vulnerable soils.</p> <p>1.1.a – General specifications (Descriptive Indicator):</p> <ol style="list-style-type: none"> 1. Legal and regulatory framework: The existence and nature of the legal and regulatory framework that governs ownership and management rights, providing increasing size, rounding and aggregation of forest property. 2. Institutional frameworks: The existence of institutional framework and capacity to guide and promote the expansion size, rounding and aggregation of forest property for rational management. 3. Economic policy and financial instruments: The existence and nature of economic policy and financial instruments to promote the expansion size, rounding and aggregation of forest property for rational management. 4. Information resources: The existence of information channels and the ability to guide and monitor the increasing size, rounding and aggregation of forest property. <p>1.1.b - Size of Forest Property (Quantitative Indicator): The total area covered by forest (in ha), The average area covered by forest (in ha) and Forest share held (in %).</p> <p>1.1.c – Structure of Forest Property (Quantitative Indicator): The structure of forests in relation to property involved size categories of property (in %)</p> <p>1.1.d - Cleared areas of forest to forest property in the last five years (Quantitative Indicator): The total area grubbed forests included forest property (in ha), Share grubbed-up areas of forest included in the forest possession to the whole forest property (in %), The share of unauthorized grubbing trees on forest premises in respect of all grub (in %)</p> <p>1.1.e - Areas in the overgrown forest property (Quantitative Indicator): The area of land included in the overgrown property (in ha), The proportion of land to be included in the overgrown property (in %), Changes in land in the overgrown (in %)</p>		<i>ZGS (Slovenian Forest Service)</i>

Criteria	Indicators:	Methodology used:	Databases used:
1.2 Growing stock on forest stands possession	<p>Appropriate silvicultural measures should be to increase the utilization of site potential, both quantitatively and qualitatively, and the accumulated growth forests to increase wood supply to forest property.</p> <p>1.2.a – General specifications (Descriptive Indicator):</p> <ol style="list-style-type: none"> 1. Legal and regulatory framework: The existence and nature of the legal and regulatory framework that ensures sustainable forest management in the direction of increasing timber supplies and better utilization production capacity of forest sites on the premises. 2. Institutional frameworks: The existence and the ability of the institutional framework to guide the management of the property at the terms of quantitative and qualitative strengthening of the growing stock of stands. 3. Economic policy and financial instruments: The existence and nature of economic policy and financial instruments to promote the provision of appropriate incentives to support the forestry policy, which aims to increase both the volumes and the quality of growth and growing stock 4. Information resources: The existence of information channels and the ability to guide and monitor the management of the property level in terms of quantitative and qualitative strengthening of the growing stock of stands. <p>1.2.b - Growing stock on forest property (Quantitative Indicator):</p> <p>Growing stock on the property involved (in m3/ha), Change in growing stock included possession (in %), Thickness on the structure of growing stock included possession (in %), Change the structure of growing stock thickness the property involved (in %).</p>		<i>ZGS (Slovenian Forest Service)</i>
1.3 Development phase of the forest on forest property	<p>Appropriate silvicultural measures should be in accordance with the ecological characteristics of tree species and site conditions, promoting variety of horizontal and vertical structure and fragmentation of the stands and you maximizing the balance of relationships and life stages thickness structure stands.</p> <p>1.3.a – General specifications (Descriptive Indicator):</p> <ol style="list-style-type: none"> 1. Legal and regulatory framework: The existence and nature of the legal and regulatory framework that ensures sustainable forest management on forest property in the direction of the greatest possible balance of development phases thickness and structure of stands. 2. Institutional frameworks: The existence and the ability of the institutional framework to guide the development of forest stands held towards the greatest possible balance of development phases and thickness structure stands. 3. Economic policy and financial instruments: The existence and nature of economic policy and financial instruments to promote the greatest possible balanced development phases and thickness structure stands on the forest property. 4. Information resources: The existence and potential of information resources for the implementation of appropriate monitoring balanced development phases and thickness structure stands on the forest property. <p>1.3.b - The situation stands in the development stages of forest property (Quantitative indicator):</p> <p>The area of forest stands held possession developmental phases (in ha), share of development phases on the total area forest property (in %).</p>		<i>ZGS (Slovenian Forest Service)</i>

Criteria	Indicators:	Methodology used:	Databases used:
2.1 Medical monitoring of forest impacts on forests and protective measures on forest property	<p>Planning and forest management on forest property must be directed towards maintaining and improving the health and vitality of forests, between constant accompaniment of other adverse events by the forest landowner monitored in cooperation with public forest service.</p> <p>2.1.a – General specifications (Descriptive Indicator):</p> <ol style="list-style-type: none"> 1. Legal and regulatory framework: The existence and nature of the legal and regulatory framework to ensure monitoring adverse events in the forest property. 2. Institutional frameworks: The existence and the ability of the institutional framework to support monitoring of adverse events in forest holdings. 3. Economic policy and financial instruments: The existence and nature of economic policy and financial instruments to support the monitoring adverse events in the forest property. 4. Information resources: The existence and potential of information resources to support regular monitoring of health the condition of forests in forest holdings. <p>2.1.b - The amount of conservation-rehabilitation cut on forest property the condition of forests in forest holdings (Quantitative Indicator):</p> <p>Annual volume of cut remedial conservation included possession (in m3), Benefit from the protection of common remedial cut felling the property involved, Structure conservation remedial cut by causes of the included possession (in %)</p>		<i>ZGS (Slovenian Forest Service)</i>

Criteria	Indicators:	Methodology used:	Databases used:
2.2 Illegal cut and grazing in forests	<p>Cut to a bare as a way of forest management is forest forbidden. V prohibited any act that reduces the Growth of the stand or fertility sites, stability or sustainability of the forest or undermines its role, its existence or purpose. Grazing in the forest, not provided for silvicultural plan is prohibited.</p> <p>2.2.a – General specifications (Descriptive Indicator):</p> <ol style="list-style-type: none"> 1. Legal and regulatory framework: The existence and nature of the legal and regulatory framework for the prevention, monitoring, control and sanctioning ecologically unacceptable conduct in the woods on the forest property. 2. Institutional frameworks: The existence and the ability of the institutional framework for the prevention, monitoring and sanctioning ecologically unacceptable conduct in the forests of the forest property. 3. Economic policy and financial instruments: The existence and nature of economic policy and financial instruments to curb unacceptable ecological management of forests and to promote ecologically acceptable of forest management on forest property. 4. Information resources: The existence and potential of information resources for the prevention, monitoring and control of organic unacceptable behaviour in forests on forest property. <p>2.2.b – Forbidden cut (Quantitative Indicator):</p> <p>The total quantity of forbidden cut in the forest included held by year (in m3), The overall proportion of forbidden cut in the forest included possession after years of depending on all logging (%),The total annual size of the clear felling included forest property (in ha), The average annual size of the clear felling included forest property (in ha).</p> <p>2.2.c - Forest grazing in the forest property (Quantitative Indicator):</p> <p>The area of forests forest property, where the grazing of domestic animals (in ha), The proportion of regulated areas (legally) Forest grazing in the total area of forest grazing in the possession (in %).</p>		<p><i>IRSKGH (Inspectorate of the Republic of Slovenia for Agriculture, Forestry and Food), ZGS (Slovenian Forest Service)</i></p>

Criteria	Indicators:	Methodology used:	Databases used:
2.3 The use of chemicals in the forest estate	<p>The use of pesticides and other chemicals in the forest is prohibited, except in certain cases to control harmful insects and gradation for the protection game. Resistance and chemical agents should be kept to a minimum, given appropriate alternative silviculture and other biological measures. In the event that the use of manure to fertilizer in a controlled, environmentally sound way.</p> <p>2.3.a - General specifications (Descriptive Indicator):</p> <ol style="list-style-type: none"> 1. Legal and regulatory framework: The existence and nature of the legal and regulatory framework which is governed by appropriate use chemicals in forestry. 2. Institutional frameworks: The existence of institutional framework and the ability to identify and control the use of chemical resources in forestry. 3. Economic policy and financial instruments: The existence and nature of economic policy and financial instruments to provide financial means for prevention and control of harmful phenomena with chemical means in the forest. 4. Information resources: The existence of information channels and the ability to monitor and control the use of chemical resources in forestry. <p>2.3.b - The quantity of chemicals used in the forest (Quantitative Indicator):</p> <p>Annual quantity of chemical used for the protection of forest resources by broad categories (insecticide, herbicide, fungicide) (in liters/10 ha), Annual amount of funds spent in the forest fertilising (kg/10 ha), The annual number of cases of unauthorized use of chemicals on forest property (number of events).</p>		<p><i>IRSKGH (Inspectorate of the Republic of Slovenia for Agriculture, Forestry and Food), ZGS (Slovenian Forest Service)</i></p>
2.4 Contamination of forest property with fuels, lubricants and other waste	<p>In the implementation of the forest machinery, with the exception of chain saws, (see note at regional level) not to leave traces of fuel and lubricants. It also prohibited any discharge of waste into the forest, which reduce the Growth and fertility sites, stability or sustainability of the forest or undermines its role, the existence or purpose. Any such event should be recorded and communicated to the relevant institution / service.</p> <p>2.4.a - General specifications (Descriptive Indicator):</p> <ol style="list-style-type: none"> 1. Legal and regulatory framework: The existence and nature of the legal and regulatory framework that prohibits the abandonment followed by fuels and lubricants in the woods and prohibits the dumping of waste into the forest, which reduce the Growth and fertility sites, stability or sustainability of forest and endanger its functions, the existence or purpose, and provides action on these events. 2. Institutional framework: The existence of institutional framework and the ability to control the application and the outpouring of fuel and lubricants as well as illegal dumping of waste in the woods. 3. Economic policy and financial instruments: The existence and nature of economic policy and financial instruments for the most ecologically acceptable use of fuel and lubricants in forestry and waste management in the forest. 4. Information resources: The existence of information channels and the ability to control the use and the outpouring of fuel and lubricants in the forest and waste disposal in the forest. <p>2.4.b - The annual number of cases of contamination of forest fuels and lubricants and other wastes on forest property(Quantitative Indicator):</p> <p>The annual number of cases recorded spills of fuel and lubricants on the forest property (number of events), The annual number of newly registered waste dumps in the forest holdings by type (municipal waste, special waste) (number of events).</p>		<p><i>IRSKGH (Inspectorate of the Republic of Slovenia for Agriculture, Forestry and Food), ZGS (Slovenian Forest Service)</i></p>

Criteria	Indicators:	Methodology used:	Databases used:
3.1 The system of forest planning at the property level	Forest management on forest property must be based on current plans, silvicultural and forest management plans, which must be periodically renewed. For the forest property is recommended for making any property plans, which should be based on silvicultural plans.		ZGS (Slovenian Forest Service)
3.2 Wood-production function - logging on forest property	The planning and actual forest management is necessary to ensure the most sustainable yields of wood from the forest under the forest property (the property the sustainability of returns), while forest landowner should not reduce the biodiversity of the forest, his life can weaken or generally useful functions. Due to excessive gap between actual and potential cut it is desirable to increase the intensity of forest management, especially in fragmented forest property.		ZGS (Slovenian Forest Service)
3.3 Wood-production function (biological investment in forests)	At the same time promoting the production of timber on forest property is necessary to ensure a more intensive silviculture and protection of investment to improve the quality and the ecological stability of forest stands.		ZGS (Slovenian Forest Service)
3.4 Wood-production function (open forest in the forest holdings)	To ensure effective forest management in the context of forest property must be properly planned, established and maintained a network of forest roads, ensuring adequate and sustainable production of forest goods and the exploitation of the forest for the overall operation of useful functions, which must be negative effects on the network environment are reduced to minimum. Forest landowner should, at the professional and financial supports of countries seek to increase (the optimal) open forest of their property.		ZGS (Slovenian Forest Service)
3.5 Non-wood forest products and services of forest property	The exploitation of non-timber forest products and forest services to the premises must be carried out in a sustainable way which does not exceed the natural capacity of forests and not worsening of their quality and general condition. Promote appropriate sustainable exploitation of non-timber forest products, including in the form of complementary activities in the property.		Owner, ZGS (Slovenian Forest Service) KGZS (Agriculture and Forestry Chamber of Slovenia)
4.1 Biodiversity within the forest holdings - general	Forest land owner in the forest management in its possession at the same time preserve and promote biological diversity of forests.		
4.2 Ecologically important biotopes and habitats of special areas and their conservation in the context of forest holdings.	In forest management on forest property, the forest landowner, and in cooperation with the guidance by professional staff, to maintain ecological importance, typical, rare and vulnerable forest biotopes, habitat types and species, particularly in the network of special areas of conservation (NATURA 2000 sites and ecologically important area).		ZGS (Slovenian Forest Service) ARSO (Environmental Agency of the Republic of Slovenia)

Criteria	Indicators:	Methodology used:	Databases used:
4.3 Conservation and use of forest reproductive material and sowing and planting for the reconstruction of artificial forestation and forest property.	For the purposes of artificial reforestation and forestation, in which preferred native species and local provenances should be the constant controlled supply of quality reproductive material of different species and provenances. Sowing and planting non-native (allochthonous) of tree species and vegetation unadjusted tree species in the forest (inadequate provenance) is prohibited if it is not overwritten in the silvicultural or forest management plan. To increase the surface area of the existing and the new seed stands.		ZGS (Slovenian Forest Service) GIS (Slovenian Forestry Institute)
4.4 Conservation of biodiversity in commercial forests of the property level	In forest management calls for the forest landowner, and in cooperation with the guidance by professional staff, under the natural opportunities and requirements to ensure the functions of the forest, and endeavor to maintain the ongoing development and mixed stands for the natural restoration, preservation of old trees and parts stands for the leakage and appropriate amounts of dead wood in the forest, etc. ...		ZGS (Slovenian Forest Service)

Criteria	Indicators:	Methodology used:	Databases used:
5.1 Maintain and enhance the protective functions of forests at the property level	Planning and forest management at the property level should be targeted to maintain and strengthen the protective function, especially against soil erosion and the different impacts of water such as floods and avalanches.		ZGS (Slovenian Forest Service)
5.2 Maintaining and strengthening the hydrological functions of forests at the property level	When planning management and site management of forests at the property level should be special attention paid to forest hydrology important function to prevent adverse effects on the quantity and quality of water resources. It is necessary to prevent the inappropriate use of chemicals and other harmful substances, and other activities that adversely affect water quality.		ZGS (Slovenian Forest Service)
5.3 Protection forests under the forest property, announced by the Government Regulations	Management of forests under the forest property, declared to be protective forests with government regulations, must be adapted primarily to preserve and strengthen their protective role.		ZGS (Slovenian Forest Service)
5.4 Maintaining and strengthening the protective function of the forest-protection infrastructure and other facilities under the forest property.	In forest management at the property level with the infrastructure facilities should be special attention paid to maintaining and strengthening the protective role of forests.		ZGS (Slovenian Forest Service)
6.1 Socio-economic importance of forests in forest property	At the forest management must take into account the multifunctional role of forests and their social importance of the General. Forest management in the context of forest holdings is important for the conservation and rural development and new employment opportunities, in conjunction with socio-economic functions of forests.		Owner
6.2 Forests with special purpose vehicles under the forest property	Management in forests with special significance, declared by government regulation or local communities within the forest property must be adapted to the emphasis of the functions for which it was declared.		ZGS (Slovenian Forest Service)
6.3 Recreational functions of forests under the forest property	Must be allowed free access and movement of visitors within the forest property for the purpose of recreation, where we need to consider ownership and other rights, the impact of recreation on the forest ecosystem as well as compatibility with other recreation functions of forests.		ZGS (Slovenian Forest Service)
6.4 Vocational education	Forest managers, forest owners and forest workers must constantly need updating their knowledge of sustainable forest management. In doing so, we must maintain and raise the quality of vocational education at all levels.		Owner, ZGS (Slovenian Forest Service), KGZS (Agriculture and Forestry Chamber of Slovenia)

Criteria	Indicators:	Methodology used:	Databases used:
6.5 Occupational Safety and Health	Forest workers and forest owners must work in a safe working conditions, to which should contribute significantly in their training to work safely in the woods. When working in the forest are required to use protective gear and equipment for personal safety at work.		<i>Owner, ZGS (Slovenian Forest Service), KGZS (Agriculture and Forestry Chamber of Slovenia), IRSD (Inspectorate of the Republic of Slovenia for work), SGLŠ (High school for Wood) MKGP (Ministry of Agriculture, Forestry and Food)</i>
6.6 Raising public awareness about the importance of forests and forestry	The public must provide the information to knowledge and the problems of forests and forestry, raise awareness about the ecological sense and in the national forests and to strengthen confidence in forestry.		<i>Owner, ZGS (Slovenian Forest Service), KGZS (Agriculture and Forestry Chamber of Slovenia)</i>
6.7 Historical and cultural and spiritual values of forests in forest possession	In places of recognized cultural-historical or other spiritual meaning, the managed forest in the direction of protecting and maintaining them in accordance with their importance.		<i>ZGS (Slovenian Forest Service)</i>

10 Forest Stewardship Council (FSC) (International) - Aino Martikainen

General characteristics:		
Initiator system:	Forest Management Certification (FM), Chain of Custody Certification (CoC), Controlled Wood (CW)	
Coordinating party:	Forest Stewardship Council (FSC)	
Initiation – duration:	1993 (FM, CoC), 2006 (CW)	
Grade of integration	Micro-standard	
Geographical coverage:	International	
Scope (feedstock included):	Forestry	
Value chain	Plantation management (FM), Entire value chain (CoC, CW)	
Mission or objective:		
FSC shall promote environmentally appropriate, socially beneficial, and economically viable management of the world's forests.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
FSC was established to promote the responsible management of the world's forests as a response to concerns over global deforestation.		
Current status of system:		
Established		
Planned activities:		

Structure of the system or initiative:	
Stakeholder participation:	Multi-stakeholder approach: NGOs, corporations, citizens
Commitment:	Voluntary/ global
Stakeholder integration:	Stakeholder consultation is a part of the forest evaluation
Monitoring performance:	Frequency and intensity of monitoring shall allow comparison of results and assessment of change; documentation of the "chain of custody".
Chain of custody mechanism:	Mass balance (FM, CW), track & trace (CoC)
Verification mechanisms:	Reporting, Stakeholder consultation, visits
Further information:	

List of principles included:	
1	<p>Compliance with laws and FSC Principles Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.</p>
2	<p>Tenure and use rights and responsibilities Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.</p>
3	<p>Indigenous peoples' rights The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.</p>
4	<p>Community relations and worker's rights Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.</p>
5	<p>Benefits from the forest Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.</p>
6	<p>Environmental impact Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.</p>
7	<p>Management plan A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.</p>
8	<p>Monitoring and assessment Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.</p>
9	<p>Maintenance of high conservation value forests Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.</p>
10	<p>Plantations Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.</p>

References:	
Website:	http://www.fsc.org/

List of criteria:

Criteria
1.1 Forest management shall respect all national and local laws and administrative requirements.
1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.
1.3 In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.
1.4 Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and the involved or affected parties.
1.5 Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities.
1.6 Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.
2.1 Clear evidence of long-term forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated.
2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.
2.3 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.
3.1 Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.
3.2 Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.
3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.
3.4 Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.
4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.
4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.
4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organisation (ILO).
4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups (both men and women) directly affected by management operations.
4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.
5.1 Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.
5.2 Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.
5.3 Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.
5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.
5.5 Forest management operations shall recognize, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.
5.6 The rate of harvest of forest products shall not exceed levels which can be permanently sustained.
6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.
6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.

Criteria
6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including: a) Forest regeneration and succession. b) Genetic, species, and ecosystem diversity. c) Natural cycles that affect the productivity of the forest ecosystem.
6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.
6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.
6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.
6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.
6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.
6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.
6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: a) entails a very limited portion of the forest management unit; and b) does not occur on high conservation value forest areas; and c) will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.
7.1 The management plan and supporting documents shall provide: a) Management objectives. b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands. c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories. d) Rationale for rate of annual harvest and species selection. e) Provisions for monitoring of forest growth and dynamics. f) Environmental safeguards based on environmental assessments. g) Plans for the identification and protection of rare, threatened and endangered species. h) Maps describing the forest resource base including protected areas, planned management activities and land ownership. i) Description and justification of harvesting techniques and equipment to be used.
7.2 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.
7.3 Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.
7.4 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.
8.1 The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.

Criteria
8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: a) Yield of all forest products harvested. b) Growth rates, regeneration and condition of the forest. c) Composition and observed changes in the flora and fauna. d) Environmental and social impacts of harvesting and other operations. e) Costs, productivity, and efficiency of forest management.
8.3 Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody."
8.4 The results of monitoring shall be incorporated into the implementation and revision of the management plan.
8.5 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.
9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.
9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.
9.3 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.
9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.
10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.
10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods, shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands found within the natural landscape.
10.3 Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.
10.4 The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.
10.5 A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover.
10.6 Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.
10.7 Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.
10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access

Criteria

10.9 Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly of such conversion.

**11 PEFC - Program for Endorsement of Forest Certification
(International) -Jinke van Dam**

General characteristics:		
Initiator system:	Founded in 1999 by PEFC governing bodies.	
Coordinating party:	The PEFC Council (Programme for the Endorsement of Forest Certification schemes) is an independent, non-profit, non-governmental organization.	
Initiation – duration:	1999	
Grade of integration	Meta-standard	
Geographical coverage:	Worldwide	
Scope (feedstock included):	All forest types	
Value chain	Forest production, trade, processing and distribution	
Mission or objective:		
PEFC is a global umbrella organization for the assessment of and mutual recognition of national forest certification schemes developed in a multi-stakeholder process. These national schemes build upon the inter-governmental processes for the promotion of sustainable forest management	Principles included:	Y/N
	Criteria included:	Y/N
	Indicators included:	Y/N
Context (i.e. legal requirement, related policies):		
The national schemes build upon the inter-governmental processes for the promotion of sustainable forest management. This is supported by 149 governments in the world covering 85% of the world's forest area.		
Current status of system:		
PEFC has in its membership 35 independent national forest certification systems of which 25 to date have been through a rigorous assessment process involving public consultation and the use of independent assessors to provide the assessments on which mutual recognition decisions are taken by the membership. These 25 systems account for more than 200 million hectares of certified forests. The other national members' schemes are at various stages of development and are working towards mutual recognition under the PEFC processes.		
Planned activities:		
-		

Structure of the system or initiative:	
Stakeholder participation:	PEFC participation models differ from country to country [5]. Participation of academic, NGO, industry and supporting actors. Strong support of forest industry and forest owner. Weak or no support of NGOs. Forest industry holds majority [5]. PEFC is criticized for having an unequal balance in membership between industry and other stakeholders [28].
Commitment:	Voluntary
Stakeholder integration:	Consultation of stakeholders in certification process is not required [28].
Monitoring performance:	PEFC standards find a renewal every 5 years. Random inspection after award of certificate.

Chain of custody mechanism:	Chain of Custody tracks products from forest through each stage of manufacturing and distribution [5]. The system offers 100% physical separation and inventory control/wood flow accounting. Under the latter, PEFC allows two different procedures [28]: % input - % output system minimum average system: 70% by volume or dry weight For non-certified wood: required that no wood from illegal logging or strictly protected areas enters the chain (self-declaration)
Verification mechanisms:	Verification includes internal and external inspections, records, documentation and data management system [29].
Further information:	
Removal of trade barriers	-
Costs:	-
List of principles included:	
<p>PEFC plays – in contrary of FSC - no role in the development of international forestry principles, and instead relies on inter-governmental principles developed and adapted for different regions of the world (e.g. Pan European Principles for European Forests) [28].</p> <p>It is mentioned by [28] that PEFC endorsed systems are often based on system standards (e.g. specify the management system that must be in place) instead of performance standards (a minimum level of performance that must be achieved).</p> <p>The national PEFC certification criteria shall [30]:</p> <p>Be compatible and consistent with the current PEOLG or ATO/ITTO PCI (only for countries covered by ATO/ITTO PCI) or the relevant ITTO guidelines (only for ITTO producing member countries except those covered by ATO/ITTO PCI) and any deviations, (e.g., based on the non-adherence of a specific issue) shall be explicitly justified.</p> <p>Include management and performance requirements that are applicable at the level of a forest management unit and optionally also at multisite (i.e. group and regional) level.</p> <p>Require compliance with national legislation.</p> <p>Be in compliance with the fundamental International Labour Organisation (ILO) Conventions. If the requirements of the Conventions are incorporated into national legislation, which is the case when a country has ratified the Conventions, the certification criteria shall require compliance with the national legislation relevant to the core ILO conventions.</p> <p>ATO/ITTO PCI form the reference basis when national and regional certification criteria are elaborated, amended or revised and assessed in countries which are covered by the ATO/ITTO process. In addition to ATO/ITTO PCI the national certification criteria shall address the following issues if relevant in the nation/region:</p> <p>maintenance, increase and monitoring of forest health and vitality including biotic risks (e.g. fire), use of fertilizers,</p> <p>management and prevention of damages caused by animal grazing in forests (domestic and wild animals),</p> <p>Maintenance of adequate quantity and quality of old, dead and decaying trees in forests to safeguard biological diversity.</p> <p>The fundamental Conventions of the ILO, (outlined below) as amended, whether ratified or not, shall be respected in the implementation of SFM. The fundamental ILO Conventions are as follows [30]:</p> <p>No 29: Forced Labour, 1930</p> <p>No 87: Freedom of Associations and Protection of the Right to Organise, 1948</p> <p>No 98: Right to Organise and Collective Bargaining, 1949</p> <p>No 100: Equal Remuneration. 1951</p> <p>No 105: Abolition of Forced Labour, 1957</p> <p>No 111: Discrimination (Employment and Occupation), 1958</p> <p>No 138: Minimum Age for Admission to Employment, 1973</p> <p>No 182: Worst Forms of Child Labour, 1999</p> <p>Other international conventions relevant to forest management and ratified by the country will be</p>	

respected through the legislative framework. Such conventions include, amongst others, e.g., Convention on Biological Diversity, Kyoto Protocol and Carbon Sinks, Convention on International Trade in Endangered Species of Wild Fauna and Flora and Biosafety Protocol [30].

References:

Website: <http://www.pefc.org/internet/html/>

12 The Ministerial Conference on the Protection of Forests in Europe – MCFPE (International) - Jinke van Dam

General characteristics:		
Initiator system:	The Ministerial Conference on the Protection of Forests	
Coordinating party:	The MCPFE Expert Level Meeting (ELM) is the decision-making body between the conferences. The Expert Level Meetings are attended by representatives of the MCPFE signatories (46 European countries and the European Community) as well as by observers from non-European countries, international organizations including stakeholders such as environmental and social NGOs, etc.	
Initiation – duration:	Founded in 1990	
Grade of integration	-	
Geographical coverage:	Europe	
Scope (feedstock included):	Sustainable Forest Management on country level (monitoring and reporting)	
Value chain	Forest production and management	
Mission or objective:		
The Ministerial Conference on the Protection of Forests in Europe (MCFPE) is a political initiative towards the protection and sustainable management of forests throughout the region [31].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Since 1990, nineteen Resolutions have been adopted at five Ministerial Conferences. The ministerial commitments are positioned within three pillars of SFM and comprise strengthening synergies by promoting a balance between the economic, ecological as well as social and cultural dimensions of SFM [31].		
Current status of system:		
The political commitments of the MCFPE involve 46 European countries, the European Union. There is cooperation with other world countries and international organizations [31].		
Planned activities:		
The MCPFE Working Group on “sustainability criteria” for forest biomass production, including bioenergy, has assessed the applicability and potential need for update of the MCPFE tools for sustainable forest management in relation to new demands. The WG recommended that the MCPFE tools should be refined and further developed to serve assessment of performance and verification of sustainable forest management. The WG recommended that the role of forest management in relation to climate change mitigation and adaptations should be clarified and strengthened for actions in the signatory countries of the MCPFE. The working group’s suggestions include further investigation of strategies for adaptation of forests to climate change, implications of land use changes on climate change mitigation and adaptation, and mitigation potentials of, e.g. bioenergy and wood constructions [32].		

Structure of the system or initiative:	
Stakeholder participation:	Commitments of the MCFPE involve 46 European countries, the European Union. There is cooperation with other world countries and international organizations
Commitment:	Not applicable
Stakeholder integration:	Not applicable
Monitoring performance:	Not applicable
Chain of custody mechanism:	Not applicable
Verification mechanisms:	Not applicable
Further information:	
Removal of trade barriers	-
Costs:	-

List of principles included [33]:	
1	Criterion 1: Maintenance and Appropriate Enhancement of Forest Resources and their contribution to Global Carbon Cycles
2	Criterion 2: Maintenance of Forest Ecosystem Health and Vitality
3	Criterion 3: Maintenance and Encouragement of Productive Functions of Forests (Wood and Non-Wood)
4	Criterion 4: Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems
5	Criterion 5: Maintenance and Appropriate Enhancement of Protective Functions in Forest Management (notably Soil and Water)
6	Criterion 6: Maintenance of Other Socio-Economic Functions and Conditions

References:	
Website:	http://www.mcpfe.org/eng/

List of criteria and indicators:

Criteria [33]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
Criterion 1: Maintenance and Appropriate Enhancement of Forest Resources and their contribution to Global Carbon Cycles	<p>Forest area: Area of forest and other wooded land, classified by forest type and by availability for wood supply, and share of forest and other wooded land in total land area</p> <p>Growing stock: Growing stock on forest and other wooded land, classified by forest type and by availability for wood supply</p> <p>Age structure and/or diameter distribution: Age structure and/or diameter distribution of forest and other wooded land, classified by forest type and by availability for wood supply</p> <p>Carbon stock: Carbon stock of woody biomass and of soils on forest and other wooded land</p> <p>Qualitative Indicator on Policies for: Land use and forest area and OWL + Carbon balance</p>		
Criterion 2: Maintenance of Forest Ecosystem Health and Vitality	<p>Deposition of air pollutants: Deposition of air pollutants on forest and other wooded land, classified by N, S and base cations</p> <p>Soil condition: Chemical soil properties (pH, CEC, C/N, organic C, base saturation) on forest and other wooded land related to soil acidity and eutrophication, classified by main soil types</p> <p>Defoliation: Defoliation of one or more main tree species on forest and other wooded land in each of the defoliation classes "moderate", "severe" and "dead"</p> <p>Forest damage: Forest and other wooded land with damage, classified by primary damaging agent (abiotic, biotic and human induced) and by forest type</p> <p>Qualitative Indicator on Policies for: Health and Vitality</p>		
Criterion 3: Maintenance and Encouragement of Productive Functions of Forests (Wood and Non-Wood)	<p>Increment and fellings: Balance between net annual increment and annual fellings of wood on forest available for wood supply</p> <p>Roundwood: Value and quantity of marketed roundwood</p> <p>Non-wood goods: Value and quantity of marketed non-wood goods from forest and other wooded land</p> <p>Services: Value of marketed services on forest and other wooded land</p> <p>Forests under management plans: Proportion of forest and other wooded land under a management plan or equivalent</p> <p>Qualitative Indicator on Policies for: Production and use of wood + Production and use of non-wood goods and services, provision of especially recreation</p>		

Criteria [33]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
Criterion 4: Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems	<p>Tree species composition: Area of forest and other wooded land, classified by number of tree species occurring and by forest type</p> <p>Regeneration: Area of regeneration within even-aged stands and uneven aged stands, classified by regeneration type</p> <p>Naturalness: Area of forest and other wooded land, classified by "undisturbed by man", by "semi-natural" or by "plantations", each by forest type</p> <p>Introduced tree species: Area of forest and other wooded land dominated by introduced tree species</p> <p>Deadwood: Volume of standing deadwood and of lying dead-wood on forest and other wooded land classified by forest type</p> <p>Genetic resources: Area managed for conservation and utilization of forest tree genetic resources (in situ and ex situ gene conservation) and area managed for seed production</p> <p>Landscape pattern: Landscape-level spatial pattern of forest cover</p> <p>Threatened forest species: Number of threatened forest species, classified according to IUCN Red List categories in relation to total number of forest species</p> <p>Protected forests: Area of forest and other wooded land protected to conserve biodiversity, landscapes and specific natural elements, according to MCPFE Assessment Guidelines</p> <p>Qualitative Indicator on Policies for: Biodiversity</p>	MCPFE Assessment Guidelines on protection of forests	IUCN Red List
Criterion 5: Maintenance and Appropriate Enhancement of Protective Functions in Forest Management (notably Soil and Water)	<p>Protective forests – soil, water and other ecosystem functions: Area of forest and other wooded land designated to prevent soil erosion, to preserve water resources, or to maintain other forest ecosystem functions, part of MCPFE Class "Protective Functions"</p> <p>Protective forests – infrastructure and managed natural resources: Area of forest and other wooded land designated to protect infrastructure and managed natural resources against natural hazards, part of MCPFE Class "Protective Functions"</p> <p>Qualitative Indicator on Policies for: Protective forests and other wooded land (OWL)</p>		

Criteria [33]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
Criterion 6: Maintenance of Other Socio-Economic Functions and Conditions	<p>Forest holdings: Number of forest holdings, classified by ownership categories and size classes</p> <p>Contribution of forest sector to GDP: Contribution of forestry and manufacturing of wood and paper products to gross domestic product</p> <p>Net revenue: Net revenue of forest enterprises</p> <p>Expenditures for services: Total expenditures for long-term sustainable services from forests</p> <p>Forest sector workforce: Number of persons employed and labor input in the forest sector, classified by gender and age group, education and job characteristics</p> <p>Occupational safety and health: Frequency of occupational accidents and occupational diseases in forestry</p> <p>Wood consumption: Consumption per head of wood and products derived from wood</p> <p>Trade in wood: Imports and exports of wood and products derived from wood</p> <p>Energy from wood resources: Share of wood energy in total energy consumption, classified by origin of wood</p> <p>Accessibility for recreation: Area of forest and other wooded land where public has a right of access for recreational purposes and indication of intensity of use</p> <p>Cultural and spiritual values: Number of sites within forest and other wooded land designated as having cultural or spiritual values</p> <p>Qualitative Indicator on Policies for: Economic viability + Employment (incl. safety and health) + Public awareness and participation + Research, training and education + Cultural and spiritual values</p>		

13 The International Tropical Timber Organization (ITTO) - Jinke van Dam

General characteristics:		
Initiator system:	The International Tropical Timber Organization (ITTO) was established under the auspices of the United Nations in 1986 amidst increasing worldwide concern for the fate of tropical forests.	
Coordinating party:	Like other commodity organizations, ITTO has two categories of membership: producers and consumers. The governing body of the ITTO is the International Tropical Timber Council, which is composed of all members of the Organization. The Council is supported by four committees, also open to all members, which provide advice and assistance to the Council [34].	
Initiation – duration:	Early 1990s	
Grade of integration	-	
Geographical coverage:	Worldwide in tropical countries. The following countries are covered by the ATO/ITTO process: Angola, Cameroon, Central African Republic, Congo, Cote d'Ivoire, Equatorial Guinea, Gabon, Ghana, Liberia, Sao Tome and Principe, Tanzania and Zaire [30].	
Scope (feedstock included):	Sustainable forest management (at national and forest management unit level)	
Value chain	Forest production and management, trade and use	
Mission or objective:		
The purpose of the C&I from the International Tropical Timber Organization (ITTO) is to provide member countries with a tool for monitoring, assessing and reporting changes and trends in forest conditions and management systems at the national and FMU levels [35].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
ITTO operates under the International Tropical Timber Agreement (international treaty).		
Current status of system:		
ITTO has developed a series of internationally agreed policy documents for achieving the conservation and sustainable management, use and trade of tropical forest resources and assists tropical member countries to adapt these to local circumstances and to implement them in the field [34].		
Planned activities:		
The following thematic areas have been defined by the ITTO Council and will be piloted as thematic programmes over the duration of the Action Plan:		
<input type="checkbox"/> Forest Law Enforcement, Governance and Trade <input type="checkbox"/> Community Forest Management and Enterprises <input type="checkbox"/> Trade and Market Transparency <input type="checkbox"/> Industry Development and Efficiency <input type="checkbox"/> Reducing Deforestation and Forest Degradation, enhancing Environmental Services		

Structure of the system or initiative:	
Stakeholder participation:	Within each caucus, the dues and votes of individual members are calculated based on tropical timber trade and, in the case of producers, also on the extent of tropical forests within the country. List of members can be found on: http://www.itto.int/en/itto_membres/ [34]
Commitment:	Not applicable. C&I are developed as tool for member countries to monitor sustainable forest management
Stakeholder integration:	Criterion 7: Extent of involvement of indigenous peoples, local communities and other forest dwellers in forest management capacity-building, consultation processes, decision-making and implementation
Monitoring performance:	-
Chain of custody mechanism:	-
Verification mechanisms:	-
Further information:	
Removal of trade barriers	-
Costs:	-

The ITTO principles contain C&I on the sustainable management of tropical forests in general [35].

List of ITTO criteria included on the sustainable management of tropical forests [35]: <i>No diversification is made between principles and criteria</i>	
1	Criterion 1: Enabling conditions for sustainable forest management
2	Criterion 2: Extent and condition of forests
3	Criterion 3: Forest ecosystem health
4	Criterion 4: Forest production
5	Criterion 5: Biological diversity
6	Criterion 6: Soil and water protection
7	Criterion 7: Economic, social and cultural aspects

References:	
Website:	http://www.itto.int/

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
Criterion 1: Enabling conditions for sustainable forest management	<p>Existence and implementation of policies, laws and regulations to govern forest management</p> <p>Forest tenure and ownership</p> <p>Amount of funding in forest management, administration, research and human resource development</p> <p>Existence and implementation of economic instruments and other incentives to encourage sustainable forest management</p> <p>Structure and staffing of institutions responsible for sustainable forest management</p> <p>Number of professional and technical personnel at all levels to perform and support forest management</p> <p>Existence of communication strategies and feedback mechanisms to increase awareness of sustainable forest management</p> <p>Existence of, and ability to apply, appropriate technology to practice sustainable forest management and the efficient utilization and marketing of forest products</p> <p>Capacity and mechanisms for planning sustainable forest management and for periodic monitoring, evaluation and feedback on progress</p> <p>Public participation in forest management planning, decision-making, data collection, monitoring and assessment</p> <p>1.11 Existence of forest management plans</p>		
Criterion 2: Extent and condition of forests	<p>2.1 Extent (area) and percentage of total land area under comprehensive land-use plans</p> <p>2.2 Extent (area) of forests committed to production and protection</p> <p>2.3 Extent (area) and percentage of total land area under each forest type</p> <p>2.4 Percentage of PFE with boundaries physically demarcated</p> <p>2.5 Changes in forested area</p> <p>2.6 Forest condition</p>		
Criterion 3: Forest ecosystem health	<p>Extent and nature of forest encroachment, degradation and disturbance caused by humans and the control procedures applied</p> <p>Extent and nature of forest degradation and disturbance due to natural causes and the control procedures applied</p>		

Criteria	Indicators:	Methodology used:	Databases used:
Criterion 4: Forest production	<p>Extent and percentage of forest for which inventory and survey procedures have been used to define the quantity of the main forest products</p> <p>Actual and sustainable harvest of wood and non-wood forest products</p> <p>Composition of harvest</p> <p>Total amount of carbon stored in forest stands</p> <p>Planning and control procedures</p> <p>Existence and implementation of:</p> <p>forest harvesting/operational plans (within forest management plans); and other harvesting permits (small-, medium- and large-scale permits without forest management plans)</p> <p>Extent of compartments/coupes harvested according to:</p> <p>harvesting/operational plans; and any other harvesting/cutting permit</p> <p>Existence of a log-tracking system or similar control mechanisms</p> <p>Long-term projections, strategies and plans for forest production</p> <p>Availability of historical records on the extent, nature and management of forests</p> <p>Silvicultural and harvesting guidelines</p> <p>Availability and implementation of silvicultural guidelines for timber and non-wood forest products</p> <p>Availability and implementation of harvesting guidelines for timber and non-wood forest products</p> <p>4.12 Area over which silvicultural and harvesting guidelines are effectively implemented</p>		
Criterion 5: Biological diversity	<p>Protected areas containing forests</p> <p>Protected areas connected by biological corridors or 'stepping stones'</p> <p>Existence and implementation of procedures to identify and protect endangered, rare and threatened species of forest-dependent flora and fauna</p> <p>Number of endangered, rare and threatened forest-dependent species</p> <p>Measures for in situ and/or ex situ conservation of genetic variation within commercial, endangered, rare and threatened species of forest flora and fauna</p> <p>Existence and implementation of procedures for the protection and monitoring of biodiversity in production forests by:</p> <p>retaining undisturbed areas;</p> <p>protecting rare, threatened and endangered species;</p> <p>protecting features of special biological interest (eg nesting sites, seed trees, niches, keystone species, etc); and</p> <p>assessing recent changes in (a), (b) and (c) above through inventories, monitoring/assessment programs and comparison with control areas</p> <p>5.7 Extent and percentage of production forest that has been set aside for biodiversity conservation</p>		

Criteria	Indicators:	Methodology used:	Databases used:
Criterion 6: Soil and water protection	<p>Extent and percentage of total forest area managed exclusively for the protection of soil and water</p> <p>Procedures to ensure the protection of downstream catchment values</p> <p>Procedures to protect soil productivity and water retention capacity within production forests</p> <p>Procedures for forest engineering, including:</p> <ul style="list-style-type: none"> drainage requirements; conservation of buffer strips along streams and rivers; protection of soils from compaction by harvesting machinery; and protection of soil from erosion during harvesting operations <p>Extent and percentage of areas in production PFE that have been defined as environmentally sensitive (e.g. very steep or erodible) and protected</p>		
Criterion 7: Economic, social and cultural aspects	<p>Value and percentage contribution of the forestry sector to gross domestic product (GDP)</p> <p>Value of domestically produced wood, non-wood forest products and environmental services in:</p> <ul style="list-style-type: none"> domestic markets; export markets; and informal markets including subsistence and illegal activities (estimate) <p>Forest products' industry structure and efficiency</p> <p>Existence and implementation of mechanisms for the equitable sharing of the costs and benefits of forest management</p> <p>Existence and implementation of conflict-resolution mechanisms for resolving disputes between forest stakeholders</p> <p>Number of people depending on forests for their livelihoods</p> <p>Training, capacity-building and manpower development programs for forest workers</p> <p>Existence and implementation of procedures to ensure the health and safety of forest workers</p> <p>Area of forests upon which people are dependent for subsistence uses and traditional and customary lifestyles</p> <p>Number and extent of forest sites available primarily for: a) research and education; and b) recreation</p> <p>Number of important archaeological, cultural and spiritual sites identified and protected</p> <p>Extent to which tenure and user rights of communities and indigenous peoples over publicly owned forests are recognized and practiced</p> <p>Extent to which indigenous knowledge is used in forest management planning and implementation</p> <p>Extent of involvement of indigenous peoples, local communities and other forest dwellers in forest management capacity-building, consultation processes, decision-making and implementation</p>		

Part 2 – Initiatives or systems to guarantee sustainability of biomass feedstock from agriculture

14 The Genesis Quality Assurance Scheme - Rocio A Diaz-Chavez

General characteristics:		
Initiator system:	The Genesis Quality Assurance (GQA) Scheme	
Coordinating party:	Assured Food Standards (AFS) the Red Tractor	
Initiation – duration:	Started 1999	
Grade of integration	It is a whole farm assurance scheme. The scheme is designed to be flexible - it can be applied to either a straightforward single unit farm or complex multiple units and yet still offer the same degree of farm assurance and cost-efficiency	
Geographical coverage:	National	
Scope (feedstock included):	GQA has developed whole farm assurance standards that are based on current standards of good farming practice, legislation and (where appropriate) animal welfare principles. The current is on Arable and/or sugar beet standards	
Value chain	Production, transport	
Mission or objective:		
At Genesis QA the philosophy is one of achieving the benefits of assurance in a commonsense manner which gives the maximum time for concentrating on rearing quality livestock and growing excellent crops.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
Current status of system:		
In use since 1999		
Planned activities:		
Structure of the system or initiative:		
Stakeholder participation:	Under the Red Tractor Scheme	
Commitment:	Voluntary	
Stakeholder integration:	No information	
Monitoring performance:		
Chain of custody mechanism:		
Verification mechanisms:		
Further information:		
Removal of trade barriers	No clear	
Costs:	No information	
References:		
Website:	http://www.genesisqa.com/default.asp	

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
2.1 Health & Safety			
2.1.1	Control of Substances Hazardous to Health (COSHH) policy is a legal requirement and members are encouraged to review their policy on an annual basis and ensure that employees and contractors working on the holding are made aware of, and comply with, the requirements of the producer's policy.	<i>Producer guidance: During the assessment the assessor will ask to see an inventory of hazardous substances used on the holding and copies of the health and safety data sheets.</i>	
2.1.2	The farm must have a current Health & Safety (H&S) Policy, where required by law, containing details of procedures for reporting accidents and location of the First Aid Kit and Accident Book. Where applicable, employees must be provided with a Health & Safety Guide for Employees that provides details of the location of First Aid Kits, the Accident Book, who to report accidents and dangerous occurrences to, local Doctor, Hospital Accident & Emergency and Health & Safety Executive Officer.	<i>For farms with less than 5 employees, a written policy is not required by law. However, it is a recommendation by GQA for the protection of farmers, that a basic H&S policy is completed. For farms with 5 or more employees an H&S at Work poster ISBN 07176 180 1 must be displayed in a prominent position within the workplace.</i>	
2.1.3	The farm must have clearly displayed emergency action plans, including fire and accident procedures, emergency contact telephone numbers, location of telephone, mains switches for electricity and water stopcocks and fire extinguishers.	<i>These plans must be on display for the benefit of all members of staff and copies available if required for the emergency services. A basic emergency action plan is included within the Appendix of this document.</i>	
2.2.1	Publications		
2.2.1.1	<i>The production unit must have copies of, or on-line access to the following publications: The Genesis QA Scheme Standards relevant to their membership Good Agricultural Practice for the Protection of Air Good Agricultural Practice for the Protection of Soil Good Agricultural Practice for the Protection of Water DEFRA Code of Practice for the Control of Salmonella during the Storage, Handling and Transport of Raw Materials DEFRA Code of Practice for Using Plant Protection Products</i>	<i>For details of where to obtain or access the publications, please refer to the Appendix. Additional recommended reading where appropriate, is contained within the Appendix of each sector specific module. The relevant publications should be kept in a place that allows staff free access to them for reference and guidance.</i>	
2.2.2	All responsible persons must be able to explain how they observe the requirements of the relevant codes.		
2.2.3	Producers must be aware of and comply with The Food Safety Act 1990.		
2.2.4	Producers must record all written complaints received within the scope of their Genesis QA membership together with details of action taken to resolve the problem and prevent reoccurrence.	<i>A basic complaints record form is included within the appendix of this document.</i>	

Criteria	Indicators:	Methodology used:	Databases used:
2.3.0	Staff		
2.3.1	All staff must be competent, based on experience or a combination of formal training and experience, to perform tasks they are required to undertake.		
2.3.2	Records must be maintained of the relevant training and experience.	<i>Records can be held in staff files or certificates may be displayed on notice boards.</i>	
2.3.3	Certificates of competence or other qualification details such as Grandfather Rights (born 31 st December 1964 or earlier) must be held.		
2.3.4	Members who use the services of contractors must ensure that the contractor has the necessary certificate of competence and that they observe the provisions of the Law and requirements of this Scheme, for the tasks they are contracted to undertake.	<i>Refer to the sector specific module for additional criteria.</i>	
2.4.0	Professional Advisors, Contractors and Registrations		
2.4.2	Producers who use the advice of a third-party, whether consultant, professional adviser or trade representative, on plant protection product usage (i.e. pesticides), must obtain the relevant BASIS Professional Register registration number. The producer should ensure that the adviser has read the Scheme Standards and agrees to advise on pesticide use in compliance with them.		
2.4.2.1	Producers who use the advice of a third-party, whether consultant, professional adviser or trade representative, when making decisions on use of fertiliser and crop nutrition should obtain the relevant FACTS Professional Registration number. The producer should ensure that the adviser has read the Scheme Standards and agrees to advise on pesticide use in compliance with them.	<i>A note of the FACTS registration number and adviser's name should be held and be available for inspection</i>	
2.5.0	Plans		
2.5.2	All farms storing and/or using organic waste must have and implement a Manure Management Plan as defined by the Codes of Practice for the Protection of Air, Soil and Water. In addition farms that store and/or dispose of animal waste must ensure that animal waste and effluents are stored and disposed of in such a way as to minimise the risk of spread of disease to other animals or to humans, and in a way which avoids the danger of polluting the environment.	<i>A suggested format for a Manure Management Plan is included in the Appendix of each species specific modules. Further copies can be downloaded from www.genesisqa.com</i>	

Criteria	Indicators:	Methodology used:	Databases used:
2.5.2.1	In addition to standard 2.5.2, farms within Nitrate Vulnerable Zones (NVZ's) and whose slurry is used on land with sandy or shallow soils must demonstrate that they have sufficient storage capacity or other means of utilising slurry during the "closed period". <i>neither in grass, nor to be sown with an autumn sown crop.</i>	<i>Note: at the time of writing (2007) DEFRA is considering extending this requirement to all soil types.</i> <i>On such land, slurry may not be applied:</i> <i>Between 1st September and 1st November to fields in grass or to be sown with an autumn sown crop</i> <i>Between 1st August and 1st November to fields</i> <i>The Manure Management Plan should demonstrate how you will ensure all slurry is utilised in accordance with NVZ rules. If you do not have access to sufficient land (which does not have sandy or shallow soils), you will need to store some slurry. Using the standard slurry production figures given in the example farm manure management plan, calculate the storage capacity required for the relevant closed period and ensure your storage capacity is at least this volume. You may also need to consider the storage capacity required to avoid spreading when ground/weather conditions are unsuitable.</i>	
2.5.3	The farm must have and implement a written and clearly displayed Chemical Spillage Plan.	<i>The plan should include emergency telephone numbers, procedures, and location details of facilities for washing off accidental spillage on operators and materials to be used to contain spillage</i>	
2.5.4	The farm must have and implement a written Pest Control Plan	<i>The plan must include a map indicating baiting points and the type of baits used. If pest control is contracted out, details must be held of who is responsible for baiting, telephone numbers, visits and bait used (for COSHH purposes).</i>	
2.9.0	Machinery		
2.9.1	Harvesting equipment, including the combine and grain dryer, must be cleaned and recorded as such. Settings should be checked daily during use, in accordance with manufacturers' instructions to avoid crop damage.	<i>It is important to check the cleanliness of the combine prior to use, especially at the start of harvesting to prevent crop contamination by mites etc.</i>	
2.9.2	All trailers used for transporting crops or animal feed must be thoroughly cleaned prior to use, with particular care given to the cleanliness of dual purpose trailers to prevent contamination.	<i>All trailers/lorries used for transporting harvested crops or animal feed must be regularly cleaned. Where trailers have been used for transporting farmyard manure or similar material, they must be power-washed before being used to transport crops. The use of a food grade sanitiser is recommended</i>	

Criteria	Indicators:	Methodology used:	Databases used:
2.9.3	All bulk loaders used for loading crops or animal feed must be thoroughly cleaned prior to use, with particular care given to the cleanliness of dual purpose loaders, to prevent contamination.	<i>All bulk loaders used for transporting harvested crops or animal feed must be regularly cleaned. Where bulk loaders have been used for transporting farm-yard manure or similar material, they must be power washed before being used to transport crops of feed. The use of a food grade sanitiser is recommended</i>	
2.9.4	Lorries used for transporting crops or feed, whether own or contractors, must be inspected for cleanliness prior to loading.	<i>In accordance with the AIC Code of Practice for Road Haulage, lorries that have previously carried materials listed on the Haulage Contaminant Sensitive List must have been cleaned using a pressure washer and sanitised. Care should be given to ensure the sheet is also cleaned. The driver must be able to provide confirmation of cleaning. If the vehicle previously carried material listed on the Haulage Exclusion List, it must not be used for carrying crops entering the food chain.</i>	
2.9	Machinery		
2.9.5	Crop or forage conditioning equipment must be serviced and cleaned in accordance with manufacturers' instructions. Records must be maintained.	<i>It is important to check the cleanliness of crop or forage conditioning equipment prior to use, especially at the start of harvesting to prevent crop contamination by mites etc.</i>	
2.9.5.1	Drying equipment must be regularly maintained in line with manufacturers' instructions by demonstrably competent staff to ensure that the burners are operating efficiently and the dates recorded. Fuel used in oil-fired dryers must meet commercial ISDN/ISO fuel standards. Waste oil must not be used under any circumstances.	<i>Wherever possible direct oil fired dryers should be avoided when drying oilseed rape. Assessors will check whether operators have been trained and whether a copy of the dryer manual is available to the operator. It is a legal requirement that all refined oils have a Benzo alpha Pyrene (BaP) level of less than 2ppb. BaP is a measure for polycyclic aromatic hydrocarbons (PAHs).</i>	
2.9.6	Producers must have access to a moisture meter. The meter must be calibrated in accordance with manufacturers' instructions (at least annually) and recorded as such.	<i>Moisture meters, if used, must be calibrated at least annually and recorded as such</i>	
2.9.6.1	Where grain is stored long term producers must have a temperature probe. The probe must be calibrated in accordance with manufacturer's instructions (at least annually) and recorded as such.		
2.9.7	All adjustable machines, such as sprayers and fertiliser spreaders must be maintained and calibrated in accordance with manufacturers' instructions. Calibration must be carried out prior to commencing spraying for the new season and re-calibrated during the season, especially during routine maintenance and when parts are replaced. Records must be maintained.	<i>Maintenance and calibration of knapsack sprayers, granular/dust applicators, seed dressing applicators and applicators of storage plant protection products must be undertaken on a regular basis and recorded. Members are encouraged to refer to and utilise the National Sprayer Testing Scheme Operator Checklist, included in the appendices of this Standards booklet, when carrying out on-going maintenance on their sprayer.</i>	

Criteria	Indicators:	Methodology used:	Databases used:
2.11	Environmental		
2.11.1	Applicants are required to confirm in writing that they are not subject to prosecution by, or have received a statutory notice from, a statutory body with regard to legislation concerning the environment. Scheme members are required to notify the Scheme in writing if either of these things occurs after they have been accepted into the Scheme.		
2.11.2	The farm must be managed in such a way that it has no adverse impact on food safety, animal welfare or environmental protection.	<i>Disused machinery, scrap and other hazardous materials must be stored away from stock and ideally away from the farm.</i>	
2.11.3	Agricultural Waste: Producers must ensure all waste is disposed of in accordance with legislation, and must be able to demonstrate at assessment the route of disposal.	<i>Use of on-farm dumps without an official permit is prohibited. Most wastes may not be burned. You will need to hold copies of "Duty of Care transfer notes" in order to demonstrate compliance.</i>	
2.11.3.1	In addition to Standard 2.11.3, where applicable, producers must ensure that the correct procedures for the disposal of spray washings and used sheep spray/dip are followed. These are described in the DEFRA Code of Practice for Using Plant Protection Products. In particular, an authorisation under the Groundwater Regulations 1998 must be held before superfluous plant protection products and used sheep dip can be spread to land in excess of any statutory rate.	<i>Care must be exercised when disposing of other soluble treatments on-farm (e.g. the contents of foot baths used to treat stock).</i>	

Criteria	Indicators:	Methodology used:	Databases used:
2.11.4	<p>Potential pollutants that include manures, slurry, silage, silage liquor, fertiliser, fuel and oils must always be stored where there is no risk of run-off polluting watercourses.</p> <p>Il muck heaps, including temporary field heaps and fertiliser bags must be at least 10m from a watercourse and at least 50 m from a well, spring or borehole that supplies water for human consumption or for use in farm dairies. Any exemptions must be specifically authorised by the Environment Agency.</p> <p>Producer in England and Wales must abide by the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991 which require that the Environment Agency must be notified before new or substantially modified silage clamps slurry stores or oil tanks are brought into service. Equivalent legislation has recently been introduced to Northern Ireland.</p> <p>Producers who store fertilisers in total quantities in excess of 25 tonnes or more should advise their local fire officer and enforcing authority under the Notification and Marking of Sites Regulations in relation to ammonium nitrate fertilisers classified as oxidising agents.</p>	<p>Solid fertiliser must be stored:</p> <p><i>On level ground, free from protruding stones.</i></p> <p><i>At least 10 metres away from water courses.</i></p> <p><i>At least 50 metres away from sensitive areas such as boreholes, wells, springs, soakaways, quarries etc.</i></p> <p><i>Away from areas accessible by members of the public, children and animals (if stored for any length of time).</i></p> <p><i>In secure stores (if stored for any length of time) to minimise risk of interference or vandalism.</i></p> <p><i>In an area where there is good access for delivery vehicles and emergency vehicles.</i></p> <p><i>Care must be exercised when moving bags of fertiliser and spillages must be cleared immediately in accordance with the farm's Chemical Spillage Plan.</i></p> <p>Liquid fertiliser must be stored:</p> <p><i>As far away as possible from any watercourse, ditch or drainage system.</i></p> <p><i>In a tank designed to suit the type and amount of liquid that is stored.</i></p> <p><i>In a tank made from a material that is resistant to corrosion from the contents.</i></p> <p><i>In a tank with a base that is designed to support the weight of the full store.</i></p> <p><i>In an area where there is hard-standing for large delivery vehicles.</i></p>	
2.11.5	<p>Where farmyard manure and slurry are applied to bare ground they should be incorporated as soon as possible. Inorganic fertiliser should only be applied to growing crops, or land destined for a crop in that season. Treated sewage sludge and composts from green waste must be applied in accordance with the ADAS Matrix.</p>	<p><i>Acceptance of the use of treated sewage sludge by the Scheme does not imply acceptance by all end users. Producers should check acceptability with their buyers before applying treated sewage sludge.</i></p>	

Criteria	Indicators:	Methodology used:	Databases used:
2.12	Safe Storage of Fertiliser		
2.12.1	Producers are required to have a copy of the leaflet 'Security of Fertiliser Storage on Farms' and must be able to explain how they observe the recommendations contained within the leaflet.	<i>Self Assessment Checklist that producers may find useful. The assessor will need to see a copy of the leaflet during the assessment and will ask to see where fertiliser is stored and also how you observe the recommendations in the leaflet. If fertiliser is not stored on farm at the time of the assessment the assessor will still ask you to explain how you observe the recommendations in the leaflet.</i>	
2.12.2	Fertiliser must be stored in such a way as to reduce the risk of theft.	<i>Where possible fertiliser should be stored in a secure building or compound where there is no public access and which is located away from and is not visible from the public highway.</i>	
2.12.3	Producers must have a protocol in place, which is known to all staff, that details what action must be taken if a discrepancy or theft of fertiliser is discovered. <i>A suggested protocol is enclosed in the appendix</i>		
3.1	Publications		
3.1.1	Home Grown Cereals Authority (HGCA) – Grain Storage Guide 2 nd Edition DEFRA Fertiliser Recommendations for Agricultural and Horticultural Crops (RB209) DEFRA booklet: Single Farm Payment Scheme Cross Compliance Guidance for Soil Management.	<i>Producers may find useful The Leaf Handbook for Integrated Farm Management which is available from: LEAF, The National Agriculture Centre, Stoneleigh, Warwickshire. CV8 2LZ Tel: 024 7641 3911.</i>	
3.2	Plant Protection		
3.2.1	In addition to section 2.3.0 (Whole Farm Module) regarding staff, sprayer operators are required to join the National Register of Sprayer Operators (NRoSO).	<i>An application form can be obtained from Genesis QA or NRoSO. Tel: 024 7669 6553 Fax: 024 7669 6128. E-mail: information@nroso.org.uk or downloaded from the NRoSO website: www.nroso.org.uk</i>	
3.2.2	Further to Standard 2.3.3 (Whole Farm Module) it is acceptable for untrained staff to apply plant protection products provided it is solely for the purpose of training and is carried out under the continuous supervision of an operator holding the relevant certificate of competence. Note Grandfather Rights do not allow them to be trainers.	<i>Operators of pesticide applicators for stores and crops in store must have appropriate training. Relevant records must be maintained of training and supervision.</i>	

Criteria	Indicators:	Methodology used:	Databases used:
3.2.3	All sprayers used on farms that have a sprayed area of combinable crops and sugar beet greater than 50 ha must be tested annually under the National Sprayer Testing Scheme (NSTS) or approved equivalent. All sprayers used on farms that have a sprayed area of combinable crops and sugar beet of 50 ha or less must have been tested at least bi-annually under the NSTS or an approved equivalent scheme.	<i>Details of your nearest NSTS approved tester can be obtained from www.nsts.org.uk or by calling Genesis QA (01283 791400)</i>	
3.2.4	Plant protection products must be stored in a suitable locked store and comply with the recommendations laid out in the Health and Safety Executive Sheet No. 16 – Guidance on Storing Pesticides for Farmers and Other Professional Users.	<i>Further information can be found in the DEFRA Code of Practice for Using Plant Protection Products.</i>	
3.2.5	When not in use plant protection products must be kept in the original packaging.		
3.2.6	All plant protection products must be clearly labelled in English and the instructions be understandable to users.		
3.2.7	An annual inspection must be undertaken of the plant protection product store to ensure that plant protection products stored, are not out of date or have had approval revoked.	<i>A manual or computerised record (inventory) of the stock within the store must be maintained with a copy kept in the office.</i>	
3.2.8	Out of date, unapproved plant protection products and empty containers must be disposed of in accordance with current legislation.	<i>Further guidance can be found in the DEFRA Code of Practice for Using Plant Protection Products.</i>	
3.2.9	A safe method of transporting plant protection products and fertilisers around the farm(s) must be adopted.	<i>The assessor may need to see evidence that the relevant personnel demonstrate due diligence/compliance with this standard.</i>	
3.2.10	A crop protection strategy to avoid unnecessary chemical applications should be employed.	<i>When selecting varieties of crops, consideration should be given to pest and disease resistant varieties that will reduce the need for plant protection products applications. Similarly with seed treatments; matching the treatment to the considered risk of the crop.</i>	

