

Testing Framework for Sustainable Biomass ("Cramer Criteria") - The Netherlands

Country/ Organization	The Netherlands, Project Group "Sustainable Production of Biomass"		Year and status	2007 (not in implementation)
Initiative	Testing Framework for Sustainable Biomass ("Cramer Criteria")			
Membership	-			
Governing bodies	-			
Type and implementation approach	Testing framework	Geographical coverage	National (including imports)	
Feedstock(s) covered	All	Supply chain coverage	Biomass production and processing in energy, fuels and chemistry	
Type(s) of biofuels covered	All			
Link	http://www.lowcvp.org.uk/assets/reports/070427-Cramer-FinalReport_EN.pdf			

Overview¹.

The project group 'Sustainable Production of Biomass' was established in 2006 in the Netherlands with the aim to develop a framework for the testing of the sustainability of biomass production and to inform national policy-making in this area.

The framework addresses the sustainability of biomass production and processing in energy, fuels and chemistry and it covers both domestically-produced and imported biomass. It was completed in 2007 but was never implemented.

The project group identified six relevant themes, which were then dealt with within dedicated working groups:

- Greenhouse gas emissions;
- Competition with food and other local applications;
- Biodiversity;
- Environment;
- Prosperity; and
- Social Well-being.

The testing framework was developed around the following nine principles:

¹ The information included in this section was excerpted and adapted directly from the Testing Framework for Sustainable Biomass document: http://www.lowcvp.org.uk/assets/reports/070427-Cramer-FinalReport_EN.pdf

1. The greenhouse gas balance of the production chain and application of the biomass must be positive;
2. Biomass production must not be at the expense of important carbon sinks in the vegetation and in the soil;
3. The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines and building materials);
4. Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity;
5. In the production and processing of biomass the soil and the soil quality are retained or improved;
6. In the production and processing of biomass ground and surface water must not be depleted and the water quality must be maintained or improved;
7. In the production and processing of biomass the air quality must be maintained or improved;
8. The production of biomass must contribute towards local prosperity; and
9. The production of biomass must contribute towards the social well-being of the employees and the local population.

A set of criteria and indicators was then developed around these principles. Whenever possible, quantitative indicators were used. Alternatively, reporting requirements were introduced.

For citation:

Ismail, M., & Rossi, A. 2010. *A Compilation of Bioenergy Sustainability Initiatives*. Rome: Food and Agriculture Organization of the UN (FAO).

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
1. ENVIRONMENTAL			
1.1 Land-use change (direct and/or indirect) Back to table of contents	2. Biomass production must not be at the expense of important carbon sinks in the vegetation and in the soil.	2.1 Conservation of above-ground (vegetation) carbon sinks when biomass units are installed.	Indicator 2.1.1 (minimum requirement) The installation of new biomass production units (BPUs) 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 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). [Also relevant to aspect(s)/issue(s): 1.6 GHG emissions.]
		2.2 The conservation of underground (soil) carbon sinks when biomass units are installed.	Indicator 2.2.1 (minimum requirement) 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. 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). [Also relevant to aspect(s)/issue(s): 1.6 GHG emissions.]
	3. The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines, building materials).	3.1 Insight into the change of land use in the region of the biomass production unit.	Reporting 3.1.1 (only at the request of the Dutch government) Information on changed land use in the region, inclusive of future developments (if information is available). [Also relevant to aspect(s)/issue(s): 4.1 Food availability.]
1.2 Biodiversity and ecosystems services	4. Biomass production must not affect protected or	4.1 No violation of national laws and regulations that are applicable	See indicator 4.1.1 on laws and regulations on protected areas, wildlife management and hunting, as well as CBD

