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REGIONAL WORKSHOP FOR AFRICA ON
WAYS AND MEANS TO PROMOTE THE
SUSTAINABLE PRODUCTION AND USE
OF BIOFUELS
8-10 December 2009, Accra, Ghana

CONSIDERATION OF WAYS AND MEANS TO PROMOTE THE POSITIVE AND MINIMIZE THE NEGATIVE IMPACTS OF THE PRODUCTION AND USE OF BIOFUELS ON BIODIVERSITY

Note by the Executive Secretary

I. INTRODUCTION

1. In paragraph 12 of decision IX/2 on agricultural biodiversity: biofuels and biodiversity, adopted at its ninth meeting, the Conference of the Parties requested the Executive Secretary to convene regional workshops on the sustainable production and use of biofuels aiming at considering ways and means to promote the positive and minimize the negative impacts of the production and use of biofuels on biodiversity, taking into account relevant guidance from the Convention. The reports of these workshops and other information will be considered by the Subsidiary Body on Scientific, Technical and Technological Advice at its fourteenth meeting when preparing recommendations for consideration by the Conference of the Parties at its tenth meeting in 2010.

2. With the financial support from Germany, the Executive Secretary is convening this regional workshop for representatives from Africa. It is the third of a series of regional workshops which has been carried out throughout 2009.

3. The present note has been prepared on the basis of information submitted by Parties and organizations in response to notification 2008-100, through which Parties and other Governments, indigenous and local communities, and relevant stakeholders and organizations were invited to share their experiences on the development and application of tools relevant to the sustainable production and use of biofuels, in relation to promoting the positive and minimizing the negative impacts on biodiversity. It focuses on those elements that could represent ways and means to promote the sustainable production and use of biofuels and is meant to facilitate discussions in the workshop. It builds on documentation prepared previously, in particular documents [UNEP/CBD/SBSTTA/12/9](#) and [UNEP/CBD/COP/9/26](#) on the scope of the discussion, as well as the nature and magnitude of impacts of biofuels on biodiversity.

4. Section II of this document summarizes relevant guidance from the decisions of the Conference of the Parties and the submissions received from Parties and other Governments, indigenous and local

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communities, and relevant stakeholders and organizations. Section III suggests elements from guidance already developed under the Convention and set into context of the sustainable production and use of biofuels. These elements could be analysed in relation to principles, criteria and standards proposed by various sources and summarized in section II.

II. WAYS AND MEANS TO PROMOTE THE POSITIVE AND MINIMIZE THE NEGATIVE IMPACTS OF THE PRODUCTION AND USE OF BIOFUELS ON BIODIVERSITY

5. This section considers elements from the decisions of the Conference of the Parties to the Convention on Biological Diversity which are particularly relevant when considering ways and means to promote the sustainable production and use of biofuels. This is followed by a summary of the submissions received to notification 2008-100.

A. Guidance from the Conference of the Parties

6. At its twelfth meeting, the Subsidiary Body on Scientific, Technical and Technological Advice recognized that there are potential positive and negative impacts of liquid biofuel production on biodiversity and human well-being (recommendation XII/7). The Conference of the Parties, at its ninth meeting, therefore agreed that biofuel production and use should be sustainable in relation to biological diversity and recognized the need to promote the positive and minimize the negative impacts of biofuel production and its use on biodiversity and the livelihoods of indigenous and local communities (decision IX/2, paragraphs 1 and 2).

7. The Conference of the Parties further agreed that the Convention on Biological Diversity has a role in biodiversity-related aspects of the sustainable production and use of biofuels; and that it is important for Parties and other Governments, in consultation with relevant organizations and stakeholders, including indigenous and local communities, to develop and apply sound policy frameworks for the sustainable production and use of biofuels, acknowledging different national conditions, and taking into account their full life cycle as compared to other fuel types, that contribute to the conservation and sustainable use of biodiversity, making use of relevant tools and guidance under the Convention as appropriate”.

8. To advance consideration of ways and means to promote the positive and minimize the negative impacts of the production and use of biofuels on biodiversity, the Conference of the Parties called upon Parties, other Governments and the research community, and invited other relevant organizations, to continue to investigate and monitor the positive and negative impacts of the production and use of biofuels on biodiversity and related socio-economic aspects, including those related to indigenous and local communities, and requested the Executive Secretary to further compile this evidence and to make it available through the clearing-house mechanism of the Convention and other appropriate means. The Conference of the Parties further urged Parties and other Governments to strengthen development cooperation with a view to promote the sustainable production and use of biofuels through, *inter alia* the transfer of environmentally sound technologies and an exchange of information concerning best practices.

