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SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE
Twenty-sixth session
Bonn, 7–18 May 2007

Item 5 of the provisional agenda
Reducing emissions from deforestation in developing countries

Views on the range of topics and other relevant information relating to reducing emissions from deforestation in developing countries

Submissions from intergovernmental organizations

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its twenty-fifth session, invited accredited observers to submit to the secretariat, by 23 February 2007, their views on ongoing and potential policy approaches and positive incentives, and technical and methodological requirements related to their implementation; assessment of results and their reliability; and improving the understanding of reducing emissions from deforestation in developing countries, in order to facilitate discussions at the second workshop,[*] to be held in Cairns, Australia, from 7 to 9 March 2007. The SBSTA requested the secretariat to make available this information for discussion at the second workshop and to compile this information for consideration by the SBSTA at its twenty-sixth session (FCCC/SBSTA/2006/11, paras. 88–89).

2. The secretariat has received six submissions from accredited intergovernmental organizations. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced[**] in the language in which they were received and without formal editing.

3. The secretariat has also received submissions from accredited non-governmental organizations. As requested by the SBSTA, the secretariat will post these submissions on the UNFCCC website <http://unfccc.int/parties_and_observers/ngo/items/3689.php>.

[*] The first workshop on this matter was held in Rome, Italy, from 30 August to 1 September 2006.

[**] These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

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* The co-sponsors of the Global Terrestrial Observing System are: Food and Agricultural Organization of the United Nations, United Nations Environment Programme, United Nations Educational, Scientific and Cultural Organization, World Meteorological Organization and International Council for Science.

PAPER NO. 1: CONVENTION ON BIOLOGICAL DIVERSITY

Submission from the Secretariat of the Convention on Biological Diversity on the Issue of Reducing Emissions from Deforestation in Developing Countries

Note by the Executive Secretary of the Convention on Biological Diversity

The present note was prepared by the Executive Secretary of the Convention on Biological Diversity (CBD) in response to the Untied Nations Framework Convention on Climate Change (UNFCCC) invitation for submissions on reducing emissions from deforestation in developing countries (FCCC/SBSTA/2006/L.25 paragraph 5).

This note contains four sections, section I on policy approaches and incentives, section II on assessments of results, section III on improving the understanding of reducing emissions from deforestation in developing countries, and section IV on next steps.

Section I: Ongoing and potential policy approaches and positive incentives, and technical and methodological requirements related to their implementation

Relevant text of the Convention

Article 11 of the CBD, on incentive measures, is the main entry point for pertinent activities under the Convention. The Article states:

"Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity."

Incentive measures

Incentive measures within the framework of the CBD are typically employed to 'internalize' the public-good value of biodiversity into the decision-making of relevant actors. When full internalization is not possible due to economic and social circumstances incentive measures seek to at least bridge the profitability gap between unsustainable activities and sustainable alternatives, thus inducing these actors to conserve biological diversity or to use its components in a sustainable manner. As such, incentives do not rely on an outright prescription or prohibition of specific activities.

Incentive measures within the framework of the CBD usually take the form of a new policy, law, or economic or social programme. However, a single incentive measure functions within the broader set of incentives governing human behavior, and its effectiveness depends upon support from the existing social, economic and policy environment. In the work of the CBD, the following types of incentive measures are distinguished:

- A *positive incentive measure* is an economic, legal or institutional measure designed to encourage activities that are beneficial for biodiversity.
- *Negative incentive measures* or disincentives are mechanisms designed to discourage harmful or unsustainable activities.

- *Indirect incentive measures* seek to change the relative costs and benefits of specific activities in an indirect way, for instance, by creating or promoting markets for biological resources and biodiversity-based products, thus encouraging the conservation and sustainable use of biodiversity.

In addition, attention is also given to taking appropriate action against measures that threaten biological diversity. These so-called *perverse incentives* induce unsustainable behavior that threatens biodiversity, often as unanticipated side effects of policies designed to attain other objectives.

Finally, undertaking *valuation* is part and parcel of the work on incentive measures under the Convention. First, eliciting the hidden (non-market) value of biodiversity is an important precondition to the internalization of this value in economic decision-making, including positive incentives. Second, by raising awareness among societal actors of the hidden values of biodiversity, valuation can also act as a positive incentive measure in its own right.

Forest biodiversity programme of work

One objective of the expanded programme of work on forest biodiversity is to mitigate the economic failures and distortions that lead to decisions that result in loss of forest biological diversity (decision VI/22 Annex, programme element 2, goal 2). It foresees the following activities in order to attain this objective:

a. Develop mechanisms to ensure that monetary and non-monetary costs and benefits of forest biodiversity management are equitably shared between stakeholders at all levels.

b. Develop, test and disseminate methods for valuing forest biological diversity and other forest ecosystem goods and services and for incorporating these values into forest planning and management, including through stakeholder analysis and mechanisms for transferring costs and benefits.

c. Incorporate forest biological diversity and other forest values into national accounting systems and seek to estimate such figures for subsistence economies.

d. Elaborate and implement economic incentives promoting forest biological diversity conservation and sustainable use.

e. Eliminate or reform perverse incentives, in particular subsidies that result in favouring unsustainable use or loss of forest biological diversity.

f. Provide market and other incentives for the use of sustainable practices, develop alternative sustainable income generation programmes and facilitate self-sufficiency programmes of indigenous and local communities.

g. Develop and disseminate analyses of the compatibility of current and predicted production and consumption patterns with respect to the limits of forest ecosystem functions and production.

h. Seek to promote national laws and policies and international trade regulations are compatible with conservation and sustainable use of forest biological diversity.

i. Increase knowledge on monetary and non-monetary cost-benefit accounting for forest biodiversity evaluation.

Similar provisions are included in other relevant programmes of work, such as the programme of work on the biodiversity of dry and sub-humid lands (decision V/23 Annex I, activities 7(g) and 9), the programme of work on mountains biodiversity (decision VII/27 Annex, activities 2.1.1 and 2.1.2), and the programme of work on islands biodiversity (decision VIII/1 Annex, target 4.1; Appendix, activities 2.1.1.6.; 4.2.2.4.; 4.3.2.3.; 7.2.1.7.).

Ecosystem approach

To provide further guidance on implementation, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) to the CBD developed voluntary principles and guidelines on the ecosystem approach. The ecosystem approach principles recognize that the alignment of incentives allows those who control the resource to benefit and ensures that those who generate environmental costs will pay.

Consequently, principle 4 of the ecosystem approach underlines that, recognizing potential gains from management, there is usually a need to understand and manage ecosystems in an economic context, and that any such ecosystem-management programme should:

a. Reduce those market distortions that adversely affect biological diversity;
b. Align incentives to promote biodiversity conservation and sustainable use;
c. Internalize costs and benefits in the given ecosystem to the extent feasible.

The implementation guidelines of principle 4 provide general guidance on what needs to be undertaken. They *inter alia* foresee to:

- apply appropriate practical economic valuation methodologies for ecosystem goods and services; and for the environmental impacts;
- aim to reduce those market distortions that adversely affect biological diversity;
- align economic and social incentives to promote biodiversity conservation and sustainable use;
- internalize costs and benefits in the given ecosystem to the extent feasible;
- evaluate the direct and indirect economic benefits associated with good ecosystem management including biodiversity conservation and environmental quality;
- enhance benefits from using biological diversity;
- ensure equitable sharing of costs and benefits;
- incorporate social and economic values of ecosystem goods and services into National Accounts, policy, planning, education and resource management decisions.

Sustainable use

The Conference of the Parties to the CBD emphasizes, through its actions on incentives, synergies with activities on sustainable use (decision V/15, paragraph 4). As a consequence, the promotion of biodiversity-based products derived from sustainable use, and the development of markets for, and trade in, these products, has been recognized as a positive incentive measure for the conservation and sustainable use of biodiversity, and has found entry into the thematic programmes of work of the Convention. [1]/

[1]/ The UNCTAD BioTrade Initiative is a close cooperating partner of the Convention in implementing related activities. At its eighth meting, in March 2006, the Conference of the Parties invited UNCTAD to continue supporting the programme of work on inc meaures, inter alie through biotrade (decision VIII/26, paragraph 9).

Technical and methodological requirements: policy guidance developed under the CBD

Incentive measures

At its sixth meeting, in 2002, the Conference of the Parties endorsed proposals for the design and implementation of incentive measures, as far as they are consistent with Parties' national policies and legislation as well as their international obligations (decision VI/15 Annex I). The proposals note that in general terms, incentive measures should take into account:

a. Local and regional knowledge, geography, circumstances and institutions;
b. The mix of policy measures and structures in place including sectoral considerations;
c. The need to match the scale of the measure to the scale of the problem;
d. The measures' relationship to existing international agreements.

The following elements are also identified for consideration during the design and implementation of incentive measures: (i) identification of the problem: purpose and issues identification; (ii) provision of capacity building support; and (iii) management, monitoring and enforcement. Guidelines are also provided for selecting appropriate and complementary measures which give an overview of different instruments and their advantages, disadvantages, and applicability, while noting that the list is not comprehensive since non-economic incentives as well as international incentives should also be considered.

a. *Problem identification*: goals of incentive measures; underlying causes/threats to biodiversity; identification of relevant experts and stakeholders; establish processes for participation; set clear targets and indicators.
b. *Design*: ecosystem approach; sectoral approach; sectoral mainstreaming; carrying capacity; precautionary approach; the efficiency objective; internalization; undertaking valuation; underlying cause of biodiversity loss; comprehensibility; equity: distributional impacts; capturing value for indigenous and local communities; raising awareness of biodiversity vlaues and services; mix of measures; monitoring and evaluation; political and cultural acceptability; funding.
c. *Capacity building:* physical and human capacity; institutional mechanisms; transparency and dissemination of public information; stakeholder involvement; funding.
d. *Management, monitoring and enforcement:* administrative and legal capacity; policy-impact indicators; information systems; funding.

The guidelines for selecting appropriate and complementary measures *inter alia* note that:

a. Well defined land and property rights are an important factor in the design and implementation of incentive measures in the conservation of biological diversity and sustainable use;
b. Positive incentives can influence decision-making by recognizing and rewarding activities that are carried out for conservation and sustainable use purposes;
c. The removal of perverse incentives eases pressure on the environment.
d. The identification of both internal and external perverse incentives and other threats to biodiversity conservation and to the promotion of sustainable use, is essential to the selection and design of incentive measures.
e. The removal of perverse incentives may improve economic efficiency and reduce fiscal expenditures;

f. Disincentives continue to be an important tool for ensuring the conservation and sustainable use of biodiversity and can be used in combination with positive incentives.