Criteria	Indicators:	Methodology used:	Databases used:
3.2.11	<p>All plant protection products must be applied according to their statutory conditions of use. It is an offence not to do so under the Control of Pesticides Regulations (COPR, as amended), the Plant Protection Products Regulations (PPPR, as amended) and the Plant Protection Products (Basic Conditions) Regulations (BCR, as amended). These are given in the 'statutory box' on the product label at present.</p> <p>With minor crops, however, many plant protection product approvals are not given under the label but are approved for use under the 'Specific Off Label Approvals' (known as SOLAs). The conditions of use that apply are given in the SOLA Notice of Approval issued by the Pesticides Safety Directorate (PSD). It is necessary for the user to have read and understood these conditions and to have a copy of the SOLA Notice before the product is used.</p>	<p><i>Copies of SOLA Notices are available on the PSD website (www.pesticides.gov.uk). Producers should consult their buyers to determine if any additional commercial restrictions exist.</i></p>	
3.2.12	<p>Where applicable producers must implement a staff training programme for plant protection product handling and storage which covers legislative requirements and industry Codes of Practice relevant to the operations being carried out (Grandfather Rights do not allow holders to train others). Where applicable appropriate personal protection equipment must be available on site, including boots, gloves, coveralls, apron and face shield.</p>		
3.2.13	<p>A copy of the data sheet from all the different plant protection products used on the farm must be retained.</p>	<p><i>See Standard 2.1.1 (Whole Farm Module). It is also recommended that copies of the data sheets be kept in the store.</i></p>	
3.2.14	<p>When applying plant protection products: Under Standards 2.2 and 2.2.1 (Whole Farm Module) all responsible persons must adhere to the requirements of the Control of Pesticide Regulations (COPR, as amended), Control of Substances Hazardous to Health (COSHH), the Plant Protection Products Regulations (PPPR, as amended), DEFRA Codes of Practice and recommendations of the Health & Safety Executive (HSE). If reduced spray volume applications are used, the guidelines given in the DEFRA Code of Practice for Using Plant Protection Products must be adhered to. Post flowering applications can only be made for reasons of pest or disease control, where threshold levels have been exceeded; as a harvest aid (desiccants); couch grass or other perennial weed control. Local beekeepers must be given a minimum of 48 hours notice of intention to apply pesticides that are potentially dangerous to bees. Appropriate action must be taken to avoid contamination of water courses.</p>	<p><i>Advice on pest thresholds can be obtained from advisors, crop consultants or product literature. A record of the local volunteer spray liaison officer's telephone number can be obtained from www.bbka.org.uk/spray_liaison_officers.php</i></p>	

Criteria	Indicators:	Methodology used:	Databases used:
3.2.15	All pesticide label recommendations must be adhered to including: Maximum permitted dose rates, Restrictions on repeated applications to a single crop, Harvest intervals and latest application stage..	<i>Caution must be exercised when an active ingredient may be available in different products or formulations. This information will be on the product label</i>	
3.2.16	Any areas of high pollution risk, e.g. nearby watercourses or ponds, must be identified and marked on a farm map. Pesticides should not be used in these areas.		
3.2.17	Records must be maintained for all chemical applications, in each field, including: Name of equipment operator Crop and growth stage Chemical required Application rate Product used Volume of water Reason for application Special precautions required (i.e. LERAP) Date and time of application Weather conditions (including wind speed and direction at application) For applications to stored grain, granular applications and seed dressing, record the date, product and rate of application..	<i>Members who use the services of contractors must ensure the contractor has the necessary certificate of competence and that they observe both the provisions of the Law and of the Scheme in respect of all aspects of the use of pesticides.</i> <i>Pesticides must never be applied to crops in unsuitable conditions i.e. high winds or in other situations where there is likely to be drift onto hedgerows, woodlands and wetlands, into private homes or gardens, or into public places such as parks or school playgrounds or other non-target areas. Engineering control systems designed to reduce drift must always be considered.</i> <i>The use of a wind speed meter is recommended.</i> <i>Records must be kept for a minimum of 3 years (as stated in the DEFRA Code of Practice for Using Plant Protection Products)</i>	
3.3	Fertilisers and Nutrients		
3.3.1	Headland kits, where provided, must be fitted. Alternatively if no headland kit is fitted action must be taken to prevent spreading fertiliser into ditches, field margins etc.	<i>Tilting spreaders or wider field margins are examples of other methods used to avoid contamination of ditches etc</i>	
3.3.2	Wherever possible, any fertiliser application (including organic) should be avoided when the ground is either waterlogged or continuously frozen to minimise leaching and pollution of watercourses.	<i>Producers must be aware of their legal obligation if they farm within a Nitrate Vulnerable Zone (NVZ) and must comply with Action Programme Rules</i>	

Criteria	Indicators:	Methodology used:	Databases used:
3.3.3	<p>Treated sewage sludge applications must be in accordance with the current Code of Practice for Agricultural Use of Sewage Sludge and any treated sewage applications must be recorded.</p> <p>Application of crop nutrients, biosolids and organic materials should be matched to the requirements of the crop, its growth stage and the prevailing weather conditions.</p>	<p><i>Acceptance of treated sewage sludge or biosolids by the Scheme does not imply acceptance by all end users. Members should first check with their buyers</i></p>	
3.3.4	<p>Records must be maintained for applied nutrients, in each field, including:</p> <ul style="list-style-type: none"> Date applied Amount applied Type of nutrient Application method Consideration given to water courses and buffer zones etc 	<p><i>Records should be kept for a minimum of 3 years.</i></p>	
3.3.5	<p>Soil analysis for major nutrients must be undertaken at least every 4-5 years to ensure fertiliser applications maintain their effectiveness.</p>	<p><i>Soil analysis results should be retained for a minimum of 5 years.</i></p>	
3.3.6	<p>Best practice methods carried out by producers should include knowledge of the classification of the soils on the farm including the conservation and build up of soil organic matter. Production potential should be geared accordingly. Practices should be such that soil structure is maintained and soil erosion controlled.</p>	<p><i>Members should be able to demonstrate awareness of erosion risk and measures to counter this. The organic matter content of soil is important for soil stability and helps to reduce soil erosion and maintain good soil structure.</i></p> <p><i>Details of best practice to maintain and improve soil quality can be found in the DEFRA Code of Good Agricultural Practice for the Protection of Soil.</i></p>	
3.3.7	<p>Producers must be aware of any practices that have an environmental impact and identify and conserve important features of biodiversity and conservation value on and around the farm. Producers must adopt practices to minimise any detrimental impact upon such features.</p>	<p><i>Producers that have any land on or bordering SSSI must adhere to the management requirements as set out in GAEC 6. If there are any Scheduled Monuments on their land, producers must adhere to the requirements set out in GAEC 7. Producers must adhere to cross compliance hedgerow and watercourse protection and 1997 Hedgerow Regulations (GAEC 14 & 15). If land is designated as Special Protection Area under the Wild Birds Directive, producer must adhere to regulations as set out in SMR1 and SMR5.</i></p>	

Criteria	Indicators:	Methodology used:	Databases used:
3.4	Field Records		
3.4.1	Records must be maintained for each crop, in each field, including: Crop type Crop variety Seed dressing used Date sown Date harvested GM status		
3.5	Crop Storage and Handling for Combinable Crops <i>It is essential that members determine the condition of the grain immediately after it leaves the combine and make an assessment of risk in relation to likely storage time. Grain stored for more than a few days may need conditioning. It may also need to be dried and/or cooled. It is essential to avoid over-drying of the grain, which could cause heat damage, and conditions leading to mould growth or chemical contamination.</i>	<i>Drying should be carried out at a temperature consistent with the required quality of the grain in relation to its end use. Grain that is not dried may deteriorate and is at risk in terms of the development of mycotoxins. For further information see HGCA Grain Storage Guide 2nd Edition and HGCA Safe Storage Time Calculator (www.hgca.com).</i>	
3.5.1	Regular on-going risk assessments (at least annual) should be carried out in relation to the storage facilities (temporary and longterm holdings) including reference to the fabric of the store (walls and roof etc) and any stored crop.	<i>The GQA risk assessment for crop stores is included within the appendix. Members should record the dates of checks and detail any corrective action undertaken as a result. Where applicable, members are urged to consider the following: Clay pigeons (which are generally made from Bitumen) can be a source of contamination in grain and particularly in loads of rapeseed, leading to high levels of BaP in crude oil and in the rapeseed (BaP is the measurement for PAHs and current legislation is max 2ppb BaP in oils).</i>	

Criteria	Indicators:	Methodology used:	Databases used:
3.5.2	<p>All crop store buildings must be suitable for the purpose of use. E.g.:</p> <p>Long-term stores must:</p> <ul style="list-style-type: none"> Be clean; Be of sound construction and weatherproof; Have roofs that are complete and do not leak; Have solid floors; Have solid walls that prevent a risk of contaminating crops; Have doors and windows that are entire and well fitting; Have all possible entry points for birds, vermin and domestic animals suitably blocked; Have secured loading pipes; All lights bulbs, tubes, lamps, windows or any other glass material must be protected or constructed to avoid risk of contamination of grain. 	<p><i>Ideally long-term stores should be dedicated crop storage however, dual-purpose stores are acceptable provided clear written guidelines on storage and cleaning is available for inspection.</i></p> <p><i>Floors must be of solid construction to prevent contamination of grain with earth, stones, debris etc. To reduce the risk of hydro carbons infiltrating oilseed in store, it is recommended that the use of bituminous floors and bituminous fillers between concrete floor slabs should not be used in stores used for oilseeds.</i></p>	
3.5.2.1	<p>In addition to Standard 2.5.4 (Whole Farm Module) action must be taken to prevent bird, rodent and domestic animal entry to all long term grain storage. Entry points around gutters, eaves, doors, loading pipes etc., should be secured. Doors should be kept shut wherever possible and stores kept as dark as possible.</p>	<p><i>Where stores are multi-purpose/mixed usage it may not be possible, for safety reasons, to darken stores, this is acceptable.</i></p> <p><i>The presence of birds in the vicinity of grain storage should be considered when undertaking grain store risk assessments (see also Standard 3.5.1).</i></p> <p><i>Agents of Newcastle Disease ('Fowl Pest'), Avian Influenza, Avian Tuberculosis and other diseases may all be carried by wild game, domestic and feral birds. In addition, birds can be carriers of salmonellae and other pathogens harmful to both livestock and humans. It is therefore crucial to take all reasonable precautions to exclude birds from areas where grain is handled or stored.</i></p> <p><i>Birds may be attracted to areas for three main reasons: availability of food; availability of shelter and roosting sites; availability of nesting sites. Wherever possible birds should be denied these.</i></p> <p><i>Making a site unattractive to birds is likely to be more effective in the long term than trying to control birds already active on the site.</i></p> <p><i>Wherever possible, birds should be deterred rather than destroyed. Destruction of any species should always be a last resort and is not acceptable for any protected specie. Where netting is used to deter birds, wire netting is preferable to string netting because it is less likely that birds will become entangled.</i></p>	

Criteria	Indicators:	Methodology used:	Databases used:
3.5.3	<p>Temporary/short-term stores must:</p> <ul style="list-style-type: none"> Be clean; Be weatherproof; Broken sheeting, guttering etc., must be repaired; Have roofs that are complete and do not leak; Have solid floors and walls that prevent a risk of crop contamination; All light bulbs, tubes, lamps, windows or any other glass material must be protected or constructed to avoid risk of contamination of grain. <p>Producers must record when the temporary holding areas are finally cleared.</p>	<p><i>When selecting temporary/short-term storage conditions, due consideration must be given to the potential risk to the crop. Members must record the date on which any short-term store is cleared. Short-term storage is for a period of no more than 6 weeks post harvest.</i></p>	
3.5.4	<p>Flat grain stores must have hardstanding loading areas that are well drained and kept clean.</p>		
3.5.5	<p>All grain stores walls, floors and horizontal surfaces of any storage, holding or reception facilities must be cleaned and where appropriate washed and insecticide treated prior to use. Residues of previous crops must be cleaned from all areas including ventilated floors and beneath conveyors. Cleaning records must be available for inspection by the assessor.</p>		
3.5.5.1	<p>If the store is used for dual purposes a written protocol for cleaning practices, in conjunction with the guidelines given in HGCA Grain Storage Guide and DEFRA Code of Practice for the Control of Salmonella during the Storage, Handling and Transport of Raw Materials, must be adhered to and recorded as such.</p>	<p><i>During the cleaning process the use of a food grade sanitizer is recommended.</i></p>	
3.5.6	<p>Only DEFRA approved disinfectants may be used during the cleaning procedure.</p>		
3.5.7	<p>Following cleaning and prior to harvest insect trapping must be carried out to ensure the cleaning procedure was effective and recorded as such.</p>	<p><i>If evidence of insects is found, remedial action must be taken. Bait bags containing nuts should not be used.</i></p>	
3.5.8	<p>When pre-harvest grain store plant protection products are used, records must be maintained of the product used, dose rate and date of application.</p>	<p><i>The use of pre harvest plant protection products is not a Scheme requirement. Members are however advised to consult their customers to determine if any additional commercial restrictions on the use of pre-harvest grain store pesticides exist.</i></p>	

Criteria	Indicators:	Methodology used:	Databases used:
3.5.9	Records must be maintained for each crop stored, including: Location of each parcel Identification of crop Field of origin Post-harvest applications or diatomaceous earth	<i>The usage of post harvest pesticides is not a Scheme requirement. However members are advised to consult with their buyers before using any post harvest pesticides. Many cereal producers do not permit the use of diatomaceous earth products. No chemically active post-harvest pesticides are approved for application to oilseeds. SCOPA has approved the use of the following diatomaceous earth products for the post- products used on grain harvest treatment of oilseeds: DEMETER, SILICO SEC.</i>	
3.5.10	All bulk/bins must be labelled with the variety/ies and field/s of origin		
3.5.11	When filling storage bins or silos a representative sample should be retained. <i>Samples should be available for the assessor to examine if required. This standard (3.5.11) complies with the Health & Safety Executive "Confined Spaces Regulations 1997".</i>		
3.5.12	Where stored crops require conditioning care must be given to avoid over-drying thus causing heat damage.	<i>When crops require drying it should be carried out as soon as is practically/physically possible to avoid damage through heating, mould or smell. An exception to this standard would be proof that further untreated storage would not result in the quality of the crop being compromised.</i>	
3.5.13	Initially stores must be monitored weekly and records maintained by a responsible person. The checks must include: Temperature and moisture content of the crop; Signs of pest infestation. The frequency of inspection may be reduced once the condition of the crop has stabilized. If a problem persists, suitable remedial action must be undertaken immediately and recorded.	<i>Initially the temperature of stored grain should be monitored on at least a weekly basis. Once storage records indicate that temperature has been stabilized over a period of time, checks may be reduced. If there is no evidence of bird and rodent activity the checks may be reduced.</i>	

Criteria	Indicators:	Methodology used:	Databases used:
3.6	Seed/Seed Treatment		
3.6.1	Only approved chemicals may be used for the treatment of home-saved seed and all applications must be recorded.	<i>All applications must comply with the requirements of COPR as amended, PPPR as amended, COSHH, HSE and DEFRA codes of practice. Appropriate records must be kept.</i>	
3.6.2	All certificates/lot numbers and any seed treatment of purchased seed must be recorded.		
3.6.3	Adequate provision including secure segregation must be made to ensure that there is no contamination of stored grain from treated seed or seed treatment chemicals.		
3.7	Genetically Modified (GM) Crops/Materials		
3.7.1	If a licence is held to grow genetically modified (GM) crops they must be stored under conditions that avoid cross-contamination and be clearly identified in the store as GM. If GM crops become mixed during harvesting and/or storing with non-GM crops, the whole crop must be labelled as GM and dealt with appropriately. The Code of Practice on the Provision of Information Relating to Genetically Modified Crops must be adhered to.		
3.7.2	Appropriate records must be kept of the variety and GM status for all crops in each field. Members and others in the supply chain are in any case required by Law under the Traceability and Labelling Regulations to keep accurate documentation of GM crops for a minimum of five years (see Regulation 183/03/EC)		
3.8	Contractors		
3.8.1	Where members use the services of a spray contractor, it is the responsibility of the member to obtain from the contractor, confirmation that the employee in question holds the relevant certificates and is registered with NRoSO. In addition the sprayer used must be tested annually under the NSTS (or an equivalent scheme) and the contractor been made aware of, and agree to comply with the relevant GQA scheme standards.		

Criteria	Indicators:	Methodology used:	Databases used:
3.8.2	Where members use the services of a seed-dressing contractor, it is the responsibility of the member to obtain the number of the relevant certificate of competence, name of the operator, or to obtain from the contractor the NAAC Verified Seed Scheme membership number and ensure that the contractor is made aware of, and agrees to comply with the GQA scheme standards.		
3.8.3	Where members use the services of a granular/dust application contractor, it is the responsibility of the member to obtain from the contractor confirmation that the employee/s concerned hold the relevant certificates of competence and ensure that they are made aware of and agree to comply with the GQA scheme standards.		
3.9	Transportation of Crops <i>The best farm assurance scheme is ineffective if lorries and trailers carrying grain are not clean and fit for the purpose of carrying raw materials entering into the food chain.</i>		
3.9.1	Members must complete and abide by the requirements of the Post Harvest Pesticide Declaration (Grain Passport), and attach their GQA Harvest Stickers accordingly.		
3.9.2	Representative and dated samples of each load leaving the farm must be taken and retained.	<i>It is recommended that a receipt for each load is obtained from the driver. The assessor may wish to examine samples taken from each load which has left the farm. Samples should be retained for 2 months following uplift/delivery, unless grain has been delivered to a central store at harvest time.</i>	
3.10	Members Own Transport Used to Haul Crops to Third-Parties (Combinable Crops) <i>This section is only applicable to members who transport their own grain (using their own lorries and/or trailers) to third parties (i.e. co-operative stores or mills/processors) and is in addition to compliance with section 2.9.0 of the Whole Farm Module.</i>	<i>If transporting grain on behalf of a third party under a Standard or a Standard (International) Operator Licence (i.e. vehicles used for hire or reward), the producer must meet the requirements of the Trade Assurance Scheme for Combinable Crops (TASCC) – Code of Practice for Road Haulage, or other industry equivalent.</i>	

Criteria	Indicators:	Methodology used:	Databases used:
3.10.1	All trailers must be uniquely numbered or lettered for identification purposes. The identification mark should appear on both sides of the trailer, and should be visible from a distance of approximately 10 m. Additionally, bulk trailer compartments must be individually marked in such a way that they can be identified in loading instructions and when loading and unloading.		
3.10.2	An inventory must be held of all vehicles or trailers owned, hired or leased. The record must include the identification number, the date that the trailer was purchased or hired and, if relevant, the date of disposal.	<i>The vehicle register can also be used to record periods when vehicles and/or trailers are inactive. When purchasing new or used equipment, producers should favour those designed to reduce the possibility of residues and hence contamination</i>	
3.10.3	Producers must ensure that vehicles, trailers and sheets are clean, inside and out before use and records kept of dates and action taken.		
3.10.4	Vehicles or trailers and sheets must be disinfected/sanitised if the vehicles have previously carried material on the Haulage Contaminant Sensitive List. Records must be kept of the cleaning operation.	<i>Any vehicle or trailer being used for deliveries to third parties that may have been previously carrying material on the Haulage Exclusion List must not be used for the transportation of crops entering the food/feed chain</i>	
3.10.5	All bulk tipping vehicles and trailers should be fitted with a sheeting system that can be operated from ground level.		
3.10.6	Vehicles or trailers used to transport assured food or feed should be sheeted at all times, unless it is impracticable to do so – the obvious exceptions being field work, loading, unloading and sampling.		
3.10.7	Drivers should not walk on top of the sheeted load; however, if this is absolutely necessary, they should ensure that the load is not contaminated.		
3.10.8	A written procedure listing action to be taken if an accident or incident occurs, which may lead to contamination of the load, whilst transporting grain to the store or mill/processor must be available and known to all staff involved in the transportation of grain.	<i>The procedure should indicate how to assess and identify any contamination or other hazards and state that the recipient of the grain must be advised before continuing with the delivery.</i>	

Criteria	Indicators:	Methodology used:	Databases used:
3.10.9	Before delivering crops, producers must ensure that there is a completed and signed grain passport which also states the previous three loads that the vehicle/trailer has carried. In addition confirmation of the date of the last cleaning and disinfection date of the vehicle must also be made available.		
3.10.10	When loading materials into vehicles with compartments, producers should check the vehicle to ensure that there are no leaks between compartments. The vehicle should be loaded so that goods cannot leak over the top of compartments. If instructions are given to load compartments in a particular order – these instructions must be followed.		
3.11	Contaminants – Combinable Crops		
3.11.1	Producers must have access to the HGCA 'Guidelines to minimise risk of fusarium mycotoxins in cereals' leaflet and must regularly carry out a risk assessment to decide the extent of the measures to be taken to reduce the risk of contamination of stored grain by mycotoxins. In addition measures must be taken to reduce exposure to other contaminants (see guidance under Standard 3.5.1).	<p><i>The Commission Regulation (EC) No 466/2001 'setting maximum levels for certain contaminants in foodstuffs' provides for maximum limits for certain mycotoxins in certain foodstuffs. Commission Regulation EC No 123/2005 sets limits for ochratoxin A and EC No: 856/2005 sets limits for fusarium mycotoxins.</i></p> <p><i>For further information and guidance relating to Fusarium mycotoxins in combinable crops:</i></p> <p><i>www.food.gov.uk/multimedia/pdfs/fusariummycotoxins.pdf</i></p> <p><i>The HGCA 'Guidelines to minimise risk of Fusarium mycotoxins in cereals' includes a mycotoxin risk assessment which has been reproduced in the following appendix.</i></p>	
3.12	Sustainability		
	Producers who are planning to use land classified as uncultivated or semi-natural area at 1 st November 2005 for arable production must ensure that Environmental Impact Assessment (EIA) Regulations have been met. In addition, if any of that land is used to produce energy crops, producers must assess and record carbon losses.	<i>Conversion from permanent pasture to arable can significantly increase carbon emissions and biofuel feedstock will need an assessment of carbon emissions. Where there is no land use change (arable – arable) an assessment is not required.</i>	

15 ÖPUL 2007 (Austria) - Josef Rathbauer

General characteristics:	
Initiator system:	Federal Ministry of Agriculture, Forestry, Environment and Water Management
Coordinating party:	AGRAR Markt Austria
Initiation – duration:	2007-2013
Grade of integration	
Geographical coverage:	national
Scope (feedstock included):	Agricultural production
Value chain	

Mission or objective:		
The agri-environmental programmes ÖPUL aim at promoting environmentally friendly and extensive agriculture that protects natural habitats. Furthermore valuable and endangered cultural landscapes shall be maintained.	Principles included:	Y/N
	Criteria included:	Y/N
	Indicators included:	Y/N
Context (i.e. legal requirement, related policies):		
<p>Council Regulation (EC) No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD)</p> <p>Commission Regulation (EC) No 1974/2006 of 15 December 2006 laying down detailed rules for the application of Council Regulation (EC) No 1698/2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD)</p> <p>Commission Regulation (EC) No 1975/2006 of 7 December 2006 laying down detailed rules for the implementation of Council Regulation (EC) No 1698/2005, as regards the implementation of control procedures as well as cross-compliance in respect of rural development support measures</p> <p>Commission Regulation (EC) No 1320/2006 of 5 September 2006 laying down rules for the transition to the rural development support provided for in Council Regulation (EC) No 1698/2005</p> <p>Commission Regulation (EC) No 2254/2004 of 27 December 2004 amending Council Regulation (EEC) No 2092/91 on organic production of agricultural products and indications referring thereto on agricultural products and foodstuffs</p> <p>Council Regulation (EC) No 967/2008 of 29 September 2008 amending Regulation (EC) No 834/2007 on organic production and labelling of organic products</p> <p>Council Regulation (EC) No 1290/2005 of 21 June 2005 on the financing of the common agricultural policy</p> <p>Commission Regulation (EC) No 796/2004 of 21 April 2004 laying down detailed rules for the implementation of cross-compliance, modulation and the integrated administration and control system provided for in of Council Regulation (EC) No 1782/2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers</p> <p>Landwirtschaftsgesetz 1992, BGBl. Nr. 375/1992</p> <p>BGBl. II Nr. 51/2004</p> <p>BGBl. II Nr. 474/2004</p>		

Current status of system:	
Registration for farmers	
Planned activities:	
Structure of the system or initiative:	
Stakeholder participation:	
Commitment:	
Stakeholder integration:	
Monitoring performance:	Acceptance of the Agri-environmental programme ÖPUL 2007 by the farmers and the environmental effects will be evaluated. A yearly, ongoing evaluation will start in 2008. A Mid-Term evaluation will be delivered to the European Commission in 2010 and an ex-post evaluation will take place in 2015. By means of these evaluations environmental effects on soil quality, water quality, climate change and biodiversity will be assessed.
Chain of custody mechanism:	
Verification mechanisms:	
Further information:	
Removal of trade barriers	
Costs:	

List of principles included:	
1	<i>Biological subsistence strategy</i>
2	<i>Environment friendly and near to nature management of arable land and grassland</i>
3	<i>Waiving of yield-increasing resources for arable land</i>
4	<i>Waiving of yield-increasing resources for arable feed land and grassland</i>
5	<i>Waiving of fungicides at grain area</i>
6	<i>Environment friendly and near to nature management for healing and spice plants, alternatives and seed breeding</i>
7	<i>Integrated production of certain fieldcrops</i>
8	Protection from erosion fruits and hops
9	<i>Integrated production fruits and hops</i>
10	Protection from erosion wine
11	<i>Integrated production wine</i>
12	<i>Integrated production protected cultivation</i>
13	<i>Waiving of silage</i>
14	<i>Preservation of scattered fruit tree stocks</i>
15	<i>Mown grass from steep slope</i>
16	alpine farming
17	<i>Eco points</i>
18	<i>Greening of arable areas</i>
19	<i>Mulch and direct seed</i>
20	<i>Regional projects for ground water protection</i>
21	<i>Preventive soil and ground water protection</i>
22	<i>Cultivation of very erosion-prone areas</i>
23	<i>Nurse crop for maize</i>
24	<i>Loss-low output for farm- produced (organic) fertilizer</i>
25	<i>Keeping of rare farm animals</i>
26	<i>Animal protection activities</i>

References:	
Website:	http://www.ama.at/Portal.Node/ama/public?genetics.rm=PCP&genetics.pm=gti_full&p.contentid=10008.56401&MEB_Allg.pdf http://www.umweltbundesamt.at/umweltschutz/landwirtschaft/umweltprogramm/

16 Biogarantie® (Belgium) - Nora Pieret

General characteristics:		
Initiator system [32]:	Biogarantie® is a private label created and owned by some farmers, transformers and traders associations.	
Coordinating party [5]:	Bioforum association manages the Biogarantie® label (Belgian organizations accreditation to achieve certification and control, label promotion and protection, etc.).	
Initiation – duration [5]:	1985	
Grade of integration [5]:	Micro-standard approach.	
Geographical coverage [5]:	National	
Scope (feedstock included) [5]:	Vegetal and animal farmed materials, animal feed, textiles, shoes, tanning, aquaculture, essential oils, extracts, dye, cleaning products.	
Value chain [5]	Production, transformation, trade, packaging and labeling.	
Mission or objective [5]:		
<p>Biogarantie® is the Belgian label for the organic products. It was created to promote and manage Belgian organic farmed productions, transformation and trade. The use of the label guarantees the product organic quality by taking into account the sustainability (social, economical and ecological issues) and the organic farming principles. 4 categories of operators are distinguished in the certification: producers, transformers, traders and sellers.</p> <p>Missions are:</p> <ul style="list-style-type: none"> - helping the consumer to easily indentify organic products - promote organic sector and secure the Biogarantie® label use. - anticipating law evolution by defining standards in topics that have not yet covered in European regulation. Only the certification procedure for producers is presented here. 	Principles included:	Y
	Criteria included:	Y
	Indicators included:	N
Context (i.e. legal requirement, related policies) [1, 6, 7]:		
European regulation CE 834/2007 of 28 th June 2007 dealing with organic productions and organic products labeling is translated in Belgian legislation in the Walloon Government order of the 28/02/2009 and the Flemish Government order of the 12/12/2008.		
Current status of system [32]:		
In use. 852 farms in 2007 (73% in WR, 26.9% in FR).		
Planned activities [5]:		
Standards for additional products categories are in progress: shoes and tanning, algae and microalgae, aquaculture.		

Structure of the system or initiative:	
Stakeholder participation [5]:	If legislation fixes directives regarding products components or processing in contradiction with the Biogarantie® requirements, operators have to inform BioForum.
Commitment [5]:	Voluntary.
Stakeholder integration [5]:	Operator has to give access to information, buildings, material samples, requested by the control body. The operator has to inform control body of any changes in the production process.
Monitoring performance [5, 16, 17, 18]:	The operator has to introduce a certification demand to the control body in which he details the target activities, his crops and livestock composition. The control body comes to check the respect of the regulation CE 834/2007 criteria and Biogarantie® requirements (Parts I and II of the official document). For the moment, two organizations are accredited for the monitoring and the control: Certysis (Walloon Region) and Integra-Blik Department (Flemish region). If the operator is eligible to the label, he can use the label only after signing a contract with the label owner and paying the fee.
Chain of custody mechanism [5]:	Track and trace.
Verification mechanisms [5]:	After first control to become certified, production units are controlled once a year. Control includes minimal requirements as mentioned in Title IV of the regulation CE 889/2008: - farm management (crops rotation, animals feed, manure, parasites and diseases fights) - accounts audit - production checking - site visit: crops, storage rooms - soils analyses
Further information:	
Removal of trade barriers [5]	In general terms (Part I), it is detailed in point 7 that foreign products are considered organic certified if they are certified by a control body accredited in a country member, in respect with the regulation CE 834/2007.
Costs [5, 15]:	Operators pay a subscription and a yearly fee. Producers have to pay: - a subscription to the certification body for certification and control. - a subscription to become Belbior ou Unab member , fixed by these organizations. - a fee to Bioforum for the Biogarantie® label and logo use on the packaging of products sold on the Belgian market.

List of principles included [5]:	
1	Organic production shall be based on a set of general principles to meet the objectives for organic production.
2	In addition to overall principles, organic farming shall be based on specific principles for farming (Livestock and aquatic animals are not detailed in the criteria list).
3	In addition to overall principles, some specific principles for the trade mark and logo use are included. (Criteria not detailed in the criteria list).
4	In addition to overall principles, some specific principles for organic food processing are included. (Criteria not detailed in the list).
5	In addition to overall principles, some specific principles for organic food trading are included. (Criteria not detailed in the list).

References: [3, 4, 5, 6, 7, 15, 16, 17, 18, 32, 35]	
Website:	www.bioforum.be

List of criteria and indicators: For producers, requirements are presented in Part I and II.

Criteria [5]	Indicators:	Methodology used:	Databases used:
<p>Part I. General requirements: More general requirement are detailed in the Part I as rules and procedures (A), trade mark use on different kinds of products (B). They are not detailed here.</p>			
<p><u>Part I, C - Non organic products presence, storage and disinfection:</u> (See Regulation CE 834/2007 and additional regulations (2008) criteria).</p>			
<p><u>Part I, D - Packaging:</u> Avoid non useful packaging. Use first recycled and reused packaging; Packaging material have to be clean, of good quality and adapted to the use; Ecological packaging material are recommended; Recipients in PVC or other plastics including chlorine are forbidden, except returnable recipients. Expanded polystyrene produced with the help of CFC is forbidden. Taking into account the packaging sector fast evolution regarding environmental issues, Biogarantie® will fix soon more restrictive criteria regarding raw material used in packaging.</p>			
<p><u>Part I, E - Social issues:</u> Production has to respect of human beings rights, avoid social unfair actions. A producer employing more than 10 workers has to plan a social politic program: rights and treatment equal between workers, without age, sex, race, philosophic convictions or sexual discrimination.</p>			
<p>Part II: Plants and animals non-transformed farmed products: - Respect of the Regulation CE 834/2007 and additional regulations (2008) criteria; - Respect of the Part I of the Biogarantie® requirements.</p>			

17 National food quality schemes (Latvia) - Dagnija Blumberga, Liga Ozolina

General characteristics:		
Initiator system:	Ministry of Economics of Latvia; Different types of food associations	
Coordinating party:	Ministry of Economics of Latvia	
Initiation – duration:	Under development since August 2008	
Grade of integration	Micro standard	
Geographical coverage:	National	
Scope (feedstock included):	Agriculture (biological farming)	
Value chain	Cultivation and processing	
Mission or objective:		
To promote manufacturing of qualitative food from agriculture and food processing and to guarantee the quality of produced food products for consumers. The requirements of national food quality schemes have been set for following products: milk and dairy products; beef, pork and its products; honey and products of apiculture; cereal crops and their products; oil crops and their products; vegetables, potatoes and their products; fruit, berries and their products.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Regulations of Cabinet of Ministers No. 663 "Requirements for food quality schemes, their implementation, operation, monitoring and control arrangements" under law "Food chain monitoring law".		
Current status of system:		
Ongoing.		
Planned activities:		
The quality requirements for product production of vegetables, potatoes, fruits and berries will be applied from 1 st of October in 2009. The quality requirements for processing of potatoes will be applied from 1 st of October in 2011.		

Structure of the system or initiative:	
Stakeholder participation:	27 companies of food industry (Agrofirma Tērvete, Aloja-Starkelesen, Balvu maiznieks, Daudznozaru kompānija Daugava, Dienividi plus, Edags, Elpa, Iecavnieks, Jānis Vainovskis, Kronis, Latfood, lazdonas piensaimnieks, Lāči, Lololita Rudzīte, Mālpils piensaimnieks, Mārupes siltumnīcas, Pure food, Rosība, Smiltenes piens, Valmieras piens) 117 biological farms all across the country
Commitment:	Voluntary/ National
Stakeholder integration:	The associations of stakeholders (companies of food industry and biological farmers) appointed which kind of food products must be included in the Food Quality Schemes and what requirements they must achieve.
Monitoring performance:	The monitoring body of the system is Food and Veterinary Service and the control body is Latvian State Institute of Agrarian Economics. Every year the control body submits to monitoring body an annual report about the activities of the system (issued and invalidated certificates, etc.)
Chain of custody mechanism:	Track-and-trace system
Verification mechanisms:	Verification of the documents prepared by the regulations of Cabinet of Ministers No. 663 and submitted by the company requesting the certificate. The responsible authority of the verification mechanisms is the control body of the system.
Further information:	
Removal of trade barriers	The system is not removing the trade barriers, because it does not apply the trade of bioenergy or agricultural and food products.
Costs:	Information is not available.

List of principles included:	
1	<i>Manufacturing of qualitative agriculture and food industry products</i>
2	<i>To guarantee the produced product quality for consumers</i>

References:	
Website:	www.zm.gov.lv www.karotite.lv

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
<p>At least 90% of the raw materials used in production must meet the requirements of national Food quality schemes.</p> <p>At least 60% of the raw materials used in production of compound foodstuffs must meet the requirements of national Food quality schemes.</p> <p>The product should not contain genetically modified organisms and should not be made from it.</p>	<p>The national Food quality schemes requirements for:</p> <p>milk and dairy products, beef, pork and its products (farming of cattle, pigs and goats and production of cattle, pigs and goats products: the maximum density of animals per hectare of arable land; production of milk and dairy products: raw milk requirements of quality, the physicochemical and microbiological parameters for drinking milk and dairy products);</p> <p>honey and products of apiculture (bee keeping, production of honey and apiculture products: the quality requirements for honey and apiculture products);</p> <p>cereal crops and their products, oil crops and their products (growing of cereal crops and oil crops: quality requirements for cereal crops and rape seed, quality requirements for production of cereal crops and rape seed, quality requirements for bread and meat of cannabis, quality requirements for production of beer, malt, kvass and soft malt drinks);</p> <p>vegetables, potatoes and their products (safety indicators of quality for vegetables and potatoes, quality indicators for canned vegetables, potatoes starch, potato chips, canned soups, pickled cabbage and dried vegetables);</p> <p>fruit, berries and their products (quality indicators for fruit and berries jam, nectar, juices, candied peels and dried fruit).</p>	<p>The methodology has been set by the regulations of Cabinet of Ministers No.633. This methodology describes the principles, criteria and indicators to run the national food quality schemes.</p>	<p>Regulations of Cabinet of Ministers No. 663 "Requirements for food quality schemes, their implementation, operation, monitoring and control arrangements".</p>

18 Eko-Keurmerk (The Netherlands) -Jinke van Dam

General characteristics:		
Initiator system:	Skal is founded under the name "Stichting Ekomeerk Controle" [28].	
Coordinating party:	Skal	
Initiation – duration:	Since 1985	
Grade of integration	Micro standard approach	
Geographical coverage:	Use of products: Netherlands Production: the Netherlands, import from biological products from abroad is included in criteria.	
Scope (feedstock included):	Agricultural products (also livestock production included)	
Value chain	Cultivation, transportation, processing	
Mission or objective:		
The Eko-Keurmerk indicates that products are biologically produced. This means that the products meet the European norms for ecological products and production methods [29]. Principles are defined for [30]: Farming Processing food and feed General production rules General farm production rules including plant production rules and rules for seaweed, livestock, aquaculture) Products and substances used in farming Conversion	Principles included:	Y
	Criteria included:	Y
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
Certification is from January 2009 onwards based on European legislation: EC Regulation 834/2007 and the additional regulations (2008). There are no additional requirements [13].		
Current status of system:		
Currently, there are around 1400 farms and 1250 companies in the processing industry (feed, bakeries, import, etc) certified [13].		
Planned activities:		
-		

Structure of the system or initiative:	
Stakeholder participation:	Limited: In 2006 over 90 stakeholders from 11 EU countries participated at the public conference 'Organic farming: Ready for the next Decade?' The delegates discussed the Commission's proposal on the Revision of the Organic Regulation with the Austrian Presidency, the EC and the European Parliament [31]. On June 12, 2007, the agriculture Ministers of the European Union reached political agreement on a new regulation on organic production and labeling and on July 20, 2007 the new organic regulation was published [31].
Commitment:	Voluntary. The use of the EU organic logo will be mandatory, but is accompanied by national or private logos [31].
Stakeholder integration:	Not specifically mentioned in criteria.

Monitoring performance:	In order to ensure that organic products are produced in accordance with the requirements laid down under the Community legal framework on organic production, activities performed by operators at all stages of production, preparation and distribution of organic products should be submitted to a control system set up and managed in conformity with the rules laid down in Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules [30].
Chain of custody mechanism:	Only the foundation ' <i>Stichting Keur Alternatief voortgebrachte Landbouwproducten</i> ' (Skal) can give the Eko-Keurmerk. The Dutch Ministry of Agriculture has appointed foundation Skal as controlling organization. This is recognized by the EC [29]. CoC is based on track and trace system: "the operator shall keep the land, animals, and products used for, or produced by, the organic units separate from those used for, or produced by, the non-organic units and keep adequate records to show the separation" [30].
Verification mechanisms:	External audits take place on an annual basis, focused on the risk areas. Every 3 years, all criteria are controlled and verified [13]. Unannounced inspections take place throughout the year [29]. Verification includes field visits, control of documentation and records and test sampling (samples collected by auditor) [29].
Further information:	
Removal of trade barriers	Art. 34: "Competent authorities, control authorities and control bodies may not prohibit or restrict the marketing of organic products controlled by another control authority or control body located in another Member State, in so far as those products meet the requirements of this Regulation. In particular, no additional controls or financial burdens in addition to those foreseen in Title V of this Regulation may be imposed [30]".
Costs:	SMK certification exists of application costs (one time), control costs and a yearly contribution (dependent on the type of company and yearly turn-over) [32].
List of principles* included (her specified for crops as maize, rapeseed, etc):	
1	Organic production shall be based on a set of general principles that meet the objectives for organic production.
2	In addition to the overall principles, organic farming shall be based on specific principles for farming. (Note: criteria specified to livestock and aquatic animals are not shown in table)
3	In addition to the overall principles, organic farming shall be based on specific principles for the processing of organic food (criteria not shown in list)
4	In addition to the overall principles, organic farming shall be based on specific principles for the processing of organic feed (criteria not shown in list)
5	General production rules: prohibition on the use of GMOs and the use of ionizing radiation
6	In addition to the overall principles, organic farming shall be based on specific rules for plant production

* Rules for seaweed, livestock, aquaculture and rules for products and substances used in farming and for conversion are not included in this list.

References:	
Website:	http://www.eko-keurmerk.nl/

List of criteria and indicators [30]: (Note: criteria specified to livestock and aquatic animals are not shown in table)

Criteria	Indicators:	Methodology used:	Databases used:
1.1 Organic production shall be based on the appropriate design and management of biological processes based on ecological systems using natural resources which are internal to the system.	By using methods that: (i) use living organisms and mechanical production methods; (ii) practice land-related crop cultivation and livestock production or practice aquaculture which complies with the principle of sustainable exploitation of fisheries; (iii) exclude the use of GMOs and products produced from or by GMOs with the exception of veterinary medicinal products; (iv) are based on risk assessment, and the use of precautionary and preventive measures, when appropriate;		
1.2 Organic production shall be based on the restriction of the use of external inputs.	Where external inputs are required or the appropriate management practices and methods referred to in paragraph (a) do not exist, these shall be limited to: (i) inputs from organic production; (ii) natural or naturally-derived substances; (iii) low solubility mineral fertilizers;		
1.3 Organic production shall be based on the strict limitation of the use of chemically synthesized inputs to exceptional cases	Exceptional cases: defined in legislation		
1.4 Organic production shall be based on the adaptation, where necessary, and within the framework of this Regulation, of the rules of organic production taking account of sanitary status, regional differences in climate and local conditions, stages of development and specific husbandry practices.			
2.1 Organic production shall be based on the maintenance and enhancement of soil life and natural soil fertility, soil stability and soil biodiversity preventing and combating soil compaction and soil erosion, and the nourishing of plants primarily through the soil ecosystem;			
2.2 Organic production shall be based on the minimization of the use of non-renewable resources and off-farm inputs;			
2.3 Organic production shall be based on the recycling of wastes and by-products of plant and animal origin as input in plant and livestock production;			
2.4 Organic production shall be based on taking account of the local or regional ecological balance when taking production decisions;			
2.5 Organic production shall be based on the maintenance of plant health by preventative measures, such as the choice of appropriate species and varieties resistant to pests and diseases, appropriate crop rotations, mechanical and physical methods and the protection of natural enemies of pests;			
2.6 The operator shall keep the land, animals, and products used for, or produced by, the organic units separate from those used for, or produced by, the non-organic units and keep adequate records to show the separation.			

Criteria	Indicators:	Methodology used:	Databases used:
5.1 GMOs and products produced from or by GMOs shall not be used as food, feed, processing aids, plant protection products, fertilizers, soil conditioners, seeds, vegetative propagating material, micro-organisms and animals in organic production.	Operators may rely on the labels accompanying a product or any other accompanying document, affixed or provided pursuant to Directive 2001/18/EC, Regulation (EC) 1829/2003 of the European Parliament and the Council of 22 September 2003 on genetically modified food and feed (1) or Regulation (EC) 1830/2003 concerning the traceability and labeling of GMOs and the traceability of food and feed products produced from GMOs.		
5.2 The use of ionizing radiation for the treatment of organic food or feed, or of raw materials used in organic food or feed is prohibited.			
6.1 Organic plant production shall use tillage and cultivation practices that maintain or increase soil organic matter, enhance soil stability and soil biodiversity, and prevent soil compaction and soil erosion;			
6.2 The fertility and biological activity of the soil shall be maintained and increased by multiannual crop rotation including legumes and other green manure crops, and by the application of livestock manure or organic material, both preferably composted, from organic production;			
6.3 The use of biodynamic preparations is allowed;			
6.4 In addition, fertilizers and soil conditioners may only be used if they have been authorized for use in organic production under Article 16;			
6.5 mineral nitrogen fertilizers shall not be used;			
6.6 All plant production techniques used shall prevent or minimize any contribution to the contamination of the environment;			
6.7 The prevention of damage caused by pests, diseases and weeds shall rely primarily on the protection by natural enemies, the choice of species and varieties, crop rotation, cultivation techniques and thermal processes;			
6.8 in the case of an established threat to a crop, plant protection products may only be used if they have been authorized for use in organic production under Article 16;			
6.9 For the production of products other than seed and vegetative propagating material only organically produced seed and propagating material shall be used. To this end, the mother plant in the case of seeds and the parent plant in the case of vegetative propagating material shall have been produced in accordance with the rules laid down in this Regulation for at least one generation, or, in the case of perennial crops, two growing seasons;			
6.10 Products for cleaning and disinfection in plant production shall be used only if they have been authorized for use in organic production under Article 16.			

Criteria	Indicators:	Methodology used:	Databases used:
6.11 The collection of wild plants and parts thereof, growing naturally in natural areas, forests and agricultural areas is considered an organic production method.	Provided that: (a) those areas have not, for a period of at least three years before the collection, received treatment with products other than those authorized for use in organic production under Article 16; (b) the collection does not affect the stability of the natural habitat or the maintenance of the species in the collection area.		
6.12 The measures necessary for the implementation of the production rules contained in this Article shall be adopted in accordance with the procedure referred to in Article 37(2).			

19 Utz Certified (International) -Jinke van Dam

General characteristics:		
Initiator system:	Two business partners established the Utz Kapeh Foundation. In March 2007, Utz Kapeh became UTZ CERTIFIED Good Inside [33].	
Coordinating party:	UTZ CERTIFIED Good Inside	
Initiation – duration:	Founded in 2002 [33].	
Grade of integration	Micro-standard	
Geographical coverage:	Worldwide. Utz is sold worldwide by companies. Examples: IKEA food stores, Kenya Airways, Sara Lee coffee brands, etc [17].	
Scope (feedstock included):	Coffee (extending to other commodities as tea and palm oil)	
Value chain	Production, transport, processing	
Mission or objective:		
The UTZ CERTIFIED Good Inside Code of Conduct is an internationally recognized set of criteria for economic, social and environmental responsible coffee production. UTZ transfers its activities and expertise also into other commodities [34].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
UTZ CERTIFIED participates as an observing (non-voting) member in the steering group of the Common Code of the Coffee Community (CCCC, or 4C) initiative [35].		
Current status of system:		
<p>In 2008, Utz certified 308,500 MT of green coffee. This was supplied from 21 origin countries including 374 certificates from 76,944 producers. Utz certified has 500+ registered members in more than 46 countries in 2008 [17].</p> <p>To facilitate better service in origin, at the beginning of 2008 the field offices became an independent organization under the name of CSN (Coffee Support Network) [33]. In 2008 UTZ CERTIFIED became an Associate Member of ISEAL [33].</p>		
Planned activities:		
UTZ transfers its activities and expertise into other commodities, primarily focusing on cocoa, tea and palm oil, with the ambition of the developing into other products in the future, whilst strengthening its position in the global coffee industry [33].		

Structure of the system or initiative:	
Stakeholder participation:	UTZ CERTIFIED strives to continuously improve the Code of Conduct in close cooperation with all stakeholders [34].
Commitment:	Voluntary
Stakeholder integration:	There is not a specific criterion included that aims to include the consultation of local communities when developing the production unit [34],
Monitoring performance:	The establishment of an internal control system is a requirement for appliance of the UTZ Certified certificate [34].
Chain of custody mechanism:	<p>In order to reach a high level of confidence that UTZ CERTIFIED coffee is really coming from UTZ CERTIFIED producers, UTZ CERTIFIED coffee is strictly separated from non-UTZ CERTIFIED coffee throughout the whole chain of production and processing [34].</p> <p>A web-based Track and Trace system follows the UTZ CERTIFIED coffee through the chain from grower to roaster [35].</p>

Verification mechanisms:	<p>The producer has to carry out an annual self-inspection. The Certification Body (CB) will do an annual audit against the UTZ CERTIFIED Code of Conduct. For a first audit, the external auditor will verify all the requested records in this Code of Conduct for the 3 months prior to the date of inspection. For a re-certification the external auditor will verify all the requested records in the Code of Conduct going back to the previous inspection [34].</p> <p>The UTZ CERTIFIED program contains Chain of Custody requirements. This is a set of chain-wide administrative and technical requirements for traceability. These requirements include criteria for separation of UTZ CERTIFIED coffee and non-UTZ CERTIFIED coffee, and keeping records of direct suppliers and buyers [35].</p> <p>Certification must be carried out by a Certification Body (CB), approved by UTZ CERTIFIED [34].</p>
Further information:	
Removal of trade barriers	-
Costs:	<p>Utz Coffee Producers are rewarded with a price premium for their UTZ certification. The premium reflects the added value of the UTZ certification of the coffee. It is the difference between the agreed upon price and the price that same coffee would have received if it were not certified. The UTZ CERTIFIED premium is explicitly determined in a negotiation process between the buyer and seller. Utz coffee price consists of [35]:</p> <p>regular world market price</p> <p>UTZ CERTIFIED price premium reflects the added value of the UTZ certification and is explicitly negotiated between producer and buyer</p> <p>UTZ CERTIFIED administration fee of \$ 0.012 per lb. of green coffee is paid to UTZ CERTIFIED by the first buyer of the coffee</p>

List of principles included:	
1	Traceability, product identification and separation: The producer at all times is able to tell where the coffee came from and where the coffee went to.
2	Management system, record keeping and self inspection
3	Varieties and root stocks
4	Soil management: The control points in this chapter are about maintaining the structure and improving the fertility of the soil and to prevent soil erosion.
5	Fertilizer use: The control points in this chapter are about the choice of fertilizers that the producer uses, their storage and application. The type and amount of fertilizers applied are appropriate for the situation. The use is recorded.
6	Irrigation: The certificate holder uses systematic methods to decide on the quantity of irrigation water to prevent using too much water. The certificate holder also considers the quality and the sustainability of the source of irrigation water. Irrigation water does not contaminate the coffee or the soil. Muddy water that is used to irrigate the coffee fields can be a source of contamination with OTA and other moulds.
7	Crop protection products: This concerns the choice of crop protection products; the use, storage and application. The type and amount of crop protection products applied should be appropriate for the situation. The use is recorded.
8	Harvesting: Good hygiene practices during harvest are of crucial importance to prevent mould formation (OTA) and consequent negative effects on the final cup quality of the coffee and the health of the final consumer.
9	Post-harvest product handling: Good hygiene practices during post-harvest handling services are of crucial importance to prevent mould formation (OTA) and consequent negative effects on the final cup quality of the coffee and the health of the final consumer.
10	Worker rights, health and safety: This chapter deals with issues on health, safety and welfare of group members and workers. A worker is a person who works on a farm or in a processing location, either permanent or temporary, and who is paid for the services provided.
11	Natural Resources and Biodiversity: Note that pesticide, fertilizer handling and soil erosion are covered in the previous chapters. Waste and pollution prevention is addressed in other points throughout the Code.

References:	
Website:	http://www.utzcertified.org/

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
1.1 Traceability, product identification and separation	<p>The certificate holder is able to document the product flow of coffee from each production unit such as a field or member of a producer group to the collection point/storage center and throughout all processing and handling, up to sorted and graded coffee, for as long as the certificate holder is the owner of the coffee.</p> <p>If the certificate holder outsources processing activities, the outsourced processing unit must ensure that traceability, product identification and separation of UTZ CERTIFIED coffee from non-UTZ CERTIFIED coffee.</p> <p>The certificate holder has a document management system in place that records: the total quantity of coffee harvested, the purchases and sales of UTZ CERTIFIED coffee, the purchases and sales of non-UTZ CERTIFIED coffee etc.</p> <p>The certificate holder clearly indicates the responsible person(s) in the organization for traceability, product identification and separation of coffee.</p> <p>This person or group of persons is able to demonstrate and explain the system and is accessible to others in the organization.</p> <p>The certificate holder at all times strictly separates physically UTZ CERTIFIED coffee from non-UTZ CERTIFIED coffee (in the fields; during storage; processing; packing and transport)</p> <p>Carry over stock of UTZ CERTIFIED coffee from a previous year is kept separate and marked clearly.</p> <p>The certificate holder clearly and visually identifies UTZ CERTIFIED coffee.</p> <p>A system is in place where representative lot samples of coffee, green or roasted, are kept to be analyzed in case of any complaint. Samples are kept for at least one year.</p>	Documentation, availability management system, evidence in field	
2.1 Record keeping and farm/field identification	<p>The certificate holder has an overview map of the production area. This map has to include the coffee areas with aggregated planted areas and nurseries, protected areas, water streams and sources and human settlements. Estates identify the coffee fields with a unique name, number, code or specific color on all the records.</p> <p>The producer physically identifies all coffee fields with permanent signs.</p> <p>All the records and documents requested by this UTZ CERTIFIED Code of Conduct are up to date and accessible for the inspector. All the documents are archived for a minimum period of two years from the date of first inspection onwards, unless legally required for a longer period of time.</p>	Overview map, records and documentation, evidence in field	
2.2 Management systems and self-inspection	<p>The certificate holder undertakes at least one self-inspection per year against the UTZ CERTIFIED Code of Conduct, using the UTZ CERTIFIED checklist.</p> <p>Subcontractors carry out an assessment of compliance against the UTZ CERTIFIED control points relevant to the services provided.</p> <p>The certificate holder is responsible that the control points applicable to the tasks performed by the subcontractor are complied with.</p> <p>The certificate holder makes and implements an overall management plan which is based on the risk assessments and includes the action plans in this Code.</p> <p>For new agricultural sites, a risk assessment is carried out with regards to food safety and environment.</p> <p>There is a management plan for new sites, setting out strategies to minimize all identified risks.</p>	Management plan	

Criteria	Indicators:	Methodology used:	Databases used:
2.3 Accountability and Transparency: The UTZ CERTIFIED program is intended to generate both tangible and intangible benefits for coffee producers. Transparency on the amount and the distribution of the tangible benefits, like the UTZ CERTIFIED premium, is a part of responsible coffee production	<p>The certificate holder can show how the UTZ CERTIFIED premium is distributed within its organization.</p> <p>The costs of operation are clearly documented.</p> <p>The certificate holder appoints a person whom producers and workers can file questions, ideas and complaints to. This person has to be known and accessible to the group members and workers. The person is well informed with the UTZ CERTIFIED program.</p> <p>The certificate holder has a complaint mechanism and/or form available for all persons that want to file a complaint relating to issues of compliance with the UTZ CERTIFIED Code of Conduct by the certificate holder and the producers.</p> <p>The certificate holder adequately records, studies and follows up on complaints and records the corrective actions taken. This includes complaints from the government in case of (alleged) violations of the law.</p>	Documentation, records, system	
3.1 In-house and external nursery	<p>The responsible person chooses the variety of coffee that is most suited for the local production situation and conditions. Important to consider when choosing the variety: the required amounts of crop protection products and fertilizers; important pests and diseases and cup quality</p> <p>The certificate holder has records/certificates available of the seed quality which states variety, batch number and seed vendor.</p> <p>For an in-house nursery, the certificate holder or producer has an operational plant health quality control system in place. This system monitors and records visible signs of pests and diseases, as well as root problems and identifies the mother plant or field of origin crop as applicable.</p> <p>For an in-house nursery, all crop protection product treatments applied to coffee in the coffee nursery are recorded and include the requirements as set out in 7.B.3.</p> <p>For an external nursery, propagation material that a producer buys from an external coffee nursery is free of visible signs of pest and disease. When plants have visible signs of pest and disease damage, a justification is available</p>	Records and certificates, control system in place	
3.2 Genetically Modified Organisms	<p>If the certificate holder or a group member starts to plant GMO coffee or if there is involvement in (trial) plantings of GMO coffee, the certificate holder informs UTZ CERTIFIED and the buyer.</p> <p>All the relevant regulations are complied with regard to GMO in the country of production. Also the certificate holder informs UTZ CERTIFIED on the status of the GMO coffee. Notifications and records are documented of the specific modification and/or the unique identifier.</p>	Records and notifications	
4.1 Soil fertility	<p>The state of soil fertility is assessed. This is done either per individual farm, per group of comparable farms or per region where the comparable farms are located.</p> <p>The producer uses practices to conserve and recuperate soil structure and fertility. There is visual and/or documented evidence that these practices are used.</p> <p>The producer uses techniques to prevent soil erosion. There is visual and/or documented evidence that one of these techniques is used. Special attention is given after (re)planting.</p>	Documentation or visual evidence	

Criteria	Indicators:	Methodology used:	Databases used:
5.1 Choice and use of fertilizers	<p>The responsible person, who chooses the fertilizers, is able to demonstrate competence to estimate the quantity, time of application and type of fertilizer (organic and inorganic) to use.</p> <p>The responsible person has a documented fertilizer program in place. This is to ensure that fertilizers are applied judiciously, preventing the amount applied from exceeding the needs of the crop and the storage capacity of the soil.</p> <p>The responsible person demonstrates that consideration has been given to nutritional needs of the crop and soil fertility.</p> <p>There are clear instructions in place for persons involved in fertilizer application. It is not allowed to apply fertilizers within 5 meters of water streams.</p>	Documentation	
5.2 Records of application	<p>The producer or certificate holder has an up to date and complete list of all fertilizers used and/or stored. All applications of organic and inorganic soil and foliar fertilizers are recorded (except for mulch and farm made compost) including e.g. (not all listed): date of application, product brand name, type of fertilizer and chemical composition, quantity or volume per hectare, plot or field, etc.</p>	List and records	
5.3 Application equipment	<p>The producer maintains inorganic fertilizer application equipment (mechanical or motorized) in good condition to ensure proper functioning.</p> <p>The certificate holder ensures that all inorganic fertilizer application equipment (mechanical or motorized) is calibrated annually.</p>	Equipment: evidence in field	
5.4 Storage: The producer stores all inorganic and organic fertilizers, except for compost and mulch	<p>Storage is separate from coffee plant propagation material or other food products and from packaging material and separate from crop protection products to prevent cross contamination.</p> <p>In a manner that reduces the risk of contamination of water streams and sources.</p> <p>In a covered storage area that is protected against sunlight and rain; the area is free from humidity and well ventilated; The area is clean; free from waste, spilling or leakage; The storage area is clearly marked with permanent, understandable and visible warning signs.</p>	Evidence in field	
5.4 Organic fertilizer	<p>The certificate holder carries out an analysis to determine the content of nutrients of organic fertilizers (such as compost). The certificate holder also makes an assessment to determine the risks of disease transmission from the organic fertilizer.</p> <p>No human sewage, sludge and sewage water is used on coffee for any purpose.</p>		
6.1 Predicting irrigation needs	<p>The certificate holder has rainfall records and systematic rainfall forecast methods available to decide on the application of irrigation water.</p> <p>If the certificate holder uses evaporation data to calculate irrigation needs, documentation is demonstrated on how and which figures are used to calculate the evaporation rate.</p>	Records and documentation	
6.2 Irrigation method	<p>The certificate holder has a water action plan to optimize irrigation water use and reduce loss and waste of water.</p> <p>The certificate holder uses the most efficient and commercially practical water delivery system and/or methods to ensure the best utilization of water resources.</p> <p>The certificate holder shows the efficiency of the irrigation system in terms of the amount of water used per MT of coffee produced.</p> <p>The certificate holder has records that indicate the date of irrigation, the quantity of water used and where the irrigation water was used.</p>	Action plan, records	

Criteria	Indicators:	Methodology used:	Databases used:
6.3 Quality of irrigation water	The certificate holder makes an annual risk assessment of phytosanitary, chemical or physical pollution or contamination of irrigation water sources. Irrigation water is analyzed at a frequency according to the results of the risk assessment. In case of adverse results, records are kept of the actions taken. Untreated sewage water is not used for irrigation. Treated sewage water can only be used on coffee if the water quality complies with the WHO published Guidelines for the Safe Use of Wastewater and Excreta in Agriculture and Aquaculture 2006.	Risk assessment, records	WHO published Guidelines for the Safe Use of Wastewater and Excreta in Agriculture and Aquaculture 2006
6.4 Supply of irrigation water	Irrigation water is extracted from sustainable sources. Advice on water extraction is sought from water authorities whenever these are available.	Physical evidence	
7.1 Choice and use of crop protection products	The responsible person who chooses the crop protection products and/or implements the IPM activities is able to demonstrate competence and knowledge. The producer does not use crop protection products that are banned in the European Union, the USA and/or Japan. The certificate holder consults the list of current Maximum Residue Levels (MRL's) for the market where the coffee is intended to be sold (whether domestic or international). The producer uses crop protection products with the least chemical toxicity possible for people, flora and fauna. The certificate holder only uses and stores crop protection products that are officially registered and permitted in the country for use on coffee. If there is no official registration scheme for crop protection products in the country, the producer refers to the FAO International Code of Conduct on the Distribution and Use of Pesticides. All the crop protection products applied to the coffee are suitable for the pest, disease or weed and can be justified (according to label recommendations or official registration body publication). All crop protection products are prepared, mixed and applied according to the label instructions. The protection of coffee against pests, diseases and weeds is done with the appropriate minimum input of crop protection product. Appropriate means as described by the label. The decision on the minimum amount is documented by written justifications. The producer has and implements an anti-resistance strategy if a crop protection product is applied more than once during the crop cycle. This in order to maintain the effectiveness of the crop protection product. The producer applies recognized IPM techniques where they are technically feasible. The producer knows and is able to show evidence of implementing at least one of each of the following IPM activities: prevention, reduction, monitoring and intervention; to reduce pest attacks; use low toxicity products; use biological products where possible	List, records and documentation	Maximum Residue Levels (MRL's) for the market FAO International Code of Conduct on the Distribution and Use of Pesticides