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
1.2 Biodiversity and ecosystems services (continued) Back to table of contents	vulnerable biodiversity and will, where possible, have to strengthen biodiversity.	to biomass production and the production area.	and CITES at aspect/issue 3.1 Compliance.
		4.2 In new or recent developments, no deterioration of biodiversity by biomass production in protected areas.	Indicator 4.2.1 (minimum requirement) Biomass production must not take place in recently cultivated areas that have been recognized as ‘gazetted protected areas’ by the government, or in a 5 km zone around these areas. 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). If biomass production does take place in the above areas, then only if this is a part of the management to protect the biodiversity values.
		4.3 In new or recent developments, no deterioration of biodiversity in other areas with high biodiversity value, vulnerability or high agrarian, nature and/or cultural values.	Indicator 4.3.1 (minimum requirement) Biomass production must not take place in recently cultivated areas that have been recognized as ‘High Conservation Value’ (HCV) areas by the parties involved, or in a 5 km zone around these areas. 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). The following areas are considered HCV areas: <ul style="list-style-type: none"> • Areas with endangered or protected species or ecosystems, on the basis of the criteria of HCV categories 1, 2 and 3; • Areas with high vulnerability (e.g. slopes and wetlands), on the basis of the criteria of HCV category 4; • Areas with high nature and cultural values, on the basis of the criteria of HCV categories 5 and 6 and criteria for ‘high nature value farmlands’. By means of a dialogue with the local parties involved it

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
1.2 Biodiversity and ecosystems services (continued) Back to table of contents	4. Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity. (continued)	4.3 In new or recent developments, no deterioration of biodiversity in other areas with high biodiversity value, vulnerability or high agrarian, nature and/or cultural values. (continued)	must be determined where the HCV areas are to be found. If biomass production does take place in the above areas, then only if this is a part of the management to protect the biodiversity values. [Also relevant at aspect(s)/issue(s): 2.8 Social sustainability (cross-cutting).]
		4.4 In new or recent developments, maintenance or recovery of biodiversity within biomass production units.	Indicator 4.4.1 (minimum requirement) If biomass production is taking place in recently cultivated areas (after 1 January 2007), room will be given to set-aside areas (at least 10%). Reporting 4.4.2 If biomass production is taking place in recently cultivated areas (after 1 January 2007), it has to be indicated: <ul style="list-style-type: none"> • In which land use zones the biomass production unit can be found; • How fragmentation is discouraged; • If ecological corridors are applied; • If the restoration of degraded areas is involved here.
		4.5 Strengthening of biodiversity where this is possible, during development and by the management of existing production units.	Reporting 4.5.1 Good practices will be applied on and around the biomass production unit for the strengthening of biodiversity, to take into account ecological corridors and to prevent disintegration as much as possible.
1.3 Productive capacity of land	5. In the production and processing of biomass, the soil, and soil quality must be retained or even improved.	See criterion 5.1 and indicator 5.1.1 on laws and regulations that are applicable to soil management at aspect/issue 3.1 Compliance.	

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
1.3 Productive capacity of land (continued)		5.2 In the production and processing of biomass best practices must be applied to retain or improve the soil and soil quality.	Reporting 5.2.1 The formulation and application of a strategy aimed at sustainable soil management for the: <ul style="list-style-type: none"> • The prevention and control of erosion; • The conservation of nutrient balance; • The conservation of organic matter in the soil; • The prevention of soil salination.
		5.3 The use of residual products must not be at variance with other local functions for the conservation of the soil.	Reporting 5.3.1 The use of agrarian residual products must not be at the expense of other essential functions for the maintenance of the soil and the soil quality (such as organic matter, mulch, straw for housing). The residual products of the biomass production and processing must be used optimally (so, for example, no unnecessary burning or removal). [Also relevant to aspect(s)/issue(s): 4.3 Food utilization.]
1.4 Crop management and agrochemical use Back to table of contents	5. In the production and processing of biomass, the soil, and soil quality must be retained or even improved.	5.1 No violation of national laws and regulations that are applicable to soil management.	See indicator 5.1.1 on use of harmful pesticide at aspect/issue 3.1 Compliance.
	6. In the production and processing of biomass ground and surface water must not be depleted and the water quality must be maintained or improved.	6.2 In the production and processing of biomass best practices must be applied to restrict the use of water and to retain or improve ground and surface water quality.	See reporting 6.2.1 on the need for a strategy for responsible use of agrochemicals at aspect/issue 1.5 Water availability and quality.
1.5 Water availability and quality	6. In the production and processing of biomass ground	6.1 No violation of national laws and regulations that are applicable to water management.	See indicator 6.1.1 on laws and regulations on water use at aspect/issue 3.1 Compliance.