At its eighth meeting, the Conference of the Parties further specified guidance on positive incentive measures by

> *Recognizing that positive incentive measures can influence decision-making by recognizing and rewarding activities that are carried out for the conservation and sustainable use of biological diversity, and are important in achieving the objectives of the Convention and the 2010 biodiversity target, when such positive incentive measures are targeted, flexible, transparent, appropriately monitored and adapted to local conditions* (decision VIII/26 preamble).

Forest biodiversity programme of work

The SBSTTA of the CBD has identified options for the application of tools for the valuation of forest biodiversity and associated functions. At its eighth meeting, in March 2006, the Conference of the Parties invited Parties and other Governments to take these options into consideration as possible inputs for analysis when considering the application of methods for assessing the changes of the value of biodiversity resources and associated ecosystem services.

The options address the following elements: (i) valuation tools; (ii) institutional considerations; (iii) capacity building and training; and (iv) further research. Based on the Millennium Ecosystem Assessment, an overview of main valuation techniques is also provided, which includes a brief description of each method, its application, data requirements and potential challenges/limitations.

a. *Valuation tools:* efficiency; choice of valuation tools; stated-preference techniques; cost-based approaches; benefits transfer.
b. *Institutional considerations:* development or improvement of institutions; biodiversity values and national income accounts; development of national guidelines; involvement of stakeholders as well as indigenous and local communities; awareness-raising and incentive measures; awareness-raising and pilot projects.
c. *Capacity building and training*: capacity building; regional workshops; regional and international cooperation and training; international databases for benefits transfer.
d. *Further research:* international research cooperation; biodiversity valuation and national accounting; further research on valuation tool; further research of benefits transfer; links between biodiversity, biodiversity functions, and associated ecosystem services.

In addition, more extensive technical background information on biodiversity values and the application of valuation tools has also been developed under the CBD:

a. *The Value of Forest Ecosystems* (2001), CBD Technical Series No. 4. The publication explores forest economic values resulting from both direct use (i.e., timber, fuel wood, tourism) and indirect use (i.e., watershed functions, climate regulators).
b. *An exploration of tools and methodologies for valuation of biodiversity and biodiversity resources and functions* (2007), CBD Technical Series No. 28. The publication provides technical background information to the options described above, with a focus on valuation methods and the role of valuation in decision-making, and also provides summaries of 13 valuation studies.

Interlinkages between multilateral environmental agreements including the UNFCCC

Interlinkages between multilateral environmental agreements on incentive measures are explicitly addressed in the recommendations for further cooperation on incentive measures, which were endorsed by the Conference of the Parties at its sixth meeting, in 2002 (decision VI/15 Annex II). [2]/ Paragraph 14 of the recommendations states:

> *There is a need to examine the policies and programmes under different multilateral environmental agreements to ensure that they provide mutually reinforcing incentives. In this respect, the Conference of the Parties (...) suggested attention to incentives with regard to other linkages, such as (...) the United Nations Framework Convention on Climate Change with respect to land-use change and forest biodiversity. In addition, the United Nations Framework Convention on Climate Change is encouraged to give priority to incentives to avoid deforestation, as a substantial amount of greenhouse gas emissions is due to the destruction of forests, the greatest terrestrial repository of biodiversity.*

The expanded programme of work on forest biological diversity calls for collaboration with the UNFCCC on research and monitoring activities on forest biological diversity and climate change.

It is also noteworthy that the Conference of the Parties urged *"Parties and other Governments to explore possible ways and means by which incentive measures promoted through the Kyoto Protocol under the United Nations Framework Convention on Climate Change can support the objectives of the Convention on Biological Diversity"* (decision V/15, paragraph 6).

Experiences in implementation by Parties

Implementation of incentive measures as reported by CBD Parties

By the beginning of November 2006, 102 Parties had submitted their third national reports to the CBD Secretariat, out of which 93 could be used for a statistical analysis.

Over two-thirds of responding Parties indicated that they had established programmes to identify and adopt incentive measures for the conservation and sustainable use of the components of biological diversity (58 Parties had some programmes, eight had comprehensive programmes), while a further 14 Parties reported that programmes are being developed.

A total of 78 Parties provided further comments, 64 of which reported to have positive incentive programmes in place. A total of 55 Parties provided information on monetary positive incentive measures.

Fifteen countries explicitly referred to measures applied in the forestry sector – bearing in mind that a number of other activities, mentioned by Parties without reference to a particular sector or ecosystem, may also apply to forests.

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[2]/ The recommendations also highlighted the importance of information, involvement of stakeholders, capacity-building, the need for the further development of methodologies for undertaking valuation of biodiversity, macro-economic policies, ecosystem focus, pilot projects/case-studies/workshops, and the support of international organizations.

With regards the vehicles by which monetary positive incentive measures are granted, a total of 12 Parties referred to the design of tax system, four Parties mentioned the application of tariff reductions or duty-free concessions, and two Parties referred to subsidized credit. Four Parties referred to payment systems for ecosystem services. The granting of access guarantees for local communities to protected areas, and the establishment of schemes that seek to share receipts from economic activities was reported by 8 Parties.

With regards to the institutional structures and mechanisms by which monetary positive incentives are granted, a total of 10 Parties referred to environmental funds. One Party reported on the application of auctions for granting stewardship payments.

A total of 18 Parties reported using non-monetary incentive measures. Social recognition through awards and other means featured most prominently, with 9 Parties making reference to such mechanisms.

A total of 26 Parties reported on the promotion of biodiversity-based goods and services. Several Parties made explicit reference to the sector in which these activities were undertaken – tourism (including ecotourism) was the most prominent sector mentioned, with 9 Parties reporting on activities in this sector. Five Parties mentioned labeling and certification as a means to promote such products.

Less than 24% of reporting countries responded that they had established mechanisms or approaches to ensure the incorporation of both market and non-market values of biodiversity into relevant plans, policies and programmes, while a further 42% said that such mechanisms were being developed. The application of tools for valuation of biodiversity was the single most important mechanism identified by Parties for this purpose. Twenty-two Parties reported that they were undertaking valuation studies, and a further two reported that they were working on integrating biodiversity values into their system of national accounts. Some Parties identified lack of human and technical capacity in conducting such studies.

Challenges in implementing incentive measures as identified by CBD Parties

Responses in the third national reports identified the lack of mainstreaming and integration of biodiversity issues into other sectors as the most important challenge in implementing Article 11, closely followed by the lack of financial, human, and technical resources. On the other hand, the deficiencies in the implementation of incentive measures were also identified as an important challenge in implementing many other provisions of the Convention – and as the single most important challenge in implementing Article 10 on sustainable use.

The need for enhanced financial, human, and technical capacity is confirmed by the fact that close to half of reporting Parties indicated that they had not yet developed or are only developing training and capacity-building programmes to implement incentive measures, while 42 reporting Parties have some programmes in place and only 5 Parties have many programmes in place. A need for enhanced capacity-building and training on biodiversity valuation was particularly identified, as it is associated with the need to enhance awareness of biodiversity values and to better incorporate them into plans, policies and programmes.

Section II: Assessment of Results and their Reliability

The CBD, through decision VIII/15 of the Conference of the Parties applied the provisional framework of goals and targets for the 2010 biodiversity target to the programmes of work of the Convention including the programme of work on forest biodiversity.

The 2010 biodiversity target contains many goals and sub-targets which are relevant for the assessment of efforts to reduce deforestation (presented in Table 1 below). Monitoring these targets will take place in close collaboration with a number of partners including *inter alia*: the Food and Agriculture Organization of the United Nations, the Global Forest Coalition, and the International Tropical Timber Organization.

Table 1 – Goals and Targets for the 2010 Biodiversity Target

Provisional goals and targets as per the framework	***Forest biodiversity***	***Relevance for Reducing Emissions from Deforestation***
Focal area 1: Protect the components of biodiversity		
Goal 1. Promote the conservation of the biological diversity of ecosystems, habitats and biomes		
Target 1.1: At least 10% of each of the world's ecological regions effectively conserved.	At least 10% of each of the world's forest types are effectively conserved.	Forest areas protected from threats of deforestation
Target 1.2: Areas of particular importance to biodiversity protected.	Areas of particular importance to forest biodiversity protected in the most threatened and vulnerable forest ecosystems through comprehensive, effectively managed and ecologically representative national and regional protected area networks.	
Goal 2. Promote the conservation of species diversity		
Target 2.1: Restore, maintain or reduce the decline of populations of species of selected taxonomic groups.	Populations of forest species of threatened and most vulnerable taxonomic groups restored, maintained, or their decline substantially reduced.	Forest species protected from habitat loss and overuse / deforestation
Target 2.2: Status of threatened species improved.	Conservation status of threatened forest species substantially improved.	
Goal 3. Promote the conservation of genetic diversity		
Target 3.1: Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained.	Genetic diversity of valuable forest species, and other species providing non-timber forest products, conserved and associated indigenous and local knowledge is protected and maintained.	Enhanced long-term sustainability of forests

Focal Area 2: Promote sustainable use		
Goal 4. Promote sustainable use and consumption		
Target 4.1: Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity.	Forest goods and services are derived from sources and concessions managed according to the principles of sustainable forest management including conservation of biological diversity.	Address perverse incentives resulting in deforestation
Target 4.2 Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced.	Unsustainable consumption of biological resources, and its impact upon forest biological resources, reduced.	
Target 4.3: No species of wild flora or fauna endangered by international trade.	No species of forest flora or fauna, including timber species, endangered by international trade.	
Focal area 3: Address threats to biodiversity		
Goal 5. Pressures from habitat loss, land-use change and degradation, and unsustainable water use, reduced		
Target 5.1: Rate of loss and degradation of natural habitats decreased.	The current rate of forest loss, degradation, and conversion to other land uses are substantially reduced and the impact on forest biodiversity of human-induced uncontrolled/unwanted forest fires substantially reduced.	Decreased rate of deforestation
Goal 6. Control threats from invasive alien species		
Target 6.1: Pathways for major potential alien invasive species controlled.	Pathways for major potential invasive alien species in forest ecosystems identified and controlled.	Enhanced long-term sustainability of forests
Target 6. 2: Management plans in place for major alien species that threaten ecosystems, habitats or species.	Management plans in place and implemented for invasive alien species that are considered a significant threat to forest ecosystems, habitats or species.	
Goal 7. Address challenges to biodiversity from climate change, and pollution		
Target 7.1: Maintain and enhance resilience of the components of biodiversity to adapt to climate change.	Resilience of the components of biodiversity to adapt to climate change in forest ecosystems maintained and enhanced.	Enhanced long-term sustainability of forests
Target 7.2: Reduce pollution and its impacts on biodiversity.	The adverse impact of pollution on forest biodiversity substantially reduced.	
	The impact on forest biodiversity of human-induced uncontrolled/unwanted forest fires substantially reduced.	

