

## APPENDIX 1. OVERVIEW OF FOUR FRAMEWORKS FOR SUSTAINABLE BIOFUELS

	European Commission (EC)	Roundtable Sustainable Biofuels	Cramer Criteria (NL)	RTFO (UK)
<b>Legalities</b>				
Legal framework		Respect country's existing legal framework	No violation of national laws and regulation applicable to biomass production and the production area (land and land-use rights), soil management, water management (water-use) and emissions and air quality (air emissions and waste management)	Compliance with national laws and regulations relevant to biomass production and the area where biomass production takes place, soil degradation and soil contamination and depletion of water sources, air emissions and burning practices
Water rights		Not violate existing formal and customary water rights		
Land rights	Respect of land use rights	Not violate formal and customary land rights		Not adversely affect existing land rights
<b>Social</b>				
Stakeholder participation		Participatory process with all relevant stakeholders		No new plantings are established on local peoples' land without their free, prior and informed consent
Human and labour rights and social well-being	International Labour Organisation Conventions No 29, 87, 98, 100, 105, 111, 138 and 182	Not violate human and labour rights, ensure decent work and well-being of workers	No negative effects on human rights and working conditions of employees	Not adversely affect workers' rights and working relationships and community relations
Food security and other biomass-applications	Availability of foodstuffs at affordable prices, in particular for people living in developing countries, and wider development issues	Biofuel production shall not impair food security	Production of biomass must not endanger food supply and local biomass applications	
<b>Economic</b>				
Micro economy			Contribute towards local prosperity	
<b>Environmental</b>				
GHG emission	GHG emission saving of at least 35%	Contribute significant to GHG emission reduction	Positive GHG balance of the production chain and application of the biomass	Biomass production will not lead to the destruction or damage of high biodiversity areas
Biodiversity	Biofuels and other bioliqids shall not be made from raw material obtained from land with high biodiversity value Carthagena protocol on biosafety and the Convention on International Trade in Endangered Species of Wild Fauna and Flora	Avoid negative impacts on biodiversity, ecosystems and High Conservation Value Areas	Not affect protected or vulnerable biodiversity and will – where possible – have to strengthen biodiversity	
Soil	Soil carbon stocks		Not be at the expense of carbon sinks in vegetation or soil	Preservation of above and below ground carbon stocks
	Soil quality		Soil and soil quality are retained or improved	Biomass production does not lead to soil degradation
Water		Improve soil health and minimize degradation	Ground and surface water must not be depleted and quality must be maintained or improved	Biomass production does not lead to the contamination or depletion of water sources
Air	Soil, water and air protection	Optimize surface and groundwater use, minimize contamination or depletion	Air quality must be maintained or improved	Biomass production does not lead to air pollution
		Minimizing air pollution along the supply chain		

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 Requirements and standards under heading "Environment" in Council Regulation (EC) No 1782/2003 (Part A and point 9 of Annex II) and in accordance with the minimum requirements for good agricultural and environmental condition de-fined pursuant to Article 5(1) of that Regulation

Contribute to economic and social development of local rural peoples and communities

Biofuels shall be produced in the most cost-efficient way. The use of technology must improve production efficiency and social and environmental performance in all stages of the biofuel value chain

## Notes with Appendix 1

The appendix includes four frameworks for sustainable biofuels:

1. The EU policy framework for sustainable biomass production (Directive 2009/28/EC) (Council of the European Union 2008). Under Article 15, the draft Directive proposes seven sustainability criteria for biofuels and other bioliquids. Criteria 1, 6 and 7 refer to the administrative terms, conditions and consequences of demonstrating compliance with Article 15 of the Directive and have therefore not been included in the scheme. Criteria 5 and 5a were so widely formulated, that the authors decided to subdivide the several issues addressed. The final version of Directive 2009/28/EC refers to Council Regulation (EC) 73/2009 of 19 January 2009 that repealed Council Regulation (EC) No. 1782/2003.
2. The Roundtable on Sustainable Biofuels (RSB), a multi-stakeholder platform that developed a voluntary, third-party certification system for biofuel sustainability (Roundtable on Sustainable Biofuels 2008). Version 0 contains 12 principles of which some are subdivided. The 12 principles have been used in Appendix 1.
3. The Dutch Cramer Criteria; a biofuel sustainability framework designed for biomass that is produced, processed and used in the Netherlands (NL) or subsidized by the Netherlands (Project Group Sustainable Production of Biomass 2007). This framework contains six themes operationalized in nine principles. The nine principles have been used in Appendix 1.
4. The UK Renewable Transport Fuels Obligation (RTFO) including sustainability criteria and indicators (Dehue et al. 2008). Seven principles, subdivided in several criterion and indicators. The seven principles have been used in Appendix 1.

As – during the study – the EU and RSB frameworks were in the process of being developed, we studied the policy proposal by the Counsel of the European Union (17086/08 of 11 December 2008), and Version 0 of the RSB.