Criteria	Indicators:	Methodology used:	Databases used:
7.2 Records of application	<p>The certificate holder has an up to date and complete list of all the crop protection products used and/or stored conforming to 7.1</p> <p>The crop protection products that the producer uses and/or stores on the production site are documented conforming to 7.2 as well as the intoxication symptoms and first aid information, where these are relevant for the product.</p> <p>The information needs to be updated annually in order to include changes in national crop protection product legislation.</p> <p>All applications of crop protection products are recorded including: date of application; product brand name and chemical composition including quantity or volume per hectare, plot or field or field identification etc.</p> <p>The producer makes all people on the farm aware of the concept of re-entry time. There are also visual methods in place that inform people of the re-entry time.</p> <p>There are clear instructions in place for persons involved in crop protection product application. It is not allowed to apply crop protection products within 5 meters of water streams.</p>	List, documentation, records	
7.3 Application equipment	<p>The producer maintains all the crop protection product application equipment (mechanical or motorized) in good condition to ensure proper functioning.</p> <p>The certificate holder ensures that the crop product application equipment (mechanical or motorized) is calibrated annually.</p>	Check equipment on site	
7.4 Disposal of surplus application mix: In order to avoid contamination of water sources, surplus crop protection product application mix or tank washings are disposed of	<p>according to national legislation where it exists, or in absence according to points below</p> <p>In a manner that it is applied over an untreated part of the crop, as long as the recommended dose is not exceeded and records are kept as if it was a normal application.</p> <p>In a manner that it is applied on designated fallow land, where legally allowed, and as long as records are kept as if it was a normal application</p>	Physical evidence	
7.5 Transport, storage, handling and mixing	<p>The producer ensures that all crop protection products are transported safely. Attention is given to minimizing possible danger to people, food products and the environment.</p> <p>The producer stores all crop protection products: a) clearly identified for the crop they are used for; in accordance with the label instructions and with all relevant national, regional and local legislation; in the original containers or packaging and properly closed so that it cannot be spilled. When an original packaging is broken or damaged, and the product is transferred to another packaging, the new package contains all the information of the original label; which is in powder or granular form above products which are liquid form.</p> <p>The facility for storing crop protection products is (especially those that pose high risks to health and safety of people and the environment): structurally sound and secure. The products are well ventilated and it is ensured that the product labels can be easily read; made of fire-resistant material such as metal, concrete, steel or brick; have shelves made of non-absorbent material such as plastic, glass or metal, etc (8 more requirements, not listed here)</p>	Physical evidence	

Criteria	Indicators:	Methodology used:	Databases used:
7.6 Empty crop protection product containers	<p>The producer does not re-use empty crop protection product containers in any form or manner.</p> <p>The producer cleans empty crop protection product containers by rinsing them 3 times with water. The producer returns the rinsing from washing the empty crop protection product containers to the application equipment tank. After rinsing the containers are perforated to prevent re-use.</p> <p>The producer stores, labels and handles empty crop protection product containers adequately and securely until they are collected. This is done according to the rules of a collection system. If available official collection and disposal systems are used and records participation.</p> <p>The producer disposes crop protection products through one of the below methods: - an official collection and disposal system; conforming to all relevant national regulations OR in a manner that minimizes exposure and risk to humans, the environment and food products.</p>	Physical evidence	
7.7 Obsolete crop protection products	<p>The producer stores, labels and handles obsolete crop protection products adequately and securely. The storage area is routinely cleaned and/or disinfected to avoid contamination.</p> <p>The producer disposes obsolete crop protection products through one of the below methods: an official collection and disposal system OR conforming to all relevant national regulations OR in a manner that minimizes exposure and risk to humans, the environment and food products.</p>	Physical evidence	
8.1 Harvesting risk analysis	<p>The certificate holder conducts a hygiene and food safety risk analysis concerning harvest activities. The analysis is reviewed annually.</p> <p>Based on the risk analysis (8.A.1), the certificate holder makes and implements an action plan on how to assure hygiene and food safety during the harvest. The person responsible for implementation is identified in this plan.</p> <p>To prevent mould formation, the producer minimizes at all times contact of the harvested coffee cherries with any possible sources of fungal contamination.</p>	Risk analysis	
8.2 Harvested coffee measurements	<p>The producer ensures that the tools used to define the weight or volume of harvested coffee is calibrated or graduated annually.</p>	Tools	
9.1 Post-harvest risk analysis	<p>The certificate holder conducts a hygiene and food safety risk analysis concerning postharvest product handling facilities. The analysis is reviewed annually.</p> <p>Based on the risk analysis (9.A.1), the certificate holder makes and implements an action plan on how to assure hygiene and food safety in post-harvest handling facilities. The person responsible for implementing is identified in this plan.</p> <p>The certificate holder keeps post-harvest handling facilities and equipment clean and maintained so as to prevent fungal, chemical contamination and loss of quality.</p> <p>The certificate holder restricts the access of animals and vehicles to prevent contamination. All entry points to buildings or equipment which may come in contact with animals are adequately protected to prevent entry.</p> <p>The producer or certificate holder (re-)uses coffee by-products such as pulp, hull, husk and parchment as fertilizer, mulch or energy source as much as possible. If possible, solids from the water filtering system are re-used as fertilizer.</p>	Analysis, action plan, physical evidence	

Criteria	Indicators:	Methodology used:	Databases used:
9.2 Wet method	The certificate holder makes and implements a water action plan. The objective of this water action plan is to (re-) use water efficiently and to minimize the amount of water used in the process. The certificate holder only uses clean water for pulping, washing and fermenting coffee. The certificate holder treats the contaminated water coming out of the wet processing unit to minimize the impact on environment, water streams and sources.	Action plan, physical evidence	
9.3 Dry method	To prevent mould formation the producer minimizes at all times contact of drying coffee cherries with any possible source of fungal contamination.	physical evidence	
9/4 Milling, storage and transport	The producer assures that during the storage of coffee, proper moisture and hygiene management is in place. This also applies for the mill. The producer uses reliable techniques to measure the humidity percentage of dried green coffee beans. The equipment or tools to determine the humidity of the coffee are calibrated. Documents are kept. The certificate holder prevents dried coffee beans from getting wet during loading and transportation.	physical evidence, documentation	
10.1 Risk management for working conditions	The certificate holder conducts a worker health and safety risk assessment of the production and/or processing units. Based on the risk assessment (see 10.A.1), the certificate holder makes and implements an action plan promoting healthy and safe working conditions in all production and/or processing units. The certificate holder appoints a person responsible for coordinating the training and the raising of awareness on labor rights. The certificate holder has regular meetings between the responsible person and group members/workers where concerns about health, safety and welfare are discussed openly. Records of these meetings are kept.	Risk assessment, personnel interview, records meetings	
10.2 Worker health and safety training	Based on the risk assessment (10.A.1), group members/workers receive an adequate training on health and safety procedures. This training includes the handling of hazardous substances, dangerous, complex equipment and/or machines. Such training has to be repeated for new or reassigned group members/workers. The certificate holder keeps up to date training records. These records indicate the date and type and subject of training. The certificate holder makes sure that there is always at least 1 person trained in First Aid available to group members/workers at a central location when production, processing etc are carried out.	Records training	

Criteria	Indicators:	Methodology used:	Databases used:
10.3 Worker health and safety facilities and accident procedures: It is the responsibility of the certificate holder to ensure that the workers understand and follow the procedures for safe and healthy working conditions, and that have the best possible access to basic emergency medical treatment.	<p>The certificate holder makes First Aid boxes (with materials before expiry date) available and accessible at all central and processing locations.</p> <p>The certificate holder has a clearly written accident and emergency procedure describing e.g. farm's map reference or farm address; who the contact persons are; etc (not all listed here)</p> <p>The certificate holder pays attention in the accident and emergency procedure to the issue of HIV/AIDS prevention.</p> <p>The certificate holder makes sure that the permanent workers and supervisors of seasonal workers understand the accident and emergency procedure conforming to 10.C.2. The certificate holder clearly and visually displays the accident and emergency procedure at all locations.</p> <p>The certificate holder indicates all potential hazards on central and processing locations with clear and permanent warning signs and symbols.</p> <p>Special provisions are to be taken for workers with a disability to ensure their health and safety in the workplace.</p>	Interview personnel, provisions check	
10.4 Crop protection product handling, clothing & equipment	<p>All group members/workers that apply hazardous crop protection products wear suitable protective clothing and equipment that is in good state of repair. For home made and/or traditional products this is done whenever they pose a health risk.</p> <p>The certificate holder ensures and is able to demonstrate that all group members/workers involved properly use the protective clothing and equipment when handling or applying crop protection products. Protective clothing and equipment are stored separately from crop protection products and in a well-ventilated area.</p> <p>Protective clothing is regularly cleaned. If damaged beyond repair, it is disposed of. Single-use items have to be disposed after one use.</p> <p>The certificate holder has all group members/workers who frequently apply hazardous crop protection products checked for their health annually.</p> <p>Pregnant and breastfeeding women and persons under 18 years do not handle or apply crop protection products.</p>	Physical evidence, interview personnel	
10.5 Hygiene and house keeping	<p>The certificate holder instructs all group members/workers on basic hygiene. The hygiene instructions are visibly displayed: provided by way of clear signs (pictures) or in the predominant language(s) of the workforce.</p> <p>The certificate holder provides all the group members/workers access to hand washing facilities /equipment and toilets facilities in the vicinity of living and eating sites and where necessary at the work sites.</p> <p>The certificate holder implements adequate pest control measures to prevent pests from coming into communal eating and living sites, as well as all production and processing locations.</p> <p>The certificate holder ensures that the production, processing locations as well as communal eating and living sites, are free of litter and waste. The certificate holder provides designated areas to dispose/store all types of litter and waste, identifying and separating different types of litter and waste.</p>	Physical evidence, interviews personnel	

Criteria	Indicators:	Methodology used:	Databases used:
10.6 Worker's rights	The certificate holder has records with a clear overview of the workers (including seasonal workers and subcontractors). For permanent workers, the minimum records the overview contains are full names (gender), date of birth or age, etc. For seasonal workers, the minimum records the overview contains are number of seasonal workers, date of birth or age, wages and payment.	Records	
10.7 Freedom of association and the right of collective bargaining	All workers have the right to establish and/or join an organization of their choice. The certificate holder and the group members do not in any way block effective functioning of such organizations. Representatives are not subject to discrimination and have access to their members in the workplace. All workers have the right to perform collective bargaining.	Interview personnel	ILO Convention 87 on Freedom of Association ILO Convention 98 on Right to Organize and Collective Bargaining
10.8 Forced labor	The certificate holder and members do not use forced, bonded or involuntary labor. The certificate holder and members do not require workers to leave deposits or their identity papers with them or retain any part of the workers salary, benefits or property to force workers to remain on the farm. Workers are free to leave the employer after reasonable notice. Spouses and children of contracted workers are not obliged to work on the farm.	Interview personnel	ILO Convention 29 on Forced Labor and 105 on Abolition of Forced Labor
10.9 Child labor	Children or minors (below 18) do not conduct hazardous work or any work that jeopardizes their physical, mental or moral well being. They do not work in dangerous locations, in unhealthy situations, at night, or with dangerous substances or equipment, nor do they carry heavy loads. They are not exposed to any form of abuse and there is no evidence of trafficked, bonded or forced labor. Children under 15 years are not employed as permanent and seasonal workers. If local legislation has established a higher minimum age, this higher age applies.	Interview personnel	ILO Convention 138 on Minimum Age and 182 on Child Labor
10.10 Discrimination	The certificate holder / members do not engage in discrimination in hiring, remuneration, access to training, promotion, termination and benefits on the basis of gender, race, caste, ethnicity, color, sexual orientation, union membership, marital status, national origin, disability, religion or political opinion.	Interview personnel	ILO Convention 111 on Discrimination
10.11 Working hours	The maximum number of weekly normal working hours is 48 or less if so determined by national or local legislation or a collective bargaining agreement. The certificate holder records the working hours per worker. Overtime work is: at all times voluntary and paid according to legal or sector standards and does not exceed 12 hours per week and is not demanded at a regular basis. Workers are entitled to at least one day off in every seven-day period. No worker works for more than five hours before having a break for at least half an hour. In addition, a woman resuming her work after child birth is entitled to two breaks daily, for an agreed period of time according to legal or sector standards. When overtime is required, workers are notified timely. Workers working overtime have access to safe transportation home following overtime shifts.	Interview personnel, records	ILO Convention 1 on Hours of Work

Criteria	Indicators:	Methodology used:	Databases used:
10.12 Wages and contracts	Workers (permanent and seasonal) are paid gross wages that comply with national legislation and sector agreements, whichever is higher. Deductions from wages for disciplinary purposes are not made. Equal work is remunerated with equal pay. Wages (incl. from overtime) are recorded and clear to workers and paid in a manner convenient to them. Additionally, for permanent workers there are employment agreements/contracts providing comprehensive information about their employment conditions, including a detailed composition of wages and benefits.	Records, documentation	ILO convention 100 on Equal Remuneration.
10.13 Maternity and child care provisions	Workers receive all maternity entitlements and protection in line with national law and practice. Maternity leave does not result in any discrimination, loss of seniority or deductions of wages.		
10.14 Respectful treatment of workers	The certificate holder and the staff do not engage in the use of corporal punishment, mental or physical oppression and coercion, verbal or physical abuse, sexual harassment or any other kind of intimidation at the workplace. The certificate holder stimulates the equal participation of disadvantaged/ minority groups within the company, particularly with respect to recruitment, staff and a committee membership. The certificate holder allows on-site living families to freely perform cultural expressions like wearing typical clothing, music, language, typical food and handicrafts. The certificate holder needs to clearly identify, delineate and preserve areas of social, cultural or religious significance on his/her farm.	Interview personnel	
10.15 Employment of workers	Housing: various requirements e.g.: For all workers that live on the production or processing site, the certificate holder provides clean and safe living quarters (which can be locked). Education: various requirements e.g. the certificate holder stimulates primary education of on-site living children of workers who have the age to go to primary school. The methods, such as awareness raising meetings, with their parents are documented. Medical assistance: various requirements e.g. The certificate holder provides access to emergency health care and regular primary health care to all workers and their families, including maternal health care.	Interview personnel, physical evidence	ILO Convention 184 on Safety and Health in Agriculture
11.1 Risk management and conservation	The certificate holder conducts a risk assessment on environmental impacts. The assessment is regularly reviewed and kept up to date. The assessment can be done regionally and can be conducted by an external party. Based on the risk assessment on environmental impacts (11.A.1), the certificate holder makes and implements an action plan how to address these environmental risks. Implemented actions are documented. The certificate holder has a conservation plan or participates in a regional biodiversity or forest management plan. The producer assesses the possibilities of product diversification as a way of making the coffee production more sustainable. The producer takes into account what the effect is on the quality and quantity of the coffee.	Risk assessment, conservation plan	
11.2 Water resources	The producer protects and conserves all the water streams and sources (incl. ground water) on the farm from contamination and pollution. The producer allows a strip of native vegetation to grow along water streams to control erosion, filter out agrochemicals and protect the wildlife habitat.	Physical evidence, mapping	

Criteria	Indicators:	Methodology used:	Databases used:
11.3 Forest and biodiversity	<p>Degradation and/or deforestation of primary forest is prohibited.</p> <p>The producer demonstrates that there has been no degradation and/or deforestation of primary forest in the 24 months prior to the date of first registration with UTZ CERTIFIED.</p> <p>The producer does not plant new coffee on land that is not classified as agricultural land and/or approved for agricultural use.</p> <p>Deforestation of secondary forest is only allowed if complied with all of the following: legal land title is available; government permits are available (if required); there is compensation with at least equal ecological value, to be confirmed by an independent expert report.</p> <p>When using wood for drying of coffee, the producer obtains this wood from managed forests or from the pruning of crops or shade trees, and not from native forests, unmanaged community forests, borders of waterways and other sources of water or protected areas.</p> <p>The producer uses shade trees whenever this is compatible with the local coffee production practices and takes into consideration the productivity.</p> <p>The producer re-forests and stimulates ecological restoration of areas that are not used for agricultural production on the farm as much as possible.</p> <p>Coffee production does not take place in protected areas.</p> <p>Coffee production does not take place in the immediate vicinity (2km) of these areas if this is not allowed in the official management plan for the area.</p> <p>If coffee production is in the immediate vicinity (2km) of a protected area or biological corridor, the certification holder is in contact with the park authorities.</p> <p>The certificate holder has information about the threatened and endangered species, known or likely to be, present in the production area. The producer protects such species and their habitats and restricts hunting, trafficking or commercial collection of such species and habitats.</p>		
11.4 Energy sources and use	<p>The certification holder records and monitors the use of energy in production and processing.</p> <p>The producer demonstrates that measures are taken to use energy more efficiently on the farm.</p> <p>The producer uses renewable energy sources on the farm whenever possible in terms of space and safety and when climate permits to do so.</p> <p>The producer uses the by-products of coffee growing and processing (pulp, hulls, husk and parchment) as fertilizer, compost, mulch or energy source (for machine drying).</p>	Records, documentation	

20 GLOBALGAP (International) - Jinke van Dam

General characteristics:		
Initiator system:	GlobalGAP is a private sector body. It is an industry initiative [1].	
Coordinating party:	The work of the Board and Committees is supported by FoodPLUS GmbH, a non-profit limited company based in Cologne, Germany, fulfilling a secretariat function for GLOBALGAP.	
Initiation – duration:	EUREPGAP started in 1997 as an initiative by retailers belonging to the Euro-Retailer Produce Working Group (EUREP).	
Grade of integration	Meta-standard: exceeds national or regional assurance schemes	
Geographical coverage:	Worldwide	
Scope (feedstock included):	Standards for fruit and vegetables; flower and ornamentals, integrated farm assurance, integrated aquaculture, coffee [2]. Food crops – combinable. Broad range of crops including soy, palm oil, sugar cane, rapeseed, sugar beet, wheat, corn/maize [1]. While biomass production is not specifically mentioned in any of these standards, it appears integrated farm assurance would be the most relevant [2].	
Value chain	Seeding until product leaves farm (pre-farm-gate)	
Mission or objective:		
GlobalGAP is a private sector body that sets voluntary standards for the certification of agricultural products around the globe. GlobalGAP is a pre-farm-gate-standard that means the certificate covers the process of the certified product from before the seed is planted until it leaves the farm. GlobalGAP is a business-to-business label and is therefore not directly visible for consumers [3].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Developed as a reaction from retailers on growing concerns by the consumers with product safety, environmental and labor standards. On the other side the development of common certification standards were also in the interest of many producers. Those with contractual relations to several retailers complained that they had to undergo multiple audits against different criteria every year. On this background GlobalGAP started to work on harmonized standards and procedures for the development of Good Agricultural Practices (GAP) in conventional agriculture [3].		
Current status of system:		
EurepGAP changed its name in 2007 to GlobalGAP. In implementation.		
Planned activities:		
Standards continuously updated		

Structure of the system or initiative:	
Stakeholder participation:	GlobalGAP members include retailers, producers, farmers and associate members from the input and service side of agriculture. Governance is by a Board which is chaired by an independent Chairperson. The Board also agrees on the activity plan of the organization. Sector Committees discuss and decide upon product and sector specific issues. All committees have 50% retailer and 50% producer - supplier representation [3].
Commitment:	Voluntary, global level
Stakeholder integration:	Not specifically addressed. GlobalGAP National Technical Working Groups are established to harmonize certification activities within the region and scope [4].
Monitoring performance:	-
Chain of custody mechanism:	As soon as leaving the production, the product will be controlled by other QA or certification systems specializing in package and manufacture. That way the product can be traced from the producer to the consumer [5]. The CoC consists of a management system with an appropriate combination of segregation and identification to avoid mixing of materials. This is used in the certification of e.g. the Green Coffee and Tea sub-scopes certification [4].
Verification mechanisms:	Existing national or regional quality assurance schemes that have successfully completed their benchmarking process are recognized as equivalent to GlobalGAP [3]. Inspection takes place on an annual basis. There are also unannounced visits. In the 1 st year, records are only valid when going back up to 3 months before the date of 1 st harvest after registration is completed. Certificate is valid for a year [4].
Further information:	
Removal of trade barriers	
Costs:	Certification fees of Certification Body are free market prices and not fixed by GlobalGAP. Allows group certification.

List of principles given for combinable crops (including crops base and all farm base as scopes) [6-8].

List of principles included:	
<i>All farms base:</i>	
1	Record keeping and internal self-assessment
2	Site history and site management (see also crops base)
3	Workers health, safety and welfare
4	Waste and pollution management, recycling and re-use
5	Environment and conservation
<i>Crops base:</i>	
6	Complaints and Traceability
7	Propagation material (also see combinable crops)
8	Soil management
9	Fertilizer use
10	Irrigation / fertigation (also see combinable crops)
11	Integrated pest management
12	Plant protection products
<i>Combinable crops (if not mentioned under crops base):</i>	
13	Machinery and equipment
14	Crop protection
15	Harvesting
16	Harvested Crop handling

References:	
Website:	http://www.globalgap.org/cms/front_content.php?idcat=9

List of criteria and indicators:

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>1a. Record keeping and internal self-assessment</p> <ol style="list-style-type: none"> 1. Are all records requested during the external inspection accessible and kept for a minimum period of time of two years, unless a longer requirement is stated in specific control points (m)? 2. Does the producer or producer group take responsibility to undertake a minimum of one internal self-assessment or producer group internal inspection, respectively, per year against the GLOBALGAP Standard (M)? 3. Are effective corrective actions taken as a result of non-conformances detected during the internal self-assessment or internal producer group inspections (M)? 	<ol style="list-style-type: none"> 1. Producers keep up to date records for a minimum of two years from the date of first inspection, unless legally required to do so for a longer period. No N/A. 2. There is documentary evidence that the GLOBALGAP (EUREPGAP) or benchmarked standard internal self-assessment/internal producer group inspections under responsibility of the producer/producer group ha(s) ve been carried out and are recorded annually. No N/A. 3. Effective corrective actions are documented and have been implemented. No N/A 		

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>2a. Site history</p> <p>a. Is a recording system established for each unit of production or other area/location to provide a permanent record of the livestock/aquaculture production and/or agronomic activities undertaken at those locations? Are these records kept in an ordered and up-to-date fashion (M)?</p> <p>b. Is a reference system for each field, orchard, etc or other area used in production established and referenced on a farm plan or map (m)?</p> <p>2b. Site management</p> <p>c. Is there a risk assessment for new agricultural sites or existing sites only where risks have changed, which shows the site in question to be suitable for production, with regards to food safety, operator health, the environment and animal health where applicable (M)?</p> <p>d. Has a management plan been developed setting out strategies to minimize all identified risks, such as pollution or water table contamination? Are the results of this analysis recorded and used to justify that the site in question is suitable (m)?</p> <p>e. Is there, where feasible, crop rotation for annual crops (R)?</p>	<p>a. Current records must provide a history of GLOBALGAP production of all production areas. For Crops: New applicants must have full records for at least three months prior to the date of external inspection that reference each area covered by a crop with all the agronomic activities related to GLOBALGAP documentation required of this area; No N/A</p> <p>b. Compliance must include visual identification in the form of a physical sign at each field/greenhouse/plot/livestock building/pen or other farm, or a farm plan or map that could be cross referenced to the identification system. No N/A.</p> <p>c. A documented risk assessment must be carried out when crops are to be introduced onto new sites. The risk assessment must be revised to take into account any new food safety risks. The risk assessment must take account site history (crops/stocking) and consider impact of proposed enterprises on adjacent stock/crops/environment</p> <p>d. A management plan that has implemented strategies to meet the objectives of this specific control point has been developed</p> <p>e. The rotations can be verified from planting date and/or plant protection product application records.</p>	<p>d. Management plan should include one or more of the following: habitat quality, soil compaction, soil erosion, emission of greenhouses gases where applicable, humus balance, phosphorus balance, nitrogen balance, intensity of chemical plant protection).</p>	<p>(See Annex on Risk Assessment to determine when a risk assessment is needed).</p>

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>3.1 Risk assessments</p> <p>a. Does the farm have a written risk assessment for safe and healthy working conditions (m)?</p> <p>b. Does the farm have a written health, safety and hygiene policy and procedures including issues of the risk assessment (m)?</p> <p>3.2 Training</p> <p>c. Is there a record kept for training activities and attendees (m)?</p> <p>d. Do all workers handling and/or administering veterinary medicines, chemicals, disinfectants, etc and all workers operating dangerous or complex equipment as defined in the risk assessment have certificates of competence, and/or details of other such qualifications (M)?</p> <p><i>Other Minor musts are not mentioned here but include:</i></p> <p><i>Health and safety training, first aid, hygiene instructions</i></p> <p>3.3 Hazards and first aid</p> <p>e. Do accident and emergency procedures exist; are they visually displayed and communicated to all persons associated with the farm activities (m)?</p> <p>f. Are potential hazards clearly identified by warning signs and placed where appropriate (m)?</p> <p><i>Other Minor musts are not mentioned here but include: Safety advice, First Aid Kits</i></p>	<p>a. Written risk assessment can be a generic one but it must be appropriate for conditions on farm. Risk assessment must be reviewed and updated when changes in organization occur. No N/A.</p> <p>b. The health, safety and hygiene policy must at least include the points identified in the risk assessment. The policy must be reviewed and updated when the risk assessment changes.</p> <p>c. A record is kept for training activities including the topic covered, the trainer, the date and attendees. Evidence of the attendance is required.</p> <p>d. Records must identify workers who carry out such tasks, and show certificates of training or proof of competence. No N/A</p> <p>e. Permanent accident procedures must be clearly displayed in accessible, and visible location(s). These instructions are available in the predominant language(s) of the workforce and/or pictograms. The procedures must identify, if appropriate the following; e.g.: farm's map reference or farm address, - contact person(s), location etc.</p> <p>f. Permanent and legible signs must indicate potential hazards. Warning signs must be present. No N/A.</p> <p>g. Complete sets of protective clothing which enable label instructions and/or legal requirements and/or requirements as authorized by a competent authority to be complied with are available, used and in a good state of repair.</p> <p>h. Protective clothing is regularly cleaned, according to a schedule adapted to the type of use and degree of soiling. Cleaning the protective clothing and equipment includes the separate washing from private clothing and glove washing before removal. All the protective clothing and equipment are stored apart and physically separate. No N/A.</p>	<p>b. Policy could include accident and emergency procedures, hygiene procedures, dealing with any identified risks in the working situation, etc.</p>	

<p>Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)</p> <p>3.4 Protective clothing / equipment</p> <p>G. Are workers (including subcontractors) equipped with suitable protective clothing in accordance with legal requirements and/or label instructions or as authorized by a competent authority (M)?</p> <p>h. Is protective clothing cleaned after use and stored so as to prevent contamination of the clothing or equipment (M)?</p> <p>3.5 Worker welfare</p> <p>I. Is a member of management clearly identifiable as responsible for workers health, safety and welfare (M)?</p> <p>J. Do workers have access to clean food storage areas, designated dining areas, hand washing facilities and drinking water (m)?</p> <p>K. Are on site living quarters habitable and have the basic services and facilities (m)?</p> <p><i>Other Minor musts are not mentioned here but include:</i></p> <p><i>Information availability, communication manager – worker</i></p> <p>3.6 Subcontractors</p> <p>L. When the producer makes use of subcontractors, is all the relevant information available on farm (m)?</p>	<p>Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria</p> <p>I. Documentation is available that demonstrates that a clearly identified, named member of management has the responsibility for ensuring compliance with existing, current and relevant national and local regulations and the implementation of the policy on workers health safety and welfare.</p> <p>J. A place to store food and to eat must be available. In addition, hand washing facilities and potable drinking water must be available to workers.</p> <p>K The living quarters for the workers on farm are habitable, have a sound roof, windows and doors, and have the basic services of running water, toilets, and drains.</p> <p>L. Sub-contractors must carry out an assessment (or the producer must do it on behalf of the subcontractor) of compliance against the GLOBALGAP control points relevant to the services provided on farm</p>		
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Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>4.1 Identification of waste and pollutants</p> <p>a. Have all possible waste products and sources of pollution been identified in all areas of the business (m)?</p> <p>4.2 Waste and pollution action plan</p> <p>b. Is there a documented farm waste management plan to avoid or reduce wastage and pollution and avoid the use of landfill or burning, by waste recycling? Are organic wastes composted on the farm and utilized for soil conditioning, provided there is no risk of disease carry-over (R)?</p> <p>c. Are the farm and premises clear of litter and waste to avoid establishing a breeding ground for pests and diseases which could result in a food safety risk (M)?</p> <p><i>Other Recommendations are not mentioned here but include:</i></p> <p><i>Implementation plan, adequate provisions for waste disposal</i></p>	<p>a. All possible waste products (such as paper, cardboard, plastic, oil, etc) and sources of pollution produced by the farm processes have been listed.</p> <p>b. A comprehensive, current, documented plan that covers wastage reduction, pollution and waste recycling is available. Air, soil, water, noise and light contamination must be considered.</p> <p>c. Visual assessment that there is no evidence of breeding grounds in areas of waste/litter in the immediate vicinity of the production or storage buildings. Incidental and insignificant litter and waste on the designated areas are acceptable as well as the waste from the current day's work. All other litter and waste has been cleared up.</p>		

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>5.1 Impact farming on environment and biodiversity</p> <p>a. Does each producer have a management of wildlife and conservation plan for the enterprise that acknowledges the impact of farming activities on the environment (m)?</p> <p>b. Has the producer considered how to enhance the environment for the benefit of the local community and flora and fauna (R)?</p> <p>c. Is this policy compatible with sustainable commercial agricultural production and does it minimize environmental impact of the agricultural activity (R)?</p> <p>d. Does the plan include a baseline audit to understand existing animal and plant diversity on the farm (R)?</p> <p><i>Other Recommendations are not mentioned here but include:</i></p> <p><i>Plan includes actions to avoid damage or to enhance habit?</i></p> <p>5.2 Unproductive sites</p> <p>e. Has consideration been given to the conversion of unproductive sites (e.g. low lying wet areas, woodlands, headland strip or areas of impoverished soil) to conservation areas for the encouragement of natural flora and fauna (R)?</p> <p>5.3 Energy efficiency</p> <p>f. Can producer show monitoring of energy use on the farm (R)?</p>	<p>a. There must be a written action plan which aims to enhance habitats and increase biodiversity on the farm. This can be either a regional activity or individual plan, if the farm is participating in or covered by it.</p> <p>b. There should be tangible actions and initiatives that can be demonstrated by the producer either on the production site or by participation in a group that is active in environmental support schemes looking at habitat quality and habitat elements.</p> <p>c. The contents and objectives of the conservation plan imply compatibility with sustainable agriculture and demonstrate a reduced environmental impact.</p> <p>d. There is a commitment within the conservation plan to undertake a base line audit of the current levels, location, condition etc. of the fauna and flora on farm so as to enable actions to be planned. The effects of agricultural production on fauna and flora should be audited and serve as the basis for the action plan.</p> <p>e. There should be a plan to convert unproductive sites and identified areas which give priority to ecology into conservation areas where viable.</p> <p>f. Energy use records exist. For example, farming equipment shall be selected and maintained for optimum consumption of energy. The use of non-renewable energy sources should be kept to a minimum.</p> <p><i>Prior use includes: previous crops, industrial or military use, land fill or mining sites, natural vegetation</i></p>	<p>a. This includes knowledge of IPM practices, of nutrient use of crops, conservation sites etc.</p>	

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>6. Complaints and traceability</p> <p>a. Is there a complaint procedure available relating to issues covered by the GLOBALGAP standard (M)?</p> <p>b. Does the complaints procedure ensure that complaints are adequately recorded, studied and followed up including a record of actions taken?</p> <p>c. Traceability: Do all producers have a documented recall procedure to manage the withdrawal of registered products from the market?</p> <p>D. Is GLOBALGAP registered product traceable back to and traceable from the registered farm (and other relevant registered areas) where it has been grown (M)?</p>	<p>a. There must be available on request, a clearly identifiable document for complaints relating to issues covered by GLOBALGAP. No N/A.</p> <p>b. There are documents of the actions taken with respect to such complaints regarding GLOBALGAP standard deficiencies found in products or services. No N/A.</p> <p>c. All producers must have access to documented procedures which identify the type of event that may result in a withdrawal, persons responsible for taking decisions on the possible withdrawal of product, the mechanism for notifying customers etc. The procedures must be tested annually to ensure that it is sufficient.</p> <p>d. There is a documented identification and traceability system that allows GLOBALGAP registered product to be traced back to the registered farm or, in a Farmer Group, to the registered farms of the group, and tracked forward to the immediate customer No N/A..</p>	<p>d. Harvest information must link a batch to the production records or the farms of specific producers. Produce handling must also be covered if applicable.</p>	<p>Information in General Regulations Part III for information on segregation.</p>

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>7.1 Quality and health <i>Not further detailed</i></p> <p>7.2 Pest and disease resistance <i>Not further detailed</i></p> <p>7.3 Chemical treatments and dressings <i>Not further detailed</i></p> <p>7.4 Sowing and planting <i>Not further detailed</i></p> <p>7.5 Genetically modified Organisms</p> <p>A. Does the planting of or trials with GMO comply with all applicable legislation in the country of production (M)?</p> <p>b. Did the producer inform their direct clients of the GMO status of the product (M)?</p> <p>c. Are GMO crops stored separately from other crops to avoid adventitious mixing (M)?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Availability of plan and documentation.</i></p> <p>7.6 Choice of variety <i>Not further detailed</i></p> <p>7.7 Seed / rootstock quality and origin <i>Not further detailed</i></p>	<p>a. The registered farm or group of registered farms have a copy of the legislation applicable in the country of production and comply accordingly. Records must be kept of the specific modification and/or the unique identifier. Specific husbandry and management advice must be obtained.</p> <p>b. Documented evidence of communication must be provided.</p> <p>c. Visual assessment must be made of genetically modified (GMO) crops storage for integrity and identification.</p>		

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>8.1 Soil mapping</p> <p>a. Have soil maps been prepared for the farm (R)?</p> <p>8.2 Cultivation</p> <p>b. Have techniques been used that improve or maintain soil structure, and to avoid soil compaction (R)?</p> <p>8.3 Erosion</p> <p>c. Are field cultivation techniques used to reduce the possibility of soil erosion (m)?</p>	<p>a. The type of soil is identified for each site, based on a soil profile or soil analysis or local (regional) cartographic soil-type map.</p> <p>b. Techniques applied are suitable for use on the land. There must be no evidence of soil compaction.</p> <p>c. There is visual evidence that there is no soil erosion or evidence of practices</p> <p><i>Note in annex: type of soil should cover structural susceptibility to erosion, structural and chemical suitability for intended crops: Conformation and slope, land form, drainage patterns, wind exposure, erosion of the soil, transportation harvested crop</i></p>	<p>c. Practices such as mulching and/or cross line techniques on slopes and/or drains and/or sowing grass or green fertilizers, trees and bushes on borders of sites, etc.</p>	

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>9.1 Nutrient requirement</p> <p>a. Is the application of all fertilizers and manure timed to maximize the efficacy and/or uptake by target crops?</p> <p>9.2 Advice on quantity and type of fertilizer</p> <p>b. Are recommendations for application of fertilizers (organic or inorganic) given by competent, qualified advisers holding a recognized national certificate or similar? Do producers who use outside professional help regarding the use of fertilizers satisfy themselves that the people on whom they rely are competent to provide that advice (m)?</p> <p>c. Where such advisers are not used, are producers able to demonstrate their competence and knowledge (m)?</p> <p>9.3 Record of application</p> <p>d. Have all applications of soil and foliar fertilizers, both organic and inorganic, been recorded including field, orchard or greenhouse reference (m)?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Data, methods, type, operator details and quantity of applications</i></p> <p>9.4 Application machinery</p> <p>e. Is fertilizer application machinery kept in good condition and verified annually to ensure accurate fertilizer application (m)?</p>	<p>a. Producer must demonstrate that consideration has been given to nutritional needs of the crop, soil fertility and residual nutrients on the farm and records must be available as evidence. No N/A</p> <p>b. Where the fertilizer records show that the technically responsible person making the choice of the fertilizer (organic or inorganic) is an external adviser, training and technical competence must be demonstrated unless employed for that purpose by a competent organization.</p> <p>c. Where the fertilizer records show that the technically responsible person determining quantity and type of fertilizer (organic or inorganic) is the producer, experience must be complemented by technical knowledge or the use of tools.</p> <p>d. Records are kept of all fertilizer applications, detailing the geographical area, the name or reference of the field, orchard or greenhouse where the registered product crop is located.</p> <p>e. There are maintenance records (or invoices of spare parts of both the organic and inorganic fertilizer application machinery available on request. There must, as a minimum, be documented records stating that the verification of calibration has been carried out by a specialized company, supplier of fertilization equipment or by the technically responsible person of the farm within the last 12 months.</p> <p>f. A stock inventory which indicates the contents of the store (type and amount) is available and it is updated at least every 3 months.</p> <p>G. Fertilizers cannot be stored with fresh produce/tea and/or harvested coffee cherries.</p>	<p>b. Demonstrated via official qualifications, specific training courses, etc.,</p>	

<p>9.5 Fertilizer storage</p> <p>f. Is there an inorganic fertilizer stock inventory or record of use up to date and available on the farm (m)?</p> <p>g. Are inorganic and organic fertilizers stored separate from fresh produce/tea/coffee cherries (M)?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Storage of organic and inorganic fertilizers</i></p> <p>9.6 Organic fertilizer</p> <p>h. Has the use of human sewage sludge been banned on the farm (M)?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Nutrient contribution and risk assessment</i></p> <p>9.7 Inorganic fertilizer</p> <p>I. Are purchased inorganic fertilizers accompanied by documentary evidence of nutrient content (N, P, K) (m)?</p> <p>J. Are purchased inorganic fertilizers accompanied by documentary evidence of chemical content, which includes heavy metals (R)?</p>	<p>h. No human sewage sludge is used on the farm. No N/A.</p> <p>I. Documentary evidence detailing N, P, K content, is available for all inorganic fertilizers used on crops grown under GLOBALGAP within the last 12-month period.</p> <p>J. Documentary evidence detailing chemical content, including heavymetals, is available for all inorganic fertilizers used on crops grown under GLOBALGAP within the last 12-month period</p>		
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Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>10.1 Predicting irrigation requirements</p> <p>a. Have systematic methods of prediction been used to calculate the water requirement of the crop (R)?</p> <p>10.2 Irrigation / fertigation method</p> <p>b. Can the producer justify the method of irrigation used in light of water conservation?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Records of irrigation use, water management plan</i></p> <p>10.3 Quality of irrigation water</p> <p>c. Has the use of untreated sewage water for irrigation/fertigation been banned (M)?</p> <p>d. Has an annual risk assessment for irrigation/fertigation water pollution been completed?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Analysis of water quality (type, where, records)</i></p> <p>10.4 Supply of irrigation water</p> <p>e. To protect the environment, is water abstracted from a sustainable source (m)?</p> <p>f. Has advice on abstraction been sought from water authorities, where required by law?</p>	<p>a. Calculations are available and are supported by data records e.g. rain gauges, drainage trays for substrate, evaporation meters, water tension meters (% of moisture in the soil) and soil maps.</p> <p>b. The idea is to avoid wasting water. The irrigation system used is the most efficient available for the crop and accepted as such within good agricultural practice.</p> <p>c. Untreated sewage water is not used for irrigation/fertigation. Where treated sewage water is used, water quality complies with the WHO published Guidelines. Also, when there is doubt if water is coming from a possibly polluted source the grower has to demonstrate through analysis that the water complies with the WHO guideline requirements or the local legislation for irrigation water. No N/A.</p> <p>d. The risk assessment must consider potential microbial, chemical or physical pollution of all sources of irrigation/fertigation water. E. e. Sustainable sources are sources that supply enough water under normal (average) conditions.</p> <p>f. Where required by law, there must be written communication from the local water authority on this subject (letter, license, etc.).</p>	<p>d. Part of the risk assessment should consider the irrigation method and the crop,</p> <p>frequency of analysis, sources of water, the resources and susceptibility for pollutants and drain water of the sources and the environment</p>	<p>WHO published Guidelines for the Safe Use of Wastewater and Excreta in Agriculture and Aquaculture 1989.</p> <p>See Table 3 in Annex gives information on Risk Assessments.</p>

Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
<p>11. Integrated Pest Management</p> <p>a. Can the producer show evidence of implementation of at least one activity that falls in the category of "Prevention" (m)?</p> <p>b. Can the producer show evidence of implementation of at least one activity that falls in the category of "Observation and Monitoring" (m)?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Categories as intervention, prevention + given assistance</i></p>	<p>a. The producer can show evidence of implementing at least one activity that includes the adoption of cultivation methods that could reduce the incidence and intensity of pest attacks, thereby reducing the need for intervention.</p> <p>b. The producer can show evidence of implementing at least one activity that will determine when, and to what extent, pests and their natural enemies are present, and using this information to plan what pest management techniques are required.</p>		<p>See Annex of GLOBALGAP (EUREPGAP) IPM Guidelines.</p>
<p>12.1 Choice of plant protection products</p> <p>a. Is the plant protection product applied appropriate for the target as recommended on the product label (M)?</p> <p>b. Do producers only use plant protection products that are registered in the country of use for the target crop where such official registration scheme exists (M)?</p> <p>c. Is there a process that prevents chemicals that are banned in the European Union from being used on crops destined for sale in the European Union (M)?</p> <p>d. If the choice of plant protection products is made by advisers, can they demonstrate competence (M)?</p> <p>e. If the choice of plant protection products is made by the producer, can competence and knowledge be demonstrated?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Invoices and lists of plant protection products</i></p>	<p>a. All the plant protection products applied to the crop are suitable and can be justified (according to label recommendations or official registration body publication) for the pest, disease, weed or target of the plant protection product intervention. Technically valid (legal) "off label" uses that are supported by the PPP industry in writing is allowable. If the producer uses off-label PPP there must be evidence of official approval for use of that PPP on that crop in that country. No N/A</p> <p>b. All the plant protection products applied are officially registered or permitted by the appropriate governmental organization in the country of application. Where no official registration scheme exists, refer to the GLOBALGAP guideline (Annex CB.2) on this subject and FAO International Code of Conduct. Refer also to Annex CB.2 for cases where producer takes part in legal field trials for final approval of PPP by the local Government. No N/A.</p> <p>c. The documented plant protection product application records confirm that no plant protection product that have been used within the last 12 months on the crops grown under GLOBALGAP</p>	<p>J. Specifically in continuous harvesting situations, there are systems in place in the field, orchard or greenhouse, e.g. warning signs, time of application etc., to ensure compliance with all pre-harvest intervals.</p>	<p>b. GLOBALGAP guideline (Annex CB.2) on this subject and FAO International Code of Conduct on the Distribution and Use of Pesticides.</p> <p>c. Under EC Prohibition Directive List - 79/117/EC.</p>

<p>12.2 Records of application</p> <p>f. Have all the plant protection product applications been recorded including the crop name and/or variety (M)?</p> <p>g. Have all the plant protection product applications been recorded including the application location (M)?</p> <p>h. Have all the plant protection product applications been recorded including application date (M)?</p> <p>I. Have all the plant protection product applications been recorded including the product trade name (M)?</p> <p><i>Other minor must are not mentioned here but include:</i></p> <p><i>Records include justification for application, technical authorization, machinery used...</i></p> <p>12.3 Pre-harvest interval</p> <p>J. Have the registered pre-harvest intervals been observed (M)?</p> <p>12.4 Application equipment <i>Not further detailed here</i></p> <p>12.5 Disposal of surplus application mix <i>Not further detailed here</i></p> <p>12.6 Plant protection residue analysis <i>Not further detailed here</i></p> <p>12.7 Plant protection product storage <i>Not further detailed here</i></p> <p>12.8 Plant protection product handling <i>Not further detailed here</i></p> <p>12.9 Empty plant protection product containers <i>Not further detailed here</i></p> <p>12.10 Obsolete plant protection products <i>Not further detailed here</i></p>	<p>destined for sale within the E.U., has been prohibited by the E.U.</p> <p>d. Where the plant protection product records show that the technically responsible person making the choice of the plant protection products is a qualified adviser, technical competence can be demonstrated via official qualifications or specific training course attendance certificates.</p> <p>e. Where the plant protection product records show that the technically responsible person making the choice of plant protection products is the producer, experience must be complemented by technical knowledge that can be demonstrated via technical documentation.</p> <p>f. All plant protection product application records specify the crop and/or variety treated. No N/A.</p> <p>g. All plant protection product application records specify the geographical area, the name or reference of the farm, and the field, orchard or greenhouse where the crop is located. No N/A.</p> <p>h. All plant protection product application records specify the exact dates (day/month/year) of the application. Record the actual date (end date, if applied more than one day) of application. No N/A.</p> <p>I. All plant protection product application records specify the trade name or beneficial organism. It must be possible to connect the trade name information to the active ingredient. No N/A.</p> <p>J. The producer can demonstrate that all pre-harvest intervals have been observed for plant protection products applied to the crops, through the use of clear documented procedures such as plant protection product application records and crop harvest dates from treated locations.</p>		
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Criteria [6-8] > Control Point (m= minor must, M= major must, R= recommendation)	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate Compliance Criteria)	Methodology used	Databases used:
13.1 Hygiene machinery and equipment <i>Not further detailed here</i>			
14.1 Crop protection – choice of chemicals a. Are restrictions imposed by national / local legislation on plant protection product application methodology complied with (M)?	a. Where national or local legislation imposes restrictions on methods of plant protection product application (for example: distance to water ways while spraying etc.) producer		
15.1 Hygiene on harvesting			
16.1 Hygiene on harvested crop handling <i>Not further detailed here</i> 16.2 Quality control <i>Not further detailed here</i> 16.3 Rodent and bird control <i>Not further detailed here</i> 16.4 Post-harvest treatments <i>Not further detailed here</i> 16.5 Storage of harvested crop <i>Not further detailed here</i> 16.6 Haulage <i>Not further detailed here</i>			

21 Sustainable Agriculture Network (International) - Jinke van Dam

General characteristics:		
Initiator system:	Leading conservation groups	
Coordinating party:	The Rainforest Alliance (RA) is an international environmental organization based in New York City. Rainforest Alliance provides two secretariats for the Sustainable Agriculture Network: The Standards & Policy Secretariat coordinates the development of standards and related policies for SAN and the Certification. Secretariat administers the certification systems for the Sustainable Agriculture Certification Network (SANcert) [2].	
Initiation – duration:	The networks use the Rainforest Alliance certified™ seal, which has been granted since 1992 [2].	
Grade of integration		
Geographical coverage:	Worldwide	
Scope (feedstock included):	Crops. Certified crops include soy, sugarcane, sunflower, palm oil, bananas, citrus, cocoa, coffee, flowers and ferns.	
Value chain	Cultivation, processing, trade	
Mission or objective:		
The Sustainable Agriculture Network/Rainforest Alliance is a coalition of non-profit, independent conservationist organizations that promotes the social and environmental sustainability of agricultural activities by developing a standard, and certifying farms that comply with that standard [1]. The SAN awards the Rainforest Alliance Certified eco-label to farms, not to companies or products [5].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y General and local indicators (developed by work groups) [9]
Context (i.e. legal requirement, related policies):		
The general mission is to improve environmental and social conditions in tropical agriculture through conservation certification [5].		
Current status of system:		
Sustainable Agricultural Network provides certification services for farmers and agricultural companies in their respective countries, while offering knowledge and experience in working towards the development of the Sustainable Agriculture standard. Since 1992, almost 800 certificates for more than 31,000 farms have met the SAN standards on almost 600,000 ha for 22 crops [9]. Recently, in April 2009, SAN has released a document with additional criteria for oil palm, sugar cane, soy, peanut and sunflower farms [10].		
Planned activities:		
RA has stated that it is interested in developing standards for energy crops if demand for such certified produce arises. In that case, certified produce could be on the market in 2-4 years time [1].		

Structure of the system or initiative:	
Stakeholder participation:	SAN representatives and their operating countries are: Conservación y Desarrollo (C&D), Ecuador; Fundación Interamericana de Investigación Tropical (FIIT); Guatemala; Fundación Natura, Colombia; ICADE, Honduras; IMAFLORA, Brazil; Pronatura Chiapas, Mexico; SalvaNatura, El Salvador and Rainforest Alliance. Rainforest Alliance is the operating member of the SAN for the time being in Africa and Asia [9]. All standards and criteria were developed with active stakeholder involvement through a public consultation process [5].
Commitment:	Voluntary (label), worldwide
Stakeholder integration:	Policies and procedures must be developed to identify the interests of the local communities [9].
Monitoring performance:	-
Chain of custody mechanism:	A CoC system is necessary to avoid the mixing of products from certified farms with products from non-certified farms. Farmers may apply for certification for all land in production and companies may request that all of their source farms be certified [5]. When deemed appropriate by the Rainforest Alliance, registered companies receive a self-assessment to determine their level of risk in mixing certified and non-certified products. Based on the self assessment, a determination is made as to the need for a verification audit for CoC.
Verification mechanisms:	In order to obtain and maintain certification, the farmers must comply at least 80% with all criteria and 50% of each principle's applicable criteria. Full compliance with critical criteria is required [9]. Certification is valid for 3 calendar years and subject to annual audits. Farm audits are determined at whole farm level [11].
Further information:	
Removal of trade barriers	-
Costs:	Cost information on SAN from [12]: Certification audit costs depend on the size and location of the farm, the total number of producers in the group, the distance between farms, and the ability of producers to assume logistical costs related to the audit process. Usually two auditors do the field work. Local auditors are used whenever possible to reduce travel expenses.

The SAN standard consists of a list of general principles [9]. Additionally, criteria for oil palm, sugar cane, soy, peanuts and sunflower farms are developed [10]. The criteria and principles listed here include the latter. The document starts with a summary of each principle.

The standard has 10 principles which apply to all its certified crops [1, 9, 10]:

1	Social and Environmental Management System.
2	Ecosystem Conservation.
3	Wildlife Protection.
4	Water Conservation.
5	Fair Treatment and Good Working Conditions for Workers.
6	Occupational Health and Safety.
7	Community Relations.
8	Integrated Crop Management
9	Soil Management and Conservation.
10	Integrated Waste Management.

References:

Website: <http://www.rainforest-alliance.org/agriculture.cfm?id=san>

List of criteria and indicators:

Criteria [9, 10]: (C) = Critical criterion, (ADD) = Additional for soy, sugarcane, (SUB) = substitution of General criteria by SAN Addendum	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>1.1 The farm must have a social and environmental management system according to its size and complexity of its operations</p> <p>1.2 The farm must implement permanent or long-term activities to comply with the standard through various programs.</p> <p>1.3 The farm’s upper management must demonstrate a commitment to certification and to complying with the requirements stipulated in the standard and by law. The management must also be familiar with and endorse the system and its programs and support its execution by providing the necessary resources.</p> <p>1.4 The objectives and a summary of the social and environmental management system and its programs must be available and made known to workers.</p> <p>1.5 The farm must keep in its offices or facilities all documentation and records created for the social and environmental management system, as well as documents proving compliance with the standard, for at least three years or for the alternative time indicated in this standard.</p> <p>1.6 The potential social and environmental impacts of new works or activities must be evaluated.</p> <p>1.7 The farm must have the necessary processes for follow up, measurement and analysis, including that of claims by workers or other persons or groups, to evaluate the functioning of the social and environmental management system and farm compliance with applicable laws and the standard.</p> <p>1.8 The farm’s service providers must commit to complying with the environmental, social and labor requirements of this standard, not only while operating on the farm but also for any outside activities related to the services provided.</p>	<p>1.1 Containing the necessary policies, programs and procedures that prove compliance with this standard and respective national legislation binding for social, labor and environmental aspects on farms – whichever is stricter.</p> <p>1.2 Social and environmental management system programs must consist of the following elements:</p> <p>a. Short-, medium- and long-term objectives and goals.</p> <p>b. A list of activities to be conducted in each program, and a timeline or plan indicating when they will be implemented.</p> <p>c. Identification of the persons responsible for carrying out the activities.</p> <p>Etc. <i>Not all listed here</i></p> <p>1.5 These documents must be readily available to the persons responsible for carrying out the social and environmental management plan’s various programs and activities.</p> <p>1.6 These include the expansion of production areas, the construction or installation of new infrastructure, or major changes in production or processing systems. The evaluation must be carried out before the initiation of any changes or new work in accordance with applicable laws or, in their absence, based on technically accepted and recognized methods. Any evaluation must include procedures for monitoring and evaluating the significant impacts identified and not foreseen during the development of new works or activities.</p> <p>1.7 The continual improvement program must include the necessary corrective actions to rectify non-compliance situations, as well as the mechanisms needed to determine if the actions are implemented and if they result in improvements or need to be adjusted to produce the desired results. The results of these processes must be recorded and incorporated into the social and environmental management system through a continual improvement plan and program.</p> <p>1.8 The farm must have mechanisms for evaluating its service providers and checking that they are complying with this standard. The farm must not use the services of suppliers or contractors that do not comply with the social, labor and environmental requirements of this standard.</p>		

<p>1.9 The farm must implement a training and education program in order to guarantee the effective execution of the social and environmental management system and its programs. The training topics must be identified according to the standard, the position, and type of work carried out.</p> <p>1.10 The farm must have a system for avoiding the mixing of certified products with non-certified products in its facilities, including harvesting, handling, processing and packaging of products, as well as transportation. All transactions involving certified products must be recorded. Products leaving the farm must be duly identified and accompanied with the relevant documentation indicating a certified farm as origin (C).</p> <p>1.11 The farm must annually describe its energy sources and the amount of energy used from each source for production processes, transport and domestic use within the farm limits. The farm must have an energy efficiency plan with goals and implementation activities for increased efficiency, for reducing dependency on non-renewable sources and for increasing the use of renewable energy. Where appropriate, the use of on-farm energy sources must be preferred (ADD).</p>	<p>1.9 Records must be kept that include the participants' signatures, topics covered and the instructor's name for each training or educational event. The required training must be paid as part of the normal workday.</p>		
<p>2.1 All existing natural ecosystems (aquatic and terrestrial) must be identified, protected and restored through a conservation program (C).</p> <p>2.2 From the date of application for certification onwards, the farm must not destroy any natural ecosystem. Additionally, from November 1, 2005 onwards no high value ecosystems must have been destroyed by or due to purposeful farm management activities (SUB).</p> <p>2.3 Production areas must not be located in places that could provoke negative effects on national parks, wildlife refuges, biological corridors, forestry reserves, buffer zones or other public or private biological conservation areas.</p> <p>2.4 The harvesting or other taking of threatened or endangered plant species is not permitted. Cutting, extracting or harvesting trees, plants and other non-timber forest products is only allowed in instances when the farm implements a sustainable management plan that has been approved by the relevant authorities, and has all the permits required by law. If no applicable laws exist, the plan must have been developed by a competent professional (SUB).</p> <p>2.5 There must be a minimum separation of production areas from natural terrestrial ecosystems where chemical products are not used. A vegetated protection zone must be established by planting or by natural regeneration between different permanent or semi-permanent crop production areas or systems.</p> <p>2.6 Aquatic ecosystems must be protected from erosion and agrochemical drift and runoff by establishing protected zones on the banks of rivers, permanent or temporary streams, creeks, springs, lakes, wetlands and around the edges of other natural water bodies.</p>	<p>2.1 The program must include the restoration of natural ecosystems or the reforestation of areas within the farm that are unsuitable for agriculture.</p> <p>2.2 If any natural ecosystems have been destroyed by or due to purposeful farm management activities between November 1, 1999 and November 1, 2005, the farm must implement the following analysis and mitigations:</p> <ul style="list-style-type: none"> a. Conduct an analysis of the ecosystem destruction to document the scope and ecological impact of the destruction. b. Develop a mitigation plan with advice from a competent professional that is consistent with applicable legislation and that compensates for the negative impact. c. Implement the activities of this mitigation plan, including for example the set aside of a significant percentage of the farm area for conservation purposes. <p>2.5 The separation between production areas and ecosystems as defined in Annex must be respected.</p> <p>2.6 Distances between crop plants and aquatic ecosystems as indicated in Annex must be respected. Farms must not alter natural water channels to create new drainage or irrigation canals. Previously converted water channels must maintain their natural vegetative cover or, in its absence, this cover must be restored. The farm must use and expand vegetative ground covers on the banks and bottoms of drainage canals.</p>		<p>Annex provides information about distances between farm area and ecosystem based on type of farm, input level and slope.</p>

<p>2.7 The farm must establish and maintain vegetation barriers between the crop and areas of human activity, as well as between production areas and on the edges of public or frequently traveled roads passing through or around the farm.</p> <p>2.8 Farms with agroforestry crops located in areas where the original natural vegetative cover is forest must establish and maintain a permanent agroforestry system distributed homogenously throughout the plantations. Farms in areas where the original natural vegetation is not forest –as grasslands, savannas, scrublands or shrublands - must dedicate at least 30% of the farm area for conservation or recovery of the area’s typical ecosystems. These farms must implement a plan to establish or recover natural vegetation within 10 years.</p> <p>2.9 The farm must implement a plan to maintain or restore the connectivity of natural ecosystems, within its boundaries, considering connectivity of habitats at the landscape level (ADD).</p>	<p>2.7 These barriers must consist of permanent native vegetation with trees, bushes or other types of plants, in order to promote biodiversity, minimize any negative visual impacts and reduce the drift of agrochemicals, dust and other substances coming from agricultural or processing activities. The distance between the crop plants and areas of human activity as defined in Annex must be respected.</p> <p>2.8 The agroforestry system’s structure must meet the following requirements:</p> <p>a. The tree community on the cultivated land consists of minimum 12 native species per hectare on average.</p> <p>b. The tree canopy comprises at least two strata or stories.</p> <p>c. The overall canopy density on the cultivated land is at least 40%.</p> <p>2.9 e.g. through elements such as native vegetation on roadsides and along water courses or river banks, shade trees, live fences and live barriers</p>		
<p>3.1 An inventory of wildlife and wildlife habitats found on the farm must be created and maintained.</p> <p>3.2 Ecosystems that provide habitats for wildlife living on the farm, or that pass through the farm during migration, must be protected and restored. The farm takes special measures to protect threatened or endangered species.</p> <p>3.3 Hunting, capturing, extracting and trafficking wild animals must be prohibited on the farm (C).</p> <p>3.4 The farmer must keep an inventory of the wild animals held in captivity on the farm, and implement policies and procedures to regulate and reduce their tenancy. Endangered or threatened species must not be held in captivity.</p> <p>3.5 The farm is allowed to breed wild animals in captivity when the farm has the required conditions and the permits stipulated by law.</p> <p>3.6 Farms that reintroduce wildlife into natural habitats must have the appropriate permit from the relevant authorities and comply with the conditions established by law, or reintroduce the animals via duly authorized and established programs.</p>	<p>3.3 Cultural or ethnic groups are allowed to hunt or collect fauna in a controlled manner and in areas designated for those purposes under the following conditions:</p> <p>a. The activities do not involve species in danger of or threatened with extinction.</p> <p>b. There are established laws that recognize the rights of these groups to hunt or collect wildlife.</p> <p>c. Hunting and collection activities do not have negative impacts on the ecological processes or functions important for agricultural and local ecosystem sustainability.</p> <p>d. The long-term viability of the species’ populations is not affected.</p> <p>e. These activities are not for commercial purposes.</p> <p>3.5 These activities must be supervised by a competent professional.</p> <p>3.6 A competent professional must advise the farm on release practices. Exotic wildlife must not be introduced into the farm.</p>		