Focal area 4: Maintain goods and services from biodiversity to support human well-being		
Goal 8. Maintain capacity of ecosystems to deliver goods and services and support livelihoods		
Target 8.1: Capacity of ecosystems to deliver goods and services maintained.	Capacity of forest ecosystems to deliver goods and services maintained or improved.	Enhanced capacity of forest ecosystems to sequester carbon
Target 8.2: Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people, maintained.	Forest biological resources that support sustainable livelihoods, local food security and health care, especially of poor people dependent upon forests, maintained.	
Focal area 5: Protect traditional knowledge, innovations and practices		
Goal 9. Maintain socio-cultural diversity of indigenous and local communities		
Target 9.1. Protect traditional knowledge, innovations and practices.	Measures to protect traditional knowledge, innovations and practices associated with forest biological diversity implemented, and the participation of indigenous and local communities in activities aimed at this promoted and facilitated.	Socially sustainable protection of forests
Target 9.2: Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing.	Traditional knowledge, innovations and practices regarding forest biodiversity respected, preserved and maintained, the wider application of such knowledge, innovations and practices promoted with the prior informed consent and involvement of the indigenous and local communities providing such traditional knowledge, innovations and practices, and the benefits arising from such knowledge, innovations and practices equitably shared.	
Focal area 6: Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources		
Goal 10. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources		
Target 10.1: All access to genetic resources is in line with the Convention on Biological Diversity and its relevant provisions	All access to genetic resources derived from forest biological diversity is in line with the Convention on Biological Diversity and its relevant provisions and, as appropriate and wherever possible, with the International Treaty on Plant Genetic Resources for Food and Agriculture.	Enhanced framework for multiple benefits from the protection and sustainable use of forests
Target 10.2: Benefits arising from the commercial and other utilization of genetic resources shared in a fair and equitable way with countries providing such resources in line with the CBD and its relevant provisions.	Benefits arising from the commercial and other utilization of forest genetic resources shared in a fair and equitable way with the countries providing such resources in line with the Convention on Biological Diversity and its relevant provisions.	
Focal area 7: Ensure provision of adequate resources		

Section III: Improving the Understanding of Reducing Emissions from Deforestation in Developing Countries

Expert meeting

The CBD will be hosting an expert meeting on the links between the conservation of forest biodiversity and climate change. This meeting will, in particular, examine:

i. existing knowledge, including socio-economic and environmental data, on forest biodiversity and climate change including (a) the contribution of forests to climate change mitigation and adaptation, and (b) threats to forests as a result of climate change;
ii. how forest biodiversity conservation and sustainable use can contribute to the long-term sustainability of mitigation measures;
iii. the potential role of forests in enabling humans to adapt to climate change; and
iv. how the climate change mitigation and adaptation services provided by forest biodiversity can contribute to implementation of the forest biodiversity programme of work and, in doing so, contribute to poverty alleviation and the achievement of the Millennium Development Goals.

International Day for Biological Diversity – 2007

Given the close links between biodiversity and climate change adaptation and mitigation, the International Day for Biological Diversity will be celebrated on 22 May 2007 under the theme: biodiversity and climate change.

The Secretariat of the CBD developed a number of outreach products in order to enhance the understanding of the important links between biodiversity and climate change including within the framework of forests and carbon sequestration. These outreach products have been made available to Parties, other Governments and relevant partners for use in their own celebrations.

Implementation of the forest biodiversity programme of work

Within the framework of the forest biodiversity programme of work, Parties are implementing two activities which can contribute to improving the understanding of reducing emissions from deforestation in developing countries. These include:

i. promote monitoring and research on the impacts of climate change on forest biological diversity and investigate the interface between forest components and the atmosphere; and
ii. assess how the conservation and sustainable use of forest biological diversity can contribute to the international work relating to climate change.

Implementation of the above two activities was reported on by only four Parties in the third national reports to the CBD (Australia, Canada, Malaysia, and Thailand) however, it is very likely that additional Parties are also implementing related activities which are not being reported.

Section IV: Next Steps

The in-depth review on incentive measures

The work on incentive measures is scheduled for in-depth review at the ninth meeting of the Conference of the Parties, in 2008. At its eighth meeting, in March 2006, the Conference of the Parties decided, in paragraph 3 of the decision, to invite Parties, other Governments, international organizations and stakeholders to communicate to the Executive Secretary their experiences in

the implementation of the programme of work on incentive measures contained in decisions V/15, VI/15 and VII/18 and provide views on elements such as:

a. Lessons learned and key challenges in implementing the existing programme of work, based on practical examples and case-studies from national implementation, where available, including whether the measures initiated or adopted by Parties have maintained or improved the conservation and sustainable use of components of biodiversity;
b. Options to address the challenges identified;
c. Priorities for a future programme of work including requirements for effective national implementation, including financial and institutional support and capacity-building;
d. Key gaps in the work to date, and gaps and obstacles in the existing programme of work that are impeding its implementation at the national level;
e. Interface with other international initiatives and instruments in this area;
f. Linkages to other programmes of work under the Convention

This invitation, and in particular sub-paragraph (e) above, provides an excellent opportunity for the UNFCCC to identify and propose relevant issues pertaining to incentive measures for consideration by the Conference of the Parties of the Convention on Biological Diversity.

The in-depth review of the forest biodiversity programme of work

The seventh meeting of the Conference of the Parties, through decision VII/31, adopted a multi-year programme of work of the Conference of the Parties up to 2010, which scheduled an in-depth review of implementation of the expanded programme of work on forest biological diversity for the ninth meeting of the Conference of the Parties.

Goal 2 of the programme of work calls on Parties to reduce the threats and mitigate the impacts of threatening process on forest biological diversity. Within this goal, objective 3 refers specifically to climate change calling for Parties to:

iii. Promote monitoring and research on the impacts of climate change on forest biological diversity and investigate the interface between forest components and the atmosphere;
iv. Develop coordinated response strategies and action plans at global, regional and national levels;
v. Promote the maintenance and restoration of biodiversity in forests in order to enhance their capacity to resist to, and recover from and adapt to climate change;
vi. Promote forest biodiversity conservation and restoration in climate change mitigation and adaptation measures;
vii. Assess how the conservation and sustainable use of forest biological diversity can contribute to the international work relating to climate change.

Implementation of Goal 2, Objective 3 as reported by CBD Parties

By the beginning of November 2006, 102 Parties had submitted their third national reports to the CBD Secretariat. Of the Parties reporting, 91 Parties took certain measures to implement Goal 2 with 17 Parties reporting on activities relating to climate change in forest ecosystems.

Challenges in implementing the Goal 2, Objective 3 as identified by CBD Parties

A number of financial and institutional barriers for the implementation of the objectives of goal 2 have been identified as a constraint. These barriers are categorized into three deficiencies: political will, resources and awareness.

a. A lack of political will is identified by Parties as impeding progress on issues relating to regulations, laws, and coordination between Ministries and various institutions.
b. Limited resources are preventing Parties from adequately monitoring and guarding activities for forest fires and illegal logging.
c. A lack of awareness among the local communities to change customs, participation, gender and biological diversity issues was also identified by Parties as hindering efforts to reduce threats to forest biodiversity.

PAPER NO. 2: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

REDUCING EMISSIONS FROM DEFORESTATION IN DEVELOPING COUNTRIES

Submission by the Food and Agriculture Organization of the United Nations
to the
Secretariat of the United Nations Framework Convention on Climate Change

February 2007

1. Background

In November 2006 at its twenty-fifth session, the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the United Nations Framework Convention on Climate Change (UNFCCC) invited Parties and accredited observers to submit their views related to reducing emissions from deforestation in developing countries, in particular on "ongoing and potential policy approaches and positive incentives, and technical and methodological requirements related to their implementation; assessment of results and their reliability; and improving the understanding of reducing emissions from deforestation in developing countries" (FCCC/SBSTA/2006/11, para. 88). The SBSTA also invited Parties to "consider, as appropriate, relevant provisions of other conventions, including the Convention on Biological Diversity, the United Nations Convention to Combat Desertification, the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) and also the work of multilateral organizations, including the United Nations Forum on Forests, the International Tropical Timber Organization, and the World Trade Organization" (FCCC/SBSTA/2006/11, para. 90).

These views are to be discussed at the second workshop on reducing emissions from deforestation in developing countries, organized by the UNFCCC secretariat in Cairns, Australia from 7-9 March 2007. The results of that workshop are to be considered by SBSTA at its twenty-sixth session in May 2007.

The following views of FAO supplement those provided in its submission to the UNFCCC secretariat in March 2006 , prepared in response to the invitation from the COP at its eleventh session in November/December 2005 (FAO, 2006). The submissions provided by Parties and accredited observers were discussed at the first UNFCCC workshop on reducing emissions from deforestation in developing countries, held in Rome, Italy from 30 August to 1 September 2006 (hereafter referred to as "the first workshop"). The report of the first workshop was made available to SBSTA at its twenty-fifth session. The current submission does not repeat information provided in the first submission, which focused to a large extent on technical and methodological issues related to definitions, baselines, forest assessment and monitoring. Instead, it focuses on the links between UNFCCC's efforts to reduce emissions from deforestation and related activities of other international conventions, instruments and processes and multilateral organizations; highlights areas in which FAO can contribute to the UNFCCC's efforts; and, finally, proposes that a feasibility study, carried out at global and country levels, could provide information to facilitate UNFCCC's deliberations regarding an instrument for reducing emissions from deforestation.

2. Links between UNFCCC and other conventions addressing needs to reduce deforestation and forest degradation

The background document for the first workshop provides an overview of multilateral cooperation and conventions, instruments and processes relevant to efforts to address deforestation and sustainable forest management (UNFCCC, 2006). There are 40 legally binding and 25 non-legally binding international and regional forest-related instruments and relevant non-governmental processes and financial and trade institutions/agreements, and a total of 33 organizations that serve as the secretariats or responsible bodies for these instruments, agreements and processes (UNFF, 2004). Some of those most relevant to UNFCCC's efforts to reduce emissions from deforestation are highlighted below.