9. At the same time, the Conference of the Parties recognized the complex nature of the issue of biofuel production and use for the conservation and sustainable use of biodiversity, resulting from the various feedstocks, production systems, and processing and conversion methods used, as well as technological developments, economic parameters and the consequences for human well-being and the livelihoods of indigenous and local communities.

10. Accordingly, the Conference of the Parties urged Parties and invited other Governments, in consultation with relevant organizations and stakeholders, including indigenous and local communities, to, *inter alia*, develop and apply sound policy frameworks for the sustainable production and use of

biofuels, acknowledging different national conditions, and taking into account their full life cycle as compared to other fuel types, that contribute to the conservation and sustainable use of biodiversity, making use of relevant tools and guidance under the Convention as appropriate, including, *inter alia*:

- (a) The application of the precautionary approach in accordance with the preamble of the Convention on Biological Diversity;
- (b) The Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity (decision VII/12, annex II) and their further elaboration;
- (c) The application of the ecosystem approach (decision V/6);
- (d) The voluntary guidelines on biodiversity-inclusive impact assessment (decision VIII/28);
- (e) The Akwé: Kon Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessments Regarding Development on Sacred Sites and on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities (decision VII/16 F);
- (f) The programme of work on protected areas (decision VII/28, annex), the programme of work on Article 8(j) (decision V/16, annex) and other relevant programmes of work of the Convention;
- (g) The Global Strategy for Plant Conservation (decision VI/9, annex);
- (h) The Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Invasive Species that Threaten Ecosystems, Habitats or Species (decision VI/23¹);
- (i) The application of sustainable forest management and best agricultural practices in relation to biological diversity;
- (j) National biodiversity strategies and action plans;
- (k) Relevant guidance developed under the Cartagena Protocol on Biosafety as appropriate.

B. Application of guidance from the Convention

11. The following section discusses aspects of particular relevance from the guidance referred to in paragraph 3 (c) of decision IX/2, aimed at developing and applying sound policy frameworks for the sustainable production and use of biofuels.

1. The precautionary approach

12. In the preamble to the Convention, the Parties note that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.

13. The precautionary approach should apply where there is a significant and imminent threat to biodiversity and aims to enable in such situations the adoption of policy measures in the face of scientific uncertainty. The approach might apply where: biofuels are produced in the absence of appropriate land and water use planning and/or regulations; where their production jeopardizes achievement of the

¹ One representative entered a formal objection during the process leading to the adoption of decision VI/23 and underlined that he did not believe that the Conference of the Parties could legitimately adopt a motion or a text with a formal objection in place. A few representatives expressed reservations regarding the procedure leading to the adoption of this decision (see UNEP/CBD/COP/6/20, paras. 294-324).

management objectives of protected areas; or where the production and use of biofuels has severe negative impacts on indigenous and local communities.

2. *The Addis Ababa Principles and Guidelines for the Sustainable Use of Biological Diversity and their further elaboration*

14. The Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity consist of fourteen interdependent practical principles, operational guidelines and a few instruments for their implementation which govern the use of components of biodiversity in order to ensure their sustainable use. The principles provide a framework to assist Governments, resource managers, indigenous and local communities, the private sector and other stakeholders in ensuring that their use of the components of biodiversity will not lead to the long-term decline of biological diversity.

15. The Addis Ababa Principles and Guidelines cover areas addressed in decision IX/2 (e.g., the pursuit of sustainability in relation to biodiversity (principle 5); the need for policy frameworks (principles 1, 2 and 10); research and monitoring (principles 4 and 6); international cooperation (principle 8)). In addition, the Addis Ababa Principles and Guidelines touch on issues that are not directly dealt with in decision IX/2 but that would appear relevant for promoting the sustainable production and use of biofuels. These include the need for supportive measures to promote the positive and minimize the negative impacts of the production and use of biofuels on biodiversity (principle 3); the need to address questions at the appropriate scale and level (principles 7 and 9; see also Ecosystem Approach); the desire to minimize negative environmental impacts (principle 11; see also voluntary guidelines on biodiversity-inclusive impact assessment); the need for equitable distribution of benefits from resource use with indigenous and local communities (principle 12); the need to internalize costs of management and conservation (principle 13; see also programme of work on protected areas); and the need for effective communication and awareness activities (principle 14).