Criteria [9, 10]: (C) = Critical criterion, (ADD) = Additional for soy, sugarcane, (SUB) = substitution of General criteria by SAN Addendum	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>4.1 The farm must have a water conservation program that ensures the rational use of water resources. The program activities must make use of the best available technology and resources. It must consider water re-circulation and reuse, maintenance of the water distribution network and the minimizing of water use.</p> <p>4.2 All surface or underground water exploited by the farm for agricultural, domestic or processing purposes must have the respective concessions and permits from the corresponding legal or environmental authorities.</p> <p>4.3 Farms that use irrigation must employ mechanisms to precisely determine and demonstrate that the volume of water applied and the duration of the application are not excessive or wasteful.</p> <p>4.4 The farm must have appropriate treatment systems for all wastewaters it generates. The treatment systems must comply with applicable national and local laws and have the respective operating permits.</p> <p>4.5 The farm must not discharge or deposit industrial or domestic wastewater into natural water bodies without demonstrating that the discharged water complies with the respective legal requirements, and that the wastewater's physical and biochemical characteristics do not degrade the receiving water body (C). The mixing of wastewater with uncontaminated water for discharge into the environment is prohibited.</p> <p>4.6 Farms that discharge wastewater continuously or periodically into the environment must establish a water-quality monitoring and analysis program that takes into account potential contaminants and applicable laws.</p> <p>4.7 The farm must not deposit into natural water bodies any organic or inorganic solids, such as domestic or industrial waste, rejected products, construction debris or rubble, soil and stones from excavations, rubbish from cleaning land, or other materials (C).</p> <p>4.8 The farm must restrict the use of septic tanks to the treatment of domestic wastewater (grey water and sewage) and non-industrial wastewater to prevent negative impacts on underground or surface water.</p> <p>4.9 If total or partial compliance with the requirements of this standard that relate directly or indirectly to the contamination of natural water bodies cannot be proven, the farm must conduct a surface-water quality monitoring and analysis program.</p>	<p>4.1 The farm must keep an inventory and indicate on a map the surface and underground water sources found on the property. The farm must record the annual water volume provided by these sources and the amount of water consumed by the farm.</p> <p>4.3 The farm must demonstrate that the water quantity and the duration of the application are based on climatic information, available soil moisture, and soil properties and characteristics. The irrigation system must be well designed and maintained so that leakage is avoided.</p> <p>4.4 There must be operating procedures for industrial wastewater treatment systems. All packing plants must have waste traps that prevent the discharge of solids from washing and packing into canals and water bodies.</p> <p>4.5 If legal requirements do not exist, the discharged wastewater must comply with a set of minimum water quality parameters:</p> <p>4.6 The program must indicate the wastewater sampling points and frequency and the analyses to be carried out. A legally accredited laboratory must conduct all analyses. Laboratory results must be kept on the farm for at least three years. The program must comply with a set of minimum requirements for analysis and sampling.</p> <p>4.8 The tanks and their drainage systems must be located in soils suitable for this purpose. Their design must coincide with the volume of wastewater received and treatment capacity, and must permit periodic inspections. Wastewater from the washing of machinery used for agrochemical applications must be collected and must not be mixed with domestic wastewater or discharged to the environment without previous treatment.</p> <p>4.9 The program must indicate the sampling points and frequency, and must be continued until it can be proven that farm activities are not contributing to the degradation of the quality of the receiving water bodies. This does not exclude monitoring and water-analysis obligations stipulated by law or as indicated by local authorities. A minimum of analyses must be conducted. Additional analyses may be required as a result of the types of contamination identified during the audit.</p>	<p>4.5 Set of parameters: * Biochemical Oxygen Demand: < 50 mg/l * Total suspended solids: < 50 mg/l * pH: between 6 and 9 * Grease and oils: < 30 mg/l * Fecal coliforms: absent</p> <p>4.6 Requirements here given for wastewater discharge rate of 50-100 m³/day: * Biochemical Oxygen Demand: half-yearly * Total suspended solids: weekly * pH: weekly * Grease and oils: half-yearly * Fecal coliforms: half-yearly</p> <p>4.9 Analysis required: Suspended solids, total nitrogen, phosphorus compounds (during rainiest month of year) and specified pesticides (just after pesticide application re-entry period)</p>	

<p>5.1 The farm must have a social policy that declares its commitment to complying with labor laws and international agreements indicated in this standard.</p> <p>5.2 The farm must not discriminate in its labor and hiring policies and procedures along the lines of race, color, gender, age, religion, social class, political tendencies, nationality, syndicate membership, sexual orientation, civil status or any other motive. The farm must offer equal pay, training and promotion opportunities and benefits to all workers for the same type of work. The farm must not influence the political, religious, social or cultural convictions of workers.</p> <p>5.3 The farm must directly hire its workforce, except when a contractor is able to provide specialized or temporary services under the same environmental, social and labor conditions required by this standard. The farm must not establish relations or contracts with third parties, form or directly participate in employee-owned companies, or use other mechanisms to avoid the direct hiring of workers and the obligations normally associated with labor contracts. Employment of foreign workers must be subject to a work permit issued by the competent government agency. The farm must not ask for money from workers in return for employment.</p> <p>5.4 The farm must have payment policies and procedures that guarantee the complete payment of workers on the dates agreed upon in the labor contract. Payment must take place at the workplace, or by another arrangement agreed upon by the worker. The farm must provide the worker with a detailed and comprehensive explanation of the salary paid and of any deductions made, allowing the worker to appeal in the case of perceived discrepancies.</p> <p>5.5 Workers must receive pay in legal tender greater than or equal to the regional average or the legally established minimum wage, whichever is greater, according to their specific job (C).</p> <p>5.6 Working hours, rest periods during the workday, the number of annual paid vacation days, holidays, and rest days must comply with current labor laws and with a set of minimum conditions. These rights and benefits must be made known to the workers and included in any labor contract or collective agreement.</p> <p>5.7 All overtime must be voluntary. The farm must have policies and procedures relating to the requirements and assignation of overtime that conform to current labor laws. These policies and procedures must be made known to workers when they are hired.</p>	<p>5.1The policy must summarize the rights and responsibilities of the administration and workers, with emphasis on labor aspects, living conditions, basic services, occupational health and safety, training opportunities and community relations. The social policy must be approved by the farm's upper management and be divulged and made completely known and available to the farm's workforce.</p> <p>5.4 Farms with 10 or more full or part-time permanent employees must maintain an up-to-date written payroll and job description for each employee with the following information, which employees must have access to: a. Worker's name, national identity card number, and position, b. Job description + assigned salary, c Minimum salary established by the government according to the type of activity, d Weekly working hours established by applicable laws for the type of activity, and a comparison with the number of hours assigned each worker, e. Job requirements, for example, training or special skills, f. Payment dates, g. Gross pay for normal hours, h. Gross pay for overtime, i. Total pay: normal and overtime, j. Legal deductions and other deductions agreed upon by the worker, k. Net pay.</p> <p>5.5 In cases where the salary is negotiated through collective bargaining or other pact, the worker must have access to a copy of this document during the hiring process. For production, quota or piecework, the established pay rate must allow workers to earn a minimum wage based on an eight-hour workday under average working conditions, or in cases where these conditions cannot be met.</p> <p>5.6 Minimum conditions: a. The maximum number of hours worked per week must not exceed 48, b. Workers must have a minimum of 24 consecutive hours rest (one day off) for every six consecutive days worked, c. All workers must have the right to annual paid vacation equivalent to a minimum of one day for each month worked (12 days or 2 work weeks per year) or the equivalent for part-time workers.</p> <p>5.7 Overtime must not exceed 12 hours per week. Overtime hours must be paid at a higher rate than normal working hours. When current labor laws permit, this standard allows for an exception period during which the maximum 60 hours (48 normal hours plus 12 overtime hours) per week can be exceeded during seasonal activities or due to unforeseen circumstances, under a set of given conditions. <i>These conditions are not described here.</i></p>	<p>5.15 Or in their absence, with the following critical parameters defined by the WHO:</p> <ul style="list-style-type: none"> * Fecal Coliforms: 0 * Chlorine residue or residue from other treatment disinfectants: 0.2 to 0.5 mg/L * Nitrates: 10 mg/L as nitrates * pH: 6.5 to 8.5 * Sodium: 20 mg/L * Sulphates: 250 mg/L * Turbidity: Less than or equal to 5 NTU 	<p>5.2 As indicated by applicable laws, ILO Conventions 100 and 111, and this standard.</p> <p>5.8 ILO Conventions have been ratified, the farm must adhere to Convention 138, Recommendation 146 (minimum age).</p> <p>5.10 International Labor Organization (ILO) Conventions 29 and 105 and national labor laws.</p>
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<p>5.8 It is prohibited to directly or indirectly employ full- or part-time workers under the age of 15. In countries where the ILO Conventions have been ratified, the farm must adhere to Convention 138, Recommendation 146 (minimum age).</p> <p>5.9 When applicable laws permit, minors between 12 and 14 years old may work part-time on family farms, only if they are family members or neighbors in a community where minors have traditionally helped with agricultural work. The schedule for these minors including school, transportation and work must not exceed ten hours on school days or eight hours on non-school days, and must not interfere with educational opportunities.</p> <p>5.10 Any type of forced labor is prohibited, including working under the regimen of imprisonment, in agreement with International Labor Organization (ILO) Conventions 29 and 105 and national labor laws.</p> <p>5.11 The farm and supervisors must not threaten, sexually abuse or harass, or verbally, physically or psychologically mistreat workers for any reason. The farm must encourage the respectful treatment of workers and have a formal mechanism to act upon workers' claims of mistreatment.</p> <p>5.12 Workers must have the right to freely organize and voluntarily negotiate their working conditions in a collective manner as established in ILO Conventions 87 and 98. The farm must have and divulge a policy guaranteeing this right and must not impede workers from forming or joining unions, collective bargaining or organizing for ideological, religious, political, economical, social, cultural or any other reasons. The farm must periodically provide opportunities for workers to make decisions regarding their rights + alternatives to form any type of organization for negotiating their working conditions.</p> <p>5.13 The farm must inform permanent and regular seasonal workers - and the workers organizations that represent them - of any plans for changes in farm management activities or organizational structure with potentially significant social, environmental and economic effects (SUB).</p> <p>5.14 Housing provided by the farm for permanent or temporary workers living there must be well-designed, built and maintained to foster good hygienic, health and safety conditions.</p>	<p>5.8 Farms contracting minors between the ages of 15 and 17 must keep a record of the following information for each minor:</p> <p>a. First and last name, bb. Date of birth (day, month and year), c c. First and last name of parents or legal guardian, etc. Workers between 15 and 17 years old must not work more than eight hours per day or more than 42 hours per week. Their work schedule must not interfere with educational opportunities. These workers must not be assigned activities that could put their health at risk, such as the handling and application of agrochemicals or activities that require strong physical exertion.</p> <p>5.9 A set of minimum conditions must be fulfilled. <i>These conditions are not described here.</i></p> <p>5.10 The farm does not withhold any part or all of workers' salaries, benefits or any rights acquired or stipulated by law, or any of the workers' documents, in order to force them to work or stay on the farm, or as a disciplinary action. The farm does not use extortion, debt, threats or sexual abuse or harassment, or any other physical or psychological measure to force workers to work or stay on the farm, or as a disciplinary measure.</p> <p>5.13 a. Workers who will be replaced by the use of machines or for any other reason due to significant changes in farm management activities or organizational structure must be given priority consideration for opportunities to be contracted in other labors on the farm and must be trained for those new tasks.</p> <p>b. In confirmed cases of job loss and lack of employment opportunities, the farm must provide economic compensation for workers according to national labor legislation. In the absence of national legislation, the labor contract for permanent or seasonal workers must include a severance provision.</p> <p>5.14 Living quarters must be separated from production areas. The farm must seek alternatives for relocating housing or camps that are currently within production areas. Workers and their families living on the farm must have access to recreation areas according to the composition of inhabitants. The design, size and construction of dormitories, barracks and other housing, type and quantity of furniture, and number and location of sanitary facilities, showers, and washing and cooking areas must comply with applicable laws. In absence of applicable laws required set of elements and characteristics apply. <i>Required size and facilities given in standard not included here.</i></p>		
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<p>5.15 All workers of the farm and persons living on the farm must have access to potable water. Sufficient supply of potable water must be provided to all workers and must be available at the work site. The farm must be able to demonstrate that the water provided complies with the physical and chemical parameters and other characteristics established in applicable laws. Non-family farms that obtain water from their own sources - water not supplied by aqueducts managed by other entities - must have a periodic drinking water monitoring and analysis program.</p> <p>5.16 All workers and their families must have access to medical services during working hours and in case of emergency. When legislation requires, farms must contract the services of a doctor or nurse with the necessary equipment to provide these services.</p> <p>5.17 The farm must have mechanisms to guarantee access to education for the school-age children that live on the farm. Schools established and administered by certified farms must have the necessary resources, personnel and infrastructure to be able to provide an educational experience that complies with national legal requirements.</p> <p>5.18 The farm must implement an educational program directed towards administrative and operative personnel (farm workers) and their families that encompasses three topics.</p> <p>5.19 In those regions or countries where families traditionally harvest specific crops and where national laws do permit it, minors can participate in harvesting under a set of conditions. <i>Conditions in standards not listed here.</i></p>	<p>5.15 Analysis program includes:</p> <ul style="list-style-type: none"> a. Identification of water sources on a map and on the farm. b. Policies / procedures for guaranteeing protection of water sources. c. Sampling procedures and sampling locations and frequency. d. Analyses conducted by a legally recognized laboratory e. A record of the results for the last 3 years or since certification process was initiated. <p>Additional analysis may be requested to ensure quality if evidence of direct or indirect contamination of surface or underground water exists.</p> <p>5.18 Topics include the general objectives and requirements of Rainforest Alliance Certified™ certification; environmental and conservation topics related to this standard; and fundamental health and hygiene concepts. The program must be designed for the culture, language and educational level of those involved.</p>		
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<p>6.1 The farm must have an occupational health and safety program with the principal objective being to identify and minimize or eliminate workers' occupational risks.</p> <p>6.2 The farm must have a permanent and continuous training program to educate workers on how to carry out their work correctly and safely, especially regarding the handling of machinery and agricultural equipment. Workers must be familiar with the training requirements for their job, and must be trained before starting work on the farm.</p> <p>6.3 All workers that apply, handle, transport or come into contact with agrochemicals or other chemical substances must be trained in at least a series of defined subjects.</p> <p>6.4 Workers that carry out activities identified as being dangerous or a health risk in the occupational health and safety program, or those that require special skills such as the handling and application of agrochemicals, carrying heavy loads, harvesting manually or using agricultural machinery or equipment, must receive a medical check-up at least annually to assure their physical and mental capacities for such work. Workers must have access to the results of their medical examinations (SUB).</p> <p>6.5 Personnel who apply or handle agrochemicals must have examinations necessary to determine the potential effects of the agrochemicals they handle before initiating such activities on the farm. The examination results must be documented in a manner in which information is easily found. Workers must have access to the examination results and must be assigned to other activities if the recommendations indicate that they are unfit to apply these products.</p>	<p>6.1 The program must have the policies, procedures, personnel and the resources necessary for reaching its objectives. It must also comply with applicable national laws and with this standard and be known and understood by the workers. The workers must be involved with reviewing the policies, procedures and other activities indicated in the program to ensure compliance. An occupational health committee must be established on farms with ten or more permanent production and processing workers. A written procedure is required for selecting committee members, and records must be kept for committee meetings and actions taken.</p> <p>6.2 On farms with >10 permanent production and processing workers, farm must keep a written record of each training session.</p> <p>6.3 Defined subjects are a.o. general occupational health, Interpretation of the pesticide labels and of the Material Safety Data Sheet (MSDS) for the substances used, etc. Only persons with proven knowledge and experience in the subject must carry out the training. Farms with >10 permanent workers in production or processing must document for each training event the objectives, topics, the workers or positions that must attend training, the training materials used, the frequency and duration, and the list of participants.</p> <p>6.4 Those workers who either express or are observed having medical or mental health issues, must have the timely attention of and, as indicated, treatment by medical personnel - with the authority to find that a worker is unfit for the specific job he/she is doing and he/she needs job reassignment. Farm management must implement actions to avoid medical disorders of farm workers caused by harvest and other labor practices. Adequate rehydration must be provided at all times.</p> <p>6.5 These workers must not suffer from chronic diseases, hepatitis or renal diseases, or respiratory diseases nor have been declared mentally challenged. Only males between the ages of 18 and 60 are permitted to apply agrochemicals.</p>		WHO's categories Ia, Ib and II technical grade active ingredients of pesticides.

<p>6.6 The farm must provide workers in all work areas with the basic services, resources and working conditions necessary to comply with the occupational health and safety program objectives and with the safety, health, and cleanliness requirements of applicable laws and this standard.</p> <p>6.7 The farm must maintain strict safety standards in workshops and storage areas in order to reduce the possibility of accidents. Farms must have mechanisms to manage and control access to these areas and workers must have knowledge of them. The farm must assign and train personnel responsible for managing distribution of materials and for controlling access to storage areas. Materials must be stored separately according to their characteristics.</p> <p>6.8 Workshops and storage facilities of all substances but agrochemicals or flammable must be designed, constructed and equipped to reduce the risk of accidents and negative impacts on human health and the environment.</p> <p>6.9 Those areas used for the storage and distribution of agrochemicals or flammable and toxic substances must be designed, constructed and equipped to reduce the risk of accidents and negative impacts on human health and the environment.</p> <p>6.10 The farm must store agrochemicals in a manner that minimizes potential negative impacts on human health and on the environment. The farm must store only the amount of agrochemicals necessary to meet short-term needs. These products must be separated according to their biocide, toxicity and chemical formula. They must not be stored on the floor nor come within contact with absorbent materials. A Material Safety Data Sheet must be kept in the storage facility for each chemical product stored. <i>Also mentioned here: information about storage agrochemical containers.</i></p> <p>6.11 The farm must demonstrate that the locations of agrochemical and fuel storage areas comply with applicable laws. If applicable legislation does not exist and if the design, construction and management of these facilities do not comply with some or all of the requirements indicated in Criteria 6.7 to 6.10, a set of required separations must be maintained (<i>not listed here</i>).</p> <p>6.12 The farm must take permanent measures to reduce the risk of accidents or spills of agrochemicals during their transportation to and within the farm. Vehicles used for transporting chemicals must be in a good state of repair, legally registered and have insurance policies designed for these services. The persons in charge of transporting agrochemicals must demonstrate that they know how to safely transport and handle the substances.</p>	<p>6.6 Farms must provide facilities for human hygiene purposes in all sites with worker presence that is out of reach of administrative infrastructure. The farm must consult workers about the provided services, resources and working conditions, and demonstrate that they take into account the results of these consultations. The farm must provide the necessary protective equipment, and require its usage, for all machinery etc considered dangerous.</p> <p>6.7 Personal protection equipment must not be stored with chemical substances. A current inventory of materials must be maintained and only the quantities of materials necessary to guarantee the continuity of work on the farm must be stored.</p> <p>6.8 All of these areas must be used exclusively for designated purposes and must have signs inside and outside that indicate the types of SAN Sustainable Agriculture substances stored, the dangers they present, and precautionary measures to be taken in the area. The design, construction and equipping of these facilities must comply with applicable laws or with a set of defined parameters (<i>not included in this list</i>) whichever are stricter.</p> <p>6.9 These areas must be used exclusively for these purposes. Fuels and other flammable substances must not be stored with agrochemicals. All of these areas must have signs legible at a distance of 20 meters to indicate the types of substances stored, the dangers they present and precautionary measures to be taken in the area. The farm must ensure that all conditions comply with applicable laws or with a set of parameters (<i>not listed here</i>) whichever are stricter.</p> <p>6.12 All agrochemicals must be transported to the farm in their original containers and accompanied by a copy of their Material Safety Data Sheet. The farm must only transport to the production areas the quantity of agrochemicals necessary for that day's work. Chemicals must be transported in properly labeled plastic containers that are then returned to storage facility after use. Mobile agrochemical application equipment must be transported empty to the application area.</p>		
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<p>6.13 All workers that come into contact with agrochemicals, including those who clean or wash clothes or equipment that has been exposed to agrochemicals, must use personal protection equipment. The farm must provide this equipment in good condition, and must provide incentives to workers to use the equipment (C).</p> <p>6.14 The farm must have the necessary safety measures for the protection of workers applying agrochemicals in the field.</p> <p>6.15 The farm must take permanent actions to protect workers, neighbors and other persons from the effects of the application of agrochemicals and biological or organic inputs.</p> <p>6.16 The farm must have showers and changing rooms for all persons that apply or come in contact with agrochemicals.</p> <p>6.17 Clothes worn while applying agrochemicals must never be washed in the workers' homes. Handling and safety procedures must be established for transferring or transporting contaminated clothing from the shower area to the laundry room.</p> <p>6.18 The farm must identify and analyze the types of potential emergencies that could occur on the farm according to its operations and environment. The farm must have an emergency response plan with actions and documented procedures for responding to all identified emergencies.</p> <p>6.19 The farm must have accessible the necessary equipment for preventing and responding to the different types of emergencies identified in the emergency response plan.</p> <p>6.20 Farms must implement documented procedures for protecting workers in the event of an extreme weather event.</p>	<p>6.13 The equipment must reduce contact with the agrochemicals and the possibility of acute or chronic poisoning, and must comply with the strictest of the following requirements: a) the requirements indicated on the products' Material Safety Data Sheet, b) any applicable laws; or c) the equipment indicated in Annex of this standard.</p> <p>6.14 A supervisor must check, at least every 3 hours, all workers applying WHO's categories Ia, Ib and II technical grade active ingredients of pesticides (see Annex). Workers must not apply agrochemicals for more than 6hours per day in order to limit their exposure to agrochemicals and to minimize the risk of accidents.</p> <p>6.15 A list of actions is given. For products that do not have restricted entry periods in the Material Safety Data Sheet, a set of restricted entry intervals must be applied (<i>not given here</i>).</p> <p>6.16 There must be policies and procedures that require that all workers that apply agrochemicals shower and change their clothes immediately after finishing the application and before leaving the farm at the end of the workday. There must be exclusive and separate areas for washing personal protection equipment and for washing application equipment.</p> <p>6.18 All workers must be familiar with the emergency response measures relating to their areas of work and responsibilities. The farm must have workers trained in first aid available on each shift.</p> <p>6.20 When harvesting at night, farms must provide constant lighting. Only in the case of monoculture crops with an average plant height lower than two meters, farms must provide shelter for shade and protection from extreme weather conditions, such as heavy rain and lightning.</p>		
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<p>7.1 The farm must respect areas and activities that are important to the community socially, culturally, biologically, environmentally and religiously. These must not be affected by farm activities.</p> <p>7.2 The farm management must implement policies and procedures for identifying and considering the interests of local populations and community interest groups regarding farm activities or changes that could have an impact on their health, employment or local natural resources. The farm must document and make available for public view all complaints and comments it receives related to its activities and its replies to them (SUB) (C).</p> <p>7.3 The farm must have policies and procedures for prioritizing the hiring and training of a local labor force and for contracting and acquiring local services and products.</p> <p>7.4 The farm must contribute to the protection and conservation of community natural resources, collaborate with the development of the local economy, and contribute fairly towards the costs of the community infrastructure and local shared resources consumed – schools, pathways, aqueducts and other infrastructure as well as water and other resources – according to the amount used by the farm. Farms must negotiate a fair compensation with local communities and local and national authorities for resources and infrastructure used.</p> <p>7.5 The farm must help with local environmental education efforts and must support and collaborate with local research in areas related to this standard.</p> <p>The farm must have a legitimate right to land use and tenure, demonstrated by presenting the appropriate official documentation.</p>	<p>7.5 If there is no such documentation the farm must show either:</p> <p>a. Absence of significant disputes on land use, tenure and access, or</p> <p>b. The consent of local communities, regarding the land, natural and agricultural resources.</p>		

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<p>8.1 The farm must have an integrated pest-management (IPM) program based on ecological principles for the control of harmful pests (insects, plants, animals and microbes).</p> <p>8.2 The farm must demonstrate by comparative agrochemical inventories and use records that it rotates chemical products and reduces their use for crop production. The agrochemical inventory on the farm must include, as a minimum requirement, the commercial and generic product names, the quantities acquired and the purchase dates.</p> <p>8.3 The farm must implement the procedures and have the necessary equipment for mixing and applying agrochemicals, as well as maintain, calibrate and repair application equipment, in order to reduce to a minimum waste and excessive applications. The farm must designate and train personnel who will be responsible for the implementation of these procedures.</p> <p>8.4 A list of given chemical or biological substances cannot be used on certified farms (C). List of Prohibited Pesticides – Sustainable Agriculture Network is binding for the inserts 8.4.c, 8.4.d, 8.4.e and 8.4.f of this criterion.</p> <p>8.5 The farm must have a plan for eliminating the use of World Health Organization Class Ia and Ib technical grade active ingredients of pesticides, and for reducing the use of World Health Organization Class II technical grade active ingredients of pesticides.</p> <p>8.6 The farm must take steps to avoid introducing, cultivating or processing transgenic crops. When nearby transgenic materials are accidentally introduced into a certified farm’s crop, the farm must develop and execute a plan to isolate the crops and provide follow-up in order to comply with the requirements of this criterion (C).</p>	<p>8.1 The program must give priority to the use of physical, mechanical, cultural and biological control methods, and the least possible use of agrochemicals. The program must include activities for monitoring pest populations, training personnel that monitor these populations, and integrated pest management techniques.</p> <p>8.2 For field applications, the farm must record the following information: a. Products applied and application dates, b. Identification of the area where the application was made (on a map or clearly identified by the name or number of the plot), etc (<i>not complete list given here</i>). The information from records must be summarized and analyzed to determine application trends for specific products during the last five years.</p> <p>8.4 a. Biological or organic substances that are not legally registered in the country for commercial use, b. Agrochemicals that are not registered officially in the country, c. Agrochemicals that are mentioned in the List of Banned and Severely Restricted Pesticides in the U.S. by its Environmental Protection Agency (EPA) or pesticides banned or severely restricted in the European Union, d. Substances that have been banned globally under the Stockholm Convention on Persistent Organic Pollutants, e. Substances listed in Annex III of the Rotterdam Convention on Prior Informed Consent (PIC), in relation to national bans or severe restrictions for documented health or environmental reasons in at least two regions of the World, f. All Pesticide Action Network Dirty Dozen substances.</p> <p>8.5 Farms that do use the formerly mentioned ingredients must demonstrate the following: a. No technically or economically viable alternatives do exist for the type of pest or infestation, b. The pest or infestation has had, or would have had, proven significant economic consequences that surpass the economic threshold for damage, c. Measures must be taken to substitute World Health Organization Class Ia, Ib and II technical grade active ingredients of pesticides.</p>	<p>8.1 As part of the program, the farm must collect and record the following information about pest infestations: infestation dates, duration, area and location; type of pest; the control mechanisms employed; environmental factors during the infestation; and damage caused and estimated costs of damage and control.</p>	<p>Standard gives list of prohibited agrochemicals in annex.</p>

<p>8.7 Farms must only use fumigation methods for post-harvest treatment that minimize health effects in workers and control applications.</p> <p>8.8 Only for sugarcane: Farms that harvest sugarcane with machines are not allowed to use fire for harvest preparation. All other farms – employing manual rather than mechanized harvesting - must eliminate fire for harvest preparation within a maximum period of three years and must implement a set of rules.</p> <p>Fire must not be allowed to spread to conservation areas. The workers in charge of burning must be adequately trained in fire management, control and suppression (ADD)</p> <p>8.9 The use of fire for pest and disease management must only be used if it is the option of less environmental impact in comparison with other pest control measures. This option must be approved by competent authorities, must reflect technical considerations and focus on problematic areas only (ADD).</p>	<p>8.7 Records must be maintained of any post-harvest treatment. These records must at least include a list of required information (<i>Not listed here</i>).</p> <p>8.8 Rules include: Explain fire-elimination plan to workers, suppliers and surrounding communities, Comply with local legislation about the use of fire for farm management, Conduct burning in a way that minimizes impact on workers, surrounding communities and natural resources.</p>		
<p>9.1 The farm must execute a soil erosion prevention and control program that minimizes the risk of erosion and reduces existing erosion.</p> <p>9.2 The farm must have a soil or crop fertilization program based on soil characteristics and properties, periodic soil or foliage sampling and analysis, and advice from a competent and impartial professional or authority. The number of soil or foliage samples must correspond with the size of the production area, types of soil, and variations in its properties, as well as results of previous analyses.</p> <p>9.3 The farm must use and expand its use of vegetative ground cover to reduce erosion and improve soil fertility; structure and organic material content, as well as minimize the use of herbicides.</p> <p>9.4 The farm must promote the use of fallow areas with natural or planted vegetation in order to recover natural fertility and interrupt pest life cycles. The farm must have a plan that indicates the fallow techniques or practices and their timing.</p> <p>9.5 New production areas must only be located on land with the climatic, soil and topographic conditions suitable for intensity level of the agricultural production planned. The establishment of new production areas must be based on land use capacity studies that demonstrate long-term production capacity. The cutting of natural forest cover or burning to prepare new production areas is not permitted (C).</p>	<p>9.1 The program activities must be based on the identification of soils affected by or susceptible to erosion, as well as soil properties and characteristics, climatic conditions, topography and agricultural practices for the crop. Special emphasis must be placed on controlling runoff and wind erosion from newly tilled or planted areas, as well as preventing sedimentation of water bodies. The farm must use and expand vegetative ground covers on the banks and bottoms of drainage canals to reduce erosion and agrochemical drift and runoff towards water bodies.</p> <p>9.2 The producer must keep the results of these analyses on the farm for a two-year period. Organic and non-organic fertilizers must be applied so as to avoid any potential negative impacts on the environment. The farm must give priority to organic fertilization using residues generated by the farm.</p> <p>9.3 There must be a vegetative ground cover establishment and expansion plan that indicates the areas with existing cover, as well as areas where cover will be established in the future. The farm must include a timeframe for these activities.</p> <p>9.4 These areas must be identified in the fields and on the farm map. Burning is not allowed to prepare land.</p>		

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<p>10.1 The farm must have an integrated waste management program for the waste products it generates.</p> <p>10.2 The use of open waste dumps and open-air burning of waste is not permitted. The burning of waste products is only allowed in an incinerator designed for that purpose, based on technical studies that determined the size, optimum location and control measures for minimizing the environmental and human health impacts related to its construction and operation. The farm must have the relevant legal permits for the construction and operation of this incinerator, as well as the appropriate operating procedures.</p> <p>10.3 The final or semi-permanent waste deposit areas on the farm must be designed and managed to reduce the risks of environmental contamination and damage to human health.</p> <p>10.4 Farms must not transfer waste to persons or businesses without checking that its treatment or final use complies with legal requirements and the requirements of this standard</p> <p>10.5 The farm must be clean and free of accumulations of all types of waste products in order to maintain a positive image and contribute to the workers' well-being.</p> <p>10.6 The farm must implement practices to diminish its emissions of GHG gases and increase CO2 sequestration. Such practices include soil cover management, use of clean technologies, improvement of energy efficiency, reduction in tillage etc aimed at GHG reduction and CO2 sequestration.</p>	<p>10.1 This must be based on the concepts of refusing or reducing the use of products that have actual or potential negative impacts on the environment or human health as well as reusing and recycling waste. Sources and types of waste must be identified and the quantity must be estimated. Activities of the integrated waste management program must be in accordance with the types and quantities of waste generated.</p> <p>10.3 Its location must be in accordance with applicable laws regarding distances from houses and other areas of human activity, water channels and sources, and conservation areas. The farm must have identified the sites and designs that are technically suitable for the final deposit or processing of both organic and inorganic waste through an evaluation of site characteristics, the volume and type of waste to be eliminated or treated, and potential impacts.</p> <p>10.4 Waste products or materials that have been in contact with agrochemicals or any other toxic or harmful substances must not be given away without first verifying that they will be used for similar purposes that do not represent a danger to human health or produce negative environmental impacts.</p> <p>10.5 The farm must regularly implement educational activities for farm workers and residents with objective of promoting cleanliness and preventing the indiscriminate disposal of waste. The farm must strategically place waste receptacles on the farm and regularly collect and dispose of their contents.</p>		

22 Roundtable on Responsible Soy RTRS (International) -Jinke van Dam

General characteristics:		
Initiator system:	RTRS was initiated by WWF Switzerland and Coop Switzerland. A first paper has been developed by ProForest in 2004 known as the so-called "Basel Criteria for Responsible Soy" [5]	
Coordinating party:	Executive board is selected by the General Assembly. Secretariat is responsible for the daily management.	
Initiation – duration:	Established in 2005	
Grade of integration	Micro standard approach	
Geographical coverage:	Worldwide	
Scope (feedstock included):	Soy value chain	
Value chain	production, trading, processing and manufacturing	
Mission or objective:		
The Round Table on Responsible Soy Association is an international multi-stakeholder initiative that brings together those concerned with the impacts of the soy economy. It's working to define what responsibly-grown and processed soy is and to promote the best available practices to mitigate negative impacts throughout the value chain.	Principles included:	Y
	Criteria included:	Y (draft)
	Indicators included:	Y (draft)
Context (i.e. legal requirement, related policies):		
-		
Current status of system:		
On May 28th, 2009 the version for the field tests of "Principle and Criterion" (P&C) for Responsible Soy Production was approved [13].		
Planned activities:		
<p>The RTRS is currently working on [13]:</p> <p>Carrying out the field tests for a period of a year, in order to make a final revision based in the practical experience obtained, from which we will produce the first certifiable version P&C of RTRS.</p> <p>Developing National Interpretation Guides for documents P&C generics of the RTRS, which, once ratified by the RTRS, will turn into the base for the certification in each country producer of soy.</p>		

Structure of the system or initiative:	
Stakeholder participation:	A development group is established to develop a set of standards for responsible soy value chains. The DG is composed of representatives of three constituencies (producers; Industry, Trade & Finance and Civil Society) having equal weight and number of votes. DG proposals are sent out for public consultation and to be approved by the General Assembly and Board [13].
Commitment:	Voluntary (RTRS members need to comply with Principles)
Stakeholder integration:	Dialogue with stakeholders and local communities included in criterion 3
Monitoring performance:	<i>For operation-specific improvement [14]:</i> Generally the auditors monitor every year and expect to see improvement on any corrective actions they have requested as part of the continuous improvement. In schemes such as FSC (as example) there is an annual monitoring report made available publicly for each operation. <i>For overall impact [14]:</i> RTRS has not (yet) put in place any monitoring of impacts / results of their scheme, or collection of standardized data.
Chain of custody mechanism:	As currently proposed: segregation and mass balance. Book and claim is not ruled out and this approach will be monitored and tested during field testing phase and recognized if appropriate [15].
Verification mechanisms:	Existing mechanisms for implementation of segregation and mass balance CoC from other sectors will be adopted and used. Rules for control of claims and use of logo will be developed.
Further information:	
Removal of trade barriers	-
Costs:	-

List of principles included [16]:	
1	Legal Compliance and Good Business Practice
2	Responsible Labor Conditions
3	Responsible Community Relations
4	Environmental responsibility
5	Good Agricultural Practice

References:	
Website:	http://www.responsiblesoy.org

List of criteria and indicators:

Criteria [16]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
1a. There is awareness of, and compliance with, all applicable local and national laws.	<ul style="list-style-type: none"> * Producer can demonstrate awareness of his or her responsibilities, according to applicable laws. * Applicable laws are being complied with. 		
1b. Legal use rights to the land are clearly defined and demonstrable.	<ul style="list-style-type: none"> * Documented evidence of rights to use the land (e.g. ownership document, rental agreement, court order etc) 		
1c. There is open and transparent engagement with interested parties (<i>optional, possibly to be removed</i>)	<ul style="list-style-type: none"> * Engagement with local actors and stakeholders. * Continuous improvement on divulging social and environmental information relevant to the RTRS standard. 		
2a. Do not engage in or support child labor or forced labor, or engage in or support discrimination or harassment.	<ul style="list-style-type: none"> * No forced, bonded, trafficked or otherwise involuntary labor is used at any stage of production. * No workers of any type are required to lodge their identity papers with anyone and no part of their salary, benefits or property is retained in order to coerce workers. * Spouses and children of contracted workers are not obliged to work on the farm. * Children and minors (below 18) do not conduct hazardous work or any work that jeopardizes their physical, mental or moral well being. * Children under 15 (or higher age as established in national law) do not carry out productive work. They may accompany their family to the field as long as they are not exposed to hazardous, unsafe or unhealthy situations. * There is no engagement in, support of or tolerance of any form of discrimination which annuls or affects the recognition, fruition or equal exercise of rights or liberties at work. * All workers receive equal remuneration for work of equal value, equal access to training and benefits and equal opportunities for promotion and to fill all positions open. * Workers are not subject to corporal punishment, mental or physical oppression and coercion, verbal or physical abuse, sexual harassment or any other kind of intimidation. 		<p>ILO Convention 29 on Forced Labor and 105 on Abolition of Forced Labor</p> <p>Ref. ILO Convention 138 on Minimum Age and 182 on Worst Forms of Child Labor</p> <p>Ref: ILO Convention 111 on Discrimination and ILO Convention 100 on Equal Remuneration.</p>
2b. All workers, sharecroppers, contractors, and subcontractors are adequately informed and trained for their tasks and are aware of their rights and duties.	<ul style="list-style-type: none"> * Labor laws, union agreements or direct contracts of employment detailing payments and conditions of employment (e.g., working hours, deductions, overtime, sickness, holiday entitlement, maternity leave, reasons for dismissal, period of notice, etc) are available in the languages understood by the workers or explained carefully to them by a management official. * Adequate and appropriate training and comprehensible instructions on fundamental rights at work, health and safety and any necessary guidance or supervision are provided to all workers. 		

Criteria [16]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
2c. A safe and healthy workplace is provided for all workers.	<ul style="list-style-type: none"> * There is a health and safety policy which applies to all workers and is adequately implemented and monitored. * Relevant health and safety risks are identified and procedures are developed to address these risks by employers and these are monitored. * Immediate steps are taken to stop any operation where there is an imminent and serious danger to safety and health and to evacuate as appropriate. * Potentially hazardous tasks are only carried out by capable and competent people who do not face specific health risks. * Adequate and appropriate protective equipment is provided and used to cover all potentially hazardous operations such as pesticide application, land preparation and harvesting. * The necessary precautions are taken to avoid people entering into recently sprayed areas. * Accident and emergency procedures exist and instructions are clearly understood by all workers. * There is access to medical assistance and compensation in case of work-related disease or injury. 		Ref: ILO convention 155 on Occupational Safety and Health; ILO Convention 184 on Safety and Health in Agriculture; ILO Recommendation 192 on Safety and Health in Agriculture
2d. Workers have freedom of association and rights of collective bargaining.	<ul style="list-style-type: none"> * All workers and sharecroppers have the right to establish and/or join an organization of their choice. * Effective functioning of such organizations is not impeded. Representatives are not subject to discrimination and have access to their members in the workplace. * All workers have the right to perform collective bargaining * Workers are not inhibited from interacting with external parties (e.g. NGOs, trade unions labor inspectors, agricultural extension workers, etc) 		Ref. ILO Convention 87 on Freedom of Association and Protection of the Right to Organize. Ref. ILO Convention 98 on Right to Organize and Collective Bargaining.

Criteria [16]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
2e. All workers, employed directly or by major service providers, receive remuneration that is sufficient to meet basic needs.	<ul style="list-style-type: none"> * Remuneration: Workers are paid gross wages that comply with national legislation and sector agreements and are sufficient to meet basic needs. * Remuneration: Deductions from wages for disciplinary purposes are not made. Wages and benefits are detailed and clear to workers and workers are paid in a manner convenient to them. Paid wages are recorded by the employer. * Normal weekly working hours do not exceed 48. * If additional overtime hours are necessary: <ul style="list-style-type: none"> a) This will only be allowed in exceptional and unforeseen circumstances. b) All workers must agree to overtime. c) The farm can have only two exceptional periods per year. d) The farm must make sure that the average of working hours in the two-month period after the start of the exceptional period is still no more than 60 hours per week. * Working hours per worker are recorded by the employer. * Overtime work must at all times be voluntary and paid according to legal or sector standards. In case overtime work is needed, workers shall receive timely notification. Workers shall be entitled to at least one day off every seven-day period. * Salaried workers shall have all entitlements and protection in national law and practice with respect to maternity. Workers taking maternity leave shall be entitled to return to their employment on the same terms and conditions that applied to them prior to taking leave and they shall not be subject to any discrimination, loss of seniority or deductions of wages. * If workers are paid per unit/result (piece work), a normal 8 hour working day should allow workers, (men and women), to earn at least the national or sector established minimum wage and be sufficient to meet basic needs. * If employees live on the central production or processing site(s), they have access to affordable and adequate housing and food. 		Ref: ILO Convention 131 on Minimum wage fixing convention. Ref. ILO Convention 1 on Hours of Work
3a. Traditional communities affected by expansion of soy bean areas are compensated for any relinquishment of rights (including traditional land use rights), subject to their free, prior, informed and documented consent.	<ul style="list-style-type: none"> * A comprehensive, participatory and documented social and environmental assessment has been carried out (as per Criterion 4) * Documented evidence of compensation and free prior informed consent for relinquishment of rights 		

Criteria [16]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
3b. A dialogue is established with local communities and a procedure is in place to address complaints and grievances.	<ul style="list-style-type: none"> * Documented evidence of the dialogue * A complaints and grievances mechanism which includes a compensation mechanism for damages incurred by the community as a result of the agricultural activities, and a timeframe for resolution of the complaint/grievance. 	Verifier: Records of complaints/grievances Verification: Interviews with representatives of local communities would be important	
3c. Preference is given to the employment and training of the local population, and to the contracting of services and purchasing inputs in the local market, as a means to promote community development.	<ul style="list-style-type: none"> * Documentation/demonstration that there is a policy to favor hiring locally, and that this has been implemented. * Documentation of % of employment of local people who originate from the area. Adequate justification if local hiring has not taken place. * Demonstrate that purchasing policies favor local procurement of services and inputs, and (if necessary) provide adequate justification where this has not taken place. 		
4a. On and off site impacts (both positive and negative, both social and environmental) of new infrastructure have been assessed and appropriate measures taken to minimize and mitigate any negative impacts.	<ul style="list-style-type: none"> * A risk assessment is carried out prior to the establishment of new infrastructure. * The assessment carried out in a comprehensive, participatory and transparent manner. 		
4b. Pollution is minimized and production waste is managed responsibly.	<ul style="list-style-type: none"> * No burning of crop residues or waste. * Possible indicators: a) Adequate storage of fuel, batteries and tires, b) Adequate facilities for rinsing mechanical equipments, c) Toxic waste should be checked carefully. 		
4c. Efforts to reduce emissions of Greenhouse gases are made.	<ul style="list-style-type: none"> * Monitoring of trends of direct fossil fuel use, per unit of production over time. * Monitoring of trends of carbon incorporation into soil (organic material in soil) <p><i>Indicators in further development</i></p>		
4d. Habitats for rare, threatened or endangered native or endemic species are maintained and safeguarded.	<ul style="list-style-type: none"> * The existence of mapping or planning to identify habitats of rare, threatened or endangered native or endemic species * Maintenance of native vegetation according to the mapping that was carried out. * Existence of monitoring system 		
4e. Expansion for soy cultivation takes place on land cleared of native vegetation before 2008 / date of publication (still optional)	<ul style="list-style-type: none"> * Status of the area at the cut off date * Proof that the area is inside the limits of an agricultural expansion zone in an official land use plan, which was subject to a participatory process. * Proof that HCVA's have not been converted. * Soy expansion preferentially takes place on existing underutilized cleared land e.g. degraded pastures. 	Guidance: "outside areas identified as HCVA" includes areas where an assessment has not yet been made.	

Criteria [16]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
4f. Impacts (both positive and negative, both social and environmental) of expansion for soy cultivation have been assessed and appropriate measures taken to minimize and mitigate any negative impacts.	Risk assessment is carried out prior to the expansion.		
5a. The quality of surface and ground water is maintained or improved.	<ul style="list-style-type: none"> * Practices are implemented to minimize impacts on water quality from chemical residues, fertilizers, erosion or other sources * There is monitoring – appropriate to scale – to demonstrate that the practices are effective 	Where appropriate there should be monitoring of parameters such as pH, temperature, dissolved oxygen, turbidity. National interpretations should provide information on how this monitoring can be carried out.	In some places basic analysis kits are available for parameters such as pH, dissolved oxygen, nitrogen and phosphorus. They do not include more complex chemicals such as some pesticide residues – especially modern pesticides.
5b. The efficiency of water use for irrigated soy production is optimized	<ul style="list-style-type: none"> * The farmer can provide a plan or other document indicating that irrigation being used is following best practice for irrigation * Irrigation is not having a negative impact on water quantity * If ground water is used for irrigation then the groundwater level is being monitored 		
5c. Natural vegetation areas around springs and along natural watercourses are maintained or reestablished.	<ul style="list-style-type: none"> * The location of all watercourses has been identified and mapped and the status of the riparian vegetation is known by the producer. * Where natural vegetation in riparian areas has been removed there is a plan with a timetable for restoration which is being implemented 		
5d. Soil quality is maintained or improved and erosion is avoided by good management practices.	<ul style="list-style-type: none"> * There is a soil quality (physical, chemical and biological) and erosion management plan – appropriate to the location and scale of production – which is being implemented. * Monitoring – appropriate to scale of production – is in place. * Producers must demonstrate knowledge of techniques to maintain soil fertility and must be implementing this in practice. <p>Suggestions monitoring indicators include</p> <ul style="list-style-type: none"> • Analysis of organic matter, total Nitrogen, Phosphorous, • Measurement of surface residues – quality and quantity 30 days before mean sowing date with a tolerance of +\ - 10 days 	The management plan should include issues such as: <ul style="list-style-type: none"> • road management • management of sloping areas • fragile soils Indicators need to be based on the key issues for production and region – this must be addressed through national interpretation	
5e. Systematic, recognized Integrated Pest Management (IPM) techniques, including biological control, to monitor, prevent and control pests, crop diseases and weeds are adopted.	<ul style="list-style-type: none"> * There is a plan for IPM and the plan is implemented. * Chemical use follows professional recommendations for agrochemicals (or, if professional recommendations are not available, then manufacturer’s recommendations). * Maintenance of records of monitoring of pests, diseases, weeds and chemical use. 		

Criteria [16]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
5f. All application of chemicals is documented and all handling, storage, collection and appropriate disposal of chemical waste and empty containers, is monitored to ensure compliance with good practice.	<ul style="list-style-type: none"> * Containers are stored, and disposed of properly. * Containers are washed using triple rinsing principles and water properly disposed of. * Transportation of chemicals is safe. * Fertilizers are used in accordance with professional recommendations (provided by manufacturers where other professionals are not available). 		
5g. Chemicals listed in the Stockholm and Rotterdam Conventions or in the Pesticide Action Network (PAN) Dirty Dozen will not be used.	There is adequate knowledge about which chemicals can and cannot be used.		Stockholm and Rotterdam Conventions Pesticide Action Network (PAN) Dirty Dozen
5h. Document monitor and control the use of biological control agents in accordance with national laws and internationally accepted scientific protocols.	<ul style="list-style-type: none"> * There is adequate information about requirements for use of biological control agents. * Adequate records are kept of all use of biological control agents. 		
5i. Systematic measures are planned and implemented to monitor, control and minimize the spread of invasive introduced species and new pests.	<ul style="list-style-type: none"> * There is a system to identify any invasive introduced species or new pests. * If such species or pests are identified there are measures in place to minimize spread. * Any incidence should be reported to the proper authorities. 		
5j. Appropriate measures are implemented to prevent the drift of agrochemicals and genetic material to neighboring areas.	<ul style="list-style-type: none"> * All application of chemicals shall follow good agricultural practice and shall be conducted only under weather conditions that minimize drift to adjacent areas. * No aerial application of hazardous chemicals within 500m of populated areas or water bodies. * Where a neighbor is producing a type of crop where contamination is an issue, the producer takes adequate measures to prevent any contamination. * Harvesters take measures to ensure there is no contamination when moving between farms. 		
5k. Control of the origin of seeds as a measure for the prevention of introduction of new diseases.	<ul style="list-style-type: none"> * All purchased seed must come from certified sources. * For small producers self-propagated non-certified seeds are permitted for their own use provided appropriate seed production norms are followed. 		

**23 Regulation (EEC) No. 2092/91 on organic farming
(European)- Jinke van Dam**

General characteristics:		
Initiator system:	European Commission	
Coordinating party:	The Standing Committee on Organic Farming consists of representatives of the Member States. A representative of the Commission has the chair.	
Initiation – duration:	In 1991 the European Council of Agricultural Ministers adopted Regulation (EEC) No. 2092/91 on organic farming and the corresponding labelling of agricultural products and foods. [17].	
Grade of integration	Micro-standard. BUT: National European labels exist that require the fulfillment of the 2092/91 criteria (see e.g. Eko-keurmerk Netherlands)	
Geographical coverage:	European countries	
Scope (feedstock included):	The Council Regulation applies to the following agricultural products, including aquaculture and yeast [17]: Living or unprocessed products Processed foods Animal feed Seeds and propagating material Collection of wild plants and seaweed is also included in the scope of this Regulation. Not included in its scope: Products from hunting and fishing of wild animals.	
Value chain	Cultivation, transportation, processing (including packaging)	
Mission or objective:		
The introduction of the 1 st version of the Regulation in 1991 was part of the reform of the EU Common Agricultural Policy and represented the conclusion of a process through which organic agriculture received the official recognition of the 15 states which were EU members at the time [17].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Forms part of the European policy on agriculture		
Current status of system:		
On 1 January 2009 new EU regulations went into effect for the production, control and labelling of organic products. However, some of the new provisions on labelling do not take effect until 1 July 2010 [17].		
Planned activities:		
-		

Structure of the system or initiative:	
Stakeholder participation:	The European Commission also works with two additional bodies that support its decision-making in matters of organic agriculture: The "Organic Farming" advisory committee The group experts for the promotion of organic farming The advisory committee brings together representatives of different technical and economic interest groups such as IFOAM, BEUC, COPA/COCEGA, COFALEC and others. This facilitates an exchange of experiences and opinions on different topics relating to organic production in order to promote the continued development of organic legislation [17].
Commitment:	All products that bear the EU organic logo have been produced in accordance with the EU Regulation on organic farming [17].
Stakeholder integration:	Not specifically mentioned in criteria.
Monitoring performance:	In order to ensure that organic products are produced in accordance with the requirements laid down under the Community legal framework on organic production, activities performed by operators at all stages of production, preparation and distribution of organic products should be submitted to a control system set up and managed in conformity with the rules laid down in Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules [18].
Chain of custody mechanism:	CoC is based on track and trace system: "the operator shall keep the land, animals, and products used for, or produced by, the organic units separate from those used for, or produced by, the non-organic units and keep adequate records to show the separation" [18].
Verification mechanisms:	Control bodies and control authorities in Europe can verify compliance to the EU legislation [17]. External audits take place on an annual basis, focused on the risk areas. Every 3 years, all criteria are controlled and verified [19]. Unannounced inspections take place throughout the year [20]. Verification includes field visits, control of documentation and records and test sampling (samples collected by auditor) [20].
Further information:	
Removal of trade barriers	Art. 34: "Competent authorities, control authorities and control bodies may not....prohibit or restrict the marketing of organic products controlled by another control authority or control body located in another Member State, in so far as those products meet the requirements of this Regulation. In particular, no additional controls or financial burdens in addition to those foreseen in Title V of this Regulation may be imposed [18]".
Costs:	-

List of principles* included (her specified for crops as maize, rapeseed, etc):	
1	Organic production shall be based on a set of general principles that meet the objectives for organic production.
2	In addition to the overall principles, organic farming shall be based on specific principles for farming. (Note: criteria specified to livestock and aquatic animals are not shown in table)
3	In addition to the overall principles, organic farming shall be based on specific principles for the processing of organic food (criteria not shown in list)
4	In addition to the overall principles, organic farming shall be based on specific principles for the processing of organic feed (criteria not shown in list)
5	General production rules: prohibition on the use of GMOs and the use of ionizing radiation
6	In addition to the overall principles, organic farming shall be based on specific rules for plant production

* Rules for seaweed, livestock, aquaculture and rules for products and substances used in farming and for conversion are not included in this list.

References:	
Website:	http://www.organic-europe.net/europe_eu/eu-regulation-on-organic-farming.asp

List of criteria and indicators [18]: (Note: criteria specified to livestock and aquatic animals are not shown in table):

Criteria	Indicators:	Methodology used:	Databases used:
1.1 Organic production shall be based on the appropriate design and management of biological processes based on ecological systems using natural resources which are internal to the system.	By using methods that: (i) use living organisms and mechanical production methods; (ii) practice land-related crop cultivation and livestock production or practice aquaculture which complies with the principle of sustainable exploitation of fisheries; (iii) exclude the use of GMOs and products produced from or by GMOs with the exception of veterinary medicinal products; (iv) are based on risk assessment, and the use of precautionary and preventive measures, when appropriate;		
1.2 Organic production shall be based on the restriction of the use of external inputs.	Where external inputs are required or the appropriate management practices and methods referred to in paragraph (a) do not exist, these shall be limited to: (i) inputs from organic production; (ii) natural or naturally-derived substances; (iii) low solubility mineral fertilizers;		
1.3 Organic production shall be based on the strict limitation of the use of chemically synthesized inputs to exceptional cases	Exceptional cases: defined in legislation		
1.4 Organic production shall be based on the adaptation, where necessary, and within the framework of this Regulation, of the rules of organic production taking account of sanitary status, regional differences in climate and local conditions, stages of development and specific husbandry practices.			
2.1 Organic production shall be based on the maintenance and enhancement of soil life and natural soil fertility, soil stability and soil biodiversity preventing and combating soil compaction and soil erosion, and the nourishing of plants primarily through the soil ecosystem;			
2.2 Organic production shall be based on the minimization of the use of non-renewable resources and off-farm inputs;			
2.3 Organic production shall be based on the recycling of wastes and by-products of plant and animal origin as input in plant and livestock production;			
2.4 Organic production shall be based on taking account of the local or regional ecological balance when taking production decisions;			
2.5 Organic production shall be based on the maintenance of plant health by preventative measures, such as the choice of appropriate species and varieties resistant to pests and diseases, appropriate crop rotations, mechanical and physical methods and the protection of natural enemies of pests;			
2.6 The operator shall keep the land, animals, and products used for, or produced by, the organic units separate from those used for, or produced by, the non-organic units and keep adequate records to show the separation.			

Criteria	Indicators:	Methodology used:	Databases used:
5.1 GMOs and products produced from or by GMOs shall not be used as food, feed, processing aids, plant protection products, fertilizers, soil conditioners, seeds, vegetative propagating material, micro-organisms and animals in organic production.	Operators may rely on the labels accompanying a product or any other accompanying document, affixed or provided pursuant to Directive 2001/18/EC, Regulation (EC) 1829/2003 of the European Parliament and the Council of 22 September 2003 on genetically modified food and feed (1) or Regulation (EC) 1830/2003 concerning the traceability and labeling of GMOs and the traceability of food and feed products produced from GMOs.		
5.2 The use of ionizing radiation for the treatment of organic food or feed, or of raw materials used in organic food or feed is prohibited.			
6.1 Organic plant production shall use tillage and cultivation practices that maintain or increase soil organic matter, enhance soil stability and soil biodiversity, and prevent soil compaction and soil erosion;			
6.2 The fertility and biological activity of the soil shall be maintained and increased by multiannual crop rotation including legumes and other green manure crops, and by the application of livestock manure or organic material, both preferably composted, from organic production;			
6.3 The use of biodynamic preparations is allowed;			
6.4 In addition, fertilizers and soil conditioners may only be used if they have been authorized for use in organic production under Article 16;			
6.5 mineral nitrogen fertilizers shall not be used;			
6.6 All plant production techniques used shall prevent or minimize any contribution to the contamination of the environment;			
6.7 The prevention of damage caused by pests, diseases and weeds shall rely primarily on the protection by natural enemies, the choice of species and varieties, crop rotation, cultivation techniques and thermal processes;			
6.8 in the case of an established threat to a crop, plant protection products may only be used if they have been authorized for use in organic production under Article 16;			
6.9 For the production of products other than seed and vegetative propagating material only organically produced seed and propagating material shall be used. To this end, the mother plant in the case of seeds and the parent plant in the case of vegetative propagating material shall have been produced in accordance with the rules laid down in this Regulation for at least one generation, or, in the case of perennial crops, two growing seasons;			

Criteria	Indicators:	Methodology used:	Databases used:
6.10 Products for cleaning and disinfection in plant production shall be used only if they have been authorized for use in organic production under Article 16.			
6.11 The collection of wild plants and parts thereof, growing naturally in natural areas, forests and agricultural areas is considered an organic production method.	Provided that: (a) those areas have not, for a period of at least three years before the collection, received treatment with products other than those authorized for use in organic production under Article 16; (b) the collection does not affect the stability of the natural habitat or the maintenance of the species in the collection area.		
6.12 The measures necessary for the implementation of the production rules contained in this Article shall be adopted in accordance with the procedure referred to in Article 37(2).			

24 Fairtrade Labelling Organizations International FLO (International) - Jinke van Dam

General characteristics:		
Initiator system:	Founded in 1997 as an umbrella organization of 17 national fair-trade labeling initiatives [5]	
Coordinating party:	Certification is done by an independent international certification company, FLO-CERT GMBH. FLO-CERT coordinates the inspections. The Board is elected by the General Assembly.	
Initiation – duration:	1997	
Grade of integration		
Geographical coverage:	International, limited to a set of defined countries, see also: http://www.fairtrade.net/fileadmin/user_upload/content/Geographical_scope_12_07.pdf	
Scope (feedstock included):	Agricultural products. Production standards are now available for: Bananas, Cocoa, Coffee, Cotton, Flowers, Fresh Fruit, Honey, Juices, Nuts and Oilseeds, Rice, Spices and Herbs, Sports Balls, Sugar, Tea, Wine and Composite Food Products [21].	
Value chain		
Mission or objective:		
Objective of FLO is to contribute to the Social and Economic Development of Farmers and Workers in the Global South through a credible and competent Certification System [5].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Actively involved in supporting producers, awareness raising and campaigning for changes in the rules and practices of conventional international trade.		
Current status of system:		
In implementation. The Fairtrade Standards are reviewed and updated regularly. The most recent announcements are available on the website of FLO [21].		
Planned activities:		
-		
Structure of the system or initiative:		
Stakeholder participation:	All members and certified producer organizations participate in FLO decision-making through the General Assembly and their respective Assemblies: the Labeling Initiatives' Assembly or relevant Producer Network Assemblies. The Board is elected by the General Assembly [21].	
Commitment:	Voluntary	
Stakeholder integration:	There is no direct involvement of stakeholders in the verification process. Inspection reports are not published [5]	
Monitoring performance:	-	
Chain of custody mechanism:	FLO undertakes the monitoring and inscription of producers while the national initiatives are responsible for the control of fair trade labels and registering importers/retailers. In order to grant the use of the fair trade label, the national initiative must ensure that retailers have complied with fair trade contracting conditions [5]. Physical traceability is required [22].	

Verification mechanisms:	Third party verification is a must for application of FT standards. The certification body undertakes yearly inspections based on a risk model. In between inspections incoming information about potential non compliances are taken into considerations for additional checks or inspections [2]. Operators need to be in full compliance with major compliance criteria related to minimum and progress requirements of the standards, to prevent suspension or withdrawal of certificate.
Further information:	
Removal of trade barriers	-
Costs:	-

FLO has **generic product standards [23]**. There are two sets of generic standards: one for small farmers and one for laborers on plantations and factories. Producers have to comply with Generic product standards and standards specific to their products situations.

FLO has **generic trade standards [22]**. This generic standard is applicable to all producers and traders regardless of the product traded. It is important to know that each producer and their trading partners need to comply with both the Generic Standards and the Product Standards.

Standards have two layers: minimum requirements and progress requirements. Companies must meet the minimum standards from the moment they join Fairtrade and work towards achieving the progress requirements as long-term goals.

List of principles included for products standards – here shown for small producer’s organizations [23]:	
1	Social development: Fairtrade adds to Development
2	Socioeconomic Development: The Fairtrade Premium is a tool for development, supporting the organization to realize their development objectives as laid down in its development plan. In the context of small producers’ organizations it is meant for investment in the social, economic and environmentally-sustainable development
3	Environmental Development: The producers’ organization ensures that its members protect the natural environment and makes environmental protection a part of farm management.
4	Labor conditions: FLO regards the ILO Conventions as the authority on working conditions, and expects all small producers’ organizations to meet the ILO requirements as far as possible.

List of principles included for <i>trade</i> standards [22]:	
1	Certification: All operators taking ownership of Fairtrade certified products and/or handling the Fairtrade price and premium are inspected and certified.
2	Traceability: Traceability requirements are put in place to protect operators and consumers.
3	Contracts: Contracts between producers and buyers set the framework for Fairtrade trade operations. It is important that the contractual obligations are mutually agreed, well documented, and clearly understood by the contracting parties.
4	Sustaining trade: Above and beyond standards requirements, it is important that these relationships grow stronger over time and are based on mutual respect, transparency and commitment.
5	Pre-finance: Pre-finance is one of the core benefits for producers within the Fairtrade system. The intention of this section is to help producers gain access to reasonable forms of financial assistance to support their purchases from members.
6	Pricing: Fairtrade minimum prices are meant to protect and reduce the risks for producers in the event that market prices fall.