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
1.5 Water availability and quality (continued)	and surface water must not be depleted and the water quality must be maintained or improved.	6.2 In the production and processing of biomass best practices must be applied to restrict the use of water and to retain or improve ground and surface water quality.	Reporting 6.2.1 The formulation and application of a strategy aimed at sustainable water management with regard to: <ul style="list-style-type: none"> • Efficient use of water; • Responsible use of agrochemicals. [Also relevant to aspect(s)/issue(s): 1.4 Crop management and agrochemical use.]
		6.3 In the production and processing of biomass no use must be made of water from non-renewable sources.	Indicator 6.3.1 (minimum requirement) Irrigation or water for the processing industry must not originate from non-renewable sources.
1.6 GHG emissions Back to table of contents	1. The greenhouse gas balance of the production chain and application of the biomass must be positive.	1.1 In the application of biomass a net emission reduction of greenhouse gases must take place along the whole chain. The reduction is calculated in relation to a reference situation with fossil fuels.	Indicator 1.1.1 (minimum requirement) The emission reduction of greenhouse gases amounts to at least 50-70% for electricity production and at least 30% for biofuels, calculated with the method described in chapter 4. These are minimum requirements. Here the basic principle must be that policy instruments should promote a higher percentage above the minimum requirement by differentiating strongly on the basis of the emission reduction of greenhouse gases.
		2. Biomass production must not be at the expense of important carbon sinks in the vegetation and in the soil.	2.1 Conservation of above-ground (vegetation) carbon sinks when biomass units are installed. 2.2 The conservation of underground (soil) carbon sinks when biomass units are installed.
	7. In the production and processing of biomass the air	7.1 No violation of national laws and regulations that are applicable to emissions and air quality.	See indicator 7.1.1 on laws and regulations on air emissions at aspect/issue 3.1 Compliance.
1.7 Air quality			

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
1.7 Air quality (continued)	quality must be maintained or improved.	7.2 In the production and processing of biomass best practices must be applied to reduce emissions and air pollution.	Reporting 7.2.1 The formulation and application of a strategy aimed at minimum air emissions, with regard to: <ul style="list-style-type: none"> • Production and processing; • Waste management. [Also relevant to aspect(s)/issue(s): 1.8 Waste management.]
		7.3 No burning as part of the installation or management of biomass production units (BPUs).	Indicator 7.3.1 (minimum requirement) Burning must not be applied in the installation or the management of biomass production units, unless in specific situations as described in ASEAN guidelines or other regional good practices.
1.8 Waste management	5. In the production and processing of biomass, the soil, and soil quality must be retained or even improved.	5.1 No violation of national laws and regulations that are applicable to soil management.	See indicator 5.1.1 on laws and regulations on waste management related to soil management at aspect/issue 3.1 Compliance.
	7. In the production and processing of biomass the air quality must be maintained or improved.	7.1 No violation of national laws and regulations that are applicable to emissions and air quality	See indicator 7.1.1 on laws and regulations on waste management related to emission and air quality at aspect/issue 3.1 Compliance.
		7.2 In the production and processing of biomass best practices must be applied to reduce emissions and air pollution.	See reporting 7.2.1 on waste management strategy at aspect/issue 1.7 Air quality.
1.9 Environmental sustainability (cross-cutting) Back to table of contents	5. In the production and processing of biomass, the soil, and soil quality must be retained or even improved.	5.1 No violation of national laws and regulations that are applicable to soil management.	See indicator 5.1.1 on laws and regulations on Environmental impact reporting related to soil management at aspect/issue 3.1 Compliance.
	6. In the production and processing of biomass ground and surface water must not be	6.1 No violation of national laws and regulations that are applicable to water management.	See indicator 6.1.1 on laws and regulations on environmental impact assessment related to water management at aspect/issue 3.1 Compliance.