3. *The ecosystem approach*

16. The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. It consists of twelve principles which are complementary and interlinked and for which operational guidance has been developed.

17. In the context of the sustainable production and use of biofuels, the principles of the ecosystem approach are particularly pertinent with regard to decisions on how to use and manage an ecosystem, including for the production of feedstocks and the subsequent biofuel production, distribution and use and for consideration of the implications beyond the immediate ecosystem.

4. *The voluntary guidelines on biodiversity-inclusive impact assessment*

18. The voluntary guidelines on biodiversity-inclusive impact assessment include a section on environmental impact assessment (EIA) and a section on strategic environmental assessment (SEA). The guidelines on biodiversity-inclusive EIA provide information on addressing biodiversity-related issues during the steps carried out during an environmental assessment and would, in the context of biofuel production, apply particularly to localized decisions, such as the planning and establishment of infrastructure for the processing and conversion of feedstock into biofuels and its subsequent distribution.

19. The guidance on biodiversity-inclusive SEA offers instruments to assess, in collaboration with the competent agencies and relevant processes, the consequences for biodiversity of more wide-scale considerations, such as: those concerning macro-economic questions; efforts towards diversification and domestication of energy supplies; creation of employment opportunities; implications of land and water-use change; types of feedstocks and production systems within agro-ecological zones; displacement

effects and their consequences on the livelihoods; and human well-being of indigenous and local communities.

20. A number of principles underpin the guidelines on biodiversity-inclusive impact assessment, including the principles of “no net loss of biodiversity” which implies that the loss of irreplaceable biodiversity must be avoided and that the loss of other biodiversity must be compensated for, both in terms of quality and quantity.

5. *The Akwé: Kon Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessments Regarding Development on Sacred Sites and on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities*

21. The Akwé: Kon Voluntary Guidelines provide advice on the incorporation of cultural, environmental, including biodiversity-related, and social considerations of indigenous and local communities into new or existing impact-assessment procedures and should be applied in conjunction with the guidelines for incorporating biodiversity-related issues into environmental impact assessment legislation and/or process and in strategic environmental assessment. The Akwé: Kon Voluntary Guidelines are particularly relevant in situation where the establishment of biofuel crop plantations may occur on lands occupied or used by indigenous and local communities.

22. The Akwé: Kon Guidelines aim, *inter alia*, to support the full and effective participation and involvement of indigenous and local communities in screening, scoping and development planning exercises, thereby taking into account the cultural, environmental and social concerns and interests of indigenous and local communities; gender considerations; traditional knowledge, innovations and practices and the need for their protection and safeguarding; the use of appropriate technologies. They promote the identification and implementation of appropriate measures to prevent or mitigate any negative impacts of proposed developments while considering the interrelationships among cultural, environmental and social elements.

23. The Akwé: Kon guidelines provide detailed advice on procedural considerations during the conduct of the assessment and on holistic approaches in which cultural, environmental, social impact assessments are conducted as a single process. A number of principles are contained in the Guidelines, including the need for the prior informed consent of the affected indigenous and local communities and the need for transparency throughout the process.

6. *The programme of work on protected areas, the programme of work on Article 8(j) and other relevant programmes of work of the Convention*

24. All programmes of work have relevance, to varying degrees, to issues related to the production and use of biofuels. An increase in biofuel production may, for example: (i) compete with protected areas, forests and particularly agriculture for land; (ii) increase demand for freshwater use and elevate other impacts on freshwaters (pollution, eutrophication), with resulting impacts in both inland and coastal areas; (iii) increasing these and other stressors in mountains, dry and sub-humid lands and islands; (iv) involve considerations on access and benefit-sharing, invasive alien species and very likely the development of and trade in living modified organisms. Economics and trade issues are integral and in all these areas, and others, there are clearly identifiable Article 8(j) considerations. Accordingly relevant guidance developed under all the programmes of work and cross-cutting issues should be taken into account when developing strategies for biofuel production and use.

25. With regard to the programmes of work specifically referred to in decision IX/2, an increase in biofuel production may compete with the establishment and strengthening of representative and effectively managed national and regional systems of protected areas and their integration into broader land- and seascapes and sectors (as called for in the programme of work on protected areas) and it might

also be inconsistent with the spiritual and cultural values and customary practices of indigenous and local communities, and their rights to have control over their traditional knowledge, innovations and practices (as referred to in the programme of work on Article 8(j)).