References:	
Website:	http://www.fairtrade.net/

List of criteria and indicators:

Criteria for Fairtrade <u>Product</u> Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>1.1 Fairtrade adds to Development <u>Progress requirements:</u> Within one year of certification, the organization carries out a needs assessment of how the Fairtrade benefits can help promote the environmentally-sustainable social and economic development of the organization and its members. Within three years of certification, the organization has a development plan in place indicating how the Fairtrade benefits will help promote the environmentally-sustainable social and economic development of the organization and its members. The development plan is based on democratic and transparent decision-making.</p>	<p>The organization is expected to create a development plan</p> <p>Based on the results of the needs assessment the organization must create and implement a development plan within three years of certification. The development plan is explained, discussed and agreed at the annual General Assembly and revised on an annual basis.</p>		
<p>1.2 Members are Small Producers The organization has membership criteria as defined in its own stated rules and regulations (the organization's constitution or by-laws). The majority of the members of the organization are small producers (> 50%) Fairtrade products may only be sourced from members. The organization must therefore ensure that products from members are kept separate from non-members' products. Where an organization wishes to sell products produced by non-members, these must not be sold as Fairtrade products. For every Fairtrade product sold by the organization, more than 50% of the volume must be produced by small producers.</p>	<p>Regulations for registration of members of the organization must be specified in the by-laws and statutes of the organization. Membership data must be kept at the office of the organization and regular updates should be given to members about their membership status. More than 50% of the members must be small producers according to the product-specific category and indicators as defined in the introduction. - On a yearly average, smaller producers must provide more than 50% of the volume sold under Fairtrade conditions</p>		

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>1.3 Democracy, Participation and Transparency An organizational structure is in place which enables effective control by the members. There is a General Assembly with direct or delegated voting rights for all members as the supreme decision-taking body, and an elected Board. The staff answers to the General Assembly via the Board. The organization holds a General Assembly at least once a year. The organization's annual report, budgets and accounts must be presented to and approved by the General Assembly. Administration is in place. <u>Progress requirements:</u> From the moment of certification, the organization works towards transparent planning of the business. Such planning is approved by the General Assembly. The organization establishes or improves internal mechanisms to facilitate members' control over the administration. The participation of members in the organization's administration and internal control is promoted through training and education. Ongoing measures will be taken to review the members' commitment to the organization</p>	<p>The certification body will check whether the organization abides by its own stated rules and regulations The meetings must be properly minuted, signed by the President of the Board and at least one other member, and recorded. The minutes must contain a list of participants. - There is at least one person (or committee) in the organization responsible for managing the organizational administration and book-keeping. The organization also needs to have a bank account with usually more than one signatory. The official records and documentation must be maintained in a central place Organizations are required to make annual business plans (short-term strategic plans), cash flow prediction plans, and longer-term strategic plans. - The organization is required to provide training and education on business administration and internal control to its members Indicators for self-assessment will include the level of membership fees, the level of member participation at General Assemblies and any other organizational structures</p>		
<p>1.4 Non-Discrimination The organization does not discriminate against members or restrict new membership on the basis of race, color, sex, sexual orientation, disability, marital status, age, religion, political opinion, language, property, nationality, ethnicity or social origin. Furthermore, there must be no discrimination regarding participation, voting rights, the right to be elected, access to markets, or access to training, technical support or any other benefit of membership. Programs related to disadvantaged/ minority groups within the organization are in place to improve the social and economic position of those groups in the organization</p>	<p>- The organization is expected to show how it directly supports members from disadvantaged or minority groups to participate actively in the organization. The applicability of this requirement depends on the size of the organization and the number of members.</p>	<p>b) The organization must identify disadvantaged/ minority groups according to e.g. income, land area, age, and gender. Special attention should be given to the participation of female members.</p>	

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>2.1 Fairtrade Premium The organization administers and manages the Fairtrade Premium transparently. The use of the Fairtrade Premium is decided by the General Assembly and properly documented. <u>Progress requirements:</u> As soon as Fairtrade Premium monies are available, the organization puts an annual Fairtrade Premium plan and budget in place.</p>	<p>The organization must show that it has systems in place to administer the Fairtrade Premium in a transparent way - The Fairtrade Premium plan to be approved by the General Assembly contains general objectives, activities, mechanisms and/or projects to be financed during the coming year. An estimated budget should be included.</p>		
<p>2.2 Economic Strengthening of the Organization <u>Progress requirements:</u> The organization should take gradual steps to assume more control over the entire trading process. The organization will continue to develop its business-related operations and maximize the return to the members.</p>			

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>3.1 Impact Assessment, Planning and Monitoring A person within the organization is given responsibility for ensuring the production of a plan giving details of how to comply with the environmental standards specified in this document. The organization ensures that for certified products no plant material is gathered from protected areas or is propagated in contravention of national and international regulations. <u>Progress Requirements</u> The organization seeking certification develops and then implements a formalized Internal Control System (ICS) that liaises with the certification body. Any harvesting of wild specimens or products from natural (uncultivated) areas by members of the organization must be done in a manner that assures the sustainability/survivability of the species in its native habitat. The organization has a plan for the improvement of the environmental and agricultural practices of its members and will monitor and report on performance objectives in the plan. The organization ensures that its members have identified conservation areas, buffer zones around water bodies and watershed recharge areas appropriate to the region, which will not be cultivated and to which agrochemicals will not be applied. New planting in virgin forest areas is prohibited. Buffer zones are maintained as required to protect water bodies and watershed recharge areas, virgin forests, and/or other legally protected areas and to protect agricultural plots from potentially polluting sources such as roads. In operations in areas of low biodiversity, where buffer zones are bare or undifferentiated from cash crops or in areas not suitable for cultivation, members should plant trees/bushes or otherwise encourage regeneration of natural flora and fauna. The organization has a plan that provides an adequate overview of current and projected use of land. The organization pursues research into and promote the implementation of agricultural diversification within its members' farms (including reforestation and establishment of shade cover as applicable) as is practical in its particular situation and this should be described in writing. Progress on this should be made over time. The organization maintains records that include land usage, agrochemical usage, crop rotation, and water usage. To the best of its ability, the organization supports the environmental and infrastructure projects of the local and regional authorities or other non-governmental organizations and programs to improve the living conditions of its members (e.g. housing, drinking water supply, roads, reforestation, sewage treatment, garbage and waste collection, transportation, community infrastructure etc.).</p>	<p>Initially, the plan will focus on the minimum requirements of the environmental standards. Over time the plan will also describe the actions that are needed to ensure compliance with the progress requirements. The organization's members should be able to prove the source of their planting stock (all plant material excluding seeds) on request of the inspector. The person(s) responsible for maintaining the internal control system should be able to show an organized methodology and record-keeping system that applies to all levels of the organization from the top management down to the individual member. Data should be updated on an annual basis at least. More details are given in standard. Harvesting should be done in a manner that: maintains the viability of the species and allows it to continue to perpetuate itself, is moderated to ensure that the product is still available to other species in the ecosystem that depend on it, ensures that the subsequent harvest cycle will provide a comparable quantity, notwithstanding, naturally occurring cycles/variations in production. The organization should: Notice and commend positive impacts, using them as a model, Monitor and stabilize neutral impacts. Neutral impacts can be accepted but must not decline into negative impacts, and should be improved whenever possible. Correct negative impacts. In order to effectively monitor these impacts and plans for their mitigation, the organization should specifically identify and describe some selected items. The information mentioned in this requirement should be documented by the organization and verifiable by inspectors. Maps or similar documentation should provide an indication of all pertinent areas. The certification body may make exceptions to this rule if the organization can prove that affected members have no other arable land. In such cases, the organization ensures that the new planting is done in a manner that preserves and integrates the native habitat to the maximum possible extent. Size of the buffer zones depends on the local context. l) Records should be verifiable by inspectors. Data should be inclusive and detailed enough to ensure verification down to the individual producers' plot(s).</p>		

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>3.2 Agrochemicals <u>Minimum Requirements</u> Materials on the FLO Prohibited Materials List may not be used or otherwise sold, handled, or distributed by the organization. This standard only applies to the materials that are exceptionally allowed in certain products and in certain countries, as specified in the tables of the FLO Prohibited Materials List. The use of the exceptionally allowed materials are minimized and undertaken only in case of definite need, in appropriate Health and Safety conditions and using advanced techniques. The organization ensures that agrochemicals are used, handled and stored correctly according to their specific characteristics (toxicity) in order to avoid danger to people and the environment. The organization ensures that all products and packages are clearly labeled. Whenever practical, storage should be in the original container. The organization ensures that all agrochemicals are only used for the crops for which they are specifically labeled and/or registered in the producer's country. The organization maintains safe storage and disposal of all agrochemicals and their containers. The organization or a subcontractor avoids air spraying of agrochemicals over rivers and other water sources of significant size.</p> <p><u>Progress Requirements</u> This standard only applies to the materials that are exceptionally allowed in certain products and in certain countries, as specified in the FLO Prohibited Materials List. Producers must ensure that the use of the exceptionally allowed materials is phased out over time. The producer should be able to stop using the exceptionally allowed materials through the planning and application of appropriate agricultural techniques. Areas for preparing agrochemicals for use are equipped to handle spills and other mishandling effectively (for example with absorbent material). Spills must not be allowed to seep into soil or water supplies. The organization maintains a written record of all agrochemicals purchased, used and disposed of. The organization ensures that its members apply agrochemicals (where permitted within these standards/ FLO Prohibited Materials List) only on the basis of written evidence that they are necessary. The organization ensures that its members' decision to use herbicides (where permitted within these standards/ FLO Prohibited Materials List) is supported by written evidence showing that there is no available alternative treatment. Unused agrochemicals are returned to the supplier if feasible. The build-up of resistance to agrochemicals is avoided through appropriate production and dosage techniques and selection of appropriate plant varieties.</p>	<p>b) An appropriate plan and record to substitute these materials must be developed and operated. Evidence of need must be demonstrated by the producer. The producer shall demonstrate on the basis of credible evidence the definite need to use the exceptionally allowed materials. Exceptions are reviewed periodically by the certification body. c) The organization should develop an internal education and control system for agrochemical issues, in order to effectively comply with this standard. e) The organization should have an awareness-raising program in place to ensure producers receive the appropriate guidance to be able to comply with this standard. f) The organization should have an awareness-raising program in place; specify an estimated timeline for implementing the program and the actions to become compliant with this standard. Producers should have a safe means of disposal; make it known to producers what their individual options are; control and restrict reuse of agrochemical bags and containers. h) The producer shall employ apposite substitutes to the exceptionally allowed materials immediately when they become available on the market. Efforts to find such alternatives are properly documented. Alternative methods and potential substitutes are explored and assessed by practical trials. i) The use of chemicals should only be permitted once the producer has ensured that members are trained and application techniques for each material to be used. j) The responsibility for keeping such records can either fall on the organization or the individual producer or be shared between the two. In all cases, the organization's control system should have a way of verifying that the records are accurate. The certification body has the authority to require that additional records be kept in cases where inspectors show reasons to doubt the adequacy of the ICS.</p>	<p>c) The organization's plan should specify an estimated timeline for implementing such a system. Minimum requirements to the control system are defined. i) The producer should document significant mishaps in a manner that is readily available to Fairtrade inspectors. The producer should have a way of recording infractions and implementing remedial actions.</p>	<p>a) FLO publishes a list of materials that cannot be used, comprising data from the WHO Class I A&B, PAN's 'Dirty Dozen' and FAO/ UNEP Prior Informed Consent Procedure Lists plus FLO specific additional materials. The FLO Prohibited Materials List is an integral part of this standard.</p>

<p>The timing and type of chemical application(s) should be chosen with the aim of minimizing the quantities used and the threat of human or animal exposure and environmental harm.</p> <p>Aerial spraying by the organization or a subcontractor is undertaken for fungicide application only. Aerial spraying over buffer zones (if any), open water bodies, or residential areas is not undertaken.</p> <p>The organization demonstrates a continual reduction in the toxicity and use of agrochemicals and a continual improvement in its rational use to the greatest possible extent.</p>			
<p>3.3 Waste</p> <p><u>Minimum Requirements</u></p> <p>No minimum requirements applicable</p> <p><u>Progress Requirements</u></p> <p>The organization ensures that its members dispose of any non-agrochemical hazardous waste in a safe manner.</p> <p>The organization ensures that its members use organic waste in a sustainable way.</p> <p>The organization ensures that its members do not feed animals with organic waste that is contaminated by pesticides.</p> <p>The organization ensures that its members manage organic waste and crop residues appropriately to prevent the spread of disease or pest problems to crops, livestock, or humans.</p> <p>The organization ensures that its members do not burn waste if there is an environmentally less damaging alternative.</p> <p>Any materials that can be effectively recycled are. Paper, plastic, metal, wood, and other waste material must be separated and recycled whenever possible.</p>	<p>The organization should establish a plan for the disposal of all the non-agrochemical hazardous waste materials. Minimum requirements for this plan are defined.</p> <p>Recycling of natural resources should be maximized. The organization should develop a plan (specifying a timeline for its implementation) for sustainable use of organic waste. Minimum requirements for this plan are defined.</p> <p>e) Producers should be educated about which materials should never be burned, which materials can/cannot be burned under certain circumstances and what those circumstances are.</p> <p>If incineration of waste is deemed the only feasible solution, adequate conditions should exist to ensure that fire is controlled, etc.</p>		

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>3.4 Soil and water <u>Minimum Requirements</u> The organization ensures that its members have undertaken procedures and practices designed to reduce and/or prevent soil erosion caused by wind, water, and/or human or animal impact. The organization ensures that its members have undertaken procedures and practices designed to enhance fertility and soil structure. <u>Progress Requirements</u> The producer ensures that water management, tillage practices, and/or use of irrigation water does not lead to or contribute to contamination of water supplies, excessive salinization of soil or desertification. The organization ensures that its members use irrigation methods and systems that minimize water consumption as much as is feasible for the operation in question. The organization ensures that its members use water for processing operations in the most efficient manner possible. The organization ensures that its members avoid the lowering of the groundwater level or any other negative effect on the availability and quality of drinking and irrigation water for the surrounding communities and farmers. The organization ensures that waste water is handled in a manner that does not have a negative impact on water quality, soil health and structure or food safety. The organization ensures that its members discharge waste water from any system with which the organization or its members are involved in a way that does not: pollute water that might be used as part of a human or animal drinking supply; contaminate soil or crops with chemicals or their by-products; contaminate crops or soil with excessive nutrients or contaminate harvestable crops with pathogenic microbes.</p>	<p>a) The organization should set up an education and control system concerning soil erosion, so that awareness is raised and actions are taken to become compliant with this standard. b) Understanding of the basic agronomic principles of tillage and irrigation practices, building of soil fertility, and crop rotation (as applicable) should be part of every organization's operating plan. In all cases, the organization should identify the water resources that are being used and document how (methods/ techniques) this was done. For those operations where desertification is a known or suspected potential problem, the organization should have a plan that includes concrete steps to conserve water. g) The organization should have a plan for monitoring the water quality of all waste water discharged. The organization should install water filtration or other treatment systems as necessary to meet the requirement.</p>	<p>a) The organization's plan should specify an estimated timeline for implementing such a system. Minimum requirements are set to the system as e.g. evaluates the possible causes of erosion on any of the land or affected water resources; Land that is at risk of erosion is noted by the organization, and monitored regularly; remedial actions appropriate to the problem should be imposed and followed up on a pre-decided timeline. b) The organization should set up an education and control system concerning fertility and soil structure. The organization plan should specify an estimated timeline for implementing such a system. Minimum requirements are set to the plan. g) The plan should include, at a minimum: establishment of baseline levels of acceptability for waste water quality; method(s) of analysis of water quality and a specified frequency of monitoring; a means to correct any incidence of contaminants down to adequate levels; documentation of the above, or other suitable means of recording or verification.</p>	

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>3.5 Fire <u>Minimum Requirements</u> No minimum requirements applicable <u>Progress Requirements</u> The organization ensures that its members use fire to clear or prepare land for production only if it is known that this is the preferred ecological option. The organization ensures that only trained members use fire to clear or prepare land. The organization ensures that its members have adopted fire safety procedures and practices that are appropriate to the operation.</p>	<p>b) It is up to the organization to define what proper training is, based on their particular situation. This definition should be in written form and available to the inspector and the certification body. The organization should establish formal guidelines and clear practices to ensure that only targeted lands are burned, and that non-target lands are left unaffected. c) The organization should establish basic rules for fire management. These should be in written form and also communicated to all members.</p>	<p>a) The certification body has the authority to require written justification that the practice is necessary, on a case-by-case basis.</p>	
<p>3.6 GMO <u>Minimum Requirements</u> The organization ensures that its members do not grow any GMO products. <u>Progress Requirements</u> The organization ensures that its members monitor possible GMO usage by neighbors and where necessary take additional precautions to ensure that their crops or any seed or propagation material saved for future plantings are not contaminated by GMO traits. The organization ensures that its members do not use any products derived from GMOs in primary production or in processing. Inputs, processing aids, and ingredients are traced back one step in the biological chain to the direct source organism from which they are produced to ensure that they are no longer regarded as GMOs.</p>	<p>The organization shall have a written plan that describes what methods it will employ to fulfill this requirement including amongst others verification of seed and seed control The organization shall investigate all inputs used in field production and processing. It shall verify that no inputs that are used in the production or processing system constitute a GMO under Fairtrade certification. The means of verification shall be specified by the organization, approved by the certification body and verified by the inspector.</p>		

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>4.1 Labor conditions – employment policy <u>Minimum requirements</u> No minimum requirements applicable <u>Progress requirements</u> a) Within three years of certification the organization has developed an employment policy as part of its development plan</p>	<p>The organization starts developing an employment policy by carrying out an assessment on how to improve the working conditions of both its own workers and any workers employed by individual members of the organization. Plan includes: awareness raising tools, consulting of employers, etc.</p>		
<p>4.2 Freedom from discrimination <u>Minimum requirements</u> The organization ensures that there is no discrimination on the basis of race, color, sex, sexual orientation, disability, marital status, age, religion, political opinion, membership of unions or other workers’ representative bodies, national extraction or social origin in recruitment, promotion, access to training, remuneration, allocation of work, termination of employment, retirement etc. The employer does not engage in, support or tolerate the use of corporal punishment, mental or physical coercion or verbal abuse. The employer does not engage in, support or tolerate behavior that is sexually intimidating, abusive or exploitative.</p>	<p>b) Workers should be aware of this policy. The organization should have in place an adequate system of records. c) Where discrimination is endemic within a sector or region an appropriate policy and system should be put in place to prevent any behavior that is not in line with this requirement. The organization should have in place an adequate system of records.</p>		<p>b) The policy shall be in line with the principle of non-discrimination.</p>

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>4.3 Freedom of Labor <u>Minimum requirements</u> Forced labor does not occur. Child labour does not occur. Children below the age of 15 are not employed (contracted). Working does not jeopardize the school attendance, the educational attainment, or the social, moral or physical development of the person less than 18 years of age. Persons under 18 years of age shall not be admitted to any type of work which, by its nature or the circumstances under which it is carried out, is likely to jeopardize their health, safety or morals. Persons under 18 years of age shall not be allowed to undertake work during the night. Employment of a worker is not conditional on the employment of their spouse. Spouses have the right to work elsewhere.</p>	<p>a) The employer must not retain any part of the workers' salary, benefits, property or documents in order to force them to remain in that employment. The employer must also refrain from requiring or forcing workers to remain in employment against their will through the use of any physical or psychological measure. The employer must explain to all workers that each worker is free to leave at any time, giving a due notice period as per his or her contract. The term 'bonded labour' also refers to workers having received loans from employers, when these loans are subject to unreasonable terms and conditions.</p> <p>b) Where children help their parents at individual member level after school and during holidays this is not considered as child labour under defined conditions. Where children have worked or been employed in the past, it is expected that the organization has put in place a remediation policy. Wherever applicable the organization considers the underlying social and economic context in its development plan for effectively eliminating child labour.</p>		<p>As defined by ILO conventions 29 and 105, forced labour includes work that is exacted from any person under the menace of any penalty and for which the said person has not offered him or herself voluntarily.</p>

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>4.4 Freedom of Association and Collective Bargaining <u>Minimum requirements</u> The employer recognizes in writing and in practice the right of all workers to establish and to join workers' organizations of their own choosing and to collectively negotiate their working conditions. Workers are free to legally incorporate their organization. The employer allows trade unions not based at the organization to meet and share information with the workforce at an agreed time and place without the interference of management. The employer allows information meetings between workers and trade union officials to take place. Participation of workers in this meeting is voluntary. The employer ensures that neither workers nor their representatives are discriminated against or suffer other repercussions because of freely exercising their right to organize or because of their decision whether or not to join a workers' organization and/or participate in its legal activities. <u>Progress requirements</u> If no active and recognized union is able to work in the area, the organization encourages the workers to democratically elect a workers' organization which represents them and which negotiates with the employer to defend their rights and interests. The representation and participation of the workers is improved through training activities for workers and administrative staff alike. The employer provides adequate resources for this to take place.</p>	<p>a) It is expected that there has not been any opposition from the employer to workers organizing themselves within two years prior to application for certification, or, if this has been the case, that the organizational circumstances have changed substantially in the intervening time (e.g. through a change of management). c) It is expected that the employer does not move or close production or deny access to workers for the direct purpose of retaliating against those who have formed or are attempting to form a workers' organization. The employer is requested to report all cases of dismissals of union or workers' organization leaders to the certification body immediately, giving reasons for dismissal. The employer maintains a register of all terminated contracts with details on reasons for termination and indicating whether the worker was a member of a union or workers' organization.</p>		<p>The term 'workers' organizations' is used in reference to ILO Convention 110. The ILO defines the term as any organization of workers with the aims of furthering and defending the rights and interests of workers.</p>

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>Conditions of employment <u>Minimum requirements</u> Conditions of employment and in particular salaries are equal to or exceed sector CBA regulations where they exist, regional average wages or official minimum wages for similar occupations, whichever is higher. The employer shall specify wages for all functions. Payment is made regularly and in a timely manner, in legal tender, and is properly documented. <u>Progress requirements</u> Other relevant conditions of employment and non-monetary benefits are at least equal to national law, the sector CBA regulations where they exist, or the Agreement signed between the workers' organization and the employer, whichever is more favorable to the employee. All permanent workers must have a legally binding written contract of employment. An adequate regulation on sick leave is put in place. A working hours and overtime regulation is put in place. Salaries are gradually increased to levels above the regional average and official minimum. Where possible all regular work is undertaken by permanent workers. Local and migrant, seasonal and permanent workers receive equivalent benefits and employment conditions for equal work performed.</p>	<p>a) National laws and applicable CBA terms must be complied with. Where national laws and applicable CBA terms exceed this standard, they supersede the standard .Where the provisions in this standard exceed national laws and CBA terms then this standard shall apply. b) Documentation should consist of pay slips bearing all necessary information. c) National laws and applicable CBA terms must be complied with. Where a workers' organization exists it is encouraged to negotiate the conditions of work with the employer. Workers have the right to choose representatives to take part in any negotiations, without external interference. d) The contract shall include all necessary items related to the position of the worker. The worker must be provided with a copy of the signed contract. f) Working hours and overtime must comply with applicable law and industry standards. g) It is expected that salaries will be negotiated between the employer and the workers' organization (where it exists) through a benchmarking system and in relation to the additional income the organization or member realizes through Fairtrade. I) The annual employers' work plan specifies measurable objectives with regard to this.</p>		

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
<p>4.6 Occupational health and safety <u>Minimum requirements</u> Work processes, workplaces, machinery and equipment on the production site are as safe as reasonably practicable. The following persons must not undertake any potentially hazardous work: persons younger than 18 years; pregnant or nursing women; <i>etc.</i> The employer provides adequate emergency first aid facilities, equipment and appropriately trained first aid staff to meet all reasonably foreseeable emergency first aid situations. All workers must have access to potable water and clean sanitary facilities. <u>Progress requirements</u> A workers' representative must be nominated who can be consulted on health and safety issues and who raises workers' concerns on health and safety issues with the organizational management. Workers engaged in any potentially hazardous work are adequately trained. A worker performing hazardous a task are provided with adequate personal protective equipment of good quality and in good condition at the employer's expense.This applies to all workers, including temporary workers. A Health and Safety policy is developed to minimize any inherent risk to health. Workers and their representatives are trained in the basic requirements of occupational health and safety, relevant health protection and first aid.</p>	<p>a) The organization is expected to carry out a risk analysis of health and safety issues. This risk analysis shall identify risk areas and potential hazards. c) Suitably stocked first aid boxes must be present in the workplace and be quickly accessible at all times. The employer trains a reasonable number of workers (in relation to the size of the operation) in first aid. d) Drinking water facilities must be clearly labeled as such and be placed within reasonable proximity to the workplace. The number of sanitary facilities must be in proportion to the number of workers. Sanitary facilities must be well maintained. Hand washing facilities must be close to toilets. e) The workers' representative on health and safety issues is not necessarily hired exclusively for this task but may have other duties and responsibilities within the operation. Where appropriate the workers can choose to create a health and safety committee h) A Health and Safety (H & S) policy shall be developed that addresses all necessary measures, means and control points. The policy is documented and communicated to the workers and is part of the overall employment policy I) Special measures are taken to identify and avoid recurring health risks to vulnerable workers operating in high risk areas. All workers will be given a formal induction and refresher training on occupational health and safety issues related to all aspects of their tasks. All training activities must be recorded including information on topics, time, duration, names of attendees and trainers.</p>		

Criteria for Fairtrade <u>Trade</u> Standards [22]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
1.1 All operators will be subject to inspection and certification to assess compliance with this standard.			
1.2 Unless otherwise stated in the product standards, certified producers may sell products that have been held in stock for a maximum of one year before the certification was initially granted as certified.			
1.3 All operators must designate one official contact for Fairtrade-related matters.	All operators must designate one key contact person (a Fairtrade Officer) within their organization. The Fairtrade Officer will be the main contact person for certification and inspection issues.		
2.1 Products that are bought, sold or altered as Fairtrade must originally have been produced by certified producers and must be physically traceable through product labeling. Documentary traceability must also be ensured by using an identification mark clearly indicated on all related documentation.	<p>The physical product must be identifiable. The method of identification is at the discretion of the operator, but must be verifiable (e.g. the FLO ID or "FLO Fairtrade" on the packaging).</p> <p>This standard also requires that buyer and seller must clearly indicate an identification mark on the related documentation (such as Contracts, Bills of Lading, Delivery Notes, Invoices).</p> <p>All operators must ensure that they and the certification body will be able to trace:</p> <ul style="list-style-type: none"> · The seller of the product · The physical form of the product when transacted · The alterations performed and relevant yields · Disposals · Quantities bought and sold (one up – one down) · Date of transactions · Payment of Fairtrade price and Fairtrade premium and pre-financing (where applicable). <p>Certified products bought and sold as loose must be stored in a dedicated area and kept spatially or temporally separate from non-certified products. Where this is not possible, all necessary steps must be taken by the operator to ensure that risks of substitution of certified with non-certified products are minimized.</p>		
2.2 Where operators cannot demonstrate full compliance to physical traceability requirements specified in standard 2.1, then a transition period applies. This period may last no longer than two years from the date the Generic Trade Standard comes into force. Requirements on traceability through documentation must still be complied with.			

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
3.1 Buyers must sign binding purchase contracts with producers. All contracts between producers and Fairtrade payers or conveyors must stipulate an arbitration mechanism agreed by both parties.	Unless otherwise stated in the product standards, contracts must as a minimum clearly indicate the: <ul style="list-style-type: none"> · agreed volumes · quality · price · payment terms · delivery conditions 		
3.2 Where notice is made of a producer's or buyer's suspension from Fairtrade, signed contracts made before the date of notice will be recognized as valid for Fairtrade-certified products for a maximum period of six months.			
3.3 Where an operator is decertified, they must immediately stop buying or selling products as Fairtrade-certified. This standard is applicable from the date of decertification. Contracts with a decertified operator that have been fulfilled before the date of decertification shall be accepted. Contracts that have not been fulfilled at the point of decertification shall not be classified as Fairtrade contracts.			
3.4 Buyers must not offer to buy certified products from a producer on condition that the producer sells a quantity of non-certified product under terms that are distinctly disadvantageous to the producer.			
3.5 Producers must have access to the contracts signed between conveyors and Fairtrade payers.			
3.6 Producers must have access to the contracts signed between conveyors and Fairtrade payers.			
4.1 Buyers (including those making purchases via marketing boards) must provide a sourcing plan to each producer from whom they plan to buy, as well as to conveyors, if applicable.	Sourcing plans are developed with reference to qualities, quantities, dates of delivery or purchase, price or value as outlined in the product standards.		
5.1 Producers may request pre-finance from Fairtrade payers against agreed time periods and, where required, against specific quantities, unless otherwise specified in the product standards.	Where marketing boards exist, pre-finance requirements are not applicable to the relevant products.		
5.2 Where pre-financing is requested and unless otherwise stated in the product standards, Fairtrade payers must provide pre-finance up to 60% of the contract value. The minimum percentage of the pre-finance must be defined by the producer			
5.3 Fairtrade payers must make pre-financing available from the point of signature of contract onwards and not later than a specified time period as stated in the product standard.			

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
5.4 Where a sufficiently high level of risk of non-repayment or non-delivery has been associated with a particular producer, and only where that level of risk has been assessed and verified via a third party lender, then the pre-finance requirements under standards 5.2 and 5.3 do not have to be met.			
5.5 Interest charges on the pre-financed value must be agreed by both the buyer and the producer. They must not exceed the buyer's current cost of borrowing (including administrative costs), and buyers are encouraged to make pre-finance available on better terms (at lower rates of interest) to the producer.			
5.6 The requirements of local and national legislation take priority where they conflict with these requirements on pre-finance.			
5.7 When pre-finance has been agreed upon, the Fairtrade payer must document either a separate pre-finance section within the contract or a separate credit agreement with the producer.			
6.1 Fairtrade payers must pay to producers at least the Fairtrade Minimum Price for the product contracted, where it exists, or the relevant market price where no Fairtrade Minimum Price exists. When the relevant market price for a product is higher than the Fairtrade Minimum Price, then at least the market price must be paid.			
6.2 Fairtrade payers must additionally pay a Fairtrade Premium for the product. Where applicable, conveyors are responsible for passing the Fairtrade Premium on to the producer.	<p>Rules for payment apply differently to different types of Fairtrade organizations, as follows:</p> <ul style="list-style-type: none"> · For Small Producers' Organizations, payment must be made directly to the certified Small Producers' Organization. · For Hired Labor Situations, payment must be made directly to the account of the Joint Body of the certified Hired Labor operator. · For Contract Production Projects, payment must be made directly to a separate account for which the Promoting Body or its nominee is responsible. · Where appropriate, payment may also be made to a Premium Trust fund or Premium Channel, or to another agreed third party with the written permission of the producer. 		
6.3 The price may be fixed, by mutual agreement, for any future delivery date, unless otherwise stated in the product standards.			
6.4 Fairtrade Minimum Prices are set at one or several levels in the trade chain.			

Criteria for Fairtrade Product Standards [23]	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate	Methodology used	Databases used:
6.5 Cases may also arise where Fairtrade Minimum Prices are set at relevant levels, but where the producer or the payer bears the costs of certain activities which are not reflected in the price.			
6.6 Unless otherwise specified in the product standards, Fairtrade payers may use any available payment method as long as it is transparent, traceable and mutually agreed between the Fairtrade payer and the producer.			
6.7 Payment of the Fairtrade price must be made no later than 30 days after date of invoice unless otherwise specified in the product standard.			
6.8 New Fairtrade Minimum Prices apply from the date of their announcement by FLO unless otherwise defined by FLO. However, existing contracts must be honored at the price already agreed on.			

25 International Federation of Organic Agriculture Movements (IFOAM) (International) - Jinke van Dam

General characteristics:		
Initiator system:	President of the French farmers' organization, Nature et Progrès and five organizations from Europe, south-Africa and the USA.	
Coordinating party:	IFOAM is comprised of a variety of committees each with specific mandates. The IFOAM General Assembly is the main decision-making body. Members elect the World Board for a 3 year term. The World Board appoints members to official committees, working groups and task forces based upon the recommendation of IFOAM membership, and IFOAM member organizations also establish regional groups and sector specific interest groups [2].	
Initiation – duration:	Founding Assembly: 1972	
Grade of integration	Umbrella organization	
Geographical coverage:	Worldwide	
Scope (feedstock included):	Organic agriculture – agriculture products	
Value chain	Cultivation / farming – trade – processing	
Mission or objective:		
International Federation of Organic Agriculture Movements (IFOAM) is the worldwide umbrella organization for organic organizations. IFOAM is a Meta-Standard by itself as it focuses on accrediting other standards for organic agriculture according to the general criteria set out by IFOAM [1].	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
-		
Current status of system:		
IFOAM unites more than 750 member organizations in 108 countries. Currently, IFOAM has accredited 33 organic standards over the world for a variety of crops [1].		
Planned activities:		
<p>The IFOAM World Board identified six goals for the Program 2011 [24]:</p> <p>Be the international authority and most effective voice on all matters organic</p> <p>Increase market share for organic products; access to them at local, regional and international levels</p> <p>Enhance capacity of the organic sector to sustain growth and development</p> <p>Strengthen IFOAM as a democratic global action network</p> <p>Create “think spaces” to cultivate the organic future</p> <p>Ensure an effectively managed organization with sufficient and sustainable resources</p> <p>The development of a Participatory Guarantee Systems (PGS) is ongoing. The Terms of Reference for the System Setting committee is available in June 2009 [25].</p>		

Structure of the system or initiative:	
Stakeholder participation:	IFOAM members are organizations and companies of the ecological agriculture and the ecological food industry (fabricators, advisors, research establishments, etc.). The members can organize itself to regional groups or stakeholders. A draft document for stakeholder participation is available [5]. IFOAM is comprised of a variety of committees each with specific mandates.
Commitment:	Voluntary
Stakeholder integration:	Is addressed, stakeholders can allude certifier to any mistakes and problems. Certifier will check this with an unannounced inspection [5]. The development of a Participatory Guarantee Systems (PGS) is ongoing. The Terms of Reference for the System Setting committee is available in June 2009 [25]. Recommendations for inspection of social standards are developed including guidelines for stakeholder consultation [26],
Monitoring performance:	Verification bodies are annually inspected.
Chain of custody mechanism:	The routine inspection procedure shall be documented and shall at least include an input/output reconciliation and trace back audit which attempts to trace finished product back to incoming ingredients or fields of production in processing and handling. Product labels should identify all ingredients, processing methods, and all additives and processing aids [5]
Verification mechanisms:	The routine visit procedure includes verification of the most recent information, review of records, interviews, an input/output reconciliation and trace back audit, production/sales reconciliation on farms, assessment of production and processing systems and residue sampling. The IFOAM Basic Standards along with the IFOAM Accreditation Criteria (together called The IFOAM Norms) establish the requirements for certification bodies seeking IFOAM accreditation. IFOAM accreditation is awarded to certification bodies that use certification standards that meet the IFOAM Basic Standards.
Further information:	
Removal of trade barriers	A professional body within IFOAM is the IFOAM Organic Trade Forum (OTF). The main mission of OTF is to organize traders of organic products – to create an IFOAM business network [24]
Costs:	-

The principles listed are the IFOAM Basic Standards. They provide a framework for certification bodies and standard setting organizations to develop their own certification standards and cannot be used for certification on their own. Certification standards should take into account local conditions [27].

List of principles included [27]:	
1	Organic farming benefits the quality of ecosystems
2	Organic farming methods conserve and grow soil, maintain water quality and use water efficiently and responsibly.
3	Genetic engineering is excluded from organic production and processing.
4	Organic management sustains and prevents degradation of common biotic and abiotic resources, including areas used for rangeland, fisheries, forests, and forage for bees, as well as neighboring land, air, and water.
5	Organic agriculture develops a viable and sustainable agro-ecosystem, by working compatibly with natural living systems and cycles.
6	The whole farm, including livestock, is converted to organic management practices according to the standards over a period of time.
7	Organic production systems require an ongoing commitment to organic production practices.
8	Species and varieties cultivated in organic agriculture systems are selected for adaptability to the local soil and climatic conditions and tolerance to pests and diseases. All seeds and plant material are certified organic.
9	A conversion period enables the establishment of an organic management system and builds soil fertility.
10	Soil and soil management is the foundation of organic production. Organic growing systems are soil based, care for the soil and surrounding ecosystems and provide support for a diversity of species, while encouraging nutrient cycling and mitigating soil and nutrient losses.
11	Organic farming returns microbial plant or animal material to the soil to increase or at least maintain its fertility and biological activity.
12	Organic farming systems apply biological and cultural means to prevent unacceptable losses from pests, diseases and weeds. They use crops and varieties that are well-adapted to the environment and a balanced fertility program to maintain fertile soils with high biological activity, locally adapted rotations, companion planting, green manures, and other recognized organic practices as described in these standards. Growth and development should take place in a natural manner.
13	All relevant measures are taken to ensure that organic soil and food is protected from contamination.
<i>Principles specified for animal husbandry and bees keeping are not listed here.</i>	
14	Organic processing and handling provides consumers with nutritious, high quality supplies of organic products and organic farmers with a market without compromise to the organic integrity of their products.
15	Organic processed products are only made from organic ingredients.
16	Organic food is processed by biological, mechanical and physical methods in a way that maintains the vital quality of each ingredient and the finished product.
17	Organic food is protected from pests and diseases by the use of good manufacturing practices that include proper cleaning, sanitation and hygiene, without the use of chemical treatment or irradiation
18	Organic product packaging has minimal adverse impacts on the product or on the environment.
19	Organic foods are safe, of high quality, and free of substances used to clean, disinfect, and sanitize food processing facilities.
20	Organic products are clearly and accurately labeled as organic.
21	Social justice and social rights are an integral part of organic agriculture and processing.
<i>Principles on Textile fiber processing and aquaculture or aquatic nutrition are not listed</i>	

References:	
Website:	http://www.ifoam.org/

List of criteria and indicators: Note: The IFOAM Basic standards provide – beside the minimum requirements (listed here as criteria) – also recommendations. Recommendations are not listed in this table.

Criteria [27]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>1a. Operators shall take measures to maintain and improve landscape and enhance biodiversity quality. 1b. Clearing of primary ecosystems is prohibited.</p>			
<p>2a. All operators shall take defined and appropriate measures to prevent erosion. 2b. Land preparation by burning vegetation shall be restricted to the minimum. 2c. Crop production, processing and handling systems shall return nutrients, organic matter and other resources removed from the soil through harvesting by the recycling, regeneration and addition of organic materials and nutrients. 2d. Grazing management shall not degrade land or pollute water resources. 2e. Relevant measures shall be taken to prevent or remedy soil and water salinization. 2f. Operators shall not deplete nor excessively exploit water resources, and shall seek to preserve water quality. They shall where possible recycle rainwater and monitor water extraction.</p>			
<p>3a. The deliberate use or negligent introduction of genetically engineered organisms or their derivatives to organic farming systems or products is prohibited. 3b. The use of genetically engineered organisms or their derivatives is prohibited. 3c. The use of genetically engineered seeds, pollen, transgene plants or plant material is not allowed. 3d. Organic processed products shall not use ingredients, additives or processing aids derived from GMOs. 3e. Inputs, processing aids and ingredients shall be traced back one step in the biological chain to the direct source organism *(see definition) from which they are produced to verify that they are not derived from GMOs. 3f. Contamination of organic product by GMOs that result from circumstances beyond the control of the operator may alter the organic status of the operation and/or product. 3g. On farms with split (including parallel) production, the use of genetically engineered organisms is not permitted in any production activity on the farm.</p>	<p>3a. This includes animals, seed, propagation material, and farm inputs such as fertilizers, soil conditioners, vaccines or crop protection materials. 3b. This shall include animals, seed and farm inputs such as fertilizers, soil conditioners, vaccines or crop protection materials.</p>		

Criteria [27]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>4a. Wild harvested products shall only be certified organic if they are derived from a stable and sustainable growing environment. The people who harvest, gather, or wildcraft shall not take any products at a rate that exceeds the sustainable yield of the ecosystem, or threaten the existence of plant, fungal or animal species, including those not directly exploited.</p> <p>4b. Operators shall harvest products only from a clearly defined area where prohibited substances have not been applied.</p> <p>4c. The collection or harvest area shall be at an appropriate distance from conventional farming, pollution and contamination.</p> <p>4d. The operator who manages the harvesting or gathering of common resource products shall be familiar with the defined collecting or harvesting area.</p> <p>4e. Operators shall take measures to ensure that wild, sedentary aquatic species are collected only from areas where the water is not contaminated by substances prohibited in these standards.</p>			
<p>5a. There shall be a period of organic management, meeting all the requirements of these standards, before the resulting product may be considered as organic.</p> <p>5b. The start of the conversion period shall be calculated from the date of application to the certification body or, alternatively, from the date of the last application of unapproved inputs.</p>	<p>5b. Provided that the operator can demonstrate that the full standards requirements have been met for at least the minimum period stated in sections 4.2 and 5.2. Calculation of the conversion period may not start before the date of the last non-compliant input or practice. For the length of conversion periods, refer to sections 4.2 and 5.2.</p>		
<p>6a. If the whole farm is not converted (split production) the organic and conventional parts of the farm shall be clearly and continuously separated.</p> <p>6b. Simultaneous production of the same organic and non-organic crops or animal products (parallel production) is only permitted where such production is undertaken in a way that allows clear and continuous separation of all products claimed as certified or certifiable as organic.</p> <p>6c. Prohibited materials shall be stored in separate locations from those where organic products are handled.</p>			
<p>7a. The operator shall demonstrate that a production system does not rely upon continuous switching between organic and conventional management.</p>			

Criteria [27]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>8a. Seed and plant materials shall be propagated under organic management one generation, in the case of annuals, and for perennials, two growing periods, or 12 months, which ever is the longer, before being certified as organic seed and plant material. 8b. Operators shall use organic seed and plant material of appropriate varieties and quality.</p>	<p>8b. When organic seed and plant materials are not available, conventional materials may be used provided that they have not been treated with pesticides not otherwise permitted by these standards. To promote and establish use of organic seed and plant material, standard setting organizations shall set appropriate standards and/or time limits for the selected use of non-organic seed and plant material. Where untreated conventional seeds and plant materials are not available, chemically treated seed + plant material may be used. The certification body shall establish time limits and conditions for exemptions that permit use of chemically treated seeds + plant materials.</p>		
<p>9a. Plant products from annual production shall only be considered organic when a conversion period of at least 12 months has elapsed prior to the start of the production cycle. In the case of perennials (excluding pastures and meadows) a period of at least 18 months prior to harvest shall be required. 9b. There shall be at least a 12-month conversion period prior to pastures, meadows and products harvested there from, being considered organic. 9c. The conversion period may be extended by the standard-setting organization depending on conditions such as past use of the land, management capacity of the operator and environmental factors. 9d. Where conversion periods exceeding those stated in 4.2.1 are required, and labeling of product as "produce of organic agriculture in the process of conversion" or a similar description is permitted, the standards requirements shall have been met for at least 12 months prior to such labeling.</p>			
<p>10a. Diversity in plant production and activity shall be assured by minimum crop rotation requirements and/or variety of plantings. 10b. For perennial crops, the certifying body shall set minimum standards for orchard/ plantation floor cover and/or diversity or refuge plantings in the orchard.</p>	<p>10a. Minimum rotation practices for annual crops shall be established unless the operator demonstrates diversity in plant production by other means. Operators are required to manage pressure from insects, weeds, diseases and other pests, while maintaining or increasing soil organic matter, fertility, microbial activity and general soil health.</p>		

Criteria [27]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>11a. Material of microbial, plant or animal origin shall form the basis of the fertility program.</p> <p>11b. Nutrients and fertility products shall be applied in a way that protects soil, water, and biodiversity. Restrictions may be based on amounts, location, timing, treatments, methods or choice of inputs applied.</p> <p>11c. Material applied to the land or crop shall be in accordance with list mentioned in appendix.</p> <p>11d. Manures containing human excrement (feces and urine) are prohibited for use on crops for human consumption.</p> <p>11e. Mineral fertilizers shall only be used in a program addressing long-term fertility needs together with other techniques such as organic matter additions, green manures, rotations and nitrogen fixation by plants.</p> <p>11f. Mineral fertilizers shall be applied in the form in which they are naturally composed and extracted and shall not be rendered more soluble by chemical treatment, other than addition of water and mixing with other naturally occurring, permitted inputs.</p> <p>11g. Chilean nitrate and all synthetic nitrogenous fertilizers, including urea, are prohibited.</p>			
<p>12a. All organic production systems shall display a set of positive processes/mechanisms capable of accounting for management of significant pests, weeds and diseases under normal circumstances.</p> <p>12b. Pest, disease and weed management products that are prepared at the farm from local plants, animals and micro-organisms, are permitted when the measures in 12a are not sufficient.</p> <p>12c. Physical methods for pest, disease and weed management are permitted, including the application of heat. Thermal sterilization of soils to combat pests and diseases is restricted.</p> <p>12d. The standard-setting organization shall establish standards or criteria for all soil sterilization methods that are considered consistent with Appendices 1 and 3.</p> <p>12e. Any input applied for plant pest, disease, weed, or growth management shall appear in Appendix 3 subject to the limitations of that appendix.</p> <p>12f. Any formulated input shall have only active ingredients listed in Appendix 3.</p>	<p>12b. If the ecosystem or the quality of organic products might be jeopardized, the criteria in Appendix and other relevant criteria shall be used to establish whether the product is acceptable.</p> <p>12f. All other ingredients shall not be carcinogens, teratogens, mutagens, or neurotoxins.</p> <p>Appendix 1 provides criteria for the evaluation of inputs, additives and processing aids for organic production and processing.</p> <p>Appendix 3 provides a table listing crop protectants and regulators and conditions for use.</p>		

Criteria [27]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>13a. The operator shall employ measures including barriers and buffer zones to avoid potential contamination and limit contaminants in organic products.</p> <p>13b. In case of a reasonable suspicion of contamination, the certification body shall ensure that an analysis of the relevant products and possible sources of pollution (soil, water, air and inputs) is undertaken.</p> <p>13c. For synthetic structure coverings, mulches, fleeces, insect netting and silage wrapping, only products based on polyethylene and polypropylene or other polycarbonates are permitted. These shall be removed from the soil after use and shall not be burned on the farmland.</p> <p>13d. All equipment from conventional farming systems shall be thoroughly cleaned of potentially contaminating materials before being used on organically managed areas.</p>	<p>13b. Objective: to determine the level of contamination and shall make the appropriate responses, such as detection of contamination sources, considering background contamination and other relevant factors.</p>		
<p>14a. Handlers and processors shall not co-mingle organic products with non-organic products.</p> <p>14b. All organic products shall be clearly identified as such, and stored and transported in a way that prevents contact with conventional product through the entire process.</p> <p>14c. The handler and processor shall take all necessary measures to prevent organic products from being contaminated by pollutants and contaminants, including the cleaning, decontamination, or if necessary disinfection of facilities and equipment.</p>			
<p>15a. All ingredients used in an organic processed product shall be organically produced except for those additives and processing aids that appear in Appendix 4 and non-organically produced ingredients that are in compliance with the labeling provisions.</p> <p>15b. Water and salt may be used as ingredients in the production of organic products and are not included in the percentage calculations of organic ingredients.</p> <p>15c. Minerals (including trace elements), vitamins and similar isolated ingredients shall not be used unless their use is legally required or where severe dietary or nutritional deficiency can be demonstrated.</p> <p>15d. Preparations of micro-organisms and enzymes commonly used in food processing may be used, with the exception of genetically engineered micro-organisms and their products.</p>	<p>15a. In cases where an ingredient of organic origin is unavailable in sufficient quality or quantity, the standard-setting organization may authorize use of non-organic raw materials subject to periodic review and re-evaluation. These materials shall not be genetically engineered.</p> <p>15d. Processors shall use micro-organisms grown on substrates that consist entirely of organic ingredients and substances on Appendix 4, if available. This includes cultures that are prepared or multiplied in-house.</p>		

Criteria [27]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>16a. Techniques used to process organic food shall be biological, physical, and mechanical in nature. Any additives, processing aids, or other materials that chemically react with or modify organic food shall be restricted and must appear in Appendix 4.</p> <p>16b. Extraction shall only take place with water, ethanol, plant and animal oils, vinegar, carbon dioxide, and nitrogen. These shall be of a quality appropriate for their purpose.</p> <p>16c. Irradiation is not permitted.</p> <p>16d. Filtration equipment shall not contain asbestos, or utilize techniques or substances that may negatively affect the product.</p> <p>16e. Defined following conditions of storage are permitted (for allowed substances in these conditions, see Appendix 4):</p> <p>16f. Ethylene gas is permitted for ripening.</p>	<p>16e. These are: a. controlled atmosphere; b. temperature control; c.drying; d. humidity regulation.</p>		
<p>17a. A handler or processor is required to manage pests and shall use the following methods according to defined priorities.</p> <p>17b. Prohibited pest control practices include, but are not limited to, the following substances and methods:</p> <p>17c. The direct use or application of a prohibited method or material renders that product no longer organic. The operator shall take necessary precautions to prevent contamination, including the removal of organic product from the storage or processing facility, and measures to decontaminate the equipment or facilities.</p>	<p>Note on 17a. Priorities are: a. preventative methods such as disruption, elimination of habitat and access to facilities; b. mechanical, physical and biological methods; c. substances according to the Appendices of the IFOAM Basic standards; D. substances (other than pesticides) used in traps.</p> <p>17b. Substances and methods are: a. pesticides not contained in Appendix 3; b. fumigation with ethylene oxide, methyl bromide, aluminum phosphide or other substance not contained in Appendix 4; c. ionizing radiation.</p> <p>17c. Application of prohibited substances to equipment or facilities shall not contaminate organic product handled or processed therein. Application of prohibited substances to equipment or facilities shall not compromise organic integrity of product handled or processed therein.</p>		
<p>18a. Packaging material shall not contaminate organic food.</p> <p>18b. Packaging materials, and storage containers, or bins that contain a synthetic fungicide, preservative, or fumigant are prohibited.</p> <p>18c. Organic produce shall not be packaged in reused bags or containers that have been in contact with any substance likely to compromise the organic integrity of product or ingredient placed in those containers.</p>			

Criteria [27]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>19a. Operators shall take all necessary precautions to protect organic food against contamination by substances prohibited in organic farming and handling, pests, disease-causing organisms, and foreign substances.</p> <p>19b. Water and substances that appear in Appendix may be used as equipment cleansers and equipment disinfectants that may come into direct contact with food.</p> <p>19c. Operations that use cleaners, sanitizers, and disinfectants on food contact surfaces shall use them in a way that maintains the food's organic integrity.</p> <p>19d. The operator shall perform an intervening event between the use of any cleaner, sanitizer, or disinfectant and the contact of organic food with that surface sufficient to prevent residual contamination of that organic food.</p>			
<p>20a. The person or company legally responsible for the production or processing of the product and the certification body shall be identifiable.</p> <p>20b. To be labeled as "produce of organic agriculture" or equivalent protected terms, a product shall comply with at least these standards.</p> <p>20c. Mixed products where not all ingredients, including additives, are of organic origin and products that are entirely in compliance with these standards, shall be labeled in various ways (percentages in this section refer to raw material weight).</p> <p>20d. All ingredients of a multi-ingredient product shall be listed on the product label in order of their weight percentage. It shall be apparent which ingredients are of organic certified origin and which are not. All additives shall be listed with their full name. If herbs and/or spices constitute less than 2% of the total weight of the product, they may be listed as "spices" or "herbs" without stating the percentage.</p> <p>20e. Added water and salt shall not be included in the percentage calculations of organic ingredients.</p> <p>20f. The label for conversion products shall be clearly distinguishable from the label for organic products.</p> <p>20g. Organic products shall not be labeled as GMO-free in the context of these standards. Any reference to genetic engineering on product labels shall be limited to the production and processing methods themselves having not used GMOs.</p>	<p>20c. Ways for labeling:</p> <p>a. where a minimum of 95% of the ingredients are of certified organic origin, products may be labeled "certified organic" or equivalent and should carry the certification mark of the certification body;</p> <p>b. where less than 95% but not less than 70% of the ingredients are of certified organic origin, products may not be called "organic". The word "organic" may be used on the principal display in statements like "made with organic ingredients" provided there is a clear statement of the proportion of the organic ingredients. An indication that the product is covered by the certification body may be used, close to the indication of proportion of organic ingredients;</p> <p>c. where less than 70% of the ingredients are of certified organic origin, the indication that an ingredient is organic may appear in the ingredient list. Such product may not be called "organic."</p>		

Criteria [27]:	Indicator + indication accuracy (Q= Qualitative, D=Descriptive, quantitative, += Accurate, - = not accurate)	Methodology used	Databases used:
<p>21a. Operators shall have a policy on social justice.</p> <p>21b. In cases where production is based on violation of basic human rights and clear cases of social injustice, that product cannot be declared as organic.</p> <p>21c Operators not use forced or involuntary labor.</p> <p>21d. Employees and contractors of organic operations have the freedom to associate, the right to organize and the right to bargain collectively.</p> <p>21e. Operators shall provide their employees and contractors equal opportunity and treatment, and shall not act in a discriminatory way.</p> <p>21f. Operators shall not hire child labor.</p>	<p>21a. Operators who hire fewer than ten (10) persons for labor and those who operate under a state system that enforces social laws may not be required to have such a policy.</p> <p>21f. Children are allowed to experience work on their family's farm or a neighboring farm provided that:</p> <ul style="list-style-type: none"> a. such work is not dangerous or hazardous to their health and safety; b. it does not jeopardize the children's educational, moral, social, and physical development; c. children are supervised by adults or have authorization from a legal guardian. 	<p>See also: Recommendations for inspection of social standards [26]</p>	

26 Better Sugarcane Initiative (International)- Aino Martikainen

General characteristics:		
Initiator system:	WWF	
Coordinating party:	BSI Secretariat and Steering Committee	
Initiation – duration:	The standard is being developed.	
Grade of integration	Micro-standard	
Geographical coverage:	International	
Scope (feedstock included):	Sugarcane	
Value chain	Partial value chain: Production and primary processing	
Mission or objective:		
BSI's mission is to promote measurable improvements in the key environmental and social impacts of sugarcane production and primary processing.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Collaboration of sugar retailers, investors, traders, producers and NGOs who are committed to sustainable sugar production by establishing principles and criteria that can be applied in the sugarcane growing regions of the world		
Current status of system:		
<p>The Better Sugar Cane Initiative Ltd (BSI) first went "live" with Version I of the Standard, during the initial public consultation period in accordance with ISEAL guidelines which ran from one March 2009 to 30 April 2009.</p> <p>Version 2 of the BSI Standard is currently under development and will be discussed at the BSI's AGM which this year is being held in India on 4 & 5 November. The AGM is open to the entire BSI membership and members who wish to attend should get in touch with Natasha Schwarzbach.</p>		
Planned activities:		
<p>Once consensus is reached with regards to the content of the Standard, the next public consultation period will take place through November and December 2009</p> <p>In parallel to the improvement of the Standard the BSI is also developing a certification model which will be approved at the AGM in November.</p>		
Structure of the system or initiative:		
Stakeholder participation:	Multi-stakeholder approach (mainly corporate and NGO members)	
Commitment:	Voluntary/global	
Stakeholder integration:	Public consultation period regarding the first version of the standard in March and April. Stakeholders were encouraged to comment the standard on the webpage; the comments were published and commented. The second version will go through the same procedure app. in November.	
Monitoring performance:	No information yet.	
Chain of custody mechanism:	No information.	
Verification mechanisms:	No information. Verification system is not yet developed.	

Further information:	
Removal of trade barriers	BSI has chosen to use in its standards measurable indicators. Great importance is attached to devising metrics, numbers that can be put to each of the indicators. It is assumed that credibility comes with metrics; without metrics, certification programs can become subjective rather than science-based. However choosing the appropriate metrics is not simple. The metrics employed may vary radically in the degree to which they capture the full character of an individual effect. Some effects are intrinsically more readily quantifiable than others (e.g. particulate emissions vs. aesthetic landscape effects). This is most difficult in the area of social issues.
Costs:	No information.

List of principles included:	
1	Obey the Law
2	Respect Human Rights and Labour Standards
3	Manage input, production and processing efficiencies to enhance sustainability
4	Actively manage biodiversity and ecosystem services
5	Commit to continuous improvement in key areas of their business

References:	
Website:	http://www.bettersugarcane.com

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
1.1 Criterion – To comply with relevant applicable laws..	Relevant national laws and international conventions complied with		
1.2 Criterion – To demonstrate clear title to land in accordance with national practice and law.	Right to use the land	Verification with independent authority: Documents showing legal ownership or lease of the land In case of any contestation by communities, verification with independent authority to establish legitimacy of claim and demonstrability of rights through 1) provision of evidence of negotiated agreements and stakeholder consultation based on free prior informed and documented consent undertaken by company 2) interview with stakeholders.	
2.1 Criterion - To Comply with ILO labour conventions governing child labour, forced labour, discrimination and freedom of association and the right to collective bargaining.	<ul style="list-style-type: none"> - Minimum age of workers - Existence of forced labour -Existence of discrimination -Respect the right of all personnel to form and join trade unions of their choice and/or to bargain collectively in accordance with the law. 	<p>Check on registries that age of employees is duly registered from documents and verify through interviews and field checks.</p> <p>There is no reliable quantitative statistics as self reporting is not a reliable source of information. Source of information on existence of forced labour: 1) Verification of presence or not of the name of the company on any existing governmental registry (e.g. black list of companies) 2) interviews with workers, and relevant stakeholders churches, NGO's, etc. ILO C111 Interview with workers</p>	
2.2 Criterion - To respect and protect human rights and labour standards for employees and workers including migrant, seasonal and other contract labour.	Percentage of suppliers and contractors who have demonstrated compliance with human rights and labour standards	Suppliers and contractors should demonstrate compliance, through self-declaration, with basic human rights e.g. no forced labour, no child labour, no discrimination, freedom of association and labour standards, etc. Effective compliance may be verified by sampling.	
2.3 Criterion - To provide a safe and healthy working environment in work place operations.	<ul style="list-style-type: none"> -Lost time accident frequency -Appropriate personal protective equipment supplied to all workers. -Training for health and safety. -Availability of potable drinking water to each worker present on the field and/or mill. -Access to first aid. -Number of trained first aid workers in each team of workers. 	<p>Where a fatal injury occurs, this to be noted separately</p> <p>Evidence of regular review and effective use of personal protective equipment.</p> <p>All employees and workers (including migrant, seasonal and other contract labour) to have basic training in health and safety measures related to their operation. Effective compliance can be verified by sampling.</p> <p>Visual check</p>	
2.4 Criterion - To provide employees and workers (including migrant, seasonal and other contract labour) with at least the national minimum living wage.	<ul style="list-style-type: none"> -Ratio of lowest entry level wage including benefits to local minimum wage -Ratio of cost of living to local minimum wage. 		
2.5 Criterion – To provide clear, equitable and comprehensive contracts.	Existence of a contract or equivalent document.		

Criteria	Indicators:	Methodology used:	Databases used:
2.6 Criterion - To provide appropriate social and technical support programmes to complement production and processing efficiency plans.	Existence of a social plan for the workers whose job is affected by efficiency and modernisation of production and processing		
3.1 Criterion - To monitor production and process efficiency; to measure the impacts of production and processing so that improvements are made over time.	<ul style="list-style-type: none"> -Total raw materials used per kg product -Sugarcane yield -Biomass yield -Working hours lost as percent of total hours worked -Mill overall time efficiency -Factory Performance Index -Industrial Efficiency 	<ul style="list-style-type: none"> -kg/kg -tc/ha harvested /y -tc/ha harvested /y -% (Hours lost are the total number of hours that any employees are booked off as a result of injury on duty.) -Processing time as a percentage of total time. -Ratio of actual sugar recovery to theoretical recovery of sugar from cane. -This is an efficiency used in Brazil where sugar and ethanol are produced in the same mill. It is the ratio of (sugar+equivalent EtOH+eq.sucrose in molasses)/(sucrose in cane+RS in cane converted to sucrose+RS in molasses converted to sucrose+yeast eq to sucrose) expressed as a %. 	
3.2 Criterion – To monitor climate change impacts.	-Global warming burden per unit mass product	t CO2 /t sugar ,Environmental Burden is t carbon dioxide equivalent.	
4.1 Criterion - To assess direct and indirect impacts of sugarcane enterprises on biodiversity and ecosystems services.	<ul style="list-style-type: none"> -Aquatic oxygen demand per unit mass product -High Conservation Value areas (interpreted nationally as described in appendix 1) at risk. -Soil nutrient status -Eutrophication per unit mass product Ecotoxicity to aquatic life per unit mass product 	<ul style="list-style-type: none"> -t/t, Environmental Burden is t oxygen. -Requires id of existence and rating of quality -% of fields with fertilizer applied according to soil test values -tt/cane; environmental burden is t phosphate equivalent - now measuring risk rather than level in downstream water -tt/cane; takes into account herbicides and other pesticides 	
4.2 Criterion - To consult relevant stakeholders and implement appropriate mitigation where adverse impacts are identified.	-Documented consultation plan	-Relates to adverse impacts such as smoke, fallout from fires, water pollution downstream, drift from agrochemical spraying, noise etc.	
5.1 Criterion - To train employees and other workers in all areas of their work and develop their general skills.	Training expense as percentage of payroll expense		
5.2 Criterion – To continuously improve the status of soil and water resources.	<ul style="list-style-type: none"> -Net water consumed per unit mass of product -Soil organic carbon -Soil acidification 	<ul style="list-style-type: none"> Kg/kg; Should be water used (rainfall plus irrigation) and in processing, less water returned from mill to environment. -% C; A benchmark matrix is required as Organic Carbon varies with clay content, and depth of sampling would need to be taken into account -pH; Annual measurements to monitor changes 	
5.3 Criterion - To continuously improve the quality of sugarcane and products from the sugar mill.	-Theoretical recoverable sugar in cane	-% ; The theoretical OR normalized for juice purity and cane fibre content calculation shown in Appendix 1.	