Three intergovernmental instruments are exclusively dedicated to forests: the International Tropical Timber Agreement (ITTA), the FAO Committee on Forestry, and the United Nations Forum on Forests (UNFF). ITTA promotes international trade in tropical timber and the sustainable management of tropical forests. FAO's Committee on Forestry reviews international forestry issues, identifies emerging policy and technical issues for concerted action by member countries and the Organization, and advises FAO on its programme of work on forestry. UNFF's mandate is to promote the management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end. It seeks to addresses policy aspects of all types of forests in a comprehensive manner. All three bodies promote sustainable forest management (SFM) – i.e. the management, conservation and sustainable development of all types of forests to provide for their multiple functions and uses.[1] These efforts and those of UNFCCC to reduce emissions from deforestation are complementary

Several instruments support conservation and sustainable use of ecosystems, including forests, as a means to conserve biological diversity or areas of natural heritage. These include the Convention on Biological Diversity (CBD), the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention), and the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention - WHC). CBD's programme of work on forest biological diversity has a broad coverage, supporting the conservation, sustainable use and the equitable sharing of the benefits of forest genetic resources. While the other conventions originally focused more narrowly on biodiversity conservation, most now also address access and benefit sharing and promote stakeholder participation. Given the critical importance of forests, particularly tropical forests, as repositories of biological diversity, UNFCCC's efforts to reduce deforestation and forest degradation will contribute to the achievement of the goals of these conventions. The work of UNFCCC and the above mentioned conventions in forest conservation, although motivated by different objectives, is mutually supportive.

The objective of the United Nations Convention to Combat Desertification (UNCCD) is to combat desertification and mitigate the effects of drought, particularly in Africa. Efforts that maintain forests and tree cover, which play an important role in protection against desertification and erosion, contribute to reduced emissions from deforestation and forest degradation.

The World Trade Organization (WTO), ITTA, various regional processes for forest law enforcement and governance, and forest certification schemes address issues related to forest products, in particular sustainable timber production, fair trade and promotion of forest products from sustainably managed and legal sources. These should contribute to reduced levels of forest degradation and, in some

[1] The concept of sustainable forest management can be traced to the "Forest Principles" which were agreed upon at the United Nations Conference on Environment and Development in 1992. Priniple 2b states that "Forest resources and forest lands should be sustainably managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations" and that "these needs are for forest products and services, such as wood and wood products, water, food, fodder, medicine, fuel, shelter, employment, recreation, habitats for wildlife, landscape divesity, carbon sinks and reservoirs, and for other forest products".

cases, of deforestation and thus contribute to UNFCCC's goal of reducing emissions from deforestation and forest degradation.

In conclusion, UNFCCC's efforts to reduce deforestation and forest degradation overall should contribute to the achievement of the objectives of the above-mentioned conventions, including conserving biological diversity, reducing land degradation and desertification, protecting wetlands and watersheds, and providing timber and non-timber forest products. Where pressures for land and forest products are high, however, incentives provided to protect forests in order to reduce emissions, could shift the pressure to other areas of importance for other values, such as biodiversity conservation, wetlands protection or areas susceptible to drought or erosion. It is important that the risk of such local level "leakage" effects are noted and efforts made to minimize them.

There are also strong linkages between efforts to reduce deforestation and promote SFM and sustainable development. The UN Commission on Sustainable Development (CSD) addresses forests in its programme of work, recognizing the importance of forests to sustainable development. In addition, forests contribute, directly and indirectly, to the achievement of the Millennium Development Goals, including most notably ensuring environmental sustainability and eradicating extreme poverty and hunger. The World Summit on Sustainable Development in 2002 recognized that sustainable forest management is essential to achieving sustainable development.

Although it is widely accepted that sustainable forest management can contribute to sustainable development, the links between deforestation and poverty reduction are not clearcut. In some cases, poverty motivates people to clear forests, in other cases poverty constrains people from clearing them. Incentives provided to reduce emissions from deforestation, therefore, may help alleviate poverty (e.g. provide additional income to people either directly or indirectly) or may exacerbate it (e.g., by reducing their access to forest lands or forests products) (FAO, 2007).

It is essential that countries analyze and understand the effect that incentives to reduce deforestation and forest degradation in order to reduce greenhouse gas emissions may have on meeting national needs and achieving their international commitments related to forests and their goods and environmental services, as well as to poverty alleviation. Strong national policy processes will be central to this.

3. FAO's contributions to UNFCCC's efforts related to reducing emissions from deforestation

This section focuses on two major areas critical to UNFCCC's efforts to reduce emissions from deforestation: a sound data and information base on forest cover and carbon stocks and strong national capacity in data collection and monitoring, and effective policy processes and incentive structures. The section highlights FAO work that can contribute to these needs.

3.1 Data needs for estimating emissions: technological and methodological issues and strengthening countries' capacities in national forest resource assessments

There was substantial discussion at the first workshop on the determination of emissions from forests, including technical issues related to assessing change in forest cover and in forest carbon stocks. It concluded that a reliable measure of carbon stocks would require cost-effective remote sensing technology in combination with field data.

FAO's forest monitoring and assessment efforts since 1947, through its global Forest Resources Assessment (FRA), now involving 229 countries, have produced experience relevant to efforts to reduce deforestation and forest degradation and to reduce and monitor emissions from forests. These include working closely with countries in the collection of data of critical importance to national forest policies,

including policies that address deforestation and forest degradation; adopting terms and definitions through common consent; using SFM as a reporting framework to facilitate links with international forest-related conventions and instruments; and developing a global network of expertise that can be instrumental in addressing new developments and needs. Among the 40 variables reported on in FRA 2005, biomass and carbon changes were reported for most of the world's forests.

Field measurement data are limited in many non-Annex 1 countries due to constraints on technical, human and financial resources. FAO's Global Forest Resources Assessment 2010 will include a sample-based remote sensing global survey which will provide information on forests by region and biome through more than 13,000 systematic samples. This can provide an important reference point for national-level data collected by countries. In addition, countries without a systematic sampling system, may find this useful for designing a national data collection system, which can provide information on carbon stocks as well as for other variables.

FAO is also actively working to strengthen countries' capacities in national forest resource assessments. Its continued support for national forest resource assessments will contribute to efforts to assess emissions due to deforestation and forest degradation.

Over the past several years, FAO has led a collaborative effort involving other organizations and secretariats of international conventions and instruments to streamline and harmonize reporting and to harmonize definitions used reporting. At the first UNFCCC workshop in Rome, FAO made a presentation on definitional issues related to reducing emissions from deforestation, pointing out considerations that need to be made in choosing definitions for use in the context of UNFCCC's efforts. FAO's recently published working paper on this topic, "Definitional issues related to reducing emissions from deforestation in developing countries", provides further information on this topic (Schoene et al, 2007). FAO will continue to provide technical information and advice related to definitions and other issues concerning monitoring and assessment of forest resources for international purposes.

3.2 National Forest Programmes: strengthening policy approaches and addressing cross-sectoral issues

The background paper and subsequent discussions at the first workshop highlighted various policy approaches and positive incentives to reduce emissions from deforestation. Policy measures will be required both inside and outside the forest sector to address the proximate and underlying causes of deforestation, which include a range of demographic, economic, policy, institutional, technological and cultural factors.

Continued support is needed to strengthen countries' capacity to develop, implement and evaluate the effectiveness of policies aiming to reduce deforestation and forest degradation. This may be effectively done through national forest programmes.

National forest programmes (NFPs) provide a framework to address forestry issues within the context of sustainable development[2]. They are tools for planning, implementing and monitoring the forest sector and forestry-related activities. National forest programmes apply participatory approaches that encourage the involvement of all forest-dependent actors at local, national and global levels. As a framework for planning, the national forest programme provides strategic orientation for the forestry sector in harmony with other sectors of the national economy. As a framework for action, the national forest programme provides an environment for the concerted and coordinated implementation of programmes and activities by all stakeholders based on mutually agreed objectives and strategies.

[2] See: **www.fao.org/forestry/site/nfp/en**

The national forest programme approach is flexible and can be adapted to a wide range of situations.

FAO supports NFP development and implementation through work of its Forestry Department and through the NFP Facility, a funding mechanism hosted at FAO Headquarters and representing a multi-country partnership. Currently about 45 countries are receiving assistance for the development and implementation of their nfps. FAO will increasingly support countries' efforts to integrate climate change concerns into national forest programmes and to address related inter-sectoral issues.

4. Feasibility study for an instrument in UNFCCC to reduce emissions from deforestation

The first workshop discussed the key scientific, technical and methodological issues and exchanged experiences and views on policy approaches and incentives for reducing emissions from deforestation. In addition, various countries (including Brazil, countries of the Congo Basin, Papua New Guinea) as well as the Latin American Discussion Group on LULUCF and Climate Change (GLAD-CC), an informal network of LULUCF experts and negotiators, made proposals related to a possible international arrangement under the UNFCCC for actions to reduce emission from deforestation in developing countries.

There are still many issues and gaps in information that could hinder the ability of UNFCCC to reach a consensus quickly on this issue. FAO suggests that a feasibility study can produce useful information to enable further consideration of an international arrangement under UNFCCC on reducing emissions from deforestation. The study could consider technical and economic feasibility of an arrangement and synergies with countries' national priorities and international commitments related to forests. The feasibility study would be carried out at two levels: global and national.

The global component would address issues related to the overall technical and financial feasibility of an international arrangement under UNFCCC, including but not limited to the following:

- Issues related to the technical feasibility and costs of assessment of forest degradation;
- Technical issues related to setting a baseline(s);
- Requirements for forest data (accuracy, precision, scale, timing);
- Options for data collection methods and their relative costs;
- Potential sources of funding to support data collection and emissions estimations;
- Implications of various forms of financial incentives: including market based mechanisms, funds.

The country studies would examine the above-mentioned issues in the country context as well as addressing other country-specific questions to improve the understanding of the implications of the international arrangement on the country in question, including:

- In view of the proximate and underlying causes of deforestation and forest degradation, whether financial incentives to reduce emissions from deforestation would be likely to be effective;
- Given the current capacity and status of forest resource assessments and forest inventory data, the costs of carrying out carbon stock assessments using the various options;
- The potential impacts – both positive and negative -- of incentives for reduced emissions from deforestation and forest degradation on national priorities related to forest goods and environmental services and on poverty alleviation.

It is envisioned that a small number of countries (4-8) would be involved in this study. A representative sample of countries (including high forest area-high deforestation rate; high forest area-low deforestation rate; low forest area-high deforestation rate; low forest area-low deforestation rate) would be included in the study, but it is important that a number of countries with large areas of forest

cover and high rates of deforestation are included, as these countries have the most to contribute to reduced emissions from deforestation.

The feasibility study would be undertaken in phases and the findings provided to SBSTA so that they can contribute to the deliberations, as follows:

- A proposal for the study would be developed and presented to a session of SBSTA for consideration. If the reaction is positive, the study would go ahead.