26. At the same time, the sustainable production and use of biofuels offers opportunities for positive impacts on biodiversity. For example, biofuels may provide incentives to put degraded lands into production and optimize production systems and thereby reduce the pressure on natural habitats. It could also contribute to improved livelihoods of rural communities.

7. *The Global Strategy for Plant Conservation*

27. The Global Strategy for Plant Conservation (GSPC) is based on 16 outcome-oriented global targets set for 2010, and provides a framework to promote coherent implementation of existing initiatives aimed at plant conservation; to identify gaps where new initiatives are required; and to promote mobilization of the necessary resources. It provides a flexible framework for setting national and/or regional targets for plant conservation.

28. Guidance for sustainable biofuel production could include the avoidance of significant negative implications for the achievement of the targets related to the conservation and sustainable use of plants (GSPC targets 4-13) and the promotion of biofuel production systems which contribute to the achievement of these targets.

8. *The guiding principles on alien invasive species*

29. Currently, biofuels are produced from a number of feedstocks including sugarcane, corn, rapeseed, jatropha, soy, palm, castor beans, etc. Some of these are recognized to be potentially invasive (e.g. *Jatropha*). For second generation biofuels the focus is shifting towards species and cultivars with high yields of woody or fibrous biomass suitable for extracting useful feedstocks. This potentially comprises a much greater range of species and therefore potentially expands the use of invasive alien species.

30. The Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species² provide guidance on assessing the risks associated with the use of non-native species and emphasize relevant tools and principles including, *inter alia*, the application of the precautionary approach, the ecosystem approach and the need for research and monitoring.

9. *The application of sustainable forest management and best agricultural practices in relation to biological diversity*

31. The application of sustainable forest management approaches and best agricultural practices, as well as integrated approaches to land use and resource policies, will help to balance food, feed and biofuel production with the conservation of forest and agricultural biological diversity. The guidance provided by regional schemes on criteria and indicators for sustainable forest management and the application of recognized best agricultural practices is helpful in deciding where to establish and how to manage biofuel production.

² One representative entered a formal objection during the process leading to the adoption of decision VI/23 and underlined that he did not believe that the Conference of the Parties could legitimately adopt a motion or a text with a formal objection in place. A few representatives expressed reservations regarding the procedure leading to the adoption of this decision (see UNEP/CBD/COP/6/20, paras. 294-324).

10. *National biodiversity strategies and action plans*

32. National biodiversity strategies and action plans (NBSAPs) provide a useful framework for implementation not only of conservation measures but of a broad range of actions corresponding to the three objectives of the Convention. In many countries NBSAPs have promoted the development of laws and programmes, and have catalysed action on a range of issues, including in some cases, biofuels.

33. National plans for the production and use of biofuels should be guided by the framework set out in NBSAPs, where fully developed, as well as other relevant development strategies and plans as appropriate. In so doing it is worthwhile to make use of tools to identify conflicts and trade-offs in the planning stage, and to consider consultations with stakeholders and indigenous and local communities as a way to seek broad support for the approach to be adopted.

11. *Relevant guidance developed under the Cartagena Protocol on Biosafety*

34. The Biosafety Protocol requires Parties to make decisions on the import of living modified organisms (LMOs) for intentional introduction into the environment in accordance with scientifically sound risk assessments. In the context of the sustainable production and use of biofuels, the Protocol applies to those LMOs that are imported for the primary purpose of biofuel production. Annex III of the Protocol sets out general principles, methodological steps, and points to consider in the conduct of risk assessment. An Ad Hoc Technical Expert Group on Risk Assessment further considered the nature and scope of existing approaches to risk assessment, evaluated such approaches and identified gaps and capacity-building needs. Currently, a process for collecting and sharing available information and guidance documents is underway to facilitate consideration of the need for further guidance on specific aspects of risk assessment and risk management.

C. *Ways and means for promoting the sustainable production and use of biofuels reported by Parties and other Governments, indigenous and local communities, and relevant stakeholders and organizations*

35. Through notification 2008-100, Parties and other Governments, indigenous and local communities, and relevant stakeholders and organizations were invited to share their experiences on the development and application of tools relevant to the sustainable production and use of biofuels, in relation to promoting the positive and minimizing the negative impacts on biodiversity, taking into account their full life-cycle as compared to other fuel types and to continue to investigate and monitor the positive and negative impacts of the production and use of biofuels on biodiversity and related socio-economic aspects. A total of 49 submissions were received by 31 July 2009. The full submissions are accessible from <http://www.cbd.int/agro/biofuelresources>. The following paragraphs summarize some of the key elements that are most relevant to considerations of ways and means to promote the sustainable production and use of biofuels but do not reflect the multitude of experiences submitted.