Criteria	Indicators:	Methodology used:	Databases used:
5.4 Criterion - To promote energy efficiency.	-Total Net Primary Energy Usage per kg product -Energy used in cane transport per tonne cane transported -Net primary energy use per tonne of sugarcane	- kJ/kg; Direct and indirect energy inputs -MJ/t cane - MJ/kg; Direct and indirect energy inputs	
5.5 To reduce emissions and effluents. To promote recycling of waste streams where practical.	-Atmospheric acidification burden per unit mass product -Non-hazardous solid residues per tonne cane	- t/t; Environmental Burden is t sulphur dioxide equivalent. -t/t cane; By-products of processing, namely stillage, manure, filter cake, boiler ash, bagasse	
5.6 Criterion - To foster effective and focused research, development and extension expertise.	-Growers research and extension costs per unit value added as %		
5.7 Criterion - For expansion or new sugarcane projects to ensure transparent, consultative and participatory processes that addresses cumulative and induced effects via an environmental and social impact assessment.	-Recognized ESIA -High Conservation Value areas interpreted nationally as described in appendix 1) used as a % of total land affected by a new project or expansion	-ESIA Environmental and Social Impact Assessment	
5.8 Criterion - To ensure active engagement and transparent, consultative and participatory processes with relevant stakeholders, as well as with local communities and to provide clear grievance mechanisms.	-Evidence of recognized grievance and dispute resolution procedures for all stakeholders -Number of cases resolved versus number of cases brought through dispute resolution mechanisms	-%; Number of cases/yr through legal / internal dispute resolution mechanisms. ILO R130 provides guidance on grievance mechanism.	
5.9 Criterion - To promote economic sustainability.	-Value added / tonne cane	-S/t cane; Value added by the operation is the value of sales less the price of goods, raw materials (including energy) and services purchased.	

27 RSPO Principles & Criteria for Sustainable Palm Oil Production (International) - Aino Martikainen

General characteristics:		
Initiator system:	Founding members of RSPO are Aarhus United UK Ltd., Karlshamns AB (Sweden) Malaysian Palm Oil Association (MPOA), Migros Genossenschafts Bund (Switzerland), Unilever NV (Netherlands) and Worldwide Fund for Nature (WWF) ¹ .	
Coordinating party:	Roundtable on Sustainable Palm Oil	
Initiation – duration:	Principles and Criteria adopted in 2005, RSPO certified palm oil on the market since September 2008	
Grade of integration	Micro-standard approach	
Geographical coverage:	International	
Scope (feedstock included):	Palm	
Value chain	Entire value chain	
Mission or objective:		
To promote the growth and use of sustainable palm oil through co-operation within the supply chain and open dialogue between its stakeholders ²	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
<p>The initiative on production and usage of sustainable palm oil started as an informal cooperation among Aarhus United UK Ltd, Golden Hope Plantations Berhad, Migros, Malaysian Palm Oil Association, Sainsbury's and Unilever together with WWF at the end of 2002. These organizations constituted themselves as an Organizing Committee to organize the first Roundtable meeting in August 2003 in Kuala Lumpur and to prepare the foundation for the organizational and governance structure that resulted in the formation of the RSPO. This event was attended by 200 participants from 16 countries. Subsequently 40 organizations signed a Statement of Intent declaring their intention to participate in this initiative³..</p> <p>On 8 April 2004, the "Roundtable on Sustainable Palm Oil (RSPO)," was formally established under Article 60 of the Swiss Civil Code with a governance structure that ensures fair representation of all stakeholders throughout the entire supply chain. The seat of the association is in Zurich, Switzerland, while the secretariat is currently based in Kuala Lumpur.</p>		
Current status of system:		
The certificate was developed and tested until 2007 and it was ready in August 2008.		
Planned activities:		
Structure of the system or initiative:		
Stakeholder participation:	NGOs, corporations, research	
Commitment:	Voluntary / global	
Stakeholder integration:	Stakeholder consultation is an important part of the certification process; during which relevant national, regional as well as local stakeholders are asked to give their views and opinions as to whether the applicant's certification units comply with the requirements of the applicable National Interpretation..	

Monitoring performance:	The maximum period of validity of the certificate is 5 years, during the lifetime of the certificate, monitoring or surveillance assessments to check continued compliance must take place at least annually, that are timed to capture seasonal variation.
Chain of custody mechanism:	Certification system will offer explicitly book & claim, mass balance, and track & trace parallel.
Verification mechanisms:	Documentation review, field checks, interviews with external stakeholders
Further information:	
Removal of trade barriers	.Provision of information: The certification guarantees compliance with the RSPO standards
Costs:	No information, the costs of the certification (audit) are agreed between the mill and certification body.

List of principles included:	
1	Commitment to transparency
2	Compliance with applicable laws and regulations
3	Commitment to long-term economic and financial viability
4	Use of appropriate best practices by growers and millers
5	Environmental responsibility and conservation of natural resources and biodiversity
6	Responsible consideration of employees and of individuals and communities affected by growers and mills
7	Responsible development of new plantings
8	Commitment to continuous improvement in key areas of activity

References:	
Website:	www.rspo.org

List of criteria and indicators⁴:

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 1.1 Oil palm growers and millers provide adequate information to other stakeholders on environmental, social and legal issues relevant to RSPO Criteria, in appropriate languages & forms to allow for effective participation in decision making</p>	<p>Records of requests and responses must be maintained</p>		
<p>Criterion 1.2 Management documents are publicly available, except where this is prevented by commercial confidentiality or where disclosure of information would result in negative environmental or social outcomes.</p>	<p>This concerns management documents relating to environmental, social and legal issues that are relevant to compliance with RSPO Criteria. Documents that must be publicly available include, but are not necessarily limited to:</p> <ul style="list-style-type: none"> • Land titles/user rights (criterion 2.2). • Health and safety plan (4.7). • Plans and impact assessments relating to environmental and social impacts (5.1, RSPO Principles and Criteria for Sustainable Palm Oil Production. October 2007 Guidance for Principle 1: Commitment to transparency 5 6.1, 7.1, 7.3). • Pollution prevention plans (5.6). • Details of complaints and grievances (6.3). • Negotiation procedures (6.4). • Continuous improvement plan (8.1). 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 2.1 There is compliance with all applicable local, national and ratified international laws and regulations.</p>	<ul style="list-style-type: none"> • Evidence of compliance with relevant legal requirements. • A documented system, which includes written information on legal requirements. • A mechanism for ensuring that they are implemented. • A system for tracking any changes in the law. <p>The systems used should be appropriate to the scale of the organisation.</p>	<p>Implementing all legal requirements is an essential baseline requirement for all growers whatever their location or size. Relevant legislation includes, but is not limited to, regulations governing land tenure and land-use rights, labour, agricultural practices (e.g., chemical use), environment (e.g., wildlife laws, pollution, environmental management and forestry laws), storage, transportation and processing practices. It also includes laws made pursuant to a country's obligations under international laws or conventions (e.g. the Convention on Biodiversity, CBD). Furthermore, where countries have provisions to respect customary law, these must be taken into account.</p> <p>For small-scale producers the focus should be on the grower having adequate knowledge of the main legal requirements and implementing them.</p> <p>Key international laws and conventions are set out in Annex 1. [amended to include UN Guidance for Principle 2: Compliance with applicable laws and regulations 7 Declaration on Rights of Indigenous people]</p> <p>For national interpretation, all relevant legislation should be identified, and any particularly important requirements identified. Contradictions and inconsistencies should be identified and solutions suggested.</p>	

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 2.2 The right to use the land can be demonstrated, and is not legitimately contested by local communities with demonstrable rights.</p>	<ul style="list-style-type: none"> • Documents showing legal ownership or lease, history of land tenure and the actual legal use of the land. • Evidence that legal boundaries are clearly demarcated and visibly maintained. • Where there are, or have been, disputes, additional proof of legal acquisition of title and that fair compensation has been made to previous owners and occupants; and that these have been accepted with free prior and informed consent. • Absence of significant land conflict, unless requirements for acceptable conflict resolution processes (criteria 6.3 and 6.4) are implemented and accepted by the parties involved. 	<ul style="list-style-type: none"> • For any conflict or dispute over the land, the extent of the disputed area should be mapped out in a participatory way. • Where there is a conflict on the condition of land use as per land title, growers should show evidence that necessary action has been taken to resolve the conflict with relevant parties. • Ensure a mechanism to solve the conflict (Criteria 6.3 and 6.4) • All operations should cease on land planted beyond the legal boundary. <p>For national interpretations, any customary land use rights or disputes which are likely to be relevant should be identified.</p>	
<p>Criterion 2.3 Use of the land for oil palm does not diminish the legal rights, or customary rights, of other users, without their free, prior and informed consent.</p>	<ul style="list-style-type: none"> • Maps of an appropriate scale showing extent of recognised customary rights (criteria 2.3, 7.5 and 7.6) • Copies of negotiated agreements detailing process of consent (criteria 2.3, 7.5 and 7.6) 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 3.1 There is an implemented management plan that aims to achieve longterm economic and financial viability.</p>	<ul style="list-style-type: none"> • A documented business or management plan (minimum 3 years). • Annual replanting programme, where applicable, projected for a minimum of 5 years with yearly review. 	<p>Whilst it is recognised that long-term profitability is also affected by factors outside their direct control, top management must be able to demonstrate attention to economic and financial viability through long-term management planning.</p> <p>The business or management plan may contain:</p> <ul style="list-style-type: none"> • Attention to quality of planting materials. • Crop projection = FFB yield trends. • Mill extraction rates = OER trends. • Cost of Production = cost per tonne of CPO trends. • Forecast prices. • Financial indicators. • Suggested calculation – trends in 3-year running mean over the last decade (FFB trends may need to allow for low yield during major replanting programmes). <p>For smallholder management schemes the content would vary from that suggested. Growers should have a system to improve practices in line with new information and techniques.</p> <p>For smallholder schemes, the scheme management will be expected to provide their members with information on significant improvements.</p> <p>This criterion is not applicable to individual smallholders.</p>	

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 4.1 Operating procedures are appropriately documented and consistently implemented and monitored.</p>	<ul style="list-style-type: none"> • Standard Operating Procedures for estates and mills are documented • A mechanism to check consistent implementation of procedures is in place. <p>Records of monitoring & the actions taken are maintained.</p>	<p>For individual smallholders working practices will have to be consistent with documented procedures provided by customers or smallholder organisations. For national interpretation, national codes of practice or Best Management Practices (BMPs) should be referenced.</p>	
<p>Criterion 4.2 Practices maintain soil fertility at, or where possible improve soil fertility to, a level that ensures optimal and sustained yield.</p>	<ul style="list-style-type: none"> • Records of fertilizer inputs are maintained. • Evidence of periodic tissue and soil sampling to monitor changes in nutrient status. • A nutrient recycling strategy should be in place. 	<p>Managers should ensure that best agricultural practice is followed. Nutrient efficiency must take account of the age of plantations and soil conditions. The nutrient recycling strategy should include EFB, POME, palm residues after replanting and any use of biomass for by-products or energy production. Smallholders should be able to demonstrate that they have an understanding of the techniques required to maintain soil fertility and that they are being implemented. National interpretation should identify the range of appropriate techniques.</p>	

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 4.3 Practices minimise and control erosion and degradation of soils.</p>	<ul style="list-style-type: none"> • Maps of fragile soils must be available. • A management strategy should exist for plantings on slopes above a certain limit (needs to be soil and climate specific). • Presence of road maintenance programme. • Subsidence of peat soils should be minimised under an effective and documented water management programme. • A management strategy should be in place for other fragile and problem soils (e.g. sandy, low organic matter, acid sulfate soils) 	<p>Techniques that minimise soil erosion are well-known and should be adopted, wherever appropriate. This may include practices such as ground cover management, biomass recycling, terracing, and natural regeneration or restoration instead of replanting.</p> <p>For existing plantings on peat, water table should be maintained at a mean of 60cm (within a range of 50-75cm) below ground surface through a network of appropriate water control structures e.g. weirs, sandbags, etc. in fields, and watergates at the discharge points of main drains (see also Criterion 4.4 and 7.4).</p> <p>Smallholders should be able to demonstrate that they have an understanding of the techniques required to manage their soils and that they are being implemented.</p> <p>National interpretation should refer to national guidance, and identify the best management practices and appropriate techniques for maintaining soil quality in local conditions, including guidance on soil types, and any appropriate performance thresholds, such as maximum acceptable slope gradient for planting.</p>	

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 4.4 Practices maintain the quality and availability of surface and ground water.</p>	<ul style="list-style-type: none"> • An implemented water management plan. • Protection of water courses and wetlands, including maintaining and restoring appropriate riparian buffer zones. • Monitoring of effluent BOD. • Monitoring of mill water use per tonne of FFB . 	<p>Growers and millers should address the effects of their use of water and the effects of their activities on local water resources. The Water Management Plan may include:</p> <ul style="list-style-type: none"> • Taking account of the efficiency of use and renewability of sources. • Ensuring that the use of water does not result in adverse impacts on other users. • Avoiding contamination of surface and ground water through run-off of soil, nutrients or chemicals, or as a result of inadequate disposal of waste including POME. • Appropriate treatment of mill effluent and regular monitoring of discharge quality, which should be in compliance with national regulations. <p>National interpretation should refer to national guidelines or best practice and where appropriate include performance thresholds for requirements such as the size and location and methods of restoration of riparian strips or acceptable maximum runoff levels.</p>	
<p>Criterion 4.5 Pests, diseases, weeds and invasive introduced species are effectively managed using appropriate Integrated Pest Management (IPM) techniques.</p>	<ul style="list-style-type: none"> • An IPM plan is documented and current. • Monitoring extent of IPM implementation including training. • Monitoring of pesticide toxicity units (a.i./LD 50 per tonne of FFB or per hectare). <p>Due to problems in the accuracy of measurement, monitoring of pesticide toxicity is not applicable to smallholders.</p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 4.6 Agrochemicals are used in a way that does not endanger health or the environment. There is no prophylactic use of pesticides, except in specific situations identified in national Best Practice guidelines. Where agrochemicals are used that are categorised as World Health Organisation Type 1A or 1B, or are listed by the Stockholm or Rotterdam Conventions, growers are actively seeking to identify alternatives, and this is documented.</p>	<ul style="list-style-type: none"> • Justification of all agrochemical use. • Records of pesticide use (including active ingredients used, area treated, amount applied per ha and number of applications). • Documentary evidence that use of chemicals categorised as World Health Organisation Type 1A or 1B, or listed by the Stockholm or Rotterdam Conventions, and paraquat, is reduced and/or eliminated. • Use of selective products that are specific to the target pest, weed or disease and which have minimal effect on non-target species should be used where available. However, measures to avoid the development of resistance (such as pesticide rotations) are applied. • Chemicals should only be applied by qualified persons who have received the necessary training and should always be applied in accordance with the product label. Appropriate safety equipment must be provided and used. All precautions attached to the products should be properly observed, applied, and understood by workers. Also see criterion 4.7 on health and safety. • Storage of all chemicals as prescribed in FAO or GIFAP Code of Practice (see Annex 1). All chemical containers must be properly disposed of and not used for other purposes (see criterion 5.3). • Application of pesticides by proven methods that minimise risk and impacts. Pesticides are applied aurally only where there is a documented justification. • Proper disposal of waste material, according to procedures that are fully understood by workers and managers. Also see criterion 5.3 on waste disposal. • Specific annual medical surveillance for pesticide operators, and documented action to eliminate adverse effects. • No work with pesticides for pregnant and breast-feeding women. 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 4.7 An occupational health and safety plan is documented, effectively communicated and implemented.</p>	<p>The health and safety plan covers the following:</p> <ul style="list-style-type: none"> • A health and safety policy, which is implemented and monitored. • All operations where health and safety is an issue have been risk assessed and procedures and actions are documented and implemented to address the identified issues. All precautions attached to products should be properly observed and applied to the workers. • All workers involved in the operations have been adequately trained in safe working practices (see also criterion 4.8). Adequate and appropriate protective equipment should be available to labourers at the place of work to cover all potentially hazardous operations, such as pesticide application, land preparation, harvesting and, if it is used, burning. • The responsible person should be identified. There are records of regular meetings between the responsible person and workers where concerns of all parties about health, safety and welfare are discussed. Records detailing the occurrence and issues raised should be kept. • Accident and emergency procedures should exist and instructions should be clearly understood by all workers. Accident procedures should be available in the appropriate language of the workforce. Assigned operatives trained in First Aid should be present in both field and other operations and first aid equipment should be available at worksites. Records should be kept of all accidents and periodically reviewed. Workers should be covered by accident insurance. • Recording of occupational injuries. Suggested calculation: Lost Time Accident (LTA) rate (either specify acceptable maximum, or demonstrate downward trend). 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 4.8 All staff, workers, smallholders and contractors are appropriately trained.</p>	<ul style="list-style-type: none"> • A formal training programme that includes regular assessment of training needs and documentation of the programme. • Records of training for each employee are kept. <p>The training programme should be appropriate to the scale of the organisation.</p>		
<p>Criterion 5.1 Aspects of plantation and mill management, including replanting, that have environmental impacts are identified, and plans to mitigate the negative impacts and promote the positive ones are made, implemented and monitored, to demonstrate continuous improvement.</p>	<ul style="list-style-type: none"> • Documented impact assessment. • Where the identification of impacts requires changes in current practices, in order to mitigate negative effects, a timetable for change should be developed. 	<p>Environmental impact assessment should cover the following activities, where they are undertaken:</p> <ul style="list-style-type: none"> • Building new roads, processing mills or other infrastructure. • Putting in drainage or irrigation systems. • Replanting or expansion of planting area. • Disposal of mill effluents (see criterion 4.4); • Clearing of remaining natural vegetation. <p>Impact assessment may be a non-restrictive format e.g. ISO 14001 EMS and/or EIA report incorporating elements spelt out in this criterion and raised through stakeholder consultation. Documented management action plans addressing issues raised from the above impact assessment, which is monitored annually.</p> <p>Environmental impacts may be identified on soil and water resources, air quality (see criterion 5.6), biodiversity and ecosystems, and people's amenity (see criterion 6.1 for social impacts), both on and off-site.</p> <p>Stakeholder consultation has a key role in identifying environmental impacts. The inclusion of consultation should result in improved processes to identify impacts and to develop any required mitigation measures.</p> <p>It is important that where activities, techniques or operations change over time, identifications of impacts, and any required mitigation, are updated as necessary.</p> <p>For smallholder schemes, the scheme management has the responsibility to undertake impact assessment and to plan and operate in accordance with the results. Individual smallholders would not be expected to undertake formal impact assessments (unless there is a legal requirement) but should have a good understanding of the potential negative impacts of their activities and appropriate mitigation techniques.</p> <p>National interpretation should consider any national legal requirements together with any other issues that are not required by law but are nevertheless important, e.g. Independent SEIA for replanting may be desirable under specific situations.</p>	

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 5.2 The status of rare, threatened or endangered species and high conservation value habitats, if any, that exist in the plantation or that could be affected by plantation or mill management, shall be identified and their conservation taken into account in management plans and operations.</p>	<p>Information should be collated that includes both the planted area itself and relevant wider landscape-level considerations (such as wildlife corridors). This information should cover:</p> <ul style="list-style-type: none"> • Presence of protected areas that could be significantly affected by the grower or miller. • Conservation status (e.g. IUCN status), legal protection, population status and habitat requirements of rare, threatened, or endangered species that could be significantly affected by the grower or miller. • Identification of high conservation value habitats, such as rare and threatened ecosystems, that could be significantly affected by the grower or miller. <p>If rare, threatened or endangered species, or high conservation value habitats, are present, appropriate measures for management planning and operations will include:</p> <ul style="list-style-type: none"> • Ensuring that any legal requirements relating to the protection of the species or habitat are met. • Avoiding damage to and deterioration of applicable habitats. • Controlling any illegal or inappropriate hunting, fishing or collecting activities; and developing responsible measures to resolve human-wildlife conflicts (e.g., incursions by elephants). 	<p>This information gathering should include checking available biological records, and consultation with relevant government departments, research institutes and interested NGOs if appropriate. Depending on the biodiversity values that are present, and the level of available information, some additional field survey work may be required.</p> <p>For individual smallholders, a basic understanding of any applicable species or habitats, together with their conservation needs, will be sufficient.</p> <p>For national interpretation, appropriate sources of information include government or international lists of threatened species ('red data lists'), national wildlife protection legislation, authorities responsible for protected areas and species, or relevant NGOs.</p>	

Criteria	Indicators:	Methodology used:	Databases used:
Criterion 5.3 Waste is reduced, recycled, re-used and disposed of in an environmentally and socially responsible manner.	<ul style="list-style-type: none"> • Documented identification of all waste products and sources of pollution • Safe disposal of pesticide containers. • Having identified wastes, a waste management and disposal plan must be developed and implemented, to avoid or reduce pollution. 		
Criterion 5.4 Efficiency of energy use and use of renewable energy is maximised.	<ul style="list-style-type: none"> • Monitoring of renewable energy use per tonne of CPO or palm product in the mill. • Monitoring of direct fossil fuel use per ton of CPO (or FFB where the grower has no mill). 		
Criterion 5.5 Use of fire for waste disposal and for preparing land for replanting is avoided except in specific situations, as identified in the ASEAN guidelines or other regional best practice.	<ul style="list-style-type: none"> • Documented assessment where fire has been used for preparing land for replanting. 		
Criterion 5.6 Plans to reduce pollution and emissions, including greenhouse gases, are developed, implemented and monitored.	<ul style="list-style-type: none"> • An assessment of all polluting activities must be conducted, including gaseous emissions, particulate/soot emissions and effluent (see also criterion 4.4). Significant pollutants and emissions must be identified and plans to reduce them implemented. • A monitoring system must be in place for these significant pollutants which goes beyond national compliance. • The treatment methodology for POME is recorded. <p>Note: RSPO needs to address all issues relating to Greenhouse Gas emissions, as set out in the Preamble to this document.</p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 6.1 Aspects of plantation and mill management, including replanting, that have social impacts are identified in a participatory way, and plans to mitigate the negative impacts and promote the positive ones are made, implemented and monitored, to demonstrate continuous improvement.</p>	<ul style="list-style-type: none"> • A documented social impact assessment including records of meetings. • Evidence that the assessment has been done with the participation of affected parties. Participation in this context means that affected parties are able to express their views through their own representative institutions, or freely chosen spokespersons, during the identification of impacts, reviewing findings and plans for mitigation, and monitoring the success of implemented plans. • A timetable with responsibilities for mitigation and monitoring, reviewed and updated as necessary, in those cases where the assessment has concluded that changes should be made to current practices. • Particular attention paid to the impacts of outgrower schemes (where the plantation includes such a scheme). 	<p>Identification of social impacts should be carried out by the grower with the participation of affected parties, including women and migrant workers as appropriate to the situation. The involvement of independent experts should be sought where this is considered necessary to ensure that all impacts (both positive and negative) are identified.</p> <p>Potential social impacts may result from activities such as: building new roads, processing mills or other infrastructure; replanting with different crops or expansion of planting area; disposal of mill effluents; clearing of remaining natural vegetation; changes in employee numbers or employment terms. Plantation and mill management may have social impacts (positive or negative) on factors such as:</p> <ul style="list-style-type: none"> • Access and use rights. • Economic livelihoods (e.g. paid employment) and working conditions. • Subsistence activities. • Cultural and religious values. • Health and education facilities. • Other community values, resulting from changes such as improved transport /communication or arrival of substantial migrant labour force. <p>Individual smallholders will not be required to conduct formal social impact assessments.</p> <p>As social impacts are particularly dependent on local social conditions, national interpretation should identify the important issues, and methodologies for collecting data and using the results. This should include adequate consideration of the impacts on the customary or traditional rights of local communities and indigenous people, where these exist (see also criteria 2.3 and 6.4).</p>	

Criteria	Indicators:	Methodology used:	Databases used:
Criterion 6.2 There are open and transparent methods for communication and consultation between growers and/or millers, local communities and other affected or interested parties.	<ul style="list-style-type: none"> • Documented consultation and communication procedures. • A nominated management official responsible for these issues. • Maintenance of a list of stakeholders, records of all communication and records of actions taken in response to input from stakeholders. 		
Criterion 6.3 There is a mutually agreed and documented system for dealing with complaints and grievances, which is implemented and accepted by all parties.	<ul style="list-style-type: none"> • The system resolves disputes in an effective, timely and appropriate manner. • Documentation of both the process by which a dispute was resolved and the outcome. • The system is open to any affected parties. 		
Criterion 6.4 Any negotiations concerning compensation for loss of legal or customary rights are dealt with through a documented system that enables indigenous peoples, local communities and other stakeholders to express their views through their own representative institutions.	<ul style="list-style-type: none"> • Establishment of a procedure for identifying legal and customary rights and a procedure for identifying people entitled to compensation. • A procedure for calculating and distributing fair compensation (monetary or otherwise) is established and implemented. This takes into account gender differences in the power to claim rights, ownership and access to land; differences of transmigrants and long-established communities; differences in ethnic groups' proof of legal versus communal ownership of land. • The process and outcome of any negotiated agreements and compensation claims is documented and made publicly available. 		
Criterion 6.5 Pay and conditions for employees and for employees of contractors always meet at least legal or industry minimum standards and are sufficient to provide decent living wages.	<ul style="list-style-type: none"> • Documentation of pay and conditions. • Labour laws, union agreements or direct contracts of employment detailing payments and conditions of employment (e.g., working hours, deductions, overtime, sickness, holiday entitlement, maternity leave, reasons for dismissal, period of notice, etc) are available in the languages understood by the workers or explained carefully to them by a management official. • Growers and millers provide adequate housing, water supplies, medical, educational and welfare amenities to national standard or above, where no such public facilities are available or accessible (not applicable to smallholders). 	<p>Where temporary or migrant workers are employed, a special labour policy should be established. This labour policy would state the non discriminatory practices; no contract substitution; post arrival orientation program to focus especially on language, safety, labour laws, cultural practices etc; decent living conditions to be provided. Migrant workers are legalised, and a separate employment agreement should be drawn up to meet immigration requirements for foreign workers, and international standards. Deductions do not jeopardise a decent living wage.</p> <p>Forced labour is not used (see ILO conventions 29 and 105, Annex 1).</p>	

Criteria	Indicators:	Methodology used:	Databases used:
Criterion 6.6 The employer respects the right of all personnel to form and join trade unions of their choice and to bargain collectively. Where the right to freedom of association and collective bargaining are restricted under law, the employer facilitates parallel means of independent and free association and bargaining for all such personnel.	<ul style="list-style-type: none"> • A published statement in local languages recognizing freedom of association. • Documented minutes of meetings with main trade unions or workers representatives. 		
Criterion 6.7 . Children are not employed or exploited. Work by children is acceptable on family farms, under adult supervision, and when not interfering with education programmes. Children are not exposed to hazardous working conditions.	<ul style="list-style-type: none"> • Documentary evidence that minimum age requirement is met. 		
Criterion 6.8 Any form of discrimination based on race, caste, national origin, religion, disability, gender, sexual orientation, union membership, political affiliation, or age, is prohibited.	<ul style="list-style-type: none"> • A publicly available equal opportunities policy including identification of relevant/affected groups in the local environment. • Evidence that employees and groups including migrant workers have not been discriminated against. 		
Criterion 6.9 A policy to prevent sexual harassment and all other forms of violence against women and to protect their reproductive rights is developed and applied.	<ul style="list-style-type: none"> • A policy on sexual harassment and violence and records of implementation. • A specific grievance mechanism is established. 		
Criterion 6.10 Growers and mills deal fairly and transparently with smallholders and other local businesses.	<ul style="list-style-type: none"> • Current and past prices paid for FFB shall be publicly available. • Pricing mechanisms for FFB and inputs/services shall be documented (where these are under the control of the mill or plantation). • Evidence shall be available that all parties understand the contractual agreements they enter into, and that contracts are fair, legal and transparent. • Agreed payments shall be made in a timely manner. 		
Criterion 6.11 Growers and millers contribute to local sustainable development wherever appropriate.	<ul style="list-style-type: none"> • Demonstrable contributions to local development that are based on the results of consultation with local communities. 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 7.1 A comprehensive and participatory independent social and environmental impact assessment is undertaken prior to establishing new plantings or operations, or expanding existing ones, and the results incorporated into planning, management and operations.</p>	<ul style="list-style-type: none"> • Independent impact assessment, undertaken through a participatory methodology including external stakeholder groups. • Appropriate management planning and operational procedures. • Where the development includes an outgrower scheme, the impacts of the scheme and the implications of the way it is managed should be given particular attention. 	<p>See also criteria 5.1 and 6.1.</p> <p>The terms of reference should be defined and impact assessment should be carried out by accredited independent experts, in order to ensure an objective process. Both should not be done by the same body. A participatory methodology including external stakeholder groups is essential to the identification of impacts, particularly social impacts. Stakeholders such as local communities, government departments and NGOs should be involved, through the use of interviews and meetings, and by reviewing findings and plans for mitigation.</p> <p>The potential impacts of all major proposed activities should be assessed prior to development. The assessment should include, in no order of preference, as a minimum:</p> <ul style="list-style-type: none"> • Assessment of the impacts of all major planned activities, including planting, mill operations, roads and other infrastructure. • Assessment, including stakeholder consultation, of High Conservation Values (see criterion 7.3) that could be negatively affected. • Assessment of potential effects on adjacent natural ecosystems of planned developments, including whether development or expansion will increase pressure on nearby natural ecosystems. • Identification of watercourses and assessment of potential effects on hydrology by planned developments. Measures should be planned and implemented to maintain the quantity and quality of water resources. • Baseline soil surveys and topographic information, including the identification of marginal and fragile soils, areas prone to erosion and slopes unsuitable for planting. • Analysis of type of land to be used (forest, degraded forest, cleared land). • Analysis of land ownership and user rights. • Analysis of current land use patterns. • Assessment of potential social impact on surrounding communities of a plantation, including an analysis of differential effect on women versus men, ethnic communities, migrant versus long-term residents. <p>Assessment of above and below ground carbon storage is important but beyond the scope of an EIA. Note: This aspect will be considered by an RSPO Greenhouse Gas Working Group (See Preamble). Plans and field operations should be developed and implemented to incorporate the results of the assessment. One potential outcome of the assessment process is that the development should not proceed, because of the magnitude of potential impacts.</p> <p>For smallholder schemes, the scheme management should do this. For individuals, it does not apply.</p> <p>National interpretation should identify the relevant accreditations for independent experts. National interpretation should consider setting a minimum threshold of the size of new plantings, e.g. 50 ha, above which an SEIA is required. Consider listing unacceptable negative social impacts (e.g., displacement, loss of the food security of local people, etc.) in the national context.</p>	

Criteria	Indicators:	Methodology used:	Databases used:
Criterion 7.2 Soil surveys and topographic information are used for site planning in the establishment of new plantings, and the results are incorporated into plans and operations.	<ul style="list-style-type: none"> • Soil suitability maps or soil surveys adequate to establish the long-term suitability of land for oil palm cultivation should be available. • Topographic information adequate to guide the planning of drainage and irrigation systems, roads and other infrastructure should be available. 		
Criterion 7.3 New plantings since November 2005, have not replaced primary forest or any area required to maintain or enhance one or more High Conservation Values.	<ul style="list-style-type: none"> • An HCV assessment, including stakeholder consultation, is conducted prior to any conversion. • Dates of land preparation and commencement are recorded 		
Criterion 7.4 Extensive planting on steep terrain, and/or on marginal and fragile soils, is avoided.	<ul style="list-style-type: none"> • Maps identifying marginal and fragile soils, including excessive gradients and peat soils, should be available. • Where limited planting on fragile and marginal soils is proposed, plans shall be developed and implemented to protect them without incurring adverse impacts. 		
Criterion 7.5 No new plantings are established on local peoples' land without their free, prior and informed consent, dealt with through a documented system that enables indigenous peoples, local communities and other stakeholders to express their views through their own representative institutions.	Refer to criteria 2.2, 2.3, 6.2, 6.4 and 7.6 for indicators and guidance on compliance.		
Criterion 7.6 Local people are compensated for any agreed land acquisitions and relinquishment of rights, subject to their free, prior and informed consent and negotiated agreements.	<ul style="list-style-type: none"> • Documented identification and assessment of legal and customary rights. • Establishment of a system for identifying people entitled to compensation. • Establishment of a system for calculating and distributing fair compensation (monetary or otherwise). • Communities that have lost access and rights to land for plantation expansion are given opportunities to benefit from plantation development. • The process and outcome of any compensation claims should be documented and made publicly available. • This activity should be integrated with the SEIA required by 7.1. 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 7.7 Use of fire in the preparation of new plantings is avoided other than in specific situations, as identified in the ASEAN guidelines or other regional best practice.</p>	<ul style="list-style-type: none"> • No evidence of land preparation by burning. • Documented assessment where fire has been used for preparing land for planting. • Evidence of approval of controlled burning as specified in ASEAN guidelines or other regional best practice. • This activity should be integrated with the SEIA required by 7.1. 		
<p>Criterion 8.1 Growers and millers regularly monitor and review their activities and develop and implement action plans that allow demonstrable continuous improvement in key operations.</p>	<p>The action plan for continual improvement should be based on a consideration of the main social and environmental impacts and opportunities of the grower/mill, and should include a range of indicators covered by these principles and criteria. As a minimum, these must include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> • Reduction in use of certain chemicals (criterion 4.6). • Environmental impacts (criterion 5.1). • Waste reduction (criterion 5.3). • Pollution and emissions (criterion 5.6). • Social impacts (6.1). 		

Part 3 – Initiatives or systems to guarantee sustainability of bioenergy from heat and power

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General characteristics:		
Initiator system:	Ofgem	
Coordinating party:		
Initiation – duration:	Started contribution to achievement of Sustainable Development in 2004.	
Grade of integration	Only reporting	
Geographical coverage:	National	
Scope (feedstock included):	Agriculture, Forestry, biofuels	
Value chain	Production, transport, use	
Mission or objective:		
The guideline provides generators using biomass and waste fuels with guidance on how to meet the fuel measurement and sampling requirements and sustainability reporting requirements of the Renewables Obligation. It details the requirements of the legislation, what we expect from generators, and suggestions on how generators can best meet these requirements.	Principles included:	Y/N
	Criteria included:	Y/N
	Indicators included:	Y/N
Context (i.e. legal requirement, related policies):		
It is not intended to be a definitive legal guide. Under the Renewables Obligation scheme.		
Current status of system:		
Only available guideline. Meta-standard type.		
Planned activities:		
Future standard		

Structure of the system or initiative:	
Stakeholder participation:	All involved in the energy sector
Commitment:	Voluntary
Stakeholder integration:	
Monitoring performance:	verification
Chain of custody mechanism:	According to scheme selected (e.g. UKWAS)
Verification mechanisms:	Audit
Further information:	
Removal of trade barriers	No
Costs:	Depending on the scheme used

List of principles included:	
	The guidelines include a section for definitions of type of feedstocks, type of energy systems in use, origin of the feedstocks, by-products and how to claim the Renewable Obligation Certificates.
	A fuel measurement and sampling (FMS) procedure is the general term that we use to describe the agreement with generators of suitable procedures for the measurement and sampling of fuels in order to determine the amount of fuel used in a month, the energy content of the fuel and the level of any fossil fuel derived contamination in the fuel. Whilst the term "FMS procedures" usually refers to the agreement of physical measurement and sampling processes, it may also refer to the provision of documentary evidence
	Article 54 of the Renewable Obligation requires generators' to provide sustainability reporting information "to the best of their knowledge and belief". In particular, we are keen to take a broad approach when considering the application of the term "consignment" by generators, and do not wish to restrict generators by defining the term "consignment" within this document.
....	

References:	
Website:	http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=15&refer=Sustainability

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
The type of biomass	The material from which the biomass was composed (for example, whether it was composed of wood)		
The form of the biomass	Where the biomass can take different forms (for example, wood can take a variety of forms, depending on whether and how it has been processed and what it is, is to be or has been used for), the form of the biomass (e.g. Wood pellets).		
Mass	Where the biomass was solid, its mass 10000te		
Volume	Where the biomass was fluid, its volume when measured at 25 degrees Celsius and 0.1 megapascal		
By-product	Whether the biomass was a by-product of a process. By-product of the paper production process.		
Waste	Whether the biomass was waste		
Country of origin England	Where the biomass was plant matter or derived from plant matter, the country where the plant matter was grown.		
Country of purchase	Where the information specified in the above paragraph is not known or the biomass was not plant matter or derived from plant matter, the country from which the operator obtained the biomass.		
Energy crop including types and proportions	Whether any of the consignment was an energy crop or derived from an energy crop and, if so—the proportion of the consignment which was an energy crop, and the type of energy crop contained in the consignment		
Environmental quality assurance schemes	Whether the biomass or any matter from which it was derived was certified under an environmental quality assurance scheme and, if so, the name of the scheme.	e.g. UK Forestry Standard/ UK Woodland Assurance Standard (UKWAS)	
Land use	Where the biomass was plant matter or derived from plant matter, the use to which the land on which the plant matter was grown has been put since 30th November 2005.	e.g. Used for forestry purposes	

29 Green certificate granting system in Wallonia (Belgium) - Nora Pieret

General characteristics:		
Initiator system [8]:	Legal requirement	
Coordinating party [33]:	CWaPE is the Walloon regulation body in charge of the green certificates' granting and the market survey.	
Initiation – duration [33]:	2003	
Grade of integration:	Meta-standard approach.	
Geographical coverage [33]:	Walloon region	
Scope (feedstock included) [33]:	Green electricity production support.	
Value chain [33]	Whole chain.	
Mission or objective [33]:		
To reach the Kyoto protocol targets by promoting the production of electricity from renewable energy sources with a financial support. The attribution of green certificates is developed to make the level of the green certificates proportional to the energetic efficiency of the whole supply chain.	Principles included:	N
	Criteria included:	Y
	Indicators included:	Y
Context: [8, 29, 33]		
Belgium has committed itself to reduce the GHG emissions with 7.5 % in 2012. In addition, electricity sales are submitted to a renewable obligation of 6% renewable electricity by 2010 (6% in the Flemish region, 12% in Wallonia and 3% in Brussels). To support the production of green electricity, authorities implement regional green certificates granting systems. To grant green certificates to electricity produced from biomass, Belgian Authorities impose an extensive analysis of the bio-fuel supply chain: all bio-fuel suppliers must undergo an energy audit, identify their biomass resources and detail the energy balance of the whole supply chain. The Walloon green certificates granting system is described in the Walloon Government order of the 04/07/2002.		
Current status of system:		
In use.		
Planned activities:		
-		

Structure of the system or initiative:	
Stakeholder participation:	Energy producers, energy suppliers
Commitment:	Mandatory system in the Walloon region.
Stakeholder integration:	Biomass supplier has to fill in a declaration form.
Monitoring performance [10]:	<p>For each biomass source used as biofuel, four documents have to be provided to CWaPE:</p> <p>The biomass supplier has to sign a declaration form mentioning green electricity producer and CWaPE requirements in terms of traceability, biomass resources origin and chain audit;</p> <p>The traceability system description, along the supply chain: from the resource exploitation to the power plant;</p> <p>A study proving the sustainability of the biomass resources delivered;</p> <p>The chain audit: check of the supply chain to control declaration form, possibly check of the biomass transformation, possibly check of the transport from the supplier to the power plant.</p> <p>These data are requested by CWaPE to approve the CO2 eq. emissions rate of the whole targeted green electricity chain from the biomass production to its energetic valorization.</p> <p>A biomass source is judged different as soon as the supply chain is different (raw material, supplier, origin, conditioning, transport, etc.)</p> <p>Documents 1 and 2 have to be provided before biomass first use.</p>
Chain of custody mechanism:	Depend on the system chosen by the power producer.
Verification mechanisms [10]:	Green electricity producers receive Guarantee of Origin Label for one year. They have to provide details about biomass origin, use and electricity production monthly.
Further information:	
Removal of trade barriers	Reduction of the green electricity production cost. A yearly obligation to integrate green electricity in the grid is in appliance. This obligation consists in a green electricity share incremented yearly and is calculated based on yearly electricity sales for each power supplier. By 2010, the green electricity obligations will have reached the 6% in the Flemish region, 12% in Wallonia and 3% in Brussels [23, 33].
Costs:	Depend on the system chosen by the power producer.

References: [8, 9, 10, 33]	
Website:	www.cwape.be

List of criteria and indicators:

Criteria [9, 33]	Indicators:	Methodology used:	Databases used:																																																																																													
CO ₂ emissions avoided with the help of the targeted green electricity production chain in comparison with a reference system.	CO ₂ equivalent calculation (GWP 100 years) for some biomass types, treatment and transport. Whole CO ₂ equivalent emissions calculation for the targeted green electricity production chain	<p>Based on detailed LCA analysis, publication of the reference list of specific fossil CO₂ emissions of the whole supply chain for all fossil fuels as well as the major biomass resources:</p> <table border="0"> <thead> <tr> <th colspan="2">NON FOSSILE</th> <th>kgCO₂/MWh_p</th> </tr> </thead> <tbody> <tr><td>wind/solar/hydropower</td><td></td><td>0</td></tr> <tr><td>organic biodegradable matters</td><td></td><td>0</td></tr> <tr><td>milling / chopping</td><td></td><td>4</td></tr> <tr><td>transport on max. 200 km</td><td></td><td>5</td></tr> <tr><td>transport on more than 200 km</td><td></td><td>25</td></tr> <tr><td>drying</td><td></td><td>10</td></tr> <tr><td>corn crops</td><td></td><td>22</td></tr> <tr><td>wood</td><td></td><td>23</td></tr> <tr><td>wood pellets with residues from the forestry</td><td></td><td>30</td></tr> <tr><td>cultivated wood (short rotation coppices)</td><td></td><td>45</td></tr> <tr><td>rapeseed oil</td><td></td><td>65</td></tr> <tr><td>bio-diesel</td><td></td><td>80</td></tr> <tr><th colspan="2">FOSSILE</th><td></td></tr> <tr><td>natural gas</td><td></td><td>251</td></tr> <tr><td>gasoil</td><td></td><td>306</td></tr> <tr><td>light fuel oil</td><td></td><td>310</td></tr> <tr><td>heavy fuel oil</td><td></td><td>320</td></tr> <tr><td>coal</td><td></td><td>385</td></tr> </tbody> </table> <p>Only GHG with direct effect are considered (IPCC, 1996):</p> <table border="0"> <thead> <tr> <th colspan="2">Gaz</th> <th>GWP (100 ans)</th> </tr> </thead> <tbody> <tr><td>CO₂</td><td></td><td>1</td></tr> <tr><td>CH₄</td><td></td><td>21</td></tr> <tr><td>N₂O</td><td></td><td>310</td></tr> <tr><td>HFC-23</td><td>11 700</td><td></td></tr> <tr><td>HC-32</td><td>650</td><td></td></tr> <tr><td>HC-125</td><td>2 800</td><td></td></tr> <tr><td>HFC-134a</td><td>2 300</td><td></td></tr> <tr><td>HFC-143a</td><td>3 800</td><td></td></tr> <tr><td>HFC-152a</td><td>140</td><td></td></tr> <tr><td>PFCs</td><td>?</td><td></td></tr> <tr><td>SF₆</td><td>23 900</td><td></td></tr> </tbody> </table> <p>The reference systems used are 1) a steam and gas power plant with an efficiency of 55% for electricity components and 2) a natural gas-fired boiler with an efficiency of 90% for the heat component.</p>	NON FOSSILE		kgCO ₂ /MWh _p	wind/solar/hydropower		0	organic biodegradable matters		0	milling / chopping		4	transport on max. 200 km		5	transport on more than 200 km		25	drying		10	corn crops		22	wood		23	wood pellets with residues from the forestry		30	cultivated wood (short rotation coppices)		45	rapeseed oil		65	bio-diesel		80	FOSSILE			natural gas		251	gasoil		306	light fuel oil		310	heavy fuel oil		320	coal		385	Gaz		GWP (100 ans)	CO ₂		1	CH ₄		21	N ₂ O		310	HFC-23	11 700		HC-32	650		HC-125	2 800		HFC-134a	2 300		HFC-143a	3 800		HFC-152a	140		PFCs	?		SF ₆	23 900		
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30 Laborelec certification procedure for the sustainable import of wood pellets - Nora Pieret

General characteristics: Laborelec certification procedure for the sustainable import of wood pellets		
Initiator system [29]:	On the request of GDF-SUEZ/Electrabel, designed by Laborelec and SGS Belgium	
Coordinating party [20]:	- Follow-up verification suppliers to GDF-SUEZ/Electrabel TPM/Fuel Procurement - Technical specifications and verification process: Laborelec - Inspection and independent reporting: SGS Belgium. SGS Belgium has been accepted as independent body to check the data all over the world.	
Initiation – duration [29]:	2006	
Grade of integration [19]:	Meta-standard concept: - If biomass has a certified origin, the following certification systems are recognized: 1) <u>Forest biomass</u> : FSC, PEFC, CSA-SFM, SFI, FFCS, APSC, GGLS5. 2) <u>Agricultural resources</u> : RSPO, Agricultural EUREGAP, EU grown agricultural products, GGLS2 Agricultural Source Criteria. - If biomass has an uncertified origin: sustainability must be reported according to criteria derived from sustainability basic principles of the existing certification schemes FSC or RSPO (see principles below).	
Geographical coverage [29]:	Sourcing: International, Use: national.	
Scope (feedstock included) [19]:	Biomass fuels production from forestry or agriculture raw material and transport for energy production.	
Value chain [29]	Biomass production, pellets production and transport.	
Mission or objective [19]:		
On behalf of Electrabel, Laborelec and SGS Belgium have designed a fast and cheap certification procedure aiming at gathering the whole set of data required for the grant of green certificates in Belgium (sustainability of the raw material origin and energy balance of the whole supply chain) as well as obtaining guarantees regarding biomass traceability and sustainability.	Principles included:	Y
	Criteria included:	N
	Indicators included:	N
Context (i.e. legal requirement, related policies): [29]		
Belgium has committed itself to reduce the GHG emissions with 7.5 % in 2012. In addition, electricity sales are submitted to a renewable obligation of 6% renewable electricity by 2010. To support the production of green electricity, authorities implement regional green certificates granting systems. To grant green certificates to electricity produced from biomass, Belgian Authorities impose an extensive analysis of the bio-fuel supply chain: all bio-fuel suppliers must undergo an energy audit, identify their biomass resources and detail the energy balance of the whole supply chain. If the product would appear in contradiction with the generic sustainability principles, the CWaPE would have the rights to cancel green certificates. Indeed, CWaPE is the Walloon regulation body in charge of the green certificates granting and the market survey.		
Current status of system: [29]		
In use. 30 pellets suppliers have already been screened by SGS.		

Planned activities: [29]	
Electrabel still negotiates with the Walloon Region for considering pellets suppliers separately as in Flemish Region.	
Structure of the system or initiative:	
Stakeholder participation:	-
Commitment [29]:	Mandatory system to sell pellets to Electrabel for power production at national level.
Stakeholder integration [20, 21]:	Pellets suppliers have to fill in a declaration form. The transport company in charge of the international transport has to fill in a declaration form too. These both declarations are considered as official documents which shall be verified by an independent inspection body.
Monitoring performance [20, 31]:	A local independent inspection body is granted by SGS International, the local independent inspection body being indeed generally a local division of SGS or a local subcontracting party. The inspector prepares an audit report based on a on-site visit and a fixed audit procedure form. The auditor verifies the data delivered by the pellets supplier with respect to the origin of the raw material, the characteristics of the pellet production and the energy consumption related to production and local transport. The inspector also checks the declaration of the transport company. All data and documents are then gathered in an Audit Inspection Report to be sent to SGS Belgium. SGS prepares a full Audit Report which comprises a check of the origin of the raw material, a check of the energy consumptions of the supply chain and a check of the technical specifications.
Chain of custody mechanism:	Track and trace system.
Verification mechanisms:	First, a supplier declaration form is filled in and signed by a pellets supplier. The first audit needs to be performed within 6 month after the pellets first burning in the power plant. SGS requires then the auditor to visit the site of the biomass production plant once a year to prepare a new report.
Further information:	
Removal of trade barriers	-
Costs:	The procedure is cheap: less than 0.1 % of the biomass fuel cost.
List of principles included [19]:	
1	Respect of legislation on forestry (afforestation and management plans).
2	Respect of legislation, rights and responsibility for soil use.
3	Respect of legislation, rights and responsibility for irrigation and water use.
4	Respect of rights of local inhabitants.
5	Respect of rights of workers (especially which ones dealing with the working children interdiction).
6	Respect of legislation and responsible management of the waste streams.
7	Respect of environmental legislation (emissions in air, water and soils).
References: [19, 20, 21, 29, 31]	
Website:	http://www.laborelec.com/content/EN/Renewables-and-biomass_p83

List of criteria and indicators:

Criteria [19, 29, 31]	Indicators:	Methodology used:	Databases used:
Meta-standard approach for biomass sustainability (cf. Grade of integration)			
Energy balance of the supply chain	Calculation of: The energy needed for raw material transport The energy needed for pellets production The energy needed for inland transport The energy needed for international transport Calculation of the total energy consumption in equivalent electricity.	Based on the data provided in the declaration forms and assuming fossil energy is converted into electricity with a 55 % efficiency.	

31 NTA 8080 (The Netherlands)- Jinke van Dam

General characteristics:		
Initiator system:	Government of the Netherlands, in preparation by project group "Sustainable production of biomass" [20]	
Coordinating party:	NEN: Netherlands Normalization Institute [36]	
Initiation – duration:	Standard established in 2009	
Grade of integration	Meta-standard	
Geographical coverage:	For all countries applicable	
Scope (feedstock included):	Biomass from all origins	
Value chain	Cultivation – processing – transportation – end use [36]	
Mission or objective:		
The project group has developed 9 principles to guarantee the sustainability of biomass. These principles are translated into a national standard NTA 8080 .	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
The Dutch government wishes to incorporate sustainability criteria for biomass into the relevant policy instruments. In the short term this regards the Dutch subsidy arrangement for electricity production and the obligation for biofuels for road transport. In the longer term the Dutch government wishes to promote a wider application of these sustainability criteria.		
Current status of system:		
The sustainability criteria are translated into a national standard: NTA 8080. NEN will be the scheme holder of the standard. The Netherlands has signed a MoU with Brazil on the topic of sustainable biomass certification.		
Planned activities:		
<p>In 2009, certifiers (in close cooperation with NEN and working groups) will test the standard for verification and develop an auditing scheme. [37] mentions in march 2009 that some indicators in the NTA standard are still open and can be interpreted in various ways. It is important that this is avoided to minimize free interpretation space of certifying companies. The results and recommendations will be brought back into the working groups and finalized. It is expected that the standard is validated in around half a year (summer 2009). As next step, the standard will be tested in the field with pilots in the 3rd quarter of 2009. These experiences will be used to (if needed) adapt the standard and scheme.</p> <p>In 2009, SenterNovem will benchmark the NTA 8080 standard with the EC sustainability criteria. The sustainability criteria in standard NTA 8080 will be linked to the subsidies for electricity companies in 2010. It is expected that the sustainability criteria for biofuels will go in implementation from 2011 onwards. Here, the Netherlands is looking for close cooperation with the EC and other countries. The NTA 8080 is brought into the discussion groups of CEN TC 383.</p>		

Structure of the system or initiative:	
Stakeholder participation:	Principle and criteria development through consultation process in the form of working groups, consultation rounds, etc.
Commitment:	Voluntary (for electricity and heating). Electricity companies can only receive subsidies when sustainability criteria are met.
Stakeholder integration:	Stakeholder involvement (on micro and macro – e.g. national government – level) is given shape by submitting the draft report on sustainability to the local and regional stakeholders. The reactions of stakeholders are incorporated into the final report, which is subsequently supplied to the purchaser
Monitoring performance:	-
Chain of custody mechanism:	For electricity and heating: no limitations (mass balance, track and trace or book and claim): the three models are all acceptable but in combination with different sustainability claims. For all counts that certain verification requirements have to be met. For biofuels: mass balance system.
Verification mechanisms:	Certification audits shall be carried out in accordance with the guidelines in ISO 19011 by an audit team. A summary of the audit reports has to become publicly available incl. nature raw material, data of address production location, and surface area for cultivation. Group certification will be possible. A certification system can make use of logo and labels [36]. Certification will take place by independent CB, accredited on the basis of ISO Guide 65 by an accreditation body which evidently complies with the requirements in ISO 17011 .
Further information:	
Removal of trade barriers	The sustainability criteria – as developed in standard NTA 8080 – meet the WTO requirements [21].
Costs:	This discussion is ongoing. In case of certification to receive subsidy for heating and electricity (as in the Netherlands), the end-user will apply for the certificate (and probably also pay for the costs). The biomass producer can apply for a certificate for production (e.g. RSPO), which can be used for the final certificate to receive the subsidy. Costs for verification in the field are calculated per day or half day working. This is a sum of audit days + (if needed) travel, hotel and transport costs [37].