- The global component would then be designed, carried out and the results presented to SBSTA, along with the proposed design of the country studies.

- A synthesis of the findings of the country studies and the conclusions of the entire feasibility study would be presented to SBSTA at the completion of the study.

FAO would be willing to coordinate and/or provide technical support to the effort, working with countries involved in the country studies and with other organizations, which would help design and technically support the study.

5. Conclusions

Efforts under UNFCCC to reduce emissions from deforestation are complementary to the objectives of many international conventions that promote sustainable forest management, conservation of biological diversity and protection of areas of natural heritage, facilitate sustainable use and fair trade in forest products, combat desertification, and contribute to poverty alleviation, among other things. Increased analysis is needed to identify how to maximize the benefits of UNFCCC's efforts in reducing emissions from deforestation for the achievement of the goals of the other conventions and instruments and vice versa, and how to find synergies with relevant efforts of international organizations and regional and global processes facilitating sustainable forest management. At the local level, risk of any "leakage" effects of incentives to reduce emissions from deforestation might have on other environmental services elsewhere should be noted.

FAO's programmes related to forest resources assessments at global and national levels and its support to national forest programme processes may contribute to both the technical and methodological development and implementation of an international arrangement under UNFCCC on reducing emissions from deforestation and to strengthening country capacities in relevant areas of policy.

A feasibility study of options for an international arrangement under UNFCCC for reducing emissions from deforestation could provide useful information to contribute to deliberations in UNFCCC. FAO proposes that a study, undertaken at global and country levels and considering issues of technical and economic feasibility, be carried out and the findings be presented to SBSTA.

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PAPER NO. 3: GLOBAL TERRESTRIAL OBSERVING SYSTEM

GTOS/GOFC-GOLD submission to UNFCCC on the issue for reducing emissions from deforestation in developing countries (RED-DC) following the SBSTA invitation to Parties and accredited observers to submit their views by 23 February 2007

The technical panel of the Global Terrestrial Observing System (GTOS) on "Global Observation of Forest Cover and Land Dynamics" (GOFC-GOLD) coordinated the preparation of a report as outcome of an established working group on the item "reducing emissions from deforestation in developing countries and considerations for monitoring and measuring" (available at: http://www.fao.org/gtos/doc/pub46.pdf).

The report highlights technical considerations for measuring and monitoring GHG emissions from deforestation and GHG emissions reductions from avoiding deforestation that need to be addressed in more detailed guidelines and protocols. It is a first consensus perspective from the earth observation community on related scientific and methodological issues with some key conclusions:

- Analysis of remotely sensed data from aircraft and satellite is the only practical approach to measure changes in forest area in developing countries at national scales. Since the early 1990s, changes in forest area can be measured from space with confidence.
- Various methods are available and appropriate to analyze satellite data for measuring changes in forest cover. These methods range from low cost visual photo-interpretation to sophisticated digital analysis. A variety of methods can be applied depending on national capabilities, deforestation patterns, and characteristics of the forest. Quantifying the accuracy of the result and ensuring that consistent methods are applied at different time intervals is more critical than applying standard methods across all countries.
- Data sources exist to determine reference emission scenarios for the 1990s. Averted emissions can be estimated from short term (<5 years) extrapolations of current trends and historical deforestation rates and from existing estimates of forest carbon stocks.
- Estimates of carbon stocks of forests undergoing deforestation are less well known for many developing countries, but default data exist for all are reported in recent IPCC and FAO reports. Guidelines already exist for carbon accounting and are detailed in the IPCC Good Practice Guidance Report (2003) and in the IPCC methods for national inventories of GHGs.
- Key constraints in implementing national systems for monitoring changes in forest cover are cost and access to high resolution data and capacities to use and analyze them.
- New technologies and approaches are developing for monitoring changes in carbon stocks using a combination of satellite and airborne imagery that will reduce uncertainties in accounting for changes in GHG emissions. International coordination and resources are also needed to further test and implement these technologies.

The report presents a first and general vision of the earth observation community potential assistance to this UNFCCC process. With the evolving discussions in the UNFCCC forum, the intention is to develop a more detailed technical-guidelines-type document with specific methodological recommendations. For this matter GOFC-GOLD will host a second workshop synthesizing the experiences from recent remote sensing case study in different parts of world. The workshop will be held on 17-19 April 2007 in cooperation with FAN Bolivia in Santa Cruz, Bolivia. The workshop will further discuss technical options for measuring and monitoring deforestation in developing countries and for estimating related greenhouse gas emissions with the following specific objectives:

- Discuss and synthesize the practical experiences of recent and ongoing case studies on the RED-DC issue (the workshop presentations will be focused on actual case studies, e.g. Bolivia, PNG, India, Cameroon, and Vanuatu)
- Discuss further key challenging issues (i.e. degradation monitoring, forest area change versus emissions, validation and accuracy, costs)

- Plan and organize the development of detailed technical guidelines for measuring and monitoring including ‘reliability’ assessments and recommendations for implementation at regional and national scales.

The consensus reached during this second GOFC-GOLD ad-hoc workshop will be presented at a side event at SBSTA 26 and documented outcomes will be prepared for SBSTA’s 27th Session in December 2007.

PAPER NO. 4: INTERNATIONAL CENTRE FOR RESEARCH IN AGROFORESTRY

Submission by the International Centre for Research in Agroforestry (ICRAF)
To the UNFCCC

Issues relating to reducing emissions from deforestation
in developing countries

In accordance with the invitation from SBSTA at its 25th session to parties and accredited observers (paragraphs 89, FCCC/SBSTA/2006/11), the International Centre for Research in Agroforestry (ICRAF) welcomes the opportunity to submit relevant information "*potential policy approaches and positive incentives, and technical and methodological requirements related to their implementation; assessment of results and their reliability; and improving the understanding of reducing emissions from deforestation in developing countries*."

1. Presentation

ICRAF is an international research and global knowledge institution that forms part of the Consultative Group on International Agricultural Research (CGIAR). The work of ICRAF is focused on producing research relevant to conserving trees and forests in agricultural landscapes and improving the livelihoods of people in the tropics. It employs over 450 staff at its headquarters in Nairobi, Kenya and at its regional offices in India, Indonesia, Mali, Malawi and Brazil.

The present submission outlines reasons why avoided deforestation has not been included the CDM and outlines how research can contribute to overcoming these obstacles. This submission focuses on issues of establishing baselines and measuring departures from the baseline, the need for whole system accounting and national level commitments to avoid problems of leakage and additionality. The submission also outlines an approach to understanding tradeoffs and abatement costs of avoided deforestation. Individual countries involved in the international mechanism should have the flexibility to meet avoided carbon emission targets. Best practice is emerging on the types of national and local mechanisms that countries can apply with much lower transaction costs than current CDM projects.

The submission is organized as follows:

- Overview of the constraints to addressing avoided deforestation in the UNFCCC
- National scale accounting to address leakage and additionality
- Full system carbon accounting
- Accuracy of accounting methods
- Tradeoffs in abatement costs
- Flexibility in mechanisms to allow countries to achieve avoided carbon emissions

2. Avoided Deforestation through Sustainable Benefits: exploring how the global community can provide effective incentives to deal with the 20% of climate change due to land cover change

There are good reasons why ***avoided deforestation*** has not so far been included in the international mechanisms to reduce net greenhouse gas emissions, despite the fact that it is responsible for approximately 20% of anthropogenic greenhouse gas emissions:

- Leakage and additionality issues may be surmountable for small-scale reforestation projects, but they preclude the use of 'avoided deforestation' concepts in projects of limited geographical scope;
- Rehabilitation of depleted C-stocks is easier to monitor and attribute than avoided degradation;

- The modified 1996 and 2006 IPCC National Guidelines for Greenhouse Gas Inventories suggest a 60% uncertainty on the reports on changes in C stocks; this is the single biggest uncertainty in the GHG quantification; and
- Much deforestation is *planned* and leads to land use with higher economic returns; completely avoiding deforestation will require offset payments that are not feasible; negotiating intermediate targets is complex.

Yet, the linkage between 'solutions' for Annex-I countries through imports of biofuel and the additional GHG emissions caused by land cover change in non-Annex I countries exporting biofuel, makes it clear that the current partial accounting leads to perverse incentives and inefficient use of scarce resources to bring climate change under control. The current 'avoided deforestation' debate offers a chance to correct some of the major inconsistencies, provided that constraints of scale, scope, political commitment, technical procedures and data quality are overcome.

3. Scale

The 'avoided deforestation' issue will have to be addressed at national scale (similar to the rules between Annex-I countries), or at least large, geographically well defined parts of large countries (e.g. the island of Sumatra, as part of Indonesia). This allows the issues of additionality, leakage and permanence to be integrated into a common accounting framework. Inter-country market leakages can only be addressed if all the countries with major forest resources become part of the mechanism.

4. Scope

The 'avoided deforestation' debate has to be interpreted as an 'avoided carbon emission' issue that includes the gradual loss of carbon in forest degradation as well as net emissions from other lands (e.g. peat lands, trees outside forests, agroforestry lands). Net-net accounting will take into account losses and regrowth in a common framework. The current IPCC Guidelines for National Greenhouse Gas Inventory provide a coherent framework to deal with aboveground as well as belowground impacts of Agriculture, Forestry and Other Land Use (AFOLU). This framework can become the primary framework for reporting and accountability, aligned with the rules that apply for Annex-I countries.

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5. Accuracy of accounting methods

According to 'expert opinion' in the IPCC community responsible for the guidelines, however, the net emission estimates from land use and land cover change may carry an uncertainty margin of as much as 60%. On the positive side: the use of these reports over multiple measurement periods will lead to a reduction of the overall error, as corrections for previous errors will be included along with the permanence issue. On the negative side, however, an uncertainty margin of 60% (IPCC Good Practice Guideline, 2004) is unacceptably high. The IPCC guidelines indicate that there is a lack of data to assess the true level of the uncertainty. Data available in the Alternatives to Slash and Burn (ASB) Partnership for the Tropical Forest Margins can be analyzed to derive better estimates of the uncertainty and ways to reduce it. The two components of uncertainty are interlinked: classification error of land cover and land cover change and uncertainty in the mean carbon stocks per unit area in each land cover class. A binary classification (forest and non-forest as classes) is insufficient. Analysis so far suggests that a classification in 5 – 10 land cover classes may lead to the lowest overall uncertainty. Further data compilation and analysis is needed and possible, as has been started for example for Asian countries through the IPCC support office at IGES.

6. Tradeoffs – abatement

National and sub-national governments will need to know how much 'avoided emissions' they can provide at what cost. Summary data of this type requires appraisal of scenarios for integrating economic development and land cover change. Currently such estimates are not available.