1. *Experiences reported by Parties and other Governments*

36. The Executive Secretary received submissions from Australia, Belgium, Brazil, Colombia, the Czech Republic, the European Community, Finland, France, Germany, the Netherlands, Portugal, the United Kingdom and the United States of America.

37. Australia maintains that countries should have the flexibility to respond to sustainability issues in accordance with their national circumstances. Australia currently has no policy, rules or regulations relating specifically to biofuel production with regard to protection of biodiversity or environmental sustainability. As with any land use in Australia, growing feedstock for biofuels, or using residual resources from agricultural crops or wood production, must meet legislation and regulations governing land use, water use and environmental impacts more broadly.

38. Brazil provided information on the development of its biofuels, focusing on developments of the domestic market, the different biofuels and feedstocks required for their production, as well as social, environmental, economic and regulatory aspects guiding private sector decisions on biofuel-related investments. Brazil also referred to voluntary best practices established by local governments. This includes the Government of São Paulo as the largest producer in the country, which involves: the progressive elimination of the burning in sugarcane fields by 2017; the preservation of riparian forests; the protection of water springs located in areas where crops are cultivated and the recovery of vegetation around them; combating erosion; encouraging re-use of water from the industrial phase of biofuel production; and optimizing recycling and promoting the reuse of residues.

39. Colombia provided the report of a Strategic Environmental Assessment of national biofuel production. This includes for the four major crops used (oil palm, sugarcane, cassava and maize) recommendations on how to make an expanded biofuel production sustainable and a comprehensive analysis of planning needs and action required on the part of different actors to ensure nutritional security, minimize negative impacts on biodiversity, and promote beneficial effects on local populations..

40. The European Commission reported on the two successive EU directives which promote biofuel use as a way to reduce the dependence of the EU on imported oil and to reduce greenhouse-gas emissions from the transport sector since 2003. The EU Directive on Renewable Energy and Fuel Quality, which will enter into force in 2011, contains a sustainability scheme for biofuels, which will oblige all EU biofuel producers or importers to comply with clear environmental criteria, and to report on a number of additional impacts, including possible economic and social impacts within the EU and in other countries. Article 17 of the Directive sets out the following biodiversity criteria:

“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 recognized by international agreements or included in lists drawn up by intergovernmental organizations 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.”

41. Belgium reported on the way in which the two EU Directives are implemented and the relevant tax changes that have been introduced to provide incentives for ensuring that manufacturers offer the fuel qualities required. Belgium also reported on the focus and results of a number of research projects associated with the growing biofuel demand.

42. The Czech Republic reported on the content and implications of the decree of the Ministry of the Environment No. 482/2005 Coll.: “On the determination of biomass types, methods of use and parameters in supporting the generation of electric energy from biomass.” The decree contains in annex II a list of alien invasive species of higher plants that could harm ecosystems and cause economic problems in the Czech Republic. Biofuels generated on the basis of these species are excluded from economic subsidies. Current research focuses on the biodiversity impacts of biofuel production and the development of second generation biofuels.

43. Finland reported that biofuels make up 25 per cent of the country’s primary energy supply, and are produced within the country. The proportion of imported second-generation biofuel for transport is not reported. The long-term climate and energy strategy of Finland aims to increase the share of renewable energy to 38 per cent by 2020, in accordance with the obligation for Finland set by the European Commission. In Finland, national sustainability criteria have not been defined. On the other hand, various kinds of indicators have been developed to concretize the social dimension of sustainable development. Finnish development policy (2007) is based on a consensus that all development must be ecologically sustainable. A report of the Finnish Environment Institute (SYKE) applies an interdisciplinary research framework to bioenergy-biodiversity linkages.

44. In France the same criteria are applied to agricultural production for food and for biofuel. Measures have been taken to evaluate the conformity of biofuel production with the EU sustainability criteria. The submission of France focuses on biofuels produced nationally and makes reference to other measures aimed at protecting biodiversity, national parks and threatened species within the Natura 2000 network.