List of principles included:	
1	General requirements
2	The GHG balance of the production chain and application of the biomass must be positive
3	Biomass production must not be at the expense of important carbon sinks in the vegetation and in the soil. 3a. Conservation of above-ground (vegetation) carbon sinks when biomass units are installed. 3b. The conservation of underground (soil) carbon sinks when biomass units are installed.
4	The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines, and building materials).
5	Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity. 5a. National regulations and laws biomass production and production area 5b. Protected areas 5c. Areas with HCV 5d. Maintenance and recovery of biodiversity 5e. Strengthening of biodiversity.
6	In the production and processing of biomass, the soil, and soil quality must be retained or even improved. 6a. National regulations and laws for soil management 6b. Preservation and improvement of the soil quality 6c. Use of residual products.
7	In the production and processing of biomass ground and surface water must not be depleted and the water quality must be maintained or improved. 7a. National regulations and laws for water management 7b. Preservation and improvement of water quality 7c. Renewable sources
8	In the production and processing of biomass the air quality must be maintained or improved. 8a. No violation of national laws and regulations for air emissions and air quality. 8b. Reducing emissions and air pollution 8c. No burning during the installation or management
9	The production of biomass must contribute towards local prosperity.
10	The production of biomass must contribute towards the social well-being of the employees and the local population. 10a. No negative effects on the working conditions of employees 10b. No negative effects on human rights 10c. The use of land shall not lead to the violation of official property and use, and customary law without the free prior consent of the sufficiently informed population 10d. Positive contribution to the well-being of the local population 10e. Insight into possible violations of the integrity of the company.
References:[36]	
Website:	www.nen.nl

List of criteria and indicators [36]:

Criteria	Indicators:	Methodology used:	Databases used:
<p>1a. Records, reports and notes shall be prepared and kept as evidence of conformity with requirements and provisions, as basis for information which shall be delivered for established reporting to 3rd parties and as evidence for the effective execution of measures, procedures and management plans to be carried out. Reports have to be readable. A procedure has to be established to protect, manage, etc. records.</p>	<p>The organization shall: Assess documents on suitability for the intended purpose, preceding to bring it in use; Revise and adapt and if necessary reassess documents on suitability when needed; Determine and introduce procedures to be sure which is the present status of revision of documents; Determine and introduce procedures to be sure that the relevant versions of documents are available on all those places where they are applicable; Determine and introduce measures to be sure that documents remain permanently readable, unambiguous to be identified; Determine and introduce procedures to be sure that documents of external source can be recognized in such a way and their distribution is managed by the organization; Determine and introduce procedures to be sure that the unintended use of expired documents is prevented and that these documents are clearly identified as expired, when they remain in circulation for any purpose; Retain documents for a period of at least 5 years or for as much longer as mandatory to prevailed laws and regulations.</p>		

Criteria	Indicators used	Methodology used	Database used
<p>1b. The organization shall enforce all applicable laws and regulations of the country of establishment, as well as international agreements and treaties which the country of establishment has signed and shall comply with P&C of NTA8080.</p>	<p>This implies that: The organizations shall enforce all applicable national laws and regulations; The organization shall comply with all applicable legal prescribed reimbursements, royalties, taxes, etc. The organization shall enforce the provisions of all bound international treaties as far as the country of establishment has signed the treaty; Conflicts between laws and regulations and the provisions of this NTA for the purpose of certification shall be evaluated case by case by the CB and the parties concerned to which the conflict applies; Regions, to which this NTA applies or is implemented, shall be safeguarded against illegal chopping or harvesting, illegal establishment and other unauthorized activities; Administrators of regions, to which the NTA applies or is implemented, shall show long time involvement to comply with requirements of this NTA.</p>		
<p>1c. The organization shall consult parties which in one way or another are interested in the region in which the production unit (PU) is being or is established. Usually these parties concerned have a clear vote in the way the organization can and may practice the exploitation of the PU. The consultation concerns, as far as applicable a list of determined areas of attention as: enlarging involvement local population determining HCV areas Etc (list not complete here)</p>	<p>For an effective and adequate contribution of the parties concerned, the organization shall: Identify, register and invite national and local stakeholders to participate in the consultation of stakeholders; Consult the identified stakeholders who expressed their willingness to participate in the consultation; Ensure that the stakeholders are informed about all cases to which the need is made known, unless this is evidently severe harmful for the position of the organization; Take applicable measures to solve substantive differences in opinion with parties concerned.</p> <p>The CB shall develop and record a methodology for the performance of consultations of direct stakeholders. The CB shall consult the direct stakeholders in the range of influence of the producer of primary biomass to verify whether the performances of the producer of primary biomass correspond with the requirements or not.</p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>2a. In the application of biomass a net emission reduction of GHGs must take place along the whole chain. The reduction is calculated in relation to a reference situation with fossil fuels.</p>	<p>A net GHG emission reduction shall take place among the whole chain. The reduction is calculated in relation to a reference situation:</p> <ul style="list-style-type: none"> - For electricity and heat at least 70% in case of reference of Dutch mixture of electricity or coal, or at least 50% in case of reference of natural gas; If in the chain of biomass innovative preparation technology or technologies are demonstrably used to enlarge the availability and / or applicability of sustainable biomass, a minimum of 50% applies; - For transportation fuels at least 50%; for those flows of biomass for which in the European Directive for RES "a typical GHG emission saving of less than 50% is included as transition period till 2012, a minimum of 35%. 	<p>A standard methodology is developed and has to be used. Two tools are designed to calculate the GHGs of bioenergy and for biofuels.</p>	
<p>3a. The installation of new biomass production units must not take place in areas in which the loss of above-ground carbon storage cannot be recovered within a period of ten years of the intended biomass production. The reference date is 1 January 2007, with the exception of those biomass flows, for which a reference date already applies from other certification systems (currently under development).</p>	<p>The organization shall:</p> <ul style="list-style-type: none"> Establish preceding the installation of new PU which carbon storage will be lost in the vegetation and in the soil by the installation of the PU; Establish whether these losses will be compensated by means of cultivation of the intended biomass during the next 10 years; Take measures to reduce the emission of GHGs from the soil during cultivation; Monitor, measure and analyze the measures; Document the results <p>Note: When for the concerned types of soil and/of vegetation independently established and approved reference values are not available, the establishment of the carbon storages should take place by an independent 3rd party according to that far extend established and approved procedure.</p>		
<p>3b. The installation of new biomass production units must not take place in areas with a great risk of significant carbon losses from the soil, such as certain grasslands, peat areas, mangroves and wet areas (wetlands). The reference date is 1 January 2007, with the exception of those biomass flows for which a reference date already applies from other certification systems (currently under development).</p>			

Criteria	Indicators:	Methodology used:	Databases used:
4a. Insight into the change of land use in the region of the biomass production unit	<p>The organization shall report, at the request of the government, about the potential risk on indirect effects in the field of competition with food and local applications of biomass and effects of land use changes, directly associated with this. The duty for reporting includes the following components: The nature of the raw material; The production location and the surface area of cultivation</p> <p>Information about LUC in the region including future developments, when information is available;</p> <p>Information about changes in land and food prices in the region including future developments, when information is available.</p> <p>Information about the availability of biomass for food, energy supply, construction materials, medicines or otherwise on local and regional level, and the relation – if any – with cultivation of energy crops, when information is available.</p>		
4b. Insight into the change of prices of food and land in the area of the biomass production unit			
5a. No violation of national laws and regulations that are applicable to biomass production and the production area.	<p>The organization shall:</p> <p>Prove, as far as applicable, that the national laws and regulations are known in general and the laws and regulations with respect to land ownership and land use rights, forest and plantation management, forest and plantation, exploitation, protected areas, wildlife management, hunting, spatial planning and the rules arising from signing of international conventions in particular;</p> <p>Take measures which are needed to ensure that the requirements of the mentioned laws and regulations are complied with;</p> <p>Take measures which are needed to ensure that the changes in applicable laws and regulations and the enforcement of these are established and applied properly.</p>		<p>For international conventions is considered:</p> <p>CBD: Convention on Biological Diversity and CITES: Convention on International Trade in Endangered Species.</p>

Criteria	Indicators:	Methodology used:	Databases used:
5b. In new or recent developments, no deterioration of biodiversity by biomass production in protected areas.	<p>The Biomass production shall not be practiced in a 'gazetted protected area' or in a zone which at any point is moved off a distance less than 5 km from a 'gazetted protected area'.</p> <p>Biomass production in gazetted protected areas or in a zone of 5 km around these areas is only permitted when:</p> <p>Biomass production is permitted according to applicable laws and regulations (under provision) in the area;</p> <p>Biomass production is part of acknowledged management to protect the biodiversity values in areas that own their great 'historical' biodiversity value to human intervention;</p> <p>Biomass production at the PU is started before 1 January 2007, or a reference dates from other certification systems (currently under development) and has taken place since in a continuous series of production cycles.</p>	<p>The positions of protected areas indicated by governments shall be verified by means of the following sources:</p> <p>World Heritage Sites UNESCO;</p> <p>IUCN list of protected areas;</p> <p>Ramsar areas being wetlands;</p> <p>Integrated biodiversity Assessment Tool IBAT</p>	<p>Relevant sites:</p> <p>UNESCO World heritage sites</p> <p>IUCN List of Protected Area's categories I, II, III and IV</p> <p>RAMSAR areas (wetlands falling under the Convention on Wetlands)</p>
5c. The biomass production shall not be practiced in areas which are pointed out as areas with HCV in dialogue with stakeholders or in a zone which at any point is moved off a distance less than 5 km from an area with HCV.	<p>Biomass production in areas with HCV or in a zone of 5 km around these areas is only permitted when:</p> <p>It is demonstrated that by biomass production the HCV of an area is not affected</p> <p>Biomass production is part of acknowledged management to protect the biodiversity values in areas that owe their great 'historical' biodiversity value to human intervention, such as reed lands and heath lands</p> <p>Biomass production at the production location is started before 1 January 2007, or references date from other certification systems (currently under development) and have taken place since continuously.</p>		<p>HCV categories 1 to 6. For updated surveys of HCV areas for each country refer to http://hcvnetwork.org/practical-support</p>
5d. Maintenance and recovery of biodiversity	<p>The organization shall:</p> <p>At least 10% of the functional soil area of the PU left covered with the original vegetation, representative for the area, for recovery of biodiversity;</p> <p>Record in which land zone the PU is located;</p> <p>Record whether the biomass production contributes to the recovery of degraded areas within the PU;</p> <p>Establish and record measures in management plans and monitor, measure and analyze these measures;</p> <p>Document the results</p> <p>The principle of precaution applies to HCV within the PU. The HCV areas in the PU are described in the management plan and as far as possible indicated in a map.</p>		

Criteria	Indicators:	Methodology used:	Databases used:
5e. Strengthening of biodiversity	<p>The organization shall: Take measures, which are needed, where possible to improve the biodiversity within the PU and to limit fragmentation and disintegration of natural land on and through the PU; Take measures, which are need to ensure that disruption of the environment by entering, use of agrochemicals, noise and invasion of exotic species from the PU; Establish and record measures in management plans and monitor, measure and analyze these measures Document the results.</p>	.	
6a National laws and regulations for soil management.	<p>The organization shall: Show, as far as applicable, that the national laws and regulations in general are known and the laws and regulations with respect to waste management, the use of agrochemicals, mineral system, the prevention of soil erosion, environmental impact assessments and company audits in particular; Show that the provisions of the Stockholm convention on persistent organic pollutants are known as concerns the application to harmful pesticides. Take measures which are needed to ensure that the requirements of the mentioned laws and regulations are complied with; Take measures which are needed to ensure that the changes in applicable laws and regulations and the enforcement of these are established and applied properly.</p>		<p>Stockholm convention on persistent organic pollutants These are the following materials: 1. PCBs, 2. Dioxines, 3. Furans, 4. Aldrin, 5. Dieldrin, 6. DDT, 7. Endrin, 8. Chlordane, 9. Hexa Chlorobenzene (HCB), 10. Mirex, 11. Toxaphene, 12. Heptachlor. http://www.unido.org/doc/29428#pcb</p>
6b. Preservation and improvement of the soil quality	<p>The organization shall: Carry out measurements yearly and record the results; Take measures, which are needed to ensure that the experiences applied in the operational management are aimed at the prevention and control of soil erosion, maintenance of the nutrient balance, maintenance of the SOM and the prevention of the soil becoming brackish; Take measures, which are needed to ensure that the experiences applied in the operational management are aimed at the prevention and control of risks for the soil as a consequence of the use of agrochemicals; Take measures, which are needed to improve continuously those experiences applied in the operational management; Establish and record measures in management plans and monitor, measure and analyze these measures; Document the results.</p>	<p>Measurements include: Soil loss in tons soil / ha /yr Soil organic matter top layer pH top layer Nutrient balance (N, P and K)</p>	

Criteria	Indicators:	Methodology used:	Databases used:
6c. The use of residual products	<p>The organization shall: Take measures which are needed to ensure that the use of an agricultural residual products, that are produced during the production and processing of biomass on the PU, is not in violation against other, in dialogue established with stakeholders, local essential functions for the maintenance of the soil and soil quality; Take measures, which are needed to ensure that residual products of the production process and processing of biomass are used optimally, to prevent unnecessary losses, to limit unnecessary extracting of residual products to remaining local functions and to prevent unnecessary environmental impact; Establish and record measures in management plans and monitor, measure and analyze these measures; Establish for which functions the residual products are used that are produced during the production and processing of biomass on the PU; Document the results.</p>		
7a. National regulations and laws for water management	<p>The organization shall: Show, as far as applicable, that the national laws and regulations in general are known and the laws and regulations with respect to use of water for irrigation, the use of ground water, the use of water for agrarian purposes in catchment basins, water purification, EIA and company audits in particular; Take measures which are needed to ensure that the requirements of the mentioned laws and regulations are complied with; Take measures which are needed to ensure that the changes in applicable laws and regulations and the enforcement of these are established and applied properly.</p>		Stockholm convention on persistent organic pollutants

Criteria	Indicators:	Methodology used:	Databases used:
7b. Preservation and improvement of water quality	<p>The organization shall: Carry out measurements yearly and record the results Take measures, which are needed to ensure that the experiences applied in the operational management are aimed at efficient use of water; Take measures which are needed to ensure that the experiences applied in the operational management are aimed at the prevention and control of risks for ground and surface water as a consequence of the use of agrochemicals and other business processes; Take measures which are needed to ensure that the experiences applied in the operational management where possible are aiming at improving water quality; Take measures which are needed to improve continuously those experiences applied in the operational management; Record measures in management plans and monitor, measure and analyze these measures; Document the results.</p>	<p>Measurements in relation with: Use of irrigation water in liter/ha/year Origin of the irrigation water and surface water level according to BOD on and near the PU; [37]: the indicator of water quality is not easy measurable. A proposal is to request in the first stage (pilot phase) a 4 page report with information on water quality. Based on the collected information and experiences, hard indicators can be coupled to this criterion.</p>	
7c. Renewable sources	<p>The organization shall: Take measures, which are needed to ensure that water of non-renewable sources is not used during the production process and processing of biomass on the PU; Record measures in management plans and monitor, measure and analyze these measures; Document the results.</p>	<p>Reporting must take place on the origin of irrigation water or water for the processing industry.</p>	
8a. No violation of national laws and regulations for air emissions and air quality.	<p>The organization shall: Show, as far as applicable, that the national laws and regulations in general are known and the laws and regulations with respect air emissions, waste management, EIA and company audits in particular; Take measures which are needed to ensure that the requirements of the mentioned laws and regulations are complied with; Take measures which are needed to ensure that the changes in applicable laws and regulations and the enforcement of these are established and applied properly.</p>		

Criteria	Indicators:	Methodology used:	Databases used:
8b. Reducing emissions and air pollution	<p>The organization shall: Carry out measurements yearly and record the results in relation with the emission of substances into the air as a consequence of the production and processing of biomass on the PU; Take measures which are needed to ensure that the experiences applied in the operational management, are aimed at the waste management and minimization of emissions of substances into the air; Take measures which are needed to improve continuously those experiences applied in the operational management; Record measures in management plans and monitor, measure and analyze these measures; Document the results.</p>		
8c. No burning during the installation or management	<p>The organization shall: No apply the burning of the stubble or stand during the installation or management on the PU, unless it is demonstrated that it is the most effective and less harmful method to minimize the risk of harm by disease and plagues; Demonstrate when burning is allowed as described under point A. that the burning under controlled conditions has taken place, among what the care for the presence of sufficient means to combat the burning; Register all incidents, at which rumor has been burning of the stubble, and make report of this during the next audit.</p>		AESAN guidelines on burning and other regional good practice guidelines.
9. Positive contribution of private company activities towards the local economy and activities.	<p>The organization shall: Establish in their policy plan what is meant by the terms local, local economy, locally settled supply companies, local labor and senior management; Establish in their policy plan which objectives are aimed for concerning the acceptance of local employees, with specific attention for senior management; Establish in their policy plan what is meant by the supply of an active contribution to the local economy; Record which criteria apply during the assessment and selection of the supplier; Take measures, which are needed to improve continuously those experiences applied in the operational management; Record measures in management plans and monitor, measure and analyze these measures; Document the results.</p>	<p>Reporting indicators based on Global Reporting Initiative On the basis of Economic Performance Indicators EC 1, 6 & 7 of GRI >> <u>EC1</u>: Direct economic values that have been generated and distributed, among which income, operational costs, staff remunerations, donations and other social investments, retained profits and payments to financiers and authorities. <u>EC6</u>: Policy, methods and part of expenditure with respect to locally based suppliers at significant locations of operation. <u>EC 7</u>: Procedures for local staff recruitment and share of the top executives originating from the local community at significant locations of operation.</p>	GRI: Global Reporting Initiative

Criteria	Indicators:	Methodology used:	Databases used:
10a. Working conditions	<p>The organization shall: Create practices in accordance with the most recent established version of the Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (compiled by the International Labor Organization) with respect to employment, labor relations, safety and health, training and education, and diversity and equal opportunities, treatment of complaints; Take measures, which are needed to improve continuously those experiences applied in the operational management; Record measures in management plans and monitor, measure and analyze these measures; Document the results.</p>		Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (compiled by the International Labor Organization)
10b. Human rights	<p>The organization shall: Create practices in accordance with the UN "Universal Declaration of Human Rights" concerning non-discrimination, child labor, forced and compulsory labor, disciplinary practices, safety practices, freedom of trade union organization and rights of indigenous peoples ; Take measures, which are needed to improve continuously those experiences applied in the operational management; Record measures in management plans and monitor, measure and analyze these measures; Document the results.</p>		UN "Universal Declaration of Human Rights"

Criteria	Indicators:	Methodology used:	Databases used:
10c. Property rights	<p>The organization shall:</p> <p>Take care that all original users of the land that is occupied by the PU, are informed sufficiently about all matters to which the need is made known, unless this is evidently severely detrimental to the competitive position of the organization;</p> <p>Define the use of land accurately and report and demonstrate unambiguously the long-term rights for the use and of the soil;</p> <p>Leave the authority over land use to the local community who owns the legal or customary law on the disposal or use of the land, in the degree that is necessary to secure their right and/or sources, unless this community delegate its authority with free and approved approval to 3rd parties;</p> <p>Take appropriate measures to solve differences in opinion about claims for disposal and right for use;</p> <p>Leave the authority over the management of their land and areas to the local population, unless they delegate its authority with free and approved approval to 3rd parties;</p> <p>Not threaten or reduce the sources or the rights for disposal of the local population, either direct or indirect, as a consequence of the local management;</p> <p>Identify unambiguous places that are of particular cultural, economic or religious importance for the local population, in dialogue with the local population and let acknowledge and protect by the responsible managers;</p> <p>Compensate the local population for the application of their traditional knowledge of the use of species of plants or management systems for land use, at which the local population shall agree formally, freely and informed with the compensation for commencement of the exploitation of the PU;</p>	Long-term rights: e.g. lease, customary law	In line with FSC and RSPO: FSC 2 and 3; RSPO 2.3.
10d. Contribution to social well-being of local population	<p>The organization shall:</p> <p>Establish and record in a specified way in which way and degree exploitation of the PU has influence on the local population, such as concerning health and safety in relation with the infrastructure, dangerous substances and materials, emissions and discharges, health and disease, involuntary resettlement, physical and economic displacement, livelihood restoration, local culture, socially and culturally defined gender differences, indigenous peoples and cultural heritage;</p> <p>Establish which information is needed to determine these influences properly and which authorities and communities have disposal of the information concerned;</p> <p>Take measures which are needed to combat effectively the extent and force of negative influences and to maximize positive effects and to continuously improve these measures;</p> <p>Take measures to continuously enlarge the involvement of local people;</p> <p>Record measures in targeted management plans and monitor, measure and analyze these measures;</p> <p>Document the results</p>	<p>SO1 Report whether:</p> <ul style="list-style-type: none"> * Program is in place to assess impacts on local population; * Programs define data collection and selection community members; * Examples of feedback * No. of operations to which programs apply; * Effectiveness 	On the basis of the Social Performance Indicator SO1 of the GRI: (Global Reporting Initiative).

Criteria	Indicators:	Methodology used:	Databases used:
10e. Integrity of the company	<p>The organization shall:</p> <ul style="list-style-type: none"> Establish and record which business units are analyzed for risks related to corruption; Establish and record the total number of employees in the pay of the organization, specified to position, distinguishing between management and non-management positions; Report separately the % of total number of management and non-management employees who have received anti-corruption training during the reporting period; Record the total number of incidents, in which employees were dismissed or disciplined for corruption; Record the total number of incidents at which contracts with business partners were not renewed due to violations related to corruption; Report any legal cases regarding corrupt practices brought against the corrupting organization or its employees during the reporting period and the outcomes of such cases; Take measures needed to combat effectively corruption with the organization; Record measures in targeted management plans and monitor, measure and analyze these measures Document the results 	<p><i>SO2: Reporting on:</i></p> <ul style="list-style-type: none"> * Identification business units analyzed for organizational risk related to corruption * % of business units analyzed <p><i>SO3 Reporting on:</i></p> <ul style="list-style-type: none"> * Identification and % trained staff on anti-corruption <p><i>SO4 reporting on:</i></p> <ul style="list-style-type: none"> Actions taken in response to incidents of corruption 	<p>On the basis of the Social Performance indicators SO2, SO3 and SO4 of the GRI (Global Reporting Initiative).</p>

32 Green Gold Label (The Netherlands) - Jinke van Dam

General characteristics:		
Initiator system:	Its foundation was an initiative of the Dutch energy company Essent in consultation with several stakeholders.	
Coordinating party:	GGL is owned by the GGL foundation.	
Initiation – duration:	Established in 2002	
Grade of integration	Meta-standard	
Geographical coverage:	Worldwide – supply to Dutch Energy company Essent (possibly extended to more users)	
Scope (feedstock included):	No limitations for origin biomass feedstock	
Value chain	Biomass used for power generation (business to business): cultivation, transportation, processing	
Mission or objective:		
The GGL aims at a traceable system for biomass from (by-) products from the power plant (and its green power it produces) back to the sustainable source. The system is laid down in 8 different GGL standards: GGLS1 - Processing and Trade standard for biomass; GGLS2 - Agricultural Source Criteria; GGLS4 - Product certificate version; GGLS5 Forest Source Criteria; GGLS6 - Standards for Power Companies; GGLS7 - Standard Conservation Stewardship; GGLS8 - Green House Gas calculations	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
GGL was developed in reaction to an increased government focus on creating renewable fuels for reduction of the fossil CO ₂ emissions. A certification program with a quality mark was deemed necessary to replace fossil fuels by biomass.		
Current status of system:		
In implementation for companies that provide biomass to the company Essent. At present 11 biomass suppliers have a certificate.		
Planned activities:		
GGL aims to open its program to other companies other than Essent. GGL considers including NTA criteria (see Netherlands government) in its sustainability standards. The NTA criteria might be embedded into two GGL versions: Certified and Controlled, the first one being stricter than Controlled. Both systems will be mainly oriented to the origin of the biomass supplied.		

Structure of the system or initiative:	
Stakeholder participation:	The foundation has its own board (not accredited) and advisory board. The advisory board comprises different stakeholders that represent social, environmental and economical interests, which are more or less equally represented. The standard and decision setting procedure is not clearly described.
Commitment:	Voluntary. A requirement from Essent to its producers.
Stakeholder integration:	GGLS7 requests stakeholder consultation (e.g. Maintenance of and conversion to high (er) conservation value areas must be supported by relevant and recognized national and local stakeholders). GGLS2 is not explicit in stakeholder consultation processes. The foundation handles appeals.
Monitoring performance:	Robust CoC in place to ensure transfer of information. Auditing takes place on a yearly basis.
Chain of custody mechanism:	Mass balance system for biomass from the sustainable source to the plant (and the green power it produces).

Verification mechanisms:	<p>GGL has endorsed several certification schemes to ensure sustainable feedstock production (e.g. Organic or GLOBALG.A.P. for agriculture). An audit is performed to assess if a GGL testimony of approval can be granted. The standards GGLS2 and GGLS5 are in practice hardly used. The minimum verification frequency is once per year. A certificate remains valid for 16 months from the certification date. The accreditation body is ISO certified and granted by the Dutch Accreditation Council: the only accreditation organization working in the Netherlands.</p> <p>GGLS5 is derived from existing and internationally recognized forest management standards (FSC, PEFC, CSA SFM, and SFI). GGLS5 has not been developed to replace existing standards, rather to enable participating parties and stakeholders to perform a quick-scan assessment on sound forest management practices. An audit based on these principles with a positive result will lead to a "testimony of approval" as a GGL approved source. Approval under these criteria is valid for maximum 4 years. After this year period a GGL approval can only be given if a pre-scope route towards certification is initiated under one of the independent approved forest management certification systems.</p> <p>CoC system: In every link of the CoC, written proof must be available that the GGL quality system is maintained, supported or sustained. Mixing or contamination with non-intrinsic or environmentally harmful materials is prohibited. The MB system features certification and inspection of transport and storage. Participating operators are certified against GGLS1 (on CoC and processing). The scheme does not support group certification.</p>
Further information:	
Removal of trade barriers	-
Costs:	<p>Costs for certification include the visit to the production locations (in this case mainly pelletisers) + travel and subsistence costs + reporting costs. The visit to the location takes about 1 to 1, 5 days. The efforts for a company to get certified the first time depends on :</p> <p>The status of the quality handbook / quality system;</p> <p>If it is a new production location: technical improvements in the company (at this stage less attention to the daily practices of the quality handbook);</p> <p>The convincement of the company to get certified; in general it requires more time to improve required items in companies that are less convinced of the certification requirements (which might take more time and therefore cost more money).</p>

List of principles included (only standards related to sustainability are listed below):

Agricultural source criteria:

GGLS2-1	The agriculture management system is part of an integrated long term planning program (either individually or organized in a group), aimed at development and sustainability.
GGLS2-2	The agriculture management system is based on land-resource planning.
GGLS2-3	The agriculture management is aimed at land conservation and rehabilitation.
GGLS2-4	The agriculture management is aimed at the insurance of freshwater supply and quality for sustainable food production and sustainable rural development.

Forest management criteria :

GGLS5-1	Long term tenure and use rights to the land and forest resources.
GGLS5-2	Management plan
GGLS5-3	Environmental impact
GGLS5-4	Monitoring and assessment
GGLS5-5	Plantations
GGLS5-6	Other sources than natural forests and plantations. (woods <5 ha, lanes and parks)

Conservation Stewardship Criteria:

GGLS7-1	The biomass removed during the conversion and restoration of an agricultural or forestry area to a non-agricultural or to a non-forestry area having enhanced conservation value over the original land, as well as the biomass extracted as a result of maintenance of this nonagricultural or non-forestry land having enhanced conservation value.
GGLS7-2	Biomass material coming from public spaces, parks and green spaces in built-up areas can be treated as Green Gold Label if sustainably managed based on the defined criteria.
GGLS8-1	The GHG and energy balance of the production chain and application of the biomass must be positive. <i>Not yet a requirement to the biomass providers.</i>

References:

Website: http://certification.controlunion.com/certification/program/Program.aspx?Program_ID=19

List of criteria and indicator:

Criteria	Indicators:	Methodology used:	Databases used:
S2-1a. A long term commitment to adhere to the principles and criteria for sustainable agriculture, expressed in a written and up to date agriculture management plan or other management documents.			
S2-1b. Policy reviews are carried out periodically.			
S2-1c. A policy is implemented to influence tenure and property rights of local small holders positively, with respect to the minimum size of land-holding.			
S2-1d. The management plan is dealing with the policy on improvement of production, harvesting, storage, processing, distribution and marketing of products on local, national and regional level.			
S2-1e. Storage and distribution problems, affecting food availability are identified and dealt with in the management plan.			
S2-2a. Collection and continuous monitoring of utilization of natural resources and living conditions are used for the land resource planning (either individually or on a regional basis).	Data about; climate, water and soil, land use, vegetation cover and distribution, animal species, utilization of wild plants, production systems and yields, costs and prices and, social and cultural considerations affecting agriculture and adjacent land use are collected on a regular basis.		
S2-2b. Participation in the initiation and maintenance of district and village agricultural land resource planning assisted by management and conservation groups.			
S2-3a. Land degradation is surveyed on a regular basis.			
S2-3b. Land and conservation areas at risk are identified and the policy and management measures are formulated.			
S2-3c. The general planning, management and utilization of land resources and the preservation of soil fertility are defined and executed			
S2-4a. Efficiency and productivity of agricultural water use for better utilization of limited water resources has to increase.			
S2-4b. Monitoring of the irrigation performance.			
S2-4c. Proper dispose of sewage and waste from the farm and human settlements and of manure produces by intensive life stock breeding.			
S2-4d. Water quality has to be monitored on biological, physical and chemical quality.			

Criteria	Indicators:	Methodology used:	Databases used:
S2-4e. Measures have to be taken to minimize soil run-of and sedimentation.			
S2-4f. Irrigation has to be planned in a long term program.			
S2-4g. Long term strategies and implementation program have to be developed on water use under scarce conditions.			
S2-4h. Waste water re-use has to be part of the agriculture management system.			
S2-5a. The management system is based on an integrated system of pest control.			
S2-5b. The use of banned pesticides is prohibited.			
S2-5c. The use of restricted pesticides is controlled and an administration is kept up to date. Stock is kept in a separate and locked storage.			
S2-5d. Biological control agents and organic pesticides, as well as traditional knowledge and skills regarding alternatively non-chemical pest control have to be identified and implemented in the agricultural management system.			
S2-6a. The management plan is based on an integrated plant nutrition approach.			
S2-6b. The availability of fertilizer and other plant nutrient resources are optimized.			
S5-1a Owner /forest manager demonstrates clear evidence of legal land use by having legal land title, customer right or lease agreement.			

Criteria	Indicators:	Methodology used:	Databases used:
<p>S5-2. The forest management shall be supported by a documented plan. The long term objectives of the management and the means of achieving them shall be clearly stated. The management plan and supporting documents shall provide:</p> <ul style="list-style-type: none"> - Management objectives* in the form of a policy dealing with; - A description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands. - Information gathered through resource inventories and a description of silvicultural and/or other management system** based on the ecology of the forest. 	<p>*Management objectives include sustainability of the forest and all its functions; sustainability of the environment and sustainability of economic viability. **Description of management system includes: rational rate of annual harvest and species selection; provisions for monitoring of forest growth and dynamics; environmental safeguards based on environmental assessments; plans for the identification and protection of rare, threatened and/or endangered species; maps describing the forest resource base including protected area/sites planned management and land ownership and description and justification of harvesting techniques and equipment to be used.</p>		
<p>S5-3. The forest management is aimed at conservation of biological diversity and forest integrity, water resources, soils, unique ecosystems and landscapes The following issues are included in the management plan:</p> <ul style="list-style-type: none"> a. Environment in general b. Roads, waterways and air routes: c. Harvests: d. Re-forestation including re-forestation method (machines, etc.), re-forestation policy; natural renewal (selection of tree species, genetic characteristics, plants, etc.), re-forestation (own work or contracting out), general maps of re-forestation areas. e. Pollution control, including policy on the use of chemicals, soil improvers, lubrication oil, etc, overview of machines used, fuels and lubricants used; maintenance plan and safety aspects and procedures. 	<ul style="list-style-type: none"> a. This includes description of current biodiversity; current or future protection measures for flora and fauna and flora and fauna management; Protective forest varieties, plants and animals (overviews, areas); Climate, topography, soil types, rainfall catchment areas, etc; Measures taken to prevent erosion, improve soil conditions, etc; General maps indicating those areas that should be labeled as 'protected'; Disease and pest management; Use of synthetic or chemical pesticides; Observational data of re-forestation. b. Including general maps of present, projected and past routes; Waterways; Mountains, slopes, gradients; Areas susceptible to erosion; Procedures for planning, design and maintenance. c. This includes evidence of tree felling permits; statement of sustainable forest management; procedures for tree felling and transport of timber (clearance plan); overview of machines and tools; selection procedures and calculations of AAC (annual admissible cutting); rotation of tree felling locations; a long-term harvest scheme and a strategic (short-term) timber harvesting plan (selection, felling and timber clearance plan; products, species, areas, lot numbers of trees that have been or are due for felling (stump and tree), potential end products, national and international export or local use; overview of timber harvesting plans (expected dates) and potential influencing factors. 		

Criteria	Indicators:	Methodology used:	Databases used:
S5-4 Monitoring shall be conducted to assess the condition of the forest, yields of the forest products, and management activities. The results of monitoring shall be incorporated into the implementation and revision of the management plan.	4.2 The following indicators should be included in the monitoring system: yield of all forest products harvested; growth rates, regeneration and condition of the forest; composition and observed changes in the flora and fauna; environmental impacts of harvesting and other operations; costs, productivity and efficiency of forest management.		
S5-5a Plantations shall be planned and managed in accordance with the principles 1-4, and principle 5. They should complement the management of, reduce pressures on and promote the restoration and conservation of natural forests.			
S5-5b For existing plantations the management has to demonstrate, that the plantation was not established by converting a forest.			
S5-6a The management of sources other than natural forests and plantations has to meet Principle 1 of the GGL SFC.			
S5-6b Management of sources other than natural forest and plantations shall conserve the ecological, social and cultural functions and integrity.			
S5-6c The management shall be supported by a documented plan. The long term objectives of the management and the means of achieving them shall be clearly stated			
S5-6d The management plan and supporting documents shall provide: 1 Management objectives 2 Description of the woods, lanes and parks to be managed, etc. 3 Description of silvicultural and/or other management system - Description and justification of harvesting techniques and equipment to be used.	1) Objectives in form of a policy dealing with; Sustainability of the woods, lanes and parks and all its functions, sustainability of the environment. 2) Based on the ecology of the woods, lanes and parks in question and information gathered through resource inventories.		

Criteria	Indicators:	Methodology used:	Databases used:
S5-6e. The environmental impact of the management on woods; lanes and parks shall be managed.			
<p>S5-6f The following issues shall be part of the management plan:</p> <p>1. Environment in general:</p> <p>2. Harvests/maintenance:</p> <p>3. Re-planting: re-planting method (machines, etc.), re-planting policy: Natural renewal (selection of tree species, genetic characteristics, plants, etc.), re-planting (own work or contracting out), general maps of re-planting areas, pollution control:</p> <p>4. Policy on the use of chemicals, soil improvers, lubrication oil, etc, overview of machines used, fuels and lubricants used, maintenance plan, safety aspects and procedures.</p>	<p>I. including: Flora and fauna management, Measures taken to prevent erosion, improve soil conditions, General maps indicating those areas that should be labeled as 'protected', Disease and pest management, use of synthetic or chemical pesticides and observational data of re-planting.</p> <p>2. Including evidence of tree felling permits and agreements with the local community or other parties involved in forest operations, procedures for tree felling and transport of timber (clearance plan), overview of machines and tools, long-term maintenance scheme and a strategic (short-term) maintenance, overview of maintenance plans (expected dates) and potential influencing factors.</p>		
S7-1a. The area to be converted must not contain high conservation value forest or areas of high conservation value.	This standard also includes biomass material that is removed from a high conservation value area as a result of maintenance that is performed in order to keep the area in the desired state of higher conservation.		HCV areas are defined as areas of outstanding and critical importance due to their environmental, socio-economic, biodiversity + landscape values (WWF).
S7-1b. Conversion and maintenance must achieve clear, additional and long term conservation benefits.			
S71-c. There is a long term commitment to adhere to the principles and criteria for sustainable conservation, expressed in a written and up to date management plan or in other management documents.	Management plan on long term sustainable conservation available.		
S7-1d. The relative conservation value of the area before and after conversion must be clearly demonstrated.			
S7-1e. The positive effect of maintenance on the conservation value of the area must be clearly demonstrated.			
S7-1f. The extent to which the converted area provides enhanced conservation benefits in terms of the landscape must be taken into account.			

Criteria	Indicators:	Methodology used:	Databases used:
S7-1g. Maintenance of and conversion to high (er) conservation value areas must be supported by relevant and recognized national and local stakeholders.			
S7-1h. The system and techniques to be used for conversion, restoration and maintenance have been proven successful on that management unit or on comparable areas.			
S7-1i. Conversion and maintenance does not affect the availability of food to local Inhabitants.			
S7-1j. Conversion recognizes traditional uses of the land by local communities and compensation is negotiated in a fair and transparent way.			
S7-1k. The management plan details the methodology for identifying local communities and individuals who may be adversely affected by the conversion.	Management plan details methodology for identifying local communities and individuals		
S7-1l. Management plan details process to be used for negotiating and making compensation in fair and transparent way. This may be by financial compensation or by planting of similar crops in suitable location accepted by all parties)			
S7-1m. All work is carried out in accordance with industry best practice and takes into account a risk assessment of the site.			
S7-2a. Maintenance must achieve clear, additional and long term conservation benefits.			
S7-2b. There is a long term commitment to adhere to the principles and criteria for sustainable conservation, expressed in a written and up to date public green maintenance and management plan or in other management documents.			
S7-2c. The positive effect of maintenance on the conservation value of the area must be clearly demonstrated.			
S7-2d. Conversion may only take place where the manager can clearly demonstrate that none of the areas to be converted can be considered to contain high conservation values.			
S7-2e. The system and techniques to be used for conversion and maintenance have been proven successful on comparable areas.			
S7-2f. All work is carried out in accordance with industry best practice and takes into account a risk assessment of the site.			
S8-1a. Minimum level of GHG saving for certification	50% GHG reduction for biomass for electricity and heat 70% GHG reduction for biomass for electricity and heat when referring to Dutch electricity mix 60% GHG reduction for biogas 50% GHG reduction for biofuels	For GHG methodology: see technical report	According to NTA 808
S8-1b. Minimum level of energy saving for certification	Biomass for electricity: 35% Biofuels: 35%	For methodology: see technical report	According to 'Besluit Vlaamse regering' from 05.03.2004

33 Milieukeur (The Netherlands) - Jinke van Dam

General characteristics:		
Initiator system:	Stichting Milieukeur (SMK)	
Coordinating party:	The owner of Milieukeur is SMK.	
Initiation – duration:	SMK exists since 1992. Criteria for Green Electricity are developed in 2004 [45].	
Grade of integration	Micro-standard	
Geographical coverage:	Renewable Electricity use in the Netherlands (feedstock can be imported from abroad)	
Scope (feedstock included):	Renewable electricity from solar, wind, water, landfill gas and biomass	
Value chain	Production (limited) - Conversion (for electricity)	
Mission or objective:		
SMK develops criteria for the sustainable production of a wide range of products including Green Electricity. This includes renewable electricity from solar, wind, water, land fill gas and biomass.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Energy companies are obliged to announce publicly the electricity source. For green electricity, the energy companies have to guarantee to the consumer that the electricity is produced in a sustainable way. This is controlled by so-called "guarantees of origin". This certificate shows e.g. a number, the electricity source and a production date [8].		
Current status of system:		
No green electricity from biomass is certified with MilieuKeur. Only green electricity from wind is at this moment (July 2009) certified by MilieuKeur [22].		
Planned activities:		
SMK is revising its criteria for Green Electricity, which will be available from 1 January 2010 onwards. Most probably, the NTA 8080 sustainability criteria will be used as a reference for green electricity from biomass [22].		

Structure of the system or initiative:	
Stakeholder participation:	A commission with relevant stakeholders is established to revise the criteria. In addition, public sessions are organized for revision and to collect opinions [22].
Commitment:	Voluntary
Stakeholder integration:	Not included in criteria.
Monitoring performance:	-
Chain of custody mechanism:	Based on certificates called "guarantee of origin" that have to show the biomass source. No specific CoC system developed.
Verification mechanisms:	The certification system is accredited by RVA. The lead auditor is ISO 14001 certified [46]. The verification process takes place on an annual basis. If needed, more frequent controls are implemented [46].

Further information:	
Removal of trade barriers	-
Costs:	The contribution for certification of green electricity is dependent on the turn over of a company. - Turn over until 25 € million: 1 promille - Turn over more than 25 € million (for the part of the turn over from 25 € million onwards): 0,75 promille (maximum contribution is 20.000 €). One-off application costs are € 470,- [47].

List of principles included [46]:	
1	Environmental demands to electricity from solar energy
2	Environmental demands to electricity from wind
3	Environmental demands to electricity from water power
4	Environmental demands to electricity from landfill gas
5	Environmental demands to electricity from biomass*

* Only the criteria and indicators for electricity from biomass are listed in this overview.

References:	
Website:	www.smk.nl

List of criteria and indicators [46]:

Criteria	Indicators:	Methodology used:	Databases used:
2.5.1.1 Demands to the installation: co-firing of polluted biomass in coal firing plants.	<ol style="list-style-type: none"> 1. Have to meet the national emission demands 2. The daily average of the SO₂ emission is based on the BVA (Dutch legislation) and has to be lower than 35 mg/m³ 3. The daily average of the total emissions of dust particles is based on the BVA (Dutch legislation) and has to be lower than 2,3 mg/m³ 	Report on emissions co-firing polluted biomass, to be delivered to authorities "Brandstofrapportage": Report that shows fuel and feedstock use, delivered to authorities	BVA (Dutch legislation)
2.5.1.2 Demands to the installation: Use of biomass in all other installations, co-firing of clean biomass	<ol style="list-style-type: none"> 1. Has to meet the national emission demands 2. Clean biomass: All installations have to meet the so called "<i>LCP Directive</i>" on the reduction of emissions of certain polluting substances in the air by large installations. In this standard, the demands are applicable to all sizes of installations. 3. In case of polluted biomass: All installations have to meet the Directive "<i>Verbranding van Afval</i>" (2000/76/EG). 	For Dutch installations: no additional testing is needed. For installations from abroad: Emission reporting " <i>Overige Biomassa</i> " required LCP Directive Directive " <i>Verbranding van Afval</i> "	LCP Directive Directive " <i>Verbranding van Afval</i> "
2.5.2 Demands to the used biomass ¹	<ol style="list-style-type: none"> 1. The use of purification slurry from sewage water is excluded. 2. Use of biomass else than '<i>Zuivere biomassa</i>' is excluded, defined as: products, waste and residues of agriculture, forestry and related sectors that are fully biologically degradable, as well as biologically degradable industrial and consumer waste. 3. Use of biomass from animal originating biomass is permitted for Milieukeur, only if retrieved biomass is originating from processes that meet criteria of EKO or Milieukeur. 		
2.8 Import of green electricity	<ol style="list-style-type: none"> 1. Only import from member states from European Union and from countries, that have come to a mutual objective with the EC, is permitted to give shape to demand of additionality 2. Imported green electricity has to meet the same demands as sustainable electricity produced in the Netherlands. 3. The exporting country will deduct the exported electricity in its reporting to the EC, as agreed in the framework of the Directive of Sustainable Electricity. 	Guarantee of origin that the exporting country deducts the amount of exported energy in its reporting to the EC De Guarantees of origin have to meet the same requirements as the Dutch Guarantees of Origin.	
3. Additional demands	Own environmental labels are not permitted.	Observation	
Notes: ¹⁾ The environmental criteria will be revised in 2010. The following additional demands will (at least) be included for bioenergy: a) additional emission demands track and trace system to trace the source of origin, requirement that the fossil energy use in the bioenergy chain stays below a certain level.			

**34 Bra Miljöval (Good Environmental Choice) (Sweden) -
Svetlana Ladanaj, Olle Olsson, Johan Vinterbäck**

General characteristics:	
Initiator system:	<p>The Swedish Society for Nature Conservation (SSNC) has, for many years, been working to improve the environmental quality of products on the market, most markedly through their own eco-labelling system Good Environmental Choice (Bra Miljöval).</p> <p>As consumers' and voters' representative, the Green Consumerism project of The Swedish Society for Nature Conservation (SSNC) covers several approaches to deal with environmental aspects of consumption levels and kind</p> <p>The labelling of electricity is a part of the overall energy project of SSNC.</p> <p>There are heating labelled with Good Environmental Choice. If you select the district heat that bears the Good Environmental Choice, the supplier promise to produce an equivalent amount of heat that you consume. Production must be in accordance with the highest Good Environmental Choise standards</p>
Coordinating party:	
Initiation – duration:	<p>Since we began eco-labelling, in 1987, several thousand products have been reformulated and adapted so that they can use our Good Environmental Choice eco-label. Today, companies compete over who has the best products in environmental terms, and most consumers are interested and knowledgeable.</p> <p>SSNC's ecolabelling of electricity delivery contracts started at the very beginning of 1996. Both supply and demand of the labelled services are expanding rapidly, also geographically. The same criteria are working in Norway and Denmark in cooperation with SSNC. In 2007 we launched criterias for district heat and got our first licensee in March 2008. The labelling of electricity and district heat is a part of the overall energy project of SSNC</p>
Grade of integration	The ecolabelling also includes the internationally introduced labelling system of TCO '95 and '99 on computers.
Geographical coverage:	<p>Both supply and demand of the labelled services are expanding rapidly, also geographically. Since May 1998, the same criteria are working in Norway and Finland in cooperation with SSNC's sister organizations, Norwegian Society for the Conservation of Nature.</p> <p>Today SSNC is also an active partner in various networks such as the Coalition Clean Baltic, where joint campaigning, with NGOs in other countries bordering the Baltic Sea, has increased awareness of environmental problems and initiated international actions to reduce the pollution levels. In total works together with around 50 organisations in over 25 countries, some small local groups, and others are working nationally, regionally or internationally.</p>
Scope (feedstock included):	Biomass from all origins
Value chain	

Mission or objective:	
<p>Mission - to influence politicians, rulers and businesses to take greater account of the nature and the environment.</p> <p>Good Environmental Choice label showing which products are least harmful to the environment.</p> <p>All criteria are based on the same basic ideas:</p> <p>We need to conserve natural resources Biodiversity and human health may not be threatened Materials are to be returned to the natural cycle, reused or recycled</p>	Principles included: Y/N
	Criteria included: Y/N
	Indicators included: Y/N
Context (i.e. legal requirement, related policies):	
<p>These Special Terms and Conditions constitute, together with the Application and the General Terms and Conditions 1 May 2003, the Licence Terms and Conditions regulating the use of Bra Miljöval in relation to electrical power supply.</p> <p><u>GENERAL LICENCE TERMS AND CONDITIONS:</u> The Application The Application Fee: Bra Miljöval Label: Instructions: Criteria: Licence: Licence Fee: Licence Holder: Licence Term: Licence Terms and Conditions: The Product: Audit:</p> <p><u>Special Terms and Conditions:</u> available at: http://www2.snf.se/pdf/bmv/bmv-terms-general.pdf</p>	
Current status of system:	
<p>These Special Terms and Conditions constitute, together with the Application and the General Terms and Conditions 1 May 2003, the Licence Terms and Conditions regulating the use of Bra Miljöval in relation to electrical power supply.</p> <p>Current status of the system is available at: http://www2.snf.se/pdf/bmv/bmv-terms-electric.pdf</p>	
Planned activities:	

Structure of the system or initiative:	
Stakeholder participation:	Before a product is allowed to display the Good Environmental Choice eco-label it must meet certain requirements. These requirements or criteria, as they are called, are drawn up by various experts. They check the requirements carefully, work out how they might lead to improvements in the environment, and decide whether they will have an impact on the market. After several revisions the proposal is handed over to industry, the retail trade and the authorities to find out what their views are. It is important that everyone takes part and that no one feels victimised. Although the requirements may be stiff, they must not be unreasonable. Otherwise no one would get involved.
Commitment:	
Stakeholder integration:	support and cooperate in partnership with a vast range of organisations such as environmental groups, indigenous peoples organisations, farmer associations and development organisations
Monitoring performance:	Before the Swedish Society for Nature Conservation draws up environmental criteria for a group of products, we first carry out a careful assessment of the environmental impact of the product. Every product affects the environment in several ways during the different phases of its life cycle. We must consider how the raw materials are extracted (or what is consumed in providing a service). We must also think about how the product is made and what happens to it when it has been used and discarded. This method of assessing the total environmental impact of a product is usually called a life cycle analysis. New information and new environmental factors must constantly be taken into account in life cycle analysis.
Chain of custody mechanism:	
Verification mechanisms:	Companies that have licensed labels checked each year. Then the company must demonstrate that agreement has been fulfilled and that the share of electricity that bear the Good Environmental Choice mark is consistent with the number of kilowatt hours sold. The data reviewed by an auditor that is approved by the Swedish Society for Nature Conservation
Further information:	
Removal of trade barriers	
Costs:	The Licence Holder shall pay to the Swedish Society for Nature Conservation, a nonrefundable Application Fee of SEK 10,000 and SEK 500 for each power station included in the Application <u>Fees and payment routines:</u> 1 The Product comprises the production specified in the Application for one or more power stations, which are covered by the Criteria. 2 The Licence Holder is not entitled to alter the composition of the Product without the written approval of the Swedish Society for Nature Conservation (Svenska Naturskyddsföreningen). 3 The Licence Holder is not entitled to change producer ("Producer") of the Product without the written approval of the Swedish Society for Nature Conservation

List of principles included:	
1	http://www2.snf.se/pdf/bmv/bmv-listcriteria.pdf
2	
3	
....	

References:	
Website:	http://www2.snf.se/bmv/english.cfm

NOTE: Similar system is also applied in Finland.

**35 International Sustainable Carbon Certification – ISCC
(International) - Philipp von Bothmer**

General characteristics:		
Initiator system:	German Ministry for Food, Agriculture and Consumer Protection	
Coordinating party:	Méo Consulting	
Initiation – duration:	Under development since Nov 2006	
Grade of integration	Meta-standard approach	
Geographical coverage:	International	
Scope (feedstock included):	Multi-feedstock approach (feedstock for biofuels).	
Value chain	Entire value Chain	
Mission or objective:		
The overall objective of the project is to test an international, pragmatic certification system, with the lowest possible administrative burden, that reduces the risk of non-sustainable production and can be used as a proof of GHG emissions of biofuels taking account of their entire life cycle.	Principles included:	Y/N
	Criteria included:	Y/N
	Indicators included:	Y (some still under development, see below)
Context (i.e. legal requirement, related policies):		
No specific legal requirement		
Current status of system:		
Field tests		
Planned activities:		
Pilot implementation from Feb 2008 – Feb 2010		

Structure of the system or initiative:	
Stakeholder participation:	<p>Abengoa Bioenergy; ADM Company; AGRAVIS Raiffeisen AG AgroVet Certification; APPA Biocarburantes; BASF AG; Bauche Energy SA; BCS ÖKO-GARANTIE; BDBe - Bundesverband der deutschen Bioethanolwirtschaft e.V; BDP - Bundesverband deutscher Pflanzenzüchter e.V; BFN - Federal Agency for Nature Conservation; BP AG; Cargill; CHOREN Industries GmbH; NSF-CMI Certification Ltd; CONCAWE ; Conoco Phillips; Control Union Certifications; Daimler AG; DBFZ - German Biomass Research Centre; DEG - Deutsche Investitions- und Entwicklungsgesellschaft; DG Agriculture and Rural Development; DG TREN; DGEnterprise; European Bioethanol Fuel Association; Ecomotion GmbH; EOP Biodiesel AG; Evonik Industries; FHW - Neukölln AG; Fleming & Wendeln; FNR - Fachagentur Nachwachsende Rohstoffe e.V.;</p> <p>Ford – Ford AG; GBEP - Bioenergy Partnership; Genius; GLOBALGAP; Hoeb - Handelsgesellschaft für Oele und Biodiesel Ltd.;</p> <p>IFEU Institut für Energie- und Umweltforschung; Kiel Institute for the World Economy; IsaCert; IUCN; KTBL - Association for Technology and Structures in Agriculture; KWS Saat AG; KWST - Kraul & Wilkening u. Stelling; LSQA; LfULG; Lubtradin – Lubtrading; LyondellBasell Industries; Marquard & Bahls; Meó Consulting Team; Mission New Energy; MPOB - Malaysian Palm Oil Board; MWV – Mineralölwirtschaftsverband;</p> <p>Royal Nedalco; Neste Oil; Nordzucker AG; Novozymes; Oiltanking; Öko-Institut; Oxfam novib; PEFC; QS Qualität und Sicherheit GmbH; Rainforest Alliance; RLV - Rheinischer Landwirtschaftsverband; Saria Bio-Industries; SGS; Shell; Südzucker AG; SWD - Stadtwerke Düsseldorf AG; TLL - Thüringer Landesanstalt für Landwirtschaft; Toepfer International; Total AG; TÜV Süd Industrie Service GmbH; Ufop - Union for the Promotion of Oil and Protein Crops; UNEP; UNICA - Brazilian Sugarcane Industry Association VDB - Verband der Deutschen Biokraftstoffindustrie e.V.;</p> <p>VISTA - VISTA Geowissenschaftliche Fernerkundung GmbH; IOI Group Loders Croklaan; Vogelbusch GmbH; Volkswagen AG; World Wide Fund For Nature; WZW TUM - Wissenschaftszentrum Weihenstephan TU München</p>
Commitment:	Mandatory / global
Stakeholder integration:	Stakeholders along the value chain and NGOs are involved into the project
Monitoring performance:	The producer or producer group takes responsibility to undertake a minimum of one self-assessment or producer group internal inspection, respectively, per year against the ISCC Checklist A complaint form and/or procedure is available for farm employees and surrounding communities
Chain of custody mechanism:	Book and claim, track and trace, mass balance Segregation of carbon reporting from sustainability reporting
Verification mechanisms:	Verification of compliance along the whole value chain of a bioenergy product
Further information:	
Removal of trade barriers	Since the system is developed as a meta standard approach, it can remove trade barriers in so far as all systems meeting the minimum standards of ISCC can be acknowledged.
Costs:	No information available on this topic

List of principles included:	
1	No conversion of high conservation value (HCV); minimization of deforestation/ loss of biodiversity
2	Minimization of GHG emissions
3	Soil protection
4	Water protection
5	Responsible use of agrochemicals
6	Good social practice regarding human rights/ labour rights compliance
7	Land rights compliance
8	Priority for food supply/food security
9	Record-keeping and self-assessment/internal inspection
10	Traceability

References:	
Website:	www.iscc-project.org

List of criteria and indicators:

Criteria
P1. New plantings since November 2008 have not replaced primary forest or any area required to maintain or enhance one or more High Conservation Values (HCV); biofuels are not made from raw material which has been: a) obtained from land with recognized high biodiversity, such as forest undisturbed by significant human activity, b) designated conservation areas, unless evidence is provided that the production of that raw material did not interfere with those purposes, c) obtained from grassland, which is species-rich, not fertilized and not degraded; d) obtained from wetlands and pristine peat land; land not currently used for production must be maintained and the deterioration of habitats must be avoided; environmental impact assessment (EIA) of new buildings, drainage systems; if building or drainage construction activities are conducted at the farm, documents must prove that environmental aspects have been considered; protected plant species must not be deliberately taken away, collected or destroyed; alien species must not be introduced; compliance with local hunting legislation.
P2. Development, implementation and monitoring of plans to reduce GHG emissions; minimum savings rate in GHG emissions over the complete supply chain.
P3. Application of field cultivation techniques to reduce the possibility of soil erosion; restriction on burning as part of the cultivation process; soil organic matter is maintained/preserved; application of techniques that improve or maintain soil structure avoid soil compaction.
P4. Storage of mineral oils and fuels in an appropriate manner, which reduces the risk of contamination of water courses; respect for formal and customary water use rights; irrigation practices do not impair the water availability for the population; the water used comes from sustainable sources, e.g. that supply enough water under normal (average) conditions; water abstraction only with the permission of local water authorities; minimization of application of fertilizers with a considerable nitrogen content in order to prevent contamination of surface water; no application of fertilizers with a considerable nitrogen content on absorptive soils; application of all fertilizers must be documented.
P5. Workers handling and/or administering plant protection products are appropriately qualified and dispose of certificates proving their competence; all the plant protection products applied are officially registered or permitted by the appropriate governmental organization in the country of application; where no official registration scheme exists, FAO's International Code of Conduct on the Distribution and Use of Pesticides applies; appropriate handling of agrochemicals; maintenance of application equipment; plant protection products (PPP) are only used on agricultural land and not in or next to water bodies; compliance with local restrictions to the use of PPP; PPP must not be harmful to bees or they are not used during flowering of the crop; recording of all PPP applications; compliance with local PPP storage regulations; secure storage of PPP.
P6. The farm management and the employee's representative have signed and displayed a self-declaration assuring good social practice and human rights of all employees; no discrimination of race, colour, sex, religion, political opinion, nationality, social origin or other distinguishing characteristic (ILO conventions 100 and 111); prohibition of forced, bonded or involuntary labour as meant in ILO Convention 29 and 105; prohibition of child labour (ILO Convention 138 and 182); all children living on the farm have access to primary school education; freedom of association and freedom of collective bargaining in accordance with all national and local legislation and ILO Conventions 87 and 98; the responsible person and the elected person of trust demonstrate awareness and/or access to national regulations concerning: Gross and minimum wages, working hours, union membership, anti-discrimination, child labour, labour contracts, holiday and maternity leave, medical care and pension/gratuity; documentation of a clearly identified, named person of trust and/or a workers' council representing the interests of the staff to the management; a complaint form and/or procedure is available for farm employees and surrounding communities; records demonstrate clearly an accurate overview of all employees (including seasonal workers and subcontractors) working on the farm. Records contain wage and the period of employment and must be accessible for the last 24 months; establishment of a time recording system that makes working hours and overtime transparent for employees and employer; documented working hours, breaks and rest days are in line with legal regulations and/or collective bargaining agreements and working hours do not exceed 48 hours a week.
P7. Documents show legal ownership or lease, history of land tenure and the actual legal use of the land; fair and transparent contract farming.
P8. The biomass production does not replace stable crops and does not impair the local food security.
P9. The producer or producer group takes responsibility to undertake a minimum of one self-assessment or producer group internal inspection, respectively, per year against the ISCC Checklist; effective corrective actions are taken as a result of non-conformances detected during the self-assessment or internal producer group inspections; establishment of a record system for each unit of production; records kept in an ordered and up-to-date fashion.
P10. The ISCC registered product must be traceable back to and traceable from the registered farm and field (and other relevant registered areas) where it has been grown.

Further information:	
Removal of trade barriers	-
Costs:	-

List of principles included: *Not applicable yet*

References:	
Web site:	http://www.cen.eu/CENORM/Sectors/TechnicalCommitteesWorkshops/CENTechnicalCommittees/CENTechnicalCommittees.asp?param=648007&title=CEN%2FTC+383

37 GBEP – Global Bioenergy Partnership (International) - Aino Martikainen

General characteristics:		
Initiator system:	G8+5 (G8 are France, Germany, Italy, Japan, the United Kingdom, the United States, Canada, Russia; the further five countries are Brazil, China, India, Mexico and South Africa)	
Coordinating party:	The GBEP Secretariat, hosted at FAO Headquarters in Rome with the support of Italy, is the coordinator of communications and activities.	
Initiation – duration:	Initiation July 2005, launching on 11 May 2006	
Grade of integration	-	
Geographical coverage:	Global	
Scope (feedstock included):	Bioenergy	
Value chain	All	
Mission or objective:		
<p>GBEP provides a forum to develop effective policy frameworks to:</p> <ul style="list-style-type: none"> • suggest rules and tools to promote sustainable biomass and bioenergy development; • facilitate investments in bioenergy; • promote project development and implementation; • foster R&D and commercial bioenergy activities. <p>GBEP's main functions are to:</p> <ul style="list-style-type: none"> • promote global high-level policy dialogue on bioenergy and facilitate international cooperation; • support national and regional bioenergy policy-making and market development; • favour the transformation of biomass use towards more efficient and sustainable practices; • foster exchange of information, skills and technologies through bilateral and multilateral collaboration; • facilitate bioenergy integration into energy markets by tackling specific barriers in the supply chain. 	Principles included:	Y (provisional)
	Criteria included:	N
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
No specific legal requirement		
Current status of system:		
Selection and development of sustainability indicators		
Planned activities:		
November 2009-the first draft of indicators, March 2010- agree final set of criteria and indicators July 2010- submission of the report on criteria and indicators to the G8 Summit in Canada		

Structure of the system or initiative:	
Stakeholder participation:	Public, private and civil society stakeholders
Commitment:	Voluntary/global
Stakeholder integration:	GBEP welcomes contributions to its Programme of Work. Countries, private sector associations, research institutes, development banks and other relevant international, intergovernmental and non-governmental organizations may apply for Partnership or Observer status in GBEP by submitting a request Partnership is subject to a consensus of the GBEP Steering Committee, in which all Partners participate, and to signature of the GBEP Terms of Reference.
Monitoring performance:	Not decided
Chain of custody mechanism:	
Verification mechanisms:	
Further information:	
Removal of trade barriers	
Costs:	

List of principles included (provisional criteria):	
1	GHG emissions
2	Natural resource utilisation and impacts
3	Indirect effects
4	Resource availability and use efficiency
5	Economic development
6	Economic viability and competitiveness
7	Rural and social development
8	Food security
9	Issues of access to energy and natural resources
10	Labour and human health issues
11	Energy security

References:	
Website:	www.globalbioenergy.org

38 ISO TC 248 standardisation- Sustainability criteria for bioenergy (International) - Aino Martikainen

General characteristics:		
Initiator system:	ISO	
Coordinating party:	International Organization for Standardisation	
Initiation – duration:	2009	
Grade of integration		
Geographical coverage:		
Scope (feedstock included):		
Value chain		
Mission or objective:		
Standardization in the field of sustainability criteria for production, supply chain and application of bioenergy. This includes terminology and aspects related to the sustainability (e.g. environmental, social and economic) of bioenergy.	Principles included:	Aspects of the standard
	Criteria included:	N
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
Current status of system:		
The project is approved and the standard is under development		
Planned activities:		
<p>A new ISO Project Committee (PC) 'Sustainability criteria for bioenergy' was recommended at a meeting of bioenergy experts on 8 – 9 June 2009 in Berlin. The ISO/PC is awaiting approval from the ISO/Technical Management Board (TMB). The scope of this ISO/PC will be standardisation in the field of sustainability criteria for production, supply chain, and application of bioenergy. This includes terminology and aspects related to the sustainability (for example, environmental, social, and economic) of bioenergy.</p> <p>It is anticipated that working groups will be set up that will cover: greenhouse gas emissions, environmental aspects, social aspects, economic aspects, verification and auditing and indirect effects. It is not necessarily the case that all these will be addressed in the final standard.</p> <p>The first meeting of the new ISO/PC will be held in Rio de Janeiro, Brazil, 21 – 23 October 2009.</p>		

Structure of the system or initiative:	
Stakeholder participation:	18 participating countries, 11 observing countries
Commitment:	
Stakeholder integration:	First meeting included representatives from the Global Bioenergy Partnership, Roundtable on Sustainable Biofuels, and Roundtable on Sustainable Palm Oil
Monitoring performance:	
Chain of custody mechanism:	
Verification mechanisms:	
Further information:	
Removal of trade barriers	
Costs:	

List of principles included:	
1	Greenhouse gas emissions
2	Environmental aspects
3	Social aspects
4	Economic aspects
5	Verification and auditing
6	Indirect effects

References:	
Website:	http://www.iso.org/iso/iso_technical_committee.html?commid=598379

39 WWF-Sustainability Standards for Bioenergy (International) - Aino Martikainen

General characteristics:		
Initiator system:	WWF Germany	
Coordinating party:	Öko-Institut e.V.	
Initiation – duration:	Study published in November 2006	
Grade of integration	-	
Geographical coverage:	International	
Scope (feedstock included):	Bioenergy	
Value chain	All	
Mission or objective:		
A discussion paper that aims to promote further discussion and implementation on different policy levels and with different stakeholders.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
A discussion paper		
Current status of system:		
-		
Planned activities:		
-		

Structure of the system or initiative:	
Stakeholder participation:	Involvement of stakeholders from both civil society and industry required in the process
Commitment:	Mandatory / global (the authors consider legally binding standards to be superior, but think that voluntary schemes might provide a well-needed start ("entry option"))
Stakeholder integration:	In general, the extent and type of stakeholder involvement are seen as crucial to the overall acceptance of sustainability standards for bioenergy
Monitoring performance:	-
Chain of custody mechanism:	-
Verification mechanisms:	-
Further information:	
Removal of trade barriers	
Costs:	No calculations

References:	
Website:	http://www.wwf.de/fileadmin/fm-wwf/pdf_neu/Sustainability_Standards_for_Bioenergy.pdf

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
<p>Land use, land availability and land-use conflicts Clarification of land ownership^</p> <p>Avoiding negative impacts from bioenergy-driven changes in land use</p> <p>Priority for food supply and food security</p>	<p>Land ownership should be equitable, and land-tenure conflicts should be avoided. This requires clearly-defined, documented and legally established tenure-use rights. To avoid leakage effects, poor people should not be excluded from the land. Customary land-use rights and disputes should be identified. A conflict register might be useful in this context.</p> <p>If land-use policies and their implementation in a given country or region are effective in preventing negative impacts from land-use changes (e.g. by controlling access to and use of high-nature-value areas and habitats, cultural sites, etc.), the indirect effects of bioenergy developments on overall land-use will be small. In this case, bioenergy development should be concentrated on available arable land.</p> <p>If a country or region has ineffective (or no) land-use policies, negative impacts of "shifts" in land-use due to bioenergy development are possible. In this case, bioenergy crop development must be restricted to areas that are not in competition with other uses. Only then can the potential "shift" with its respective impacts be avoided.</p> <p>Food security is a basic human need which should not be compromised by bioenergy development, i.e. cultivating energy crops to the disadvantage of food crops should be avoided.</p>		
<p>Loss of biodiversity and deforestation No additional negative biodiversity impacts</p>	<p>Areas to be protected:</p> <ul style="list-style-type: none"> -High-nature-value areas (e.g. intact close-to-nature ecosystems, natural habitats, primary and virgin forests), land needed to maintain critical population levels of species in natural surroundings, and relevant migration corridors must be excluded from bioenergy cropping areas -Adequate buffer zones must be maintained for habitats of rare, threatened or endangered species, as well as for land adjacent to areas needing protection. <p>Production practices:</p> <ul style="list-style-type: none"> -Management plans and farming operations must ensure the protection of high-nature-value farming systems (e.g. on grass land or small patterned traditional farming systems) as well as nature-oriented forestry - To preserve genetic diversity, a minimum number of crop species and varieties, as well as structural diversity within the bioenergy cropping area must be demonstrated in management plans - As a precautionary measure, the use of genetically modified organisms (GMO) as bioenergy crops should be excluded, since they could have adverse environmental impacts -Appropriate fire-protection strategies are needed, and the use of fire to clear or prepare land for production should only be permitted if it is known to be preferred ecological option - Alien species should only be cultivated under conditions of careful control and monitoring; effects on wildlife species should be blocked 		

Criteria	Indicators:	Methodology used:	Databases used:
Greenhouse-gas emissions Minimization of greenhouse-gas emissions	<p>A maximum life-cycle GHG balance of bioenergy cultivation of 30 kg/GJ must be demonstrated. This limit represents a 67% reduction on the life-cycle GHG emissions from (unprocessed) crude-oil combustion.</p> <p>The processing of bioenergy crops – especially to biofuels – must demonstrate a minimum conversion efficiency of 67%, taking into account by-products for which proof of use must be given. A maximum direct GHG emission factor of 60 kg/GJ input should apply for the process energy.</p> <p>On the other hand, a simplified approach to GHG accounting should be developed for the small-scale farming of bioenergy crops using rural-systems to avoid excessive compliance costs.</p>		
Soil erosion and other forms of soil degradation Minimization of soil erosion and degradation	<p>The exclusion (or significant restriction) of bioenergy crops requiring intense tilling and below-surface harvesting (e.g. sugar beets)</p> <p>Maximum (soil-specific) slope limits for bioenergy crop cultivation</p> <p>Maximum extraction rates for agricultural and forestry residues (specific for soil and crop/crop rotation)</p> <p>Acceptable removal levels for agro- and forestry residues, so that humus and organic C soil content is not negatively affected</p> <p>Use of farming and harvesting practices that reduce erosion risks and adverse soil compaction (irrigation schemes, harvesting equipment)</p> <p>Irrigation schemes to prevent salinization; exclusion of crops and cropping systems for which such schemes are not applicable (specific to soil type and semi-dry/dry regions)</p> <p>Furthermore, a qualitative standard on the toxicity and biodegradability of agrochemicals is needed (e.g. a positive list of chemicals and user guidelines); non-chemical pest treatment and organic fertilizers should be preferred.</p>		
Water use and water contamination Minimization of water use and avoidance of water contamination	<p>Optimized farming systems requiring low water input should be used, e.g. agro-forestry systems in dry regions</p> <p>Critical irrigation needs in semi-dry and dry regions should be avoided by applying water management plans (long-term strategies and implementation program) providing a sustainable and efficient water supply for irrigation</p> <p>The quality and availability of surface and ground water must be maintained, avoiding the negative impacts of agrochemical use (by timing and quantity of application)</p> <p>No untreated sewage water for irrigation</p> <p>Re-use of treated waste-water must be part of the agricultural management system</p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Socio-economic problems and standards Improvement of labor conditions and worker rights</p> <p>Ensuring a share of proceeds</p> <p>Avoiding human health impacts</p>	<p>The supply systems for bioenergy – i.e. the cultivation of bioenergy crops, the collection of biogenic residues and wastes and their respective downstream processing – must comply with ILO standards on workers’ safety, workers’ rights, wage policies, child labor, seasonal workers’ conditions, and working hours during harvest time.</p> <p>A standard on income distribution and poverty-reduction issues (share of proceeds) seems necessary, although this can only be discussed in detail with respect to regional and local conditions and project specifics.</p> <p>This is related to agreements on workers’ rights: occupational-health impacts are regulated by the ILO convention. Important indicators include first aid kits, medical attendance and regular information about the dangers and risks of the work. They help prevent accidents and provide a safe and healthy work environment.</p>		

Part 4 – Initiatives or systems to guarantee sustainability of biofuels for transportation

40 Renewable Transport Fuel Obligation - Rocio A Diaz-Chavez

General characteristics:		
Initiator system:	Renewable Transport Fuel Obligation	
Coordinating party:	Renewable Fuels Agency, Department for Transport	
Initiation – duration:	2008	
Grade of integration	Meta-Standard	
Geographical coverage:	National	
Scope (feedstock included):	Biofuels	
Value chain	Production, transport, pre-treatment, conversion	
Mission or objective:		
To encourage suppliers to source sustainable biofuels. The Renewable Fuels Agency (RFA) requires biofuel suppliers to submit reports on both the net GHG saving and the sustainability of the biofuels they supply, in order to receive Renewable Transport Fuel Certificates (RTFCs).	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Under the Renewable Transport Fuel Obligation and in the future the RED		
Current status of system:		
Active since 2008		
Planned activities:		
Adapt to RED		

Structure of the system or initiative:	
Stakeholder participation:	Several since the starting process with the Low Carbon Vehicle Partnership (LowCVP)
Commitment:	Mandatory but without penalisation (Reporting)
Stakeholder integration:	Yes
Monitoring performance:	Yes
Chain of custody mechanism:	Yes
Verification mechanisms:	Yes
Further information:	
Removal of trade barriers	?
Costs:	<i>Depending on the standard chosen</i>

List of principles included:	
1	CARBON CONSERVATION .Biomass production will not destroy or damage large above or below ground carbon stocks
2	BIODIVERSITY CONSERVATION. Biomass production will not lead to the destruction or damage of high biodiversity areas
3	SOIL CONSERVATION. Biomass production does not lead to soil degradation
4.	SUSTAINABLE WATER USE. Biomass production does not lead to the contamination or depletion of water sources
5	AIR QUALITY. Biomass production does not lead to air pollution
6.	WORKERS RIGHTS. Biomass production does adversely affect workers rights and working relationships
7	Land rights. Biomass production does not adversely affect existing land rights and community relations

References:	
Website:	http://www.renewablefuelsagency.gov.uk/reportsandpublications/guidance/carbonand sustainabilityguidance.cfm

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
Principle 1: CARBON CONSERVATION	Biomass production will not destroy or damage large above or below ground carbon stocks		
1.1 Preservation of above and below ground carbon stocks (reference date 30-11-2005).	Evidence that biomass production has not caused direct land use change with a carbon payback time exceeding 10 years ¹²¹ . Evidence that the biomass production unit has not been established on soils with a large risk of significant soil stored carbon losses such as peat lands, mangroves, wetlands and certain grasslands.		
Principle 2: BIODIVERSITY CONSERVATION	Biomass production will not lead to the destruction or damage of high biodiversity areas		
2.1 Compliance with national laws and regulations relevant to biomass production in the area and surroundings where biomass production takes place.	Evidence of compliance with national and local laws and regulations including: : Environmental Impact Assessment, Land ownership and land use rights , land use planning, , among others.		
2.2 No conversion of high biodiversity areas after November 30, 2005	Evidence that production does not take place in gazetted areas and High Value conservation areas or of high diversity.		
2.3 The status of rare, threatened or endangered species and high conservation value habitats,	Documentation of the status of rare, threatened or endangered species (resident, migratory or otherwise) and high conservation value habitats in and around the production site and consideration of these in the management plans.		