In an earlier phase of the discussions on clean development mechanisms, an inventory was made of 'abatement costs', largely in the energy sector.

(http://www.adb.org/Documents/Reports/ALGAS/Summary/default.asp). These results indicated that there was a fraction of 'hot air' – emissions that could be avoided at negative total economic costs, as they incur net economic costs at the societal level. There is also a range of emissions associated with moderate economic gain that can be offset at feasible levels of financial transfers. Emissions that are associated with substantial economic gains probably cannot be offset under current carbon prices (Figure 1).

For the avoided deforestation debate in tropical countries, there are, to our knowledge, no estimates available for the cumulative abatement costs (see Figure 1 for the indicative shape). ICRAF, together with CIFOR and the ASB Partnership for the Tropical Forest Margins has embarked on such an analysis for representative areas of Indonesia for the period since 1990. We expect to have preliminary data available by August 2007 and a full report in December 2007 (COP, Bali).

An effective mechanism for avoided carbon emissions from avoided deforestation would have related but separate mechanisms at the international and national levels. Between countries, political negotiations should be convened to establish commitments to baseline and target emission levels. Countries that attain superior performance in avoided carbon emissions through avoided deforestation should be eligible for carbon offset payments or credits through multi-lateral or bilateral arrangements.

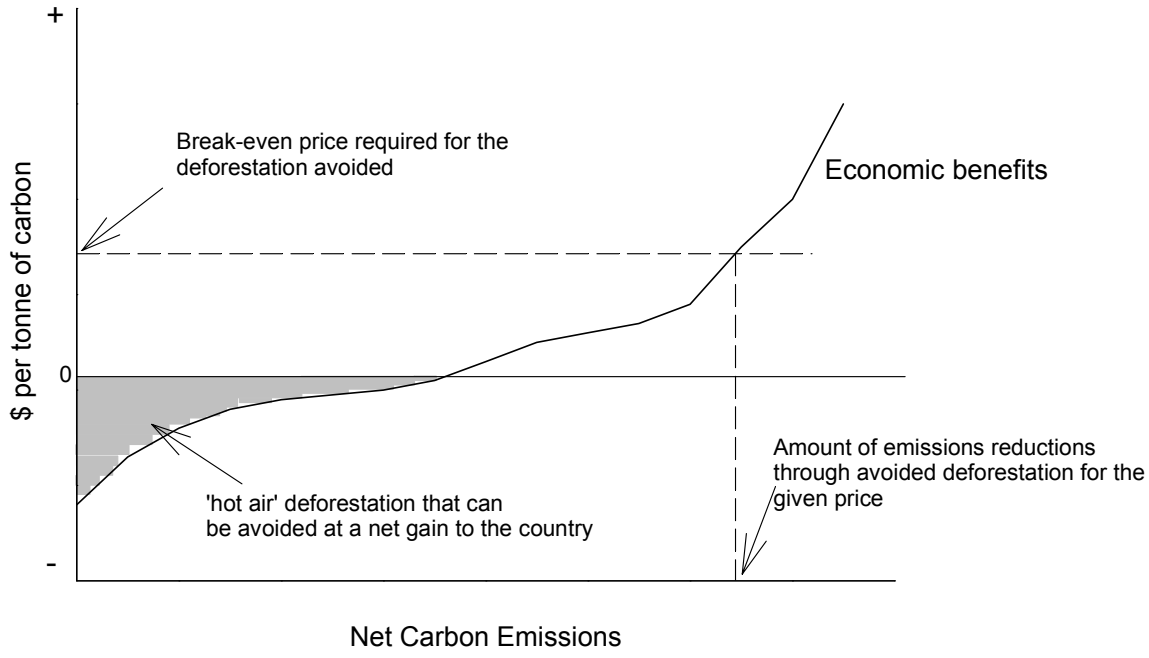

Figure 1. Tradeoffs between reduced greenhouse gas emissions through avoided deforestation and national economic development opportunities.

7. Flexible mechanisms and scales of application

Individual countries involved in the international mechanism should have the flexibility to meet avoided carbon emission targets through national mechanisms appropriate to individual country conditions, following principles already established among Annex 1 countries.

Best practice is emerging on the types of national and local mechanisms that countries can apply to reduce carbon emissions from avoided deforestation, potentially with much lower transaction costs than current CDM projects.

Incentive and rights-based mechanisms can be put in place to reduce carbon emissions from avoided deforestation, while sustaining the asset base, rights and well-being of people dependent on those resources. Countries such as Costa Rica and Mexico already have substantial experience in implementing such mechanisms at the national and sub-national scale. Large-scale afforestation programmes, such as currently implemented in Indonesia, China and India, could be revised to better address avoided carbon emissions. Forest, landscape and watershed management projects can be revised to provide greater incentives to avoid carbon emissions through avoided deforestation.

Case study evidence from across Asia and a pan-tropical synthesis show that realism, conditionality, voluntarism, and pro-poor are important criteria for evaluating the performance of incentive and rights-based mechanisms (www.worldagroforestrycentre.org/sea/networks/rupes).

Countries should be given the flexibility to adapt the design of national and local mechanisms to the various sub-national contexts, with international accountability for the outcomes of net GHG emissions.

PAPER NO. 5: UNITED NATIONS ENVIRONMENTAL PROGRAMME
WORLD CONSERVATION MONITORING CENTRE

Reducing Emissions from Deforestation: A Key Opportunity for Attaining Multiple Benefits

Prepared by

Valerie Kapos, Peter Herkenrath & Lera Miles

on behalf of UNEP

February 2007

The United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) is the biodiversity assessment and policy implementation arm of the United Nations Environment Programme (UNEP), the world's foremost intergovernmental environmental organization. The centre has been in operation since 1989, combining scientific research with practical policy advice.

UNEP-WCMC provides objective, scientifically rigorous products and services to help decision makers recognize the value of biodiversity and apply this knowledge to all that they do. Its core business is managing data about ecosystems and biodiversity, interpreting and analysing that data to provide assessments and policy analysis, and making the results available to international decision-makers and businesses.

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Contents

Reducing Emissions from Deforestation: A Key Opportunity for Attaining Multiple Benefits

Abstract

This paper reviews the potential for multiple benefits that might be attained by reducing emissions from deforestation (RED) through a mechanism developed under the UNFCCC. These benefits are relevant to national commitments under several environmental and sustainable development conventions and instruments, and may not be directly correlated with reduced carbon emissions. The design of the mechanism and its implementation will affect the degree to which these other benefits, such as biodiversity conservation, livelihoods, watershed protection and other ecosystem goods and services, are obtained.

Introduction

The UNFCCC discussions on reducing emissions from deforestation in developing countries result from recognition of the key role that forests play in the global carbon cycle and of the major contribution to global carbon dioxide (CO_2) emissions made by deforestation, especially in the tropics.

Forests account for almost half of the global terrestrial carbon pool. The total carbon content of forest ecosystems in 2005 was estimated at 638 Gt, including stores in biomass, soils and dead wood (FAO 2006a). Tropical forests play a particularly important role in the global carbon budget (Melillo *et al*. 1993; Dixon *et al*. 1994; Schimel *et al*. 2001, Houghton 2005) because of the large amount of carbon stored in their biomass . Depending on the method of forest removal and the subsequent use of the felled trees and the land, deforestation not only releases the carbon stored in the above ground biomass, but leads to decomposition of root mass and mobilization of soil carbon. Global carbon emissions (CO_2 and other greenhouse gases) from changes in land use, including tropical deforestation are estimated to be between 18% (Stern 2006, IPCC 2007) and 25% of annual global emissions from all sources (Santilli *et al*. 2005).

Therefore, discussions are underway to consider policy mechanisms and incentives to effect reductions in this important source of emissions. Reducing emissions from deforestation (RED) is distinct from carbon sequestration, which aims to immobilise CO_2 from the atmosphere and thus concerns sinks rather than sources of emissions. While details of RED mechanisms have yet to be worked out, it is clear that they will have to focus on the avoidance or reduction of CO_2 emissions rather than on deforestation *per se*. Thus, one currency in which they must be considered is tonnes of CO_2 as distinct from hectares of forest. There is no simple linear relationship between these two sets of units because forests and other ecosystems vary in both the amount of carbon per hectare they store in their biomass (carbon density) and the carbon immobilised in other compartments of the ecosystem, such as the soils (FAO 2006a). Therefore, there is no clear correlation between net loss of forest cover and the quantity of CO_2 emitted through deforestation. Furthermore, the degree to which deforestation releases stored CO_2 from biomass and other ecosystem compartments depends on the methods used for deforestation (e.g. whether fire is involved) and the land use in the newly converted forest areas. For example, in the peat swamp forests of Southeast Asia, deforestation, fire and drainage are estimated to generate at least 2000 Mt CO_2 emissions annually (Hooijer *et al*. 2006).

For the current purposes of UNFCCC and the Clean Development Mechanism, forests are defined as areas larger than 0.05-1 ha having greater than 10-30% crown cover of trees that are 2-4 m or more in height (each Party selects an appropriate definition from the specified range). Emissions resulting from deforestation are therefore those emissions resulting from a reduction in the area that meets this

definition. It is important to recognise, however, that large carbon emissions can be generated from forests by tree removal and other degradation processes that do not cause them to pass the definition thresholds (Mollicone et al 2007). Discussions around RED also include whether emissions from forest degradation should be included in the mechanism. Many such issues remain to be clarified to ensure that the objectives and modalities of RED developments are clear and unambiguous.

Once definitions and other issues are resolved, an effective mechanism to advance RED will provide an unprecedented opportunity to reap multiple environmental and other benefits at global, national and local scales. Despite their basic focus on carbon, RED efforts under the UNFCCC have strong potential to contribute towards the goals of many other multilateral environmental agreements and mechanisms and to help national governments to meet their obligations under these instruments, as well as to help assure the continued provision of vital ecosystem services by forests and to enhance livelihoods. This paper highlights the relevant policy goals and commitments, as well as the ecosystem services most likely to be affected by RED efforts. It identifies considerations and tools for addressing these that could increase the efficacy of RED efforts for meeting multiple environmental objectives. This paper focuses on RED only in relation to deforestation; reducing forest degradation would increase still further the potential for multiple benefits.

Multiple Benefits: Multilateral Environmental Agreements and Processes

Many multilateral environmental agreements and processes have objectives that are directly and/or indirectly linked to maintenance of healthy forest ecosystems. Most explicitly recognise climate change as a major factor affecting their focal concerns, and some recognise the importance of ecosystems in general or forests in particular for carbon storage. However, outside the UNFCCC, no process focuses on carbon storage as an objective (Table 1).