45. Germany’s draft Biofuel Sustainability Ordinance (2007) formulates binding sustainability requirements for biofuels to be credited against the biofuel quota and these must make allowance for the conservation of biodiversity. Germany provided comprehensive information on completed and ongoing research activities related to the sustainable production and use of biofuels. The German Advisory Council on Global Change (WBGU) argues that use should be made of the global sustainable potential of bioenergy, provided that risks to sustainability, including food security, nature conservation goals and climate protection objectives, can be excluded. A study commissioned by the Federal Ministry of the Environment, Nature Conservation and Nuclear Safety recommended that biofuel production should aim to contribute to the following objectives/principles:

- (a) Significant contribution to greenhouse-gas reduction;
- (b) Minimization of negative consequences of indirect land use changes and compensation of competing land use;
- (c) Exclusion of the loss of biospheres with high natural value (HNV);
- (d) Exclusion of the loss of biodiversity;

- (e) Minimization of negative effects on soil, water and air;
- (f) No disadvantages suffered by the local population, and participation in the opportunities of biomass cultivation ensured; and
- (g) Observation of internationally recognized standards for working conditions.

46. The Netherlands developed a Biomass Action Plan for their international engagement. This action plan fully takes into consideration the respective EU policy development and the Netherlands ambition to invest in the sustainability of biofuels. The action plan details the cooperation with developing countries in drafting policies on sustainable biofuels and the development of implementation capacity. At the request of the Government, the project group “Sustainable production of biomass” prepared a “Testing Framework for Sustainable Biomass” including a set of sustainability criteria (the “Cramer Criteria”) as follows:

- (a) Greenhouse gas emissions: (i) Calculated over the whole chain, the use of biomass must produce fewer net greenhouse-gas emissions on average than fossil fuel; (ii) the development of new acreage for the planting of biomass for energy must not lead to the long-term release of large quantities of carbon that had been stored there (in soil or vegetation);
- (b) Competition with food or other local applications: The production of biomass for energy must not endanger the food supply and other local applications (such as for medicines or building materials);
- (c) Biodiversity: Biomass production must not affect protected or vulnerable biodiversity and will, where possible, have to strengthen biodiversity;
- (d) Environment: In the production and processing of biomass, the quality of soil, surface and ground water and air must be retained or even increased;
- (e) Prosperity: The production of biomass must contribute towards local prosperity;
- (f) Social well-being: The production of biomass must contribute towards the social well-being of the employees and the local population.

47. In Portugal, EU Directive 2003/30/EC on the promotion and use of biofuels has been transposed to national legislation. Portugal has also developed a set of instruments that determine, from the environmental point of view, the conditions of production of biofuels and biomass and ensure that it is done within the framework of sustainable development and respect for biodiversity conservation. For example, the operational level guidelines of the process of Ministerial Conference on the Protection of Forests in Europe (MCPFE) and has been adapted to the national level.

48. The report of the United Kingdom emphasizes current research. The Global Impacts Programme is centered on developing a database and website to provide access to a range of information that is relevant to global biodiversity issues, including a review of potential impacts of use of biomass for energy on biodiversity. At the request of the Government, the United Kingdom Renewable Fuels Agency carried out a study of the indirect effects of biofuels production. The “Gallagher Review” concludes that, while a genuinely sustainable industry is possible, the introduction of biofuels should be significantly slowed until adequate controls to address displacement effects are implemented and are demonstrated to be effective, thereby reducing the impact of biofuels on food commodity prices. The report called for the following principles:

- (a) Feedstock production for biofuels must avoid agricultural land that would otherwise be used for food production;
- (b) Biofuel production must target idle and marginal land and use of wastes and residues;
- (c) Specific incentives must stimulate advanced technology.

49. A report prepared for the United States Agency for International Development (USAID) analyses the sustainability options for biofuel production in Asia by summarizing the benefits and risks of biofuels development in Asia, and examines the distribution and use of biofuels through the lenses of: global climate change; biodiversity conservation; energy alternatives; food security; economic development; and local livelihoods. It maintains that countries and stakeholders should: carefully evaluate the sustainability prospects of different biofuels in Asia; assess international best practices that can help realize the full potential of biofuels; and design and implement appropriate policies to enable sustainable biofuel production and use.

2. *Efforts undertaken by other bodies*

50. By 31 July 2009, 32 submissions in response to notification 2008-100 had been received from organizations and individual researchers.