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
1.9 Environmental sustainability (cross-cutting) (continued)	depleted and the water quality must be maintained or improved.		
	7. In the production and processing of biomass the air quality must be maintained or improved.	7.1 No violation of national laws and regulations that are applicable to emissions and air quality.	See indicator 7.1.1 on laws and regulations on environmental impact assessment related to emission and air quality at aspect/issue 3.1 Compliance.
2. SOCIO-ECONOMIC			
2.1 Land tenure/access and displacement	4. Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity.	4.1 No violation of national laws and regulations that are applicable to biomass production and the production area.	See indicator 4.1.1 on laws and regulations on land ownership and land use rights at aspect/issue 3.1 Compliance.
	9. The production of biomass must contribute towards the social well-being of the employees and the local population.	9.3 The use of land must not lead to the violation of official property and use, and customary law without the free and prior consent of the sufficiently informed local population.	Indicator 9.3.1 (minimum requirement) Comply with the following requirements: <ul style="list-style-type: none"> • No land use without the informed consent of original users; • Land use must be carefully described and officially laid down; • Official property and use, and customary law of the indigenous population must be recognized and respected. [Also relevant to aspect(s)/issue(s): 3.2 Participation and transparency]
2.2 Rural and social development Back to table of contents	8. The production of biomass must contribute towards local prosperity.	8.1 Positive contribution of private company activities towards the local economy and activities.	Reporting 8.1.1 Description of: <ul style="list-style-type: none"> • The direct economic value that is created; • Policy, practice and the proportion of the budget spent on local supply companies; • The procedures for appointment of local staff and the share of local senior management.

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
2.2 Rural and social development (continued)	9. The production of biomass must contribute towards the social well-being of the employees and the local population.	9.2 No negative effects on human rights.	On the basis of Economic Performance Indicators EC 1, 6 & 7 of GRI: (Global Reporting Initiative). See indicator 9.2.1 on compliance with the Universal Declaration of Human Rights on the rights of indigenous peoples at aspect/issue 3.1 Compliance.
		9.4 Positive contribution to the well-being of local population.	Reporting 9.4.1 • Description of programmes and practices to determine and manage the effects of company activities on local population; On the basis of the Social Performance Indicator SO1 of the GRI: (Global Reporting Initiative).
2.4 Employment, wages and labor conditions	9. The production of biomass must contribute towards the social well-being of the employees and the local population.	See criterion 9.1 on laws and regulations on the effects on the working conditions of employees at aspect 3.1 Compliance.	
		9.2 No negative effects on human rights.	See indicator 9.2.1 on compliance with the Universal Declaration of Human Rights at aspect/issue 3.1 Compliance.
2.5 Human health and safety Back to table of contents	3. The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines, building materials).		
	9. The production of biomass must contribute towards the social well-being of the employees and the local population.	9.2 No negative effects on human rights.	See indicator 9.2.1 on compliance with the Universal Declaration of Human Rights concerning safety practices at aspect/issue 3.1 Compliance.
2.6 Energy security and access	3. The production of biomass for energy must not endanger		

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
	the food supply and local biomass applications (energy supply, medicines, building materials) .		
2.7 Good management practices and continuous improvement	9. The production of biomass must contribute towards the social well-being of the employees and the local population.	9.5 Insight into possible violations of the integrity of the company.	Rapportage 9.5.1 Description of: <ul style="list-style-type: none"> • Degree of training and risk analysis to prevent corruption; • Actions taken in response to cases of corruption. On the basis of the Social Performance indicators SO2, SO3 and SO4 of the GRI (Global Reporting Initiative).
2.8 Social sustainability (cross-cutting)	4. Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity.	4.3 In new or recent developments, no deterioration of biodiversity in other areas with high biodiversity value, vulnerability or high agrarian, nature and/or cultural values.	See indicator 4.3.1 on biomass production in HCV areas with high nature and cultural values at aspect/issue 1.2 Biodiversity and ecosystem services.
3. GOVERNANCE			
3.1 Compliance Back to table of contents	4. Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity. 4. Biomass production must not affect protected or	4.1 No violation of national laws and regulations that are applicable to biomass production and the production area. 4.1 No violation of national laws and regulations that are	Indicator 4.1.1 (minimum requirement) Relevant national and local regulations must be complied with, with regard to: <ul style="list-style-type: none"> • Land ownership and land use rights; • Forest and plantation management and exploitation; • Protected areas; • Wildlife management; • Hunting;