In addition to the International Tropical Timber Agreement (ITTA) and the United Nations Forum on Forests (UNFF), which specifically address forest issues, global agreements whose objectives relate to forests in some way include: the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD), the Ramsar Convention on Wetlands of International Importance, the Convention on Migratory Species (CMS), and the World Heritage Convention. Importantly, a number of processes that are less strictly environmental in scope also include objectives or targets relating to forests. These include the Millennium Development Goals and other discussions on sustainable development, in particular the Commission on Sustainable Development and the World Summit on Sustainable Development (WSSD).

Table 1. Multilateral agreements and processes that include forest-related objectives

Instrument	***Example forest-related objective(s)***
UNFCCC	Reduction in emissions resulting from deforestation
ITTA	Sustainable supply of timber
UNFF	Sustainable forest management
CBD	Conservation and sustainable use of forest biodiversity
UNCCD	Maintenance and restoration of forest cover as a means of reducing effects of desertification
Ramsar Convention	Conservation and wise use of forest wetlands
CMS	Conservation of migratory species using forest habitats

World Heritage Convention	Protection of identified forests representing heritage of outstanding universal value
MDGs	Ensuring environmental sustainability and reversing the loss of forest-related resources
CSD	Promoting the role of forests in sustainable development
WSSD	Support for the forest-related components of other instruments

International Tropical Timber Agreement

The 1994 International Tropical Timber Agreement (ITTA) had 58 signatories. The newly renegotiated 2006 version of the ITTA, which will enter into force in 2008, will potentially have 82 signatories: 45 producer and 37 consumer countries. The 2006 ITTA builds on the foundations of the previous agreements, focusing on the world tropical timber economy and the sustainable management of the resource base, simultaneously encouraging the timber trade and the improved management of forests. In addition, it contains provisions for information sharing, including non-tropical timber trade data, and allows for the consideration of non-tropical timber issues as they relate to tropical timber. A RED mechanism could provide a basis for improved management of tropical forests.

United Nations Forum on Forests

The United Nations Forum on Forests (UNFF) involves all 192 member-states of the United Nations and aims to promote "… the management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end" based on the Rio Declaration, the Forest Principles, Chapter 11 of Agenda 21 and the outcome of the Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests (IPF/IFF) processes, and other key milestones of international forest policy. UNFF promotes sustainable management, including forest restoration and conservation of threatened species – to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. Sustainable forest management will be fundamental to the maintenance of forest under a RED mechanism.

Convention on Biological Diversity

The CBD, which has been ratified by 189 countries and the European Community, addresses forests within its three broad objectives: Conservation of biodiversity, sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources. Forests are addressed specifically and in more detail within the *Expanded Programme of Work on Forest Biological Diversity.* Much of the CBD's effort is aimed at its '2010 biodiversity target' of significantly reducing the rate of biodiversity loss by 2010. Among the indicators of progress towards this target are changes in the extent of ecosystems such as forests, the area of forest under sustainable management, and trends in ecosystem integrity and ecosystem goods and services, and specifically in the fragmentation or connectivity of forest ecosystems. All of these could be affected positively by the implementation of a RED mechanism.

UN Convention to Combat Desertification

The UN Convention to Combat Desertification, which has been ratified by 190 countries and the European Community, recognises the importance of ecosystem loss and degradation as drivers of desertification and encourages Parties to manage ecosystems sustainably and to conserve them, and especially singles out the importance of forests in this respect. It specifically recognises the concerns of low forest cover countries and supports their participation in the Tehran Process on countries with low forest cover under UNFF. Maintaining forest cover in these countries can make an important contribution to combating desertification and mitigating the effects of drought.

Ramsar Convention on Wetlands

The Ramsar Convention on Wetlands, which has 154 Contracting Parties, promotes the conservation and wise use of all wetlands through local, regional and national actions and international cooperation, as a

contribution towards achieving sustainable development throughout the world. According to its definitions, wetlands include many types of forests such as mangroves, riverine forests, bog and swamp forests. The operational objectives of the Convention recognise the importance of land use planning and catchment and river basin management in maintaining the ecological character of Ramsar sites and other wetlands. Maintaining forest cover is a fundamental part of catchment management and maintaining healthy wetlands.

Convention on Migratory Species

The Convention on Migratory Species (CMS), which has 101 Parties, urges Parties to take action to conserve and manage effectively key sites and habitats to improve the conservation status of migratory species of conservation concern and, where appropriate, to connect these sites through networks of protected areas and corridors. A number of the species listed in the CMS appendices are forest species whose habitats might be conserved and managed under a RED mechanism.

World Heritage Convention

The World Heritage Convention, bringing together 183 State Parties, is concerned with the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage of outstanding universal value. State Parties are required to take the appropriate legal, scientific, technical, administrative and financial measures in this regard. The World Heritage List of cultural and natural heritage comprises 162 natural and 24 mixed cultural and natural properties, many of which are forests. Any RED mechanism would potentially support the protection and conservation of those forest properties.

Millennium Development Goals

The Millennium Development Goals (MDGs) explicitly recognise the importance of forests for human well being and livelihoods through the inclusion of indicators on forests and biodiversity under goal 7 on environmental sustainability (ensure environmental sustainability), target 9 (Integrate the principles of sustainable development into country policies and programmes and reverse the losses of environmental resources). Benefits for human livelihoods can potentially be achieved through implementation of a RED mechanism that works within the framework set by the MDGs.

Commission on Sustainable Development

The United Nations Commission on Sustainable Development (CSD) was established by the UN General Assembly in December 1992 to ensure effective follow-up of the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit. The CSD is the high-level forum for sustainable development within the United Nations system. At its fifth session, in 1997, CSD considered forests as a sectoral focus. The meeting recognised the importance of forests for sustainable development, and called for political commitment to encourage and facilitate the intergovernmental policy dialogue on forests. It also called for implementation of national forest programmes and enhanced international cooperation. Forests are part of the thematic cluster for the 2012/2013 session of the CSD. Development of a RED mechanism that can contribute to sustainable development would advance the mission of the CSD.

World Summit on Sustainable Development

In 2002, the World Summit on Sustainable Development (WSSD) adopted the Johannesburg Plan of Implementation. The Plan recognises that sustainable forest management is essential to achieving sustainable development and urges actions to enhance political commitment for sustainable forest management; support UNFF; take action on domestic forest law enforcement; achieve sustainable timber harvesting; address the needs of those parts of the world that suffer the highest deforestation rates; create and strengthen cooperation to facilitate the provision of increased financial resources, technology transfer and capacity-building; accelerate implementation of the proposals for action of IPF/IFF; support indigenous and community-based forest management systems; and implement the CBD expanded programme of work on forest biodiversity. Both, the forest-related calls from the CSD and the

commitments of the WSSD Plan of Implementation could become integral parts of a RED mechanism. A RED mechanism that recognises and promotes the livelihoods benefits of forests will contribute to meeting the goals of these processes.

Mechanisms to support collaboration among processes

At present, at least two key mechanisms exist to support collaboration among processes and promote consistency among their approaches:

- The ***Joint Liaison Group*** (JLG) comprising CBD, UNCCD and UNFCCC, established as an informal forum for exchanging information, exploring opportunities for synergistic activities and increasing coordination. The JLG comprises the officers of the Conventions' scientific subsidiary bodies, the Executive Secretaries, and members of the secretariats.
- The ***Collaborative Partnership on Forests,*** which comprises 14 major forest-related international organizations, institutions and convention secretariats. The objectives of the Collaborative Partnership on Forests are to support the work of UNFF and member countries, and to enhance cooperation and coordination on forest issues.

These and other mechanisms could be mobilised to contribute to development of a RED mechanism and to support countries in its implementation.

Summary

These different agreements and processes all promote forest conservation and sustainable management for slightly different reasons. None of them is strongly prescriptive in the way they define forest, but their reasons for valuing forests lead to different approaches (e.g. see the report of the FAO/IPCC expert meeting on harmonization of forest-related definitions for use by various stakeholders, UNEP/CBD/COP/6/INF/26). Thus, progress towards the goal of reducing emissions from deforestation under UNFCCC can help to meet some (although not all) of the relevant objectives of these agreements and processes, depending on the mechanism and attendant definitions that are finally agreed for RED. Similarly, many of the actions being taken under these agreements and processes already limit deforestation and have the potential to contribute to RED.

Multiple Benefits: Ecosystem Services

As recognised by many of the above agreements and processes, and detailed in the Millennium Ecosystem Assessment (Millennium Ecosystem Assessment 2005), forests are important providers of essential ecosystem services. Their crucial role in carbon storage and climate regulation is the basis for the UNFCCC discussions of RED, but other services they provide, such as housing and preserving endemic biodiversity, have similar global values. Still other forest ecosystem services such as maintaining populations of natural crop pest predators and of pollinators, water regulation, timber and food provision, and the landscape values that promote tourism, are vitally important to individual nations and to local communities. Therefore, in addition to helping countries to meet their international commitments on the environment, reducing rates of forest loss can also help them to obtain the concrete benefits provided by forests.

Where forests have been retained, the services they provide may also have strong implications for other ecosystems. Thus, for example, retaining forests in mountain catchments and around headwaters can not only help to ensure consistent water yields of high quality, it can contribute to the health of aquatic ecosystems and wetlands and their abilities to provide ecosystem services in turn. Studies show that intact forests play a key role in the health of riverine, estuarine and coastal ecosystems (Thrush *et al*. 2004), and that forest habitats support pollinator populations that increase yields within agricultural ecosystems (de Marco & Coelho 2004).

Retaining large tracts of forest not only ensures a greater area remains to provide values and services, but also potentially improves the status and resilience of the remaining forest. On the whole, forests are more robust and less vulnerable to disturbances by fire and wind when present in larger tracts. Individual forest areas can contribute to the robustness of others by providing regulating services such as modulating local climates and maintaining populations of species that are key to ecosystem function, such as pollinators and dispersers. This increased robustness adds to the ability of forests to store carbon.

On the other hand, it is important to recognise that efforts to reduce rates of deforestation can be associated with risks to ecosystem services. These are largely dependent on the drivers of land use change that are causing forest loss. For example, if the drivers of land use change (such as agricultural or urban development) are strong enough and are insufficiently addressed in efforts to retain forest cover, this land use change may be shifted to other ecosystems, such as wetlands or grasslands (i.e. 'leakage' in UNFCCC terminology).. This kind of shift would adversely affect the goods and services provided by the affected ecosystems. Thus important biodiversity may be lost from these other ecosystems, water quality may be prejudiced (in the case of wetlands), or cultural values may be lost. Furthermore, th shifts may even have implications for carbon storage if the affected ecosystems have high carbon storage capacity (e.g. peatlands) and especially if the conversion process includes fire. Carefully integrated cross-sectoral planning and decision-making can help to avoid these adverse impacts.