Criteria	Indicators:	Methodology used:	Databases used:
Principle 3: SOIL CONSERVATION	Biomass production does not lead to soil degradation		
3.1 Compliance with national laws and regulations relevant to soil degradation and soil management.	Evidence of compliance with international agreements, national and local laws and regulations including information on the EIA, waste storage and handling, pesticides and agro-chemicals, fertilizer, soil erosion.		
3.2 Application of good agricultural practices and soil conservation and management.	Documentation of soil management plan aimed at sustainable soil management, erosion prevention and erosion control.		
Principle 4: SUSTAINABLE WATER USE	Biomass production does not lead to the contamination or depletion of water sources		
4.1 Compliance with national laws and regulations relevant to contamination and depletion of water sources.	Evidence of compliance with national and local laws and regulations including EIA, water and chemicals use (fertilisers and pesticides).		
4.2 Application of good agricultural practices to reduce water usage and to maintain and improve water quality.	Documentation of water management plan aimed at sustainable water use and prevention of water pollution.		
Principle 5: AIR QUALITY	Biomass production does not lead to air pollution		
5.1 Compliance with national laws and regulations relevant to air emissions and burning practices	Evidence of compliance with national and local laws and regulations with respect to EIA, air emissions and waste management.		
5.2 No burning as part of land clearing or waste disposal.	Evidence that no burning occurs as part of land clearing or waste disposal (some exceptions).		

Criteria	Indicators:	Methodology used:	Databases used:
Principle 6: WORKERS RIGHTS	Biomass production does adversely affect workers rights and working relationships		
C 6.1 Compliance with national law on working conditions and workers rights	Compliance with all national law concerning working conditions and workers rights.		
C 6.2 Contracts	Certification applicant must supply all categories of employees (incl. temporary workers) with a legal contract.		
C 6.3 Provision of information	Show evidence that all workers are informed about their rights (incl. bargaining rights).		
C 6.4 Subcontracting	When labour is contracted or subcontracted to provide services for the certification applicant, the certification applicant must demonstrate that the subcontractor provides its services under the same environmental, social and labour conditions as required for this standard.		
C 6.5 Freedom of association and right to collective bargaining	Guarantee the rights of workers to organise and negotiate their working conditions.		
C 6.6 Child labour	No children below the age of 15 are employed. Children are allowed to work on family farms if not interfering with children's educational, moral, social and physical development (the workday, inclusive of school and transport time, to be a maximum of 10 hours).		
C 6.7 Young workers	The work carried out shall not be hazardous or dangerous to the health and safety of young workers (age 15 -17). It shall also not jeopardise their educational, moral, social and physical development.		

Criteria	Indicators:	Methodology used:	Databases used:
C 6.8 Health and safety	Meet basic requirements including potable drinking water, clean latrines or toilettes, a clean place to eat, adequate protective equipment and access to adequate and accessible (physically and financially) medical care..		
	Ensure that workers have received regular health and safety training appropriate to the work that they perform.		
	Identify and inform workers of hazards, and adopt preventive measures to minimise hazards in the workplace and maintain records of accidents.		
C 6.9 Wages/ compensation	Wageworkers must be paid at least equivalent to the legal national minimum wage.		
	Workers must be paid in cash, or in a form that is convenient to them and regularly.		
C 6.10 Discrimination	There must be no discrimination (distinction, exclusion, or preference) practised that denies or impairs equality of opportunity and conditions of workers.		
Principle 7: Land rights.	Biomass production does not adversely affect existing land rights and community relations		
C 7.1 Land right issues	The right to use the land and does not diminish the legal or customary rights of other users and respects important areas for local people.		
C 7.2 Consultation and communication with local stakeholders	Procedures are in place to consult and communicate with local populations and interest groups on plans and activities.		

41 Royal order of the 22nd July 2009 dealing with an obligation of incorporation biofuels in fossil fuels in transportation - Nora Pieret

General characteristics:		
Initiator system:	The Belgian Government	
Coordinating party:	Implementation by General Energy Direction, in collaboration with Customs and Excises Administration of the finances FPS and the General Environment Direction of the FPS Public Health, Food chain Security and Environment.	
Initiation – duration:	Signed on the 22 nd of July 2009, published in the Belgian Monitor on the 3 rd of August 2009. Law will become effective in 2010.	
Grade of integration	Meta-standard approach.	
Geographical coverage:	Belgium	
Scope (feedstock included):	Promotion of Biofuels for transportation.	
Value chain	Biofuels cultivation and production, CO2 emission of the supply chain.	
Mission or objective:		
This law aims at promoting the use of Biofuels in transportation by fixing an incorporation obligation of 4 % in volume of biofuels in fossil fuels for transportation.	Principles included:	N
	Criteria included:	Y
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
In the Royal Order of 4th March 2005, a Belgian voluntary target of biofuels incorporation in the Belgian market has been fixed at 5.75 % in energy by 2010. To promote Belgian biofuel market, the Belgian Government has opted for an invitation to tender in 2006 to grant tax advantages on 380,000 m ³ of biodiesel and on 250,000 m ³ of bioethanol. The above mentioned volumes, subject to tax reductions, have to be commercialized and bought in Belgium. Following the invitation to tender of 2006, seven biofuels producing companies were selected for the production of the above mentioned tax exempted volumes.		
Current status of system:		
Not yet in application.		
Planned activities:		
-		

Structure of the system or initiative:	
Stakeholder participation:	-
Commitment:	Mandatory.
Stakeholder integration:	Stakeholders will have to give access to data to prove the respect of the criteria.
Monitoring performance:	First evaluation in March 2010, based on the data collected until the 31 st December 2009.
Chain of custody mechanism:	-
Verification mechanisms:	Yearly evaluation includes biofuels sustainability verification.

Further information:	
Removal of trade barriers	To promote biofuels integration in the fossil fuels in transport.
Costs:	-

List of principles included:	
1	
2	
3	
....	

References: [22]	
Website:	http://www.ejustice.just.fgov.be/doc/rech_f.htm

List of criteria and indicators:

Criteria [22]	Indicators:	Methodology used:	Databases used:
1. The biofuels should be produced inside the Community. The raw material has to be issued from agriculture and should be cultivated with a minimum pesticides and fertilizers		The King of Belgium fixes with an Order deliberated in Council of Ministers criteria means, evidences, calendar and methods of calculation of the.	
2. The production of the raw material should respect requirements set out in the framework of the Common Agricultural Policy			
3. The raw material should not originate from a non-European region which has been recently deforested			
4. The considered biofuels should present substantial CO2 emission savings			
5. The production of the biofuels should respect the technical specifications imposed by the European Commission in view of the respect of social and environmental regulations			

**42 Directive 2009/28/EC (The Renewables Directive)
(European) - Aino Martikainen**

General characteristics:		
Initiator system:	European Council	
Coordinating party:	European Parliament and the Council	
Initiation – duration:	Draft report published in January 2008, official version published 23 rd April 2009	
Grade of integration	Meta Standard	
Geographical coverage:	Countries of the European Union	
Scope (feedstock included):	Multi-feedstock approach (feedstock for biofuels).	
Value chain	Entire value Chain	
Mission or objective:		
<p>“The increasing worldwide demand for biofuels and bioliquids, and the incentives for their use provided for in this Directive, should not have the effect of encouraging the destruction of biodiverse lands. Those finite resources, recognised in various international instruments to be of value to all mankind, should be preserved. Consumers in the Community would, in addition, find it morally unacceptable that their increased use of biofuels and bioliquids could have the effect of destroying biodiverse lands. For these reasons, it is necessary to provide sustainability criteria ensuring that biofuels and bioliquids can qualify for the incentives only when it can be guaranteed that they do not originate in biodiverse areas or, in the case of areas designated for nature protection purposes or for the protection of rare, threatened or endangered ecosystems or species, the relevant competent authority demonstrates that the production of the raw material does not interfere with those purposes. ”</p>	Principles included:	N
	Criteria included:	Y
	Indicators included:	N
Context (i.e. legal requirement, related policies):		
Legal requirement: directive		
Current status of system:		
Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with the Directive by 5 December 2010.		
Planned activities:		
Implementation, reporting every second year		

Structure of the system or initiative:	
Stakeholder participation:	
Commitment:	Mandatory / EU
Stakeholder integration:	
Monitoring performance:	Art. 18 (3): Member States shall take measures to ensure that economic operators submit reliable information and make available to the Member State, on request, the data that were used to develop the information. Member States shall require economic operators to arrange for an adequate standard of independent auditing of the information submitted, and to provide evidence that this has been done. The auditing shall verify that the systems used by economic operators are accurate, reliable and protected against fraud. It shall evaluate the frequency and methodology of sampling and the robustness of the data. (...)
Chain of custody mechanism:	Mass balance
Verification mechanisms:	Article 18 (3): Member States shall require economic operators to arrange for an adequate standard of independent auditing of the information submitted, and to provide evidence that this has been done. The auditing shall verify that the systems used by economic operators are accurate, reliable and protected against fraud. It shall evaluate the frequency and methodology of sampling and the robustness of the data.
Further information:	
Removal of trade barriers	
Costs:	No information available on this topic

References:	
Website:	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
<p>Article 17 paragraph 2 The greenhouse gas emission saving from the use of biofuels and bioliquids (...) shall be at least 35 %. With effect from 1 January 2017, the greenhouse gas emission saving from the use of biofuels and bioliquids (...) shall be at least 50 %. From 1 January 2018 that greenhouse gas emission saving shall be at least 60 % for biofuels and bioliquids produced in installations in which production started on or after 1 January 2017.</p>			
<p>Article 17 paragraph 3 Biofuels and bioliquids (...) shall not be made from raw material obtained from land with high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status: (a) primary forest and other wooded land, namely forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed; (b) areas designated: (i) by law or by the relevant competent authority for nature protection purposes; or (ii) for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the second subparagraph of Article 18(4); unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes; (c) highly biodiverse grassland that is: (i) natural, namely grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes; or (ii) non-natural, namely grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status. (...)</p>			

Criteria	Indicators:	Methodology used:	Databases used:
<p>Article 17 paragraph 4 Biofuels and bioliquids (...) shall not be made from raw material obtained from land with high carbon stock, namely land that had one of the following statuses in January 2008 and no longer has that status: (a) wetlands, namely land that is covered with or saturated by water permanently or for a significant part of the year; (b) continuously forested areas, namely land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 %, or trees able to reach those thresholds in situ; (c) land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10 % and 30 %, or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of the area before and after conversion is such that, when the methodology laid down in part C of Annex V is applied, the conditions laid down in paragraph 2 of this Article would be fulfilled. The provisions of this paragraph shall not apply if, at the time the raw material was obtained, the land had the same status as it had in January 2008.</p>			
<p>Article 17 paragraph 5 Biofuels and bioliquids (...) shall not be made from raw material obtained from land that was peatland in January 2008, unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil.</p>			

Criteria	Indicators:	Methodology used:	Databases used:
<p>Article 17 paragraph 6 Agricultural raw materials cultivated in the Community and used for the production of biofuels and bioliquids (...) shall be obtained in accordance with the requirements and standards under the provisions referred to under the heading 'Environment' in part A and in point 9 of Annex II to Council Regulation (EC) No 73/2009 of 19 January 2009 establishing common rules for direct support schemes for farmers under the common agricultural policy and establishing certain support schemes for farmers and in accordance with the minimum requirements for good agricultural and environmental condition defined pursuant to Article 6(1) of that Regulation.</p>	<p>(EC) 73/2009 Article 6(1) Good agricultural and environmental condition Member States shall ensure that all agricultural land, especially land which is no longer used for production purposes, is maintained in good agricultural and environmental condition. Member States shall define, at national or regional level, minimum requirements for good agricultural and environmental condition on the basis of the framework established in Annex III, taking into account the specific characteristics of the areas concerned, including soil and climatic condition, existing farming systems, land use, crop rotation, farming practices, and farm structures. Member States shall not define minimum requirements which are not foreseen in that framework.</p>	<p>(EC) 73/2009 Appendix III Soil erosion: Protect soil through appropriate measures – Minimum soil cover – Minimum land management reflecting site-specific conditions Soil organic matter: Maintain soil organic matter levels through appropriate practices – Arable stubble management Soil structure: Maintain soil structure through appropriate measures Minimum level of maintenance: Ensure a minimum level of maintenance and avoid the deterioration of habitats – Retention of landscape features, including, where appropriate, hedges, ponds, ditches trees in line, in group or isolated and field margins – Avoiding the encroachment of unwanted vegetation on agricultural land – Protection of permanent pasture Protection and management of water: Protect water against pollution and run-off, and manage the use of water – Establishment of buffer strips along water courses – Where use of water for irrigation is subject to authorisation, compliance with authorisation procedures</p>	
Criteria	Indicators:	Methodology used:	Databases

			used:
<p>Article 18 paragraph 1 (...) Member States shall require economic operators to show that the sustainability criteria set out in Article 17(2) to (5) have been fulfilled. For that purpose they shall require economic operators to use a mass balance system which:</p> <ul style="list-style-type: none"> (a) allows consignments of raw material or biofuel with differing sustainability characteristics to be mixed; (b) requires information about the sustainability characteristics and sizes of the consignments referred to in point (a) to remain assigned to the mixture; and (c) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture. 			

**43 Roundtable on Sustainable Biofuels (RSB) (International) -
Aino Martikainen**

General characteristics:		
Initiator system:	Swiss EPFL (École Polytechnique Fédérale de Lausanne) Energy Center	
Coordinating party:	Ecole Polytechnique Fédérale de Lausanne (EPFL) Energy Center	
Initiation – duration:	June 2007	
Grade of integration	Meta-standard approach	
Geographical coverage:	International	
Scope (feedstock included):	Multi-feedstock approach	
Value chain	Entire value Chain	
Mission or objective:		
RSB intends to define standards ensuring the sustainability of biofuels production in compliance with the ISEAL Code of Good Practice and Processing. It is designed to function as a policy tool.	Principles included:	Y
	Criteria included:	Y
	Indicators included:	Y
Context (i.e. legal requirement, related policies):		
Current status of system:		
Publication of Version Zero "Global Principles and Criteria for Sustainable Biofuels Production" (The most current draft of the Roundtable on Sustainable Biofuels' Principles and Criteria is Version 0.6, publicly released in September, 2009)		
Planned activities:		
Publishing the "Version One" in 2009, creating a certification system		

Structure of the system or initiative:	
Stakeholder participation:	NGOs, (inter-)governmental organizations, corporations, research
Commitment:	Mandatory/ global
Stakeholder integration:	Stakeholder are encouraged to give feedback on the principles and criteria in the internet and per mail or telephone.
Monitoring performance:	Not specified yet.
Chain of custody mechanism:	Not specified
Verification mechanisms:	-

List of principles included:	
1	<p>Legality Biofuel production shall follow all applicable laws of the country in which they occur, and shall endeavour to follow all international treaties relevant to biofuels' production to which the relevant country is a party.</p>
2	<p>Consultation, Planning and Monitoring Sustainable biofuel operations shall be planned, implemented, and continuously improved through an open, transparent, and consultative Environmental and Social Impact Assessment (ESIA) and an economic viability analysis..</p>
3	<p>Greenhouse Gas Emissions Biofuels shall contribute to climate change mitigation by significantly reducing lifecycle GHG emissions as compared to fossil fuels.</p>
4	<p>Human and Labor Rights Biofuel production shall not violate human rights or labor rights, and shall promote decent work and the well-being of workers.</p>
5	<p>Rural and Social Development In regions of poverty, biofuel production shall contribute to the social and economic development of local, rural and indigenous people and communities</p>
6	<p>Food Security Biofuel production shall ensure the human right to adequate food and improve food security in food insecure regions</p>
7	<p>Conservation Biofuel production shall avoid negative impacts on biodiversity, ecosystems, and other conservation values.</p>
8	<p>Soil Biofuel production shall implement practices that seek to maintain soil health and reverse degradation.</p>
9	<p>Water Biofuel production shall maintain or enhance the quality and quantity of surface and ground water resources, and respect prior formal or customary water rights.</p>
10	<p>Air Air pollution from biofuel production shall be minimized along the supply chain.</p>
11	<p>Use of technology, inputs and Management of waste The use of technologies in biofuel production shall seek to maximize production efficiency and social and environmental performance, and minimize the risk of damages to the environment and people.</p>
12	<p>Land rights Biofuel production shall respect land rights and land use rights.</p>

References:	
Website:	http://EnergyCenter.epfl.ch/Biofuels

List of criteria and indicators:

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 1. Biofuel operations shall comply with all applicable laws and regulations of the country in which the production activity occurs and with relevant international law.</p>	<p><i>Laws and treaties relating to air quality, water resources, soil conservation, protected areas, biodiversity, labor conditions, agricultural practices, and land rights, including for instance ILO, CBD, UNFCCC, and the Universal Declaration of Human Rights.</i></p>		
<p>Criterion 2a. Biofuel operations shall undertake an Environmental and Social Impact Assessment (ESIA) to assess impacts and risks and ensure sustainability through the development of effective and efficient implementation, mitigation, monitoring and evaluation plans.</p>	<p>Minimum requirements <i>-Where an impact assessment is required by national, regional, and/or local laws, the process shall be integrated with the RSB process to avoid duplication of efforts, but the higher and more comprehensive standard shall be applied.</i> <i>-Operators shall refer to and comply with the relevant aspects of the RSB ESIA guidelines and toolkits as determined by the scale and intensity of the operations.</i> <i>-A screening exercise shall be required for all new and existing operations and extensions to operations, of all sizes to determine whether a full ESIA, Rapid Environmental and Social Assessment (RESA) or Environmental and Social Management plan (ESMP) is required. The screening exercise shall be done in strict accordance with the RSB screening guidelines.</i> <i>-Where the scoping exercise indicates the necessity of doing a full ESIA then a full ESIA shall be carried out.</i> <i>-Where the scoping exercise indicates that a full ESIA is not required, a RESA shall be carried out according to the RSB guidelines</i> <i>-The ESMP as described in the RSB ESIA guidelines shall be required for all operations and shall ensure compliance with all RSB principles and criteria</i> <i>-The ESIA shall be carried out using independent and qualified professionals.</i> <i>-Local experts shall be used to undertake the specialist social impact survey of the RSB ESIA together with the accredited professionals, to ensure that local customs, languages, practices and indigenous knowledge are respected and utilized in the ESIA process. -Where local skills are inadequate, capacity-building shall be provided by the Operator to enable local people to assist in the process.</i> <i>-Small-scale operators that are working together and/or selling to the same processor or producer (such as those working in a cooperative or an outgrower scheme) shall be permitted to combine operations under one ESIA, RESA or ESMP process.</i> <i>-For certain principles, the impact ESIA assessment and/pr management plan shall extend beyond the scope of the immediate operational area, for instance for food security, water management and use, ecosystem impacts, biodiversity and conservation in accordance with the RSB ESIA guidelines.</i> <i>-The Operator shall provide implementation and monitoring plans that clearly address and provide indicators for the continuous improvement of the operations against the RSB standard, with particular attention paid to the aspects that are noted as "progress requirements" in the standard.</i> <i>-Monitoring and evaluation shall take place at regularly defined intervals described in the ESMP, and relevant elements of such reports shall be made available to all locally-affected stakeholders in a readily accessible manner and format.</i></p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 2b. Free, Prior & Informed Consent (FPIC) shall form the basis for the process to be followed during all stakeholder consultation, which shall be gender sensitive and result in consensus-driven negotiated agreements.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -While FPIC provides the process conditions for stakeholder engagement and negotiated agreements, consensus shall be the decision-making tool applied in all cases and carried out in accordance with the RSB consensus building toolkit. -Those responsible for undertaking the ESIA or RESA shall undertake and document a stakeholder analysis in accordance with the RSB ESIA guidelines. -The facilitators shall demonstrate that they have made every effort to invite all locally-affected stakeholders, local leaders, representatives of community and indigenous peoples groups and all relevant stakeholders to participate in the consultative process. -The scope of engagement shall be determined by the scale of the operations as set out in the RSB ESIA guidelines. -Participatory methodologies described in the RSB guidelines shall be used to ensure meaningful stakeholder engagement. Special attention shall be made to ensure that women, youth, indigenous and vulnerable people can participate meaningfully in meetings and negotiations, through, for instance, including women's groups, youth groups and issue-based groups in the stakeholder meetings, and holding separate meetings with such groups if necessary. Where the need is identified through the ESIA process, the Operator shall provide capacity-building in regions of vulnerability and inequality to ensure meaningful engagement. -Relevant government authorities shall be included in the stakeholder process to ensure efficient streamlining of the process with legal requirements. -Documentation necessary to inform stakeholder positions shall be made freely available to stakeholders in a timely, open, transparent and accessible manner through distribution channels appropriate to the local conditions in accordance with the RSB ESIA guidelines. Information identified by the independent assessors/ESIA professionals as non-essential for decision-making, for instance proprietary data, need not be included. -Internationally-recognized methodologies for consensus-seeking outlined in the RSB ESIA guidelines shall be used, such that individuals or single-issue groups cannot block consensus. The RSB ESIA guidelines also provide tools for unblocking deadlocks and they shall be used in the event of a deadlock. In regions of poverty, where the ESIA identifies a significant potential for rights abuses through biofuel productions, the Operator shall provide independent legal advice for local and indigenous communities in the event that such services cannot be provided by the state or are outside of the reaches of the affected stakeholders to afford such services. 		
<p>Criterion 2c. Biofuel operations shall implement a business plan that reflects a commitment to long-term economic viability.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -Operations shall develop and implement a business plan that reflects a commitment to long-term economic viability without compromising the social and environmental principles described in the RSB standard. 		

Criteria	Indicators:	Methodology used:	Databases used:
Criterion 3a. In geographic areas with legislative biofuel policy or regulations in force, in which biofuel must meet GHG reduction requirements across its lifecycle to comply with such policy or regulations and/or to qualify for incentives, biofuel shall comply with such policy and regulations and/or qualify for the applicable incentives.			
Criterion 3b. Lifecycle GHG emissions of biofuel shall be calculated using the RSB lifecycle GHG emission calculation methodology, which incorporates methodological ingredients and input data from authoritative sources; is based on sound and accepted Science; is updated periodically as new data become available; has system boundaries from Well to Wheel; includes GHG emissions from land use change, including, but not limited to above- and below-ground carbon stock changes; and incentivizes the use of co-products, residues and waste in such a way that the lifecycle GHG emissions of the biofuel are reduced.	<p>Minimum requirements:</p> <ul style="list-style-type: none"> -The Operator shall report the lifecycle GHG emissions of the feedstock or biofuel using the RSB lifecycle GHG emission calculation methodology ("RSB methodology") to be published in a separate RSB GHG Calculation Methodology document. -In certain instances where the RSB methodology is not available for a fuel pathway, the Operator shall report the lifecycle GHG emissions of the feedstock or biofuel using an alternative, RSB-listed methodology, as indicated in the RSB GHG Calculation Methodology document. -Instead of reporting GHG emissions using RSB default values, an Operator may use the RSB calculations to determine more accurate GHG emissions ("calculated values"). -When calculated values show better performance than RSB default values, the Operator shall provide, when requested, the qualitative or quantitative data upon which the calculated values are based. 		
Criterion 3c. Biofuel shall have lower lifecycle GHG emissions than the fossil fuel baseline of January 1, 2010 and shall contribute to the minimization of overall GHG emissions.	<p>Minimum requirements:</p> <ul style="list-style-type: none"> -Lifecycle GHG emissions of biofuel, calculated following the methodology in Criterion 3b, shall meet a minimum reduction (the "minimum GHG emission reduction threshold") below the applicable fossil fuel baseline. -The minimum GHG emission reduction threshold shall be as follows: 30% by January 1, 2010; 37.5% by January 1, 2015; 45% by January 1, 2020; 52.5% by January 1, 2025; and 60% by January 1, 2030. 		
Criterion 4.a Workers shall enjoy freedom of association, the right to organise, and the right to collectively bargain.	<p>Minimum requirements</p> <ul style="list-style-type: none"> -In countries where the law prevents collective bargaining or unionisation, operators shall not interfere with workers' own efforts to set up representational mechanisms in such cases, and shall provide a mechanism for workers to engage with employers without breaking the law. 		
Criterion 4.b No slave labour or forced labour shall occur.			
Criterion 4.c No child labour shall occur, except on family farms and then only when work does not interfere with the child's schooling and does not put his or her health at risk.	<p>Minimum requirements</p> <ul style="list-style-type: none"> -Schooling age limit is that defined in the national legislation or 14, whichever is higher. -Hazardous child labour as defined by ILO Convention 138 is not allowed. -Work by children on family small holdings is only acceptable under adult supervision and when work does not interfere with the child's schooling nor puts at risk his or her health. 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 4.d Workers shall be free of discrimination of any kind, whether in employment or opportunity, with respect to wages, working conditions, and social benefits.</p>	<p>Minimum requirements <i>-Employees, contracted labor, small outgrowers, and employees of outgrowers shall all be free of discrimination as per ILO Convention 111.</i> <i>-Work sites must be safe for women; free from sexual harassment and other discrimination and abuse; and promote access to jobs, skills training, recruitment and career development for women.</i></p>		
<p>Criterion 4e. Workers' wages and working conditions shall respect all applicable laws and international conventions, as well as all relevant collective agreements. Where a government regulated minimum wage is in place in a given country, this shall be observed. Where a minimum wage is absent, the wage paid for a particular activity shall be negotiated and agreed on an annual basis with the worker. Men and women shall receive equal remuneration for work of equal value.</p>	<p>Minimum requirements <i>-Wages shall be provided in cash or in another form acceptable to workers.</i> <i>-Any housing provided by the Operator for permanent or temporary workers shall be built and maintained to ensure good sanitary, health, and safety conditions.</i> <i>-For piecework (pay based on production rather than hours), the pay rate must allow workers to earn at least the legal minimum wage or comparable regional wage, whichever is higher, based on an eight-hour workday under average conditions.</i> <i>-The maximum number of hours worked per regular week must not exceed 48. In exceptional circumstances (for instance during peak production periods), workers may choose to work an additional 12 hours per week of overtime. Overtime shall be voluntary.</i></p>		
<p>Criterion 4.f Conditions of occupational safety and health for workers shall follow internationally-recognized standards.</p>	<p>Minimum requirements <i>-Workers shall not be exposed to any known or potentially harmful agrochemicals, pesticides, herbicides, or other chemical products used in biofuel production without adequate protection and training as defined in national law and international standards.</i></p>		
<p>Criterion 4 g. Operators shall implement a mechanism to ensure the human rights and labor rights outlined in this principle apply equally when labor is contracted through third parties.</p>	<p>Progress requirements (required within three years of certification) <i>Operators shall identify instances where those working within the scope of their operational function (feedstock producer, feedstock processor, or biofuel producer) are contracted outside of the direct influence of the operation by external parties and shall implement a mechanism to ensure that such contracted workers are afforded the same rights as described in this principle as employed staff within the process.</i></p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 5.a In regions of poverty, the socioeconomic status of local stakeholders impacted by biofuel production shall be improved.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -In areas where the socioeconomic baseline survey undertaken during the ESIA process identifies an excess of unemployed or underemployed labor in the locality of the operations, biofuel production shall optimize the job creation potential. -The operator shall assess ways in which the use of permanent and local labor can be promoted and introduced over the use of migrant, seasonal and casual labor. -If it is determined through the ESIA that mechanization is the optimal choice from an environmental, economic, and social perspective, any transition from labor intensity to mechanization shall be done in a fair and equitable way for existing workers and shall not lead to a decrease in average household income or of the local communities. -International best practice on dealing with the transition from labor intensity to mechanization shall be applied -Measured improvements in the social and economic indicators as set against the baseline survey carried out under the ESIA shall be targeted for review every two years. -Skills training shall be provided by the Operator if necessary to ensure the implementation of this criterion. -Mitigation measures for potential negative impacts shall be negotiated through the ESIA process. -Cultural sensitivity and respect for existing social structures shall be applied in the development of options for compliance with this criterion. -At least one measure to significantly optimize the benefits to local stakeholders shall be implemented within a five year period of the start of the operations, these include, but are not limited to the following: <ul style="list-style-type: none"> a. Creation of year round and/or long term jobs b. The establishment of governance structures that support empowerment of small scale farmers and rural communities such as co-operatives and micro credit schemes c. Use of the locally produced bio-energy to provide modern energy services to local poor communities d. Shareholding options, local ownership, joint ventures and partnerships with the local communities e. Social benefits for the local community such as the building or servicing of clinics, homes, hospitals and schools. 		
<p>Criterion 5.b In regions of poverty, special measures that benefit and encourage the participation of women, youth, indigenous communities and the vulnerable in biofuel production shall be designed and implemented.</p>	<p>Progress requirements</p> <ul style="list-style-type: none"> -Training and capacity building shall be required to give effect to this principle. Such training is required for both the workers and also for management that oversees employment protocols and supervision 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 6a. Biofuel production shall assess risks to food security in the region and locality and shall mitigate any negative impacts that result from biofuel production</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -If the scoping exercise of the ESIA process indicates that biofuel production will involve a change in land ownership (rights) and take place in a region where food security is a risk, a full assessment shall be carried out according to the RSB food security guidelines. -If the scoping exercise described in the ESIA guidelines indicates that biofuels production will not involve a change in land ownership (rights) but will take place in a region where food security is a risk, an RESA can be undertaken with a specialist assessment of the impact on food security -The scope of the impact assessment shall include additional impacts that the biofuel operations may have on cross-cutting requirements for food security including land, water, labor, and infrastructure. -If the assessment indicates a food security risk as a result of biofuel production, a mitigation plan shall be developed and implemented through the ESMP. -The risk assessment shall identify potential positive impacts on local economic development that can be promoted through compliance with Principle 5 on Rural and Social Development. 		
<p>Criterion 6b. If food security is a risk, caused directly by biofuel production, then local food security for the directly affected stakeholders shall be enhanced.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -In regions where food security is an ongoing risk and concern, Operators shall enhance food security of the locally affected community by, for instance, setting aside land for food growing, increasing yields, providing opportunities for workers to carry out household-level food production, sponsoring agricultural support programs and activities, and/or making value-added food byproducts available to the local market. -Strategies to enhance regional food security shall be integrated with the rural and social development goals outlined in Principle 5. 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 7.a Conservation values within the potential or existing area of production shall be identified through a land-use planning process. Conservation values of local, regional or global importance within the potential or existing area of production maintained.</p>	<p>Minimum requirements <i>-Operators shall evaluate the conservation value(s) of potential or existing production area following a land-use planning process, as detailed in the guidance.</i> <i>-Biofuel production shall occur in priority on areas with the lowest possible risk of impacts on people and the environment. Biofuel production shall only happen on higher risk areas under limited conditions, which ensure that their conservation value(s) is/are maintained or enhanced.</i> <i>-Areas identified as "no-go areas" shall not be used for biofuel production after the 1st of January 2009.</i> <i>-Whenever the land-use planning process identifies conservation values of global, regional or local importance, the potential areas shall only be used if such values can be maintained through adequate management practices (e.g. sustainable biomass harvesting) and not converted after the 1st of January 2009.</i> <i>-After the 1st of January 2009, very limited land conversion for biofuel production shall only happen if the land-use planning process provides evidence that this conversion will not lead to the loss of conservation values of global, regional or local importance and that it will produce a clear additional and demonstrable conservation and/or social benefits (employment, subsistence, economic development).</i> <i>-Hunting, fishing, ensnaring, poisoning and exploitation of rare, threatened, endangered and legally protected species shall not occur on the production site.</i></p>		
<p>Criterion 7.b Ecosystem functions and services that are directly affected by biofuel production shall be maintained</p>	<p>Minimum requirements <i>-Following the land-use planning process (7a), operators shall implement a management plan and practices that maintain ecosystem functions and services both inside and outside the production site, if directly affected by biofuel production.</i></p>		
<p>Criterion 7.c Buffer zones shall be protected, restored or created.</p>	<p>Minimum requirements <i>-Existing buffer zones within the production site shall be protected and remain unconverted.</i> <i>-Existing buffer zones between the production site and the surrounding areas shall be protected. If non-existing, such buffer zones shall be created.</i> <i>-Any buffer zone destroyed between the 1st of January 2004 and the 31st December 2008 on or near the production site and for which the Operator is directly accountable shall be restored by the Operator.</i> <i>-Within the production site, buffer zones shall be created around any area that includes conservation value(s) of local, regional or global importance, and remain unexploited.</i></p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 7.d Ecological corridors shall be protected, restored or created to minimize fragmentation of habitats.</p>	<p>Minimum requirements <i>-Ecological corridors within the production site should be set-aside and protected with appropriate surrounding buffer zones after the 1st of January 2010.</i> <i>-Whenever the production site impairs the connectivity between surrounding ecosystems, ecological corridors shall be created by the operator.</i> Progress requirements (Medium and large operators only) <i>-New ecological corridors shall be created within the production site if it is surrounded by areas containing wildlife and there is evidence that such corridors would improve connectivity.</i> <i>-Any ecological corridor destroyed between the 1st of January 2004 and the 31st December 2008 on or near the production site and for which the operator is directly accountable shall be restored.</i></p>		
<p>Criterion 7.e Biofuel production shall not use crops considered as alien invasive species under local conditions.</p>	<p>Minimum requirements <i>-Operators shall not use any species officially recorded as representing a high risk of invasiveness in the country of operation.</i> <i>-Whenever the species of interest is not recorded as significantly invasive and/or prohibited in the country of operation, the following procedure shall apply:</i> →For new projects or when switching crops in an existing project: Whenever the Operator intends to use a species recorded in the Global Invasive Species Database (GISD)⁴, a risk assessment of the invasiveness of this species in the local context shall be completed prior to any planting or spreading (e.g. by transporting seeds) of the crop of concern. →For existing projects, such assessment shall be completed as part of the Scoping Exercise or the ESIA required under Principle 2. <i>-Following the risk assessment, the operator shall not use the species a) if the risk assessment provides evidence of the species' invasiveness in the local context; b) if the risk assessment fails to provide evidence of the species' non-invasiveness in the local context, following the precautionary approach (i.e. in absence of clear results). Whenever the invasive crop of concern is already being used, the operator shall set a substitution plan to replace it by another non-invasive crop within two years of certification. Whenever the invasive crop of concern is already being used, the operator shall set a substitution plan to replace it by another non-invasive crop within three years of certification.</i></p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 8.a Feedstock producers shall implement a soil management plan designed to maintain or improve soil physical, chemical, and biological conditions.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -<i>Soil erosion shall be minimized through the design of the plantation or production site and use of sustainable practices (including, for example, crop rotation, direct planting, maintaining vegetative ground cover, and maintaining or creating tree hedges) in order to enhance soil physical health on a watershed scale.</i> -<i>None of the chemicals recorded in the WHO's 1a and 1b lists shall be used. The full guidance on the use of chemicals can be found under principle 11 (Technologies).</i> -<i>The use of agrarian and forestry residual products for biofuel production, including lignocellulosic material, shall not be at the expense of long-term soil stability and organic matter content, except if the operator is able to implement mitigation practices that do not infringe on any of the principles and criteria included in the standard, e.g. by following US Department of Agriculture's white paper on "Crop Residue Removal for Biomass Energy Production: Effects on Soils and Recommendations1" or through mitigating practices included in the "Sustainable Forestry for Bioenergy and Bio-based Products" toolkit from the US National Learning Center for Private Forest and Range Landowners2.</i> -<i>This criterion applies to the production site's soils and any soil outside the production site which is directly impacted by the production (e.g. through runoff).</i> <p><i>For medium and large feedstock producers</i></p> <ul style="list-style-type: none"> -<i>A soil management plan shall be implemented that includes practices that prevent or reverse degradation over the long term.</i> <p><i>For small holder producers:</i></p> <ul style="list-style-type: none"> -<i>Smallholders shall be able to demonstrate implementation of practices aiming to maintain and enhance soil organic matter.</i> <p>Progress requirements</p> <ul style="list-style-type: none"> -<i>For annual crops, medium and large scale feedstock producers shall implement measures to improve soil health, such as by following the Conservation Agriculture practices as defined by the FAO, including:</i> <ol style="list-style-type: none"> a. <i>Organic direct planting</i> b. <i>Permanent soil cover</i> c. <i>Crop rotation</i> -<i>For perennial crops, none of the chemicals recorded in the WHO's 1a and 1b lists, in Annex III of the Rotterdam Convention and in the Stockholm Convention on POPs shall be used within 3 years after certification (See full guidance on chemicals under principle 11).</i> 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 9.a Biofuel production shall respect the existing water rights of local and indigenous communities and water needs for the long-term sustainability of ecosystems.</p>	<p>Minimum requirements <i>-The use of water for biofuel production shall not be at the expense of the water needed by ecosystems or the communities that rely on the same water for subsistence.</i> <i>-Water resources under legitimate dispute shall not be used for biofuel or feedstock production or processing until any legitimate disputes have been settled through Free, Prior and Informed -Consent and negotiated agreements with affected stakeholders.</i> <i>-Legitimacy of the dispute shall be determined by the auditor against guidelines established by the RSB.</i> <i>For new and expanding medium and large-scale projects:</i> <i>-As part of the Environmental and Social Impact Assessment (ESIA) outlined in Principle 2, a consultative process that includes water regulatory authorities, local water experts, community members, and indigenous peoples relying on the same water table or watercourse for their basic needs shall be used to identify downstream or groundwater users and determine the formal or customary water rights that exist, as well as critical aquifer recharge areas, replenishment capacities of local water tables, watercourses, and ecosystem needs. The potential impacts of the operation on any of these aspects shall be evaluated, and any negative impacts mitigated.</i> <i>-Any formal or customary water rights that exist shall be respected and protected through the water management plan (see 9.b) to prevent infringement of such rights. No modification of the existing rights can happen without the Free Prior and Informed Consent of the parties affected.</i> <i>For small-scale projects:</i> <i>-The potential impacts of operations on water availability shall be assessed within the local community and ecosystems, and any negative impacts mitigated.</i></p>		
<p>Criterion 9.b Biofuel production shall include a water management plan which aims to use water efficiently and to maintain or enhance the quality of the water resources that are used for biofuel production.</p>	<p>9.b.1 Minimum requirements <i>-Operators shall implement a water management plan.</i> <i>-The water management plan shall be made available to the public, unless limited by national law or international agreements on intellectual property.</i> <i>-The water management plan shall not contradict any local or regional water management plans and include the neighbor areas, which receive direct runoff from the production site. Any negative impact on these neighbor areas shall be mitigated..</i> <i>-The operator shall undertake an annual monitoring of the success of the implementation of the water management plan.</i> 9.b.2 Progress requirements: <i>-The water management plan shall include steps for reusing or recycling waste water, appropriate to the scale and intensity of production.</i></p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 9.c Biofuel production shall not withdraw surface or groundwater resources beyond replenishment capacities.</p>	<p>9.c.1 Minimum requirements <i>-Water used for irrigation, feedstock processing, or biofuel production shall not be withdrawn beyond replenishment capacity of the water table, watercourse, or tank from which the water comes. The replenishment capacity shall be evaluated through the Environmental and Social Impact Assessment outlined in Principle 2 on a yearly basis.</i> <i>-Based on the Environmental and Social Impact Assessment outlined in Principle 2 and the water management plan (9.b), the use and share of water resources (e.g. maximum volume to be annually withdrawn from the water table) for biofuel production shall be defined in agreement with local experts and the community; any water user committees shall be consulted.</i> <i>-Irrigated biofuel crops and freshwater-intensive biofuel production systems shall not be established in long-term freshwater-stressed areas, unless the implementation of:</i> a. good practices or b. an adequate mitigation process that does not contradict other requirements in this standard ensures that the water level remains stable. <i>-Large-scale operators shall not withdraw water from natural watercourses (e.g. a river) to an extent that modifies its natural trajectory or its original physical, chemical and biological equilibrium.</i> <i>-The Operator shall demonstrate commitment to the improvement of water efficiency over time. If an area becomes fresh-water stressed, good practices that minimize water use shall be implemented.</i></p> <p>9.c.2 Progress requirements (medium and large operators only) <i>-Wherever applicable, operators shall contribute to the replenishment of local water tables and/or invest in local water conservation projects.</i></p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 9.d The quality of the surface and groundwater resources that are used for biofuel production shall be maintained or enhanced.</p>	<p>9.d.1 Minimum requirements <i>-Feedstock production and processing, as well as biofuel production, shall not occur on a critical aquifer recharge area without a specific authorization from legal authorities.</i> <i>-Operators shall implement the best available practices which aim to maintain or enhance the quality of surface and ground water resources that are used for biofuel production to the level deemed optimal for the local system for sustained water supply, ecosystem functioning and ecological services; this optimal level is to be defined, as part of the ESIA (PC2), through the consultation of local experts, communities and producers, taking into account local economic, climatic, hydrologic and ecologic conditions.</i> <i>-Adequate precautions shall be taken to contain effluents and avoid runoffs and contamination of surface and ground water resources, in particular from chemicals and biological agents.</i> <i>-Buffer zones shall be set between the production site and surface or ground water resources. Waste water shall be adequately managed and, whenever possible, recycled.</i></p> <p>9.d.2 Progress requirements: <i>-For existing operations, degradation of water resources that existed prior to certification and for which the Operator is directly accountable shall be reversed. Wherever applicable, medium and large scale operators shall participate in projects that aim to improve water quality at a watershed scale.</i> <i>-Waste water or runoff that contains potential organic and mineral contaminants shall be treated to prevent any negative impact on humans, wildlife, and natural compartments (water, soil).</i> <i>-None of the chemicals recorded in the WHO's 1a and 1b lists, in Annex III of the Rotterdam Convention or in the Stockholm Convention on POPs shall be used within 3 years after certification (See full guidance on chemicals under principle 11).</i></p>		
<p>Criterion 10.a Air pollution emission sources from biofuel production shall be identified, and air pollution minimized.</p>	<p>Minimum requirements <i>-An emission control plan appropriate to the scale and intensity of production shall be in place regarding major air pollutants including carbon oxides, nitrogen oxides, volatile organic compounds, particulate matter, sulphur compounds, dioxins and other substances recognised as potentially harmful for the environment or human health. The plan shall identify all potentially air pollution sources and describes their nature (e.g. open burn, boiler stack). The plan shall describe any air pollution mitigation strategies that are employed, or else the rationale for not utilizing such strategies.</i> <i>-The use of ground or aerial pesticides shall comply with the FAO's Guidelines on Good Practices for Ground and Aerial Applications of Pesticides (See full guidance on chemicals under Principle 11).</i></p> <p>Progress requirements <i>-The Operator shall investigate and, whenever possible in the local context, implement Better Management Practices (BMP) or Best Available Technology (BAT) to reduce air pollution, appropriate to the scale and intensity of operation.</i></p>		
<p>Criteria</p>	<p>Indicators:</p>	<p>Methodology</p>	<p>Databases used:</p>

		used:	
<p>Criterion 10.b Biofuel production shall avoid and, where possible, eliminate open-air burning of residues, wastes or by-products. Good practices for contained burning of residues, wastes or by-products shall be used to maintain emissions of air pollutants below national and international norms.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -Open- air burning of agricultural residues, wastes and by-products shall only occur when no viable alternative is available or affordable in the local context. -A plan shall be put in place to phase out any open-air burning of leaves, straw and other agricultural residues. In specific situations such as those described in the ASEAN guidelines and other relevant policies, if workers' health and safety is at stake (for instance in manual sugarcane harvesting), if burning may prevent natural fires, or if the cultivation of the crop periodically requires burning for viability in the long term without any equivalent alternatives (e.g. switchgrass), limited open-air burning practices may occur. <p>Progress requirements (medium and large scale operators only):</p> <ul style="list-style-type: none"> -Measures shall be taken to collect heat from burning processing wastes and by-products in order to generate electricity or heat, appropriate to the scale and intensity of operation. Such burning shall always occur in an appropriate infrastructure to minimise air. Solid residues from burning shall be disposed following national guidelines. -All infrastructures needed to prevent air emissions to a level that goes beyond national minimum requirements shall be in place. -Open air burning of agricultural residues and by-products shall not occur, except in the cases formulated in the guidance. 		
<p>Criterion 11.a Information on the use of technologies in biofuel production shall be fully available, unless limited by national law or international agreements on intellectual property.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -When complying with and auditing against this criterion, proprietary technology shall be protected from competitors and intellectual property rights shall be respected -The Operator shall identify potential hazards related but not restricted to Genetically Modified Organisms (GMO) when such technology is used, and make this information available to the public. The Biosafety Clearinghouse established under the Cartagena Protocol on Biosafety shall be consulted to provide information about specific GMOs, including related risk and countries' decisions regarding that technology. 		
<p>Criterion 11.b The technologies used in biofuel production including genetically modified: plants, micro-organisms, and algae, shall minimize the risk of damages to environment and people, and improve environmental and/or social performance over the long term.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -The use of genetically modified organisms shall follow relevant national or international guidelines, laws and agreement, including crop-specific stewardship systems, and local and community coexistence agreements or understandings. -Operators shall provide evidence that the technologies they use do not contradict any of the RSB principles and criteria; for new projects, such evidence shall be provided before the beginning of operation. -Operators using GMOs shall take measures to prevent migration of genetically modified material and shall cooperate with neighbours, regulatory and conservation authorities, and local stakeholders to implement monitoring and preventative measures. Crop-specific and technology-specific mitigation strategies shall be utilized. 		
<p>Criterion 11.c Micro-organisms used in biofuel processing which may represent a risk to the environment or people shall be adequately contained to prevent release into the environment.</p>	<p>Minimum requirements</p> <ul style="list-style-type: none"> -In no case shall genetically modified micro-organisms or any micro-organisms that pose a risk (pathogenic, mutagenic, contaminant, etc.) to human health or the environment be released outside the processing/production unit. Any such organism used for processing shall be destroyed or adequately neutralised (i.e. loss of any potentially hazardous character) before being disposed. -The Operator shall implement a plan that includes adequate monitoring and an emergency procedure in case of accidental dissemination of any such micro-organisms into the environment. 		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 11.d Good practices shall be implemented for the storage, handling, use, and disposal of chemicals.</p>	<p>11.d.1 Minimum requirements <i>-None of the chemicals recorded in the WHO's 1a and 1b lists shall be used. The use of chemicals recorded in Annex III of the Rotterdam Convention and in the Stockholm Convention on Persistent Organic Pollutants (POPs) shall be listed (type and annual volume used) and a plan to phase out any such chemical over the three years following certification shall be set.</i> <i>-Manufacturer's safety instructions for the storage, handling, use, and disposal of chemicals shall be followed.</i> <i>The use of ground or aerial pesticides shall comply with the FAO's Guidelines on Good Practices for Ground and Aerial Applications of Pesticides. Any chemical used in biofuel production shall be in accordance with the manufacturer's safety instructions.</i></p> <p>11.d.2 Progress requirements <i>None of the chemicals recorded in Annex III of the Rotterdam Convention or in the Stockholm Convention on Persistent Organic Pollutants shall be used within three years after certification.</i></p>		
<p>Criterion 11.e Residues, wastes and byproducts from feedstock processing and biofuel production units shall be managed such that soil, water and air physical, chemical, and biological conditions are not damaged.</p>	<p>11.e.1 Minimum requirements <i>-A waste and byproduct management plan shall exist such that wastes and byproducts are handled and/or disposed of in appropriate containers to prevent any environmental contamination and damage to human health.</i> <i>-These products shall not be in direct contact with soils, water sources and air outside the processing and production units unless their innocuousness to the environment and people is officially stated by manufacturers or the country or regional (e.g. EU, ASEAN, ALENA) guidelines. In all other cases, handling and disposal must follow the manufacturer's recommendation and the country or regional (e.g. EU, ASEAN, ALENA) guidelines.</i> <i>-Burning of wastes or byproducts shall be used as much as technically possible for electricity or heat generation (e.g. in a boiler) and with authorisation from local authorities. Such burning shall always occur in an appropriate facility to minimise air pollution from substances recognised as potentially harmful for the environment or human health, except as provided for under Principle 10. Solid residues from incineration shall be disposed of such that soil and water conditions are not damaged or according to national regulations.</i> <i>-For new and expanding operations, the design of operations shall integrate the necessary infrastructure for safe burning of processing waste and by-products.</i> <i>-For existing projects, a strategy shall be set to develop the necessary infrastructures for safe burning of waste and by-products.</i></p> <p>11.e.2 Progress requirements <i>-For medium and large scale operators, byproducts or wastes shall be reused by the processing/production unit or transferred to other sectors whenever their use may improve the overall system's energy balance, greenhouse gas emissions, and/or economic viability without impairing the other principles and criteria in this standard.</i> <i>-For all operators, byproducts or wastes shall not be burned except in the case their combustion is used to produce heat or electricity (cogeneration) and only in an appropriate structure following national directives.</i></p>		

Criteria	Indicators:	Methodology used:	Databases used:
<p>Criterion 12.a Existing land rights and land use rights, both formal and informal, shall be assessed, documented, and established. The right to use land for biofuel production or processing of feedstock for biofuel shall be established only when these rights are determined..</p>	<p>Minimum requirements <i>-The ESIA guidelines on land rights including the toolkit on stakeholder mapping shall be used to determine land rights and land use rights.</i> <i>-Land under legitimate dispute shall not be used for biofuel or feedstock production or processing until any legitimate disputes have been settled through Free, Prior and Informed Consent and negotiated agreements with affected land users.</i></p>		
<p>Criterion 12.b Free, Prior, and Informed Consent shall form the basis for all negotiated agreements for any compensation, acquisition, or voluntary relinquishment of rights by land users or owners for biofuel production.</p>	<p>Minimum requirements <i>-No involuntary resettlement shall be allowed for biofuel production.</i> <i>-The ESIA guidelines for land rights, the consensus building toolkit and Free Prior and Informed Consent shall be used as the basis for any negotiated agreements.</i> <i>-Where land rights and land use rights are voluntarily relinquished, local people shall be fairly, equitably and timely compensated for any agreed land acquisitions and relinquishments of any land rights or land use rights.</i> <i>-Compensation for voluntary relinquishment shall include appropriate balancing measures needed to preserve the ability of the persons concerned to sustain their livelihoods in an autonomous and dignified manner.</i> <i>-Independent, qualified land valuation specialists shall be used for valuing all land and asset values.</i> <i>-Where land is to be sold it shall be done on a willing-seller/willing-buyer basis.</i> <i>-Coercion to alter existing land rights or land use rights shall not be allowed in biofuel production.</i> <i>-Where the rule of law is not adequately applied, international and regional legal bodies shall be consulted for rulings and information on disputes.</i> <i>-Biofuel production shall provide for independent legal advice for communities who do not have the resources to represent their own interests in disputes.</i> <i>-If there are disputes about the tenure agreements of the land among stakeholders, biofuel production shall not be approved</i></p>		

44 SEKAB: Verifierat Sustainable Etanol (Sweden) - Svetlana Ladanai, Olle Olsson, Johan Vinterbäck

General characteristics:		
Initiator system:	SEKAB BioFuels & Chemicals (produces, imports, develops, sells and distributes bioethanol fuel and chemical products)	
Coordinating party:	BioAlcohol Fuel Foundation (BAFF)	
Initiation – duration:	On 12th September 2007 Sweden and Brazil signed an agreement on bioenergy and biofuels The verified and traceable ethanol is available in Swedish pumps since August 2008.	
Grade of integration		
Geographical coverage:	SEKAB expands in Europe and in East Africa.	
Scope (feedstock included):	forestry waste products, wood chips, recycled paper, energy forests, grains, sugarcane, corn or sugar beets.	
Value chain		
Mission or objective:		
<p>Aims of the Initiative</p> <ol style="list-style-type: none"> 1. To physically guarantee Swedish consumers that they are filling up with good ethanol. 2. To increase the offering of verified sustainable ethanol in close collaboration with the Brazilian sugar industry. 3. To persuade other countries in Europe to develop systems for quality and sustainability assurance. 4. To expedite the development of international regulations for sustainable biofuels. 	Principles included:	Y/N
	Criteria included:	Y/N
	Indicators included:	Y/N
Context (i.e. legal requirement, related policies):		
<p><u>Sekab's Quality policy:</u> In Sekab's business, the aim is to have satisfied customers. The products and actions of Sekab shall be of such a character that the customers prefer Sekab over its competitors. Sekab shall: actively focus all quality activities on agreed targets, so that quality thinking becomes a natural part of the day-to-day activities. plan and control the business so that the right thing will be done from the beginning at every stage. This includes taking preventive measures to ensure that faults are not repeated. develop and deepen its contact with suppliers so that they fully understand and satisfy the company's requirements. And so that Sekab receive correct deliveries of raw materials, supplies and services. follow up quality activities by means of quality audits. make it clear that quality is a matter for which each and every employee has responsibility Read SEKAB BioFuels & Chemicals' policy on quality here: http://www.sekab.com/Eng2/Information%20pages/Policies/SEKABQualityPolicy.pdf</p> <p><u>Sekab's BioFuels & Chemicals' policy on Health, Security & Environment (HSE):</u> At SEKAB, health and safety shall always be prioritized Concern for the external environment has priority over production. Activities relating to HSE matters shall always lead to continuous improvements.</p> <p>Read SEKAB BioFuels & Chemicals' policy on Health, Security & Environment (HSE) here: .http://www.sekab.com/default.asp?id=2494</p>		
Current status of system:		
SEKAB's quality assurance measures are designed to ensure customer satisfaction. Our products must always meet the given specifications and be delivered on time. This quality assurance gives us a competitive edge, making us our client's first choice for ethanol.. Quality is assured by thorough planning, management, and the monitoring of our work at every stage. Doing things right from the very beginning of the process is an important part of our		

philosophy, and is achieved through a system of checks, which ensures that mistakes are not repeated. SEKAB aims to make a focus on quality an integral part of our everyday operations.

Work is conducted in accordance with the quality management standard ISO 9002, and is carried out in close cooperation with suppliers and customers in order to ensure the quality of raw materials, products and services. Customers with specific quality requirements provide us with feedback on our work to ensure that we meet their most stringent demands

Planned activities:

In the long term the sustainability requirements will be global, like trade policy management. This initiative is an initial step in a long process and is important as a way of bridging the gap between production of sustainable ethanol and production of non-sustainable ethanol until EU legislation is in place.

SEKAB are currently conducting a long-term industrial initiative in cellulose-based ethanol. The goal is to develop an industrial structure that will enable the supply of knowledge and equipment for the production of cellulose-based ethanol.

Structure of the system or initiative:	
Stakeholder participation:	SEKAB is owned by a regional consortium consisting of Övik Energi, Umeå Energi, Skellefteå Kraft, Länsförsäkringar i Västerbotten, OK Ekonomisk förening and EcoDevelopment. BioAlcohol Fuel Foundation (BAFF),
Commitment:	Calculations according to RTFO principles In compliance with article 1 and 2 in ILO convention 138
Stakeholder integration:	
Monitoring performance:	Continuous monitoring that the criteria are being met Moreover, in general, SEKAB have modern operations that incorporate the continual computerised process of monitoring and follow-up of our impact on the environment. The company has identified the particular environmental issues relevant to our operations to be able to actively reduce their impact. Environmental impact includes everything related to activities, processes, products and services which have or may potentially have an impact on the environment. SEKAB also have an on-going focus on optimising our processes and improving the efficiency of our use of raw materials, energy and natural resources. A reduced reliance on chemicals and more efficient transportation are also important measures in rationalising SEKAB's operations. By means of computerised process monitoring and adjustment, SEKAB has been able to significantly reduce its consumption of raw materials and energy, which has lessened its environmental impact
Chain of custody mechanism:	

Verification mechanisms:	<p>The ethanol is quality assured from environmental, climate and social perspectives, and is controlled and verified by the British company SGS</p> <p>The setup will be similar to a quality-management system. Monitoring and verification will be carried out by an independent third party. In case the third party finds non-compliance, procedures are in place to ensure that this non-compliance is corrected and that it never reoccurs.</p> <p>Three levels of non-compliance:</p> <ul style="list-style-type: none"> • Observation <i>Shall be corrected before next audit</i> • Minor non-compliance <i>Shall be corrected within 3 months</i> • Major non-compliance <i>A plan for mitigation shall be submitted within 14 days</i> <i>Always followed by an extra audit</i> • Full traceability of all physical flows <p>Note: The system for verified sustainable ethanol is still in development and we appreciate comments and suggestions for improvements.</p>
Further information:	
Removal of trade barriers	
Costs:	

List of principles included:	
1	At least 85 % reduction in fossil carbon dioxide compared with petrol, from a well to-wheel perspective
2	At least 30 % mechanisation of the harvest now, plus a planned increase in the degree of mechanisation to 100 %
3	Zero tolerance for felling of rain forest
4	Rights and safety measures for all employees in accordance with UN guidelines
5	Ecological consideration in accordance with UNICAs environmental initiative
6	Continuous monitoring that the criteria are being met

References:	
Website:	http://www.sekab.com/ http://www.sustainableethanolinitiative.com/default.asp?id=1062