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3.1 Compliance (continued) Back to table of contents	vulnerable biodiversity and will, where possible, have to strengthen biodiversity. (continued)	applicable to biomass production and the production area. (continued)	<ul style="list-style-type: none"> • Spatial planning; • National rules arising from the signing of international conventions CBD (Convention on Biological Diversity) and CITES (Convention on International Trade in Endangered Species). [Also relevant to aspect(s)/issue(s): 1.2 Biodiversity and ecosystem services; 2.1 Land tenure/access and displacement.]
	5. In the production and processing of biomass, the soil, and soil quality must be retained or even improved.	5.1 No violation of national laws and regulations that are applicable to soil management.	Indicator 5.1.1 (minimum requirement) Relevant national and local regulations must be complied with, with respect to: <ul style="list-style-type: none"> • Waste management; • The use of agrochemicals (fertilizers and pesticides); • The mineral system; • The prevention of soil erosion; • Environmental impact reporting; • Company audits. At least the Stockholm convention (12 most harmful pesticides) must be complied with, also where national legislation is lacking. [Also relevant to aspect(s)/issue(s): 1.3 Productive capacity of land; 1.4 Crop management and agrochemical use; 1.8 Waste management; 1.9 Environmental sustainability (cross-cutting).]
	6. In the production and processing of biomass ground	6.1 No violation of national laws and regulations that are	Indicator 6.1.1 (minimum requirement) Relevant national and local laws and regulations must be

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
3.1 Compliance (continued) Back to table of contents	and surface water must not be depleted and the water quality must be maintained or improved.	applicable to water management.	observed, with respect to: <ul style="list-style-type: none"> • The use of water for irrigation; • The use of ground water; • The use of water for agrarian purposes in catchment areas; • Water purification; • Environmental impact assessments; • Company audits. [Also relevant to aspect(s)/issue(s): 1.5 Water availability and quality; and 1.9 Environmental sustainability (cross-cutting).]
	7. In the production and processing of biomass the air quality must be maintained or improved.	7.1 No violation of national laws and regulations that are applicable to emissions and air quality.	Indicator 7.1.1 (minimum requirement) Relevant national and local regulations must be observed with respect to: <ul style="list-style-type: none"> • Air emissions; • Waste management; • Environmental impact assessments; • Company audits. [Also relevant to aspect(s)/issue(s): 1.7 Air quality; 1.8 Waste management; and 1.9 Environmental sustainability (cross-cutting).]
	9. The production of biomass must contribute towards the social well-being of the employees and the local population.	9.1 No negative effects on the working conditions of employees.	Indicator 9.1.1 (minimum requirement) Comply with the Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (compiled by the International Labour Organisation). [Also relevant to aspect(s)/issue(s): 2.4 Employment, wages and labor conditions]

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
3.1 Compliance (continued)	9. The production of biomass must contribute towards the social well-being of the employees and the local population. (continued)	9.2 No negative effects on human rights.	Indicator 9.2.1 (minimum requirement) Comply with the Universal Declaration of Human Rights of the United Nations. It concerns here: non-discrimination; freedom of trade union organisation, child labour; forced and compulsory labour; disciplinary practices, safety practices and the rights of indigenous peoples. [Also relevant to aspect(s)/issue(s): 2.2 Rural and social development; 2.4 Employment, wages and labor conditions; and 2.5 Human health and safety.]
3.2 Participation and transparency	9. The production of biomass must contribute towards the social well-being of the employees and the local population.	9.3 The use of land must not lead to the violation of official property and use, and customary law without the free and prior consent of the sufficiently informed local population.	See indicator 9.3.1 on land used carefully described and officially laid down, with informed consent of original users at aspect/issue 2.1 Land tenure/access and displacement.
4. FOOD SECURITY			
4.1 Food availability	3. The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines, building materials).	3.1 Insight into the change of land use in the region of the biomass production unit.	See reporting 3.1.1 on changed land use that does not endangering food supply at aspect/issue 1.1 Land-use change (direct and/or indirect)
4.2 Food access Back to table of contents	3. The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines, building materials).	3.2 Insight into the change of prices of food and land in the area of the biomass production unit.	Reporting 3.2.1 (only at the request of the Dutch government) Information about changes in prices of land and food in the region, inclusive of future developments (if information is available).

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ASPECTS/ISSUES	PRINCIPLES	CRITERIA	INDICATORS/REPORTING
4.3 Food utilization Back to table of contents	3. The production of biomass for energy must not endanger the food supply and local biomass applications (energy supply, medicines, building materials).		
	5. In the production and processing of biomass, the soil, and soil quality must be retained or even improved.	5.3 The use of residual products must not be at variance with other local functions for the conservation of the soil.	See reporting 5.3.1 on use of agrarian residue not at the expense of other functions such as housing material at aspect/issue 1.3 Productive capacity of land.