51. A policy brief of UNESCO, SCOPE and UNEP argues that biofuel policies will be most successful if integrated in comprehensive plans for climate change, biodiversity protection and food and energy security and that these plans should address energy conservation and efficiency as well as new sources of energy.

52. The Roundtable on Sustainable Biofuels (RSB) prepared, on the basis of a several rounds of consultations, a set of highly aspirational principles, criteria and indicators and recognizes that very few biofuel supply chains currently fulfil these principles. The RSB version zero results include the following principles:

- (a) 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;
- (b) Biofuel projects shall be designed and operated under appropriate, comprehensive, transparent, consultative, and participatory processes that involve all relevant stakeholders;
- (c) Biofuel shall contribute to climate change mitigation by significantly reducing GHG emissions as compared to fossil fuels;
- (d) Biofuel production shall not violate human rights or labor rights, and shall ensure decent work and the well-being of workers;
- (e) Biofuel production shall contribute to the social and economic development of local, rural and indigenous peoples and communities;
- (f) Biofuel production shall not impair food security;
- (g) Biofuel production shall avoid negative impacts on biodiversity, ecosystems, and areas of High Conservation Value;
- (h) Biofuel production shall promote practices that seek to improve soil health and minimize degradation;

(i) Biofuel production shall optimize surface and groundwater resource use, including minimizing contamination or depletion of these resources, and shall not violate existing formal and customary water rights. Air pollution from biofuel production and processing shall be minimized along the supply chain;

(j) Biofuel shall be produced in the most cost-effective way. The use of technology must improve production efficiency and social and environmental performance in all stages of the biofuel value chain;

(k) Biofuel production shall not violate land rights.

53. The International Risk Governance Council (IRGC) concluded that current policies, and economic incentives that accompany them, do not enable a balanced resolution of the trade-offs that need to be made between (i) Biomass for fuel *versus* food; (ii) Energy security and independence *versus* climate change mitigation; (iii) Different uses of land, with direct and indirect impact on GHG emissions, soil degradation and water resources; and (iv) Local, regional and global needs. In view of the complexity of the issue, IRGC proposes policy options, with clear-cut targets, summarized as follows:

(a) Industrialized countries and major exporters of bioenergy among developing countries should encourage the development of bioenergy only where it can be demonstrated that doing so will reduce GHG emissions throughout the entire life-cycle;

(b) Other developing countries and countries with economies in transition should develop bioenergy that primarily benefits local livelihoods through the provision of affordable, safe and more efficient heat, electricity and fuel for transportation, and to support wider sustainable development goals that do not, in doing so, jeopardise food security.

54. A study commissioned by WWF Germany and led by the Öko-Institut proposes the following biomass sustainability standards:

- (a) Clarification of land ownership;
- (b) Avoiding negative impacts from bioenergy-driven changes in land use;
- (c) Priorities for food supply and food security;
- (d) No additional negative biodiversity impacts;
- (e) Minimization of greenhouse gas emissions;
- (f) Minimization of soil erosion and degradation;
- (g) Minimization of water use and avoidance of water contamination;
- (h) Improvement of worker conditions and worker rights;
- (i) Ensuring a share of proceeds; and
- (j) Avoiding human health impacts.

55. IUCN provides a compilation of example principles, frameworks and tools already in use in the conservation community which may be applied to bioenergy production to identify and reduce environmental as well as socio-economic risks and promote opportunities. The aim is to provide the range of stakeholders who are engaged in the bioenergy agenda (governments, businesses, communities, land

owners, and individuals) the tools to achieve more sustainable outcomes in relation to ecosystems and livelihoods.

56. Some submissions provide an overview of the range of issues related to the sustainable production and use of biofuels (e.g. Red de Desarrollo Sostenible y Medio Ambiente). Others emphasize specific points such as the need to study the carbon balance of biofuel production (e.g. Wetlands International; International Mire Conservation Group; Greenpeace), its implications on biota (European Forest Institute; European Centre for Nature Conservation), land use and conservation activities (UNEP-WCMC; Econexus; Plieninger) and water use (e.g. International Water Management Institute), trade-offs between food and energy production (International Federation of Organic Agriculture Movements; CGIAR Livestock Program; CIMMYT, ICRISAT) including associated incentive measures (Center for Advanced Studies on Applied Economics of the University of São Paulo; Econexus), the use of living modified organisms (Gressel) and invasive alien species as feedstock (Global Invasive Species Programme) and implications for indigenous and local communities (Econexus) and gender equality (UNDP/GEF-SGP).

III. CONCLUSIONS

57. The following paragraphs present considerations for the sustainable production and use of biofuels derived from the guidance already developed under the Convention and set the context for the sustainable production and use of biofuels. It could be useful to analyse this guidance in relation to proposed principles, criteria and standards presented in section II of this document and to examine opportunities for their application as well as obstacles that may need to be overcome. Additional tools for promoting the sustainable production and use of biofuels are expected to emerge from country experiences presented during the regional workshops called for through decision IX/2. Consideration of the elements of guidance could follow the structure adopted by the Global Bioenergy Partnership, which is based on the three pillars of sustainable development.

A. *General guidance for the production and use of biofuels*

58. The production and use of biofuels should be sustainable in relation to biodiversity (decision IX/2 para. 1).

59. The positive impacts of biofuel production and its use on biodiversity and the livelihoods of indigenous and local communities should be promoted and the negative impacts should be minimized (decision IX/2 para. 2).

60. The positive and negative impacts of the production and use of biofuels on biodiversity and related socio-economic aspects, including those related to indigenous and local communities should be investigated and monitored (Decision IX/2 para. 5).

B. *Guidance related to feedstock production*

1. *Potential environmental impacts: land-use-change and climate change impacts on biodiversity*

61. The ecosystem approach is the primary framework of action to be taken under the Convention (decisions V/6 and VII/11).

62. Where the production of biofuels impacts on protected areas it should be ensured that the management objectives of protected areas are met (decision IX/2 para. 9).

63. The decisions to use biofuels as a substitute for fossil fuels should be based on an assessment of the full life cycle as compared to other fuel types (decision IX/2 para. 9).

2. *Other potential environmental impacts*

64. Decisions concerning intentional introductions of potentially invasive species for the production of biofuels should be based on the precautionary approach. (decision VI/23³ guiding principle 1)

3. *Potential socio-economic impacts*

65. Where decisions on the production and use of biofuels affect indigenous and local communities, they should:

(a) Be made with the full and effective participation and involvement of indigenous and local communities in screening, scoping and development planning exercises (paragraph 3 (a) of the Akwé: Kon Voluntary Guidelines);

(b) Properly take into account the cultural, environmental and social concerns and interests of indigenous and local communities, especially of women who often bear a disproportionately large share of negative development impacts (Akwé: Kon 3(b));

(c) Take into account the traditional knowledge, innovations and practices of indigenous and local communities as part of environmental, social and cultural impact-assessment processes, with due regard to the ownership of and the need for the protection and safeguarding of traditional knowledge, innovations and practices. (Akwé: Kon 3(c));

(d) Identify and implement appropriate measures to prevent or mitigate any negative impacts of proposed developments (Akwé: Kon 3(e)); and

(e) Take into consideration the interrelationships among cultural, environmental and social elements (Akwé: Kon 3(f)).

C. *Guidance related to the end-use of biofuels*

66. The decisions to use biofuels as a substitute for fossil fuels should be based on all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices (ecosystem approach principle 11).

67. International, national policies, laws and regulations that distort markets which contribute to habitat degradation or otherwise generate perverse incentives that undermine conservation and sustainable use of biodiversity, should be identified and removed or mitigated. (Addis Ababa principle 3; see also principle 4 of the ecosystem approach).

68. Incentive measures should: contribute to the conservation of biological diversity and the sustainable use of its components and not negatively affect biodiversity and livelihoods of other countries; contribute to sustainable development and the eradication of poverty; take into account national and local conditions and circumstances; and be consistent and in harmony with the Convention and other relevant international obligations (decision IX/6, preambular paragraph 4).

69. The use of biofuels should seek to minimize waste and adverse environmental impact and optimize benefits from its use (Addis Ababa principle 11).

³ One representative entered a formal objection during the process leading to the adoption of decision VI/23 and underlined that he did not believe that the Conference of the Parties could legitimately adopt a motion or a text with a formal objection in place. A few representatives expressed reservations regarding the procedure leading to the adoption of this decision (see UNEP/CBD/COP/6/20, paras. 294-324).

70. The environmental performance of the production of biofuels should be improved through voluntary initiatives, including through environmental management systems, codes of conduct, certification and public reporting on environmental and social issues (decision IX/2, para. 10)