A further risk is that limiting deforestation may prove less effective in carbon storage terms if the forest retained proves sensitive to climate change. Increasing temperatures and altered rainfall patterns can lead both to forest ecosystem degradation and to changes in soil carbon dynamics that may mean that the reduction of emissions is smaller than initially anticipated. Monitoring and accounting tools will need to be sensitive to such processes to minimise the errors in tracking carbon emissions.

Multiple Benefits: Livelihoods

The goods and ecosystem services provided by forests underpin the livelihoods of millions of people, and especially the rural poor. Maintaining forest cover helps to maintain the supply and security of these goods and services, for which there are often no viable alternatives. Careful implementation of RED can therefore help to secure and enhance the livelihoods of vulnerable people.

Depending on the factors driving deforestation, and the approaches adopted to implement RED (such as strictly protected areas), limiting land use change and deforestation can also limit access to key forest resources. It can reduce access to land for cultivation or constrain the suitability of the land available. It may limit people's access to forest products, which can be particularly important for food security and other components of livelihoods for the poor. It may also limit traditional activities, causing cultural impacts. The livelihood implications of such actions will need to be assessed. Integrated planning can help to reduce some such impacts, and there is the potential to mitigate or minimise others, for example through benefit sharing. It will be vital to assess correctly the drivers of deforestation and plan actions accordingly. A recent report by the World Bank (Chomitz et al. 2006) points out that land clearance by the poor is often mistakenly identified as the driver of deforestation, when other factors may be more important. Addressing the true main drivers and actors of deforestation will potentially mitigate negative impacts of RED on rural livelihoods. Supporting efforts to implement sustainable forest management, low impact logging and joint forest management and other arrangements for benefit-sharing may help to achieve a reduction of emissions of greenhouse gases and at the same time secure livelihoods of forest dependent communities.

Other considerations for attaining multiple benefits from RED

Definitions

The definitions agreed in the development of the RED mechanism under UNFCCC will influence the outcomes of RED from the perspective of multiple benefits. Land use based definitions, like those currently specified under the Marrakesh Accord, which include areas from which forest has temporarily been removed (FCCC/CP/2001/13/Add.1), will allow RED to deliver only some types of benefits. While areas designated as forest that are temporarily un-stocked do in theory retain their ability to generate forest products or store carbon (FAO 2006b), their function with respect to biodiversity or catchment protection may be severely compromised. Therefore, for these ecosystem services and the multilateral processes and agreements that address them, the actual forest cover and its condition are much more important than the land use designation. Depending on how the RED mechanism develops, it will also be important to define forest degradation and examine the carbon implications of degradation in other ecosystems with high carbon storage potential, such as peatlands.

Shared monitoring and reporting

It will be important to recognise the multiple benefits of RED via appropriate monitoring and reporting schemes at national and global scales. Reporting of such benefits may well occur under the relevant multilateral agreements, but there is as yet no mechanism for noting them within the UNFCC. Shared monitoring and harmonisation of reporting to different international agreements can reduce the costs of documenting, and increase the profile of the multiple benefits arising from RED.

Existing voluntary schemes

A number of existing or developing voluntary emissions reduction programmes (VERs) seek to maximise non-carbon environmental benefits from carbon sequestration under the CDM. The length and perceived uncertainty of the negotiation process for adopting a RED mechanism may be disincentives for voluntary schemes. The loss of existing schemes should be avoided by considering them within the design and priorities of official national-scale RED implementation.

The accuracy of accounting carbon (and other) benefits of RED will also require attention in the light of voluntary schemes. The risk is that the carbon and other benefits from these schemes are included both within national accounts and the scheme's own reporting, double-counting their benefits.

Actions to Reduce Emissions from Deforestation

Despite these limited risks, the development of mechanisms providing new and additional resources for reducing emissions due to deforestation provides an important opportunity for achieving multiple environmental and other benefits at both national and international levels. Furthermore, with appropriate tools and support, the actions that countries take towards RED goals can also help them to meet a number of their commitments under multilateral environmental agreements and other processes.

The actions that Parties are likely to take to make progress towards RED goals fall into three broad categories. These are: (i) actions that aim to limit the drivers of deforestation, including decisions on extractive activity, infrastructure development, and agricultural expansion, as well as programmes to meet societal and livelihoods needs from other sources and sectors; (ii) protection of forests, either in formal protected areas or in community conservation areas; and (iii) implementation of sustainable forest management regimes in production forest. (These broad categories of action are equally relevant to reducing emissions from forest degradation). Each of these types of action can have multiple benefits, and decisions taken at all levels on how and where to implement them will affect the achievement and magnitude of these benefits.

It will be important to develop complementary measures in order to ensure that efforts aimed at emission reductions from deforestation do not exclusively focus on the carbon values of forests. For example, additional support for protecting high priority conservation areas would provide co-benefits for biodiversity and could overcome land-use opportunity costs. Similarly, conserving arid and semi-arid woodlands with relatively low carbon values would contribute greatly to halting desertification and land degradation, particularly in Africa.

Decision support tools for RED implementation

Key to decisions on implementing such actions is strategic analysis of the opportunities available for reducing emissions from deforestation, for meeting commitments under non-climate agreements and for obtaining ecosystem values and services. This analysis must take account of the facts that environmental values of forests are unevenly distributed across landscapes and that different values can be very differently distributed. For example, some relatively low stature and therefore low carbon forests are critically important for biodiversity, and forests important for regulating water flows and reducing flooding risks may or may not be in areas of high value for biodiversity conservation. A further complication is that the values assigned to ecosystem services vary depending on the scale of the decision (e.g. national, regional or operational). The Natural Capital Project partnership and other groups are currently developing tools that can potentially aid this kind of strategic analysis by helping to quantify and visualise the distribution, magnitude and flows of ecosystem services (Naidoo & Ricketts 2006).

Identifying opportunities for RED actions will also depend on knowledge of rates and drivers of change in forest cover and of their distribution. The feasibility of addressing particular drivers will be key to deciding policy options.

Multicriteria analysis of the services and values provided by forests and the potential benefits from land use change could provide a basis for prioritising areas for RED implementation and maximising multiple benefits (e.g. Chan et al. 2006). Scenario analysis incorporating economic and environmental drivers would help to consider the potential impacts of the different policy options and prioritisation identified (e.g. ten Brink et al. 2006).

An important component of such scenario analysis will be recognising and incorporating risks associated with RED implementation. These include economic risks at the national scale, derived from the opportunity costs associated with redirecting land use change and possible fluctuations in the value of the carbon stored. The risks at the global scale are that RED actions do not in fact reduce emissions as much as anticipated or deliver the other benefits sought in optimum ways. This may come about through 'leakage', when land use change is diverted to other ecosystems or nations. Leakage is well recognised as a concept in relation to carbon storage, but it has been less discussed with respect to other environmental values and services. It is important to recognise that leakage can occur with respect to these values, and because of differences in their spatial distributions, may differ among values. Incorporating potential leakage in both carbon emissions and other land use change impacts into policy option scenarios can help to ensure that appropriate decisions are taken.

Requirements for research and support to Parties

In addition to decision support tools, substantial research and development will be needed to ensure that the RED mechanism is as efficient and effective as possible and that Parties are supported in its implementation. Relevant areas include:

- supporting countries in accurate identification of drivers of forest loss;
- supporting countries in assessing deforestation rates and developing appropriate monitoring programmes;

- development of scenario modelling to assess the implications of different mechanisms and associated definitions in terms of potential environmental and livelihoods benefits;
- investigation of the effects of forest fragmentation and other degradation processes on the integrity and vulnerability of carbon sinks;
- modelling and helping countries to minimise leakage and its environmental impacts of 'leakage'.

Conclusion

The development of a mechanism for reducing emissions due to deforestation provides an unprecedented opportunity for achieving multiple environmental and other benefits at global, national and local scales. Including reduction of emissions due to forest degradation in such a mechanism would increase still further the potential for multiple benefits. A RED mechanism will need to recognise and promote opportunities for also achieving forest-related objectives of other instruments, retaining forest ecosystem services and enhancing livelihoods from forests. Furthermore, with appropriate tools and support, the actions that countries take towards RED goals under the UNFCCC can also help them to meet a number of their commitments under multilateral environmental agreements and other processes as well as to help ensure the continued provision by forests of vital ecosystem services and livelihoods. Similarly, actions taken under other MEAs should be directed at generating multiple benefits, including RED, wherever possible. Integrated cross-sectoral planning and decision-making is required to maximise the benefits and minimise risks for the maintenance of the suite of services provided by forests.

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PAPER NO. 6: UNITED NATIONS FORUM ON FORESTS

Submission by the secretariat of the United Nations Forum on Forests

Reducing Emissions from Deforestation in Developing Countries

I. Introduction

Pursuant to SBSTA decision FCCC/SBSTA/2006/L.25, taken in November 2006, the secretariat of the United Nations Forum on Forests would like to contribute to the on-going discussion on reducing emissions from deforestation in developing countries with the present submission. The submission will primarily address ongoing policy approaches to the challenges presented by deforestation, paying particular attention to the policy decisions taken by member States in this regard since 1992 as well as prospects for future action.

II. Deforestation on the International Policy Agenda

There have been more than forty international organizations and more than twenty international agreements related to forests, yet no single international institution or instrument had the mandate to address holistically all aspects of forest policy until very recently. As a result, the UN Economic and Social Council (ECOSOC) established in 2000, the United Nations Forum on Forests (UNFF) with the objective of promoting sustainable forest management worldwide and strengthening political commitment to this end. As a global policy making body with full membership of the 192 member States of the United Nations, the UNFF is a subsidiary body of the UN Economic and Social Council (ECOSOC) and reports to ECOSOC, and through it, to the General Assembly. The UN Forum on Forests provides a forum for discussion of experiences as well as challenges related to sustainable forest management, including prevention of deforestation, and provides policy guidance for action at the international and national levels.

In 2006, the UNFF and ECOSOC agreed on four Global Objectives on Forests which aim to reverse the loss of forest cover, improve the contribution of forests to local livelihoods, increase protected areas, and enhance financial support for sustainable forest management.[1] The resolution also calls on the UNFF to complete negotiations of a non-legally binding instrument on all types of forests at its seventh session in April 2007. Such an instrument would provide a framework for international and national action to achieve the agreed Global Objectives and, upon adoption by the General Assembly, provide for a strong political commitment to the reduction of deforestation and the enhancement of sustainable forest management world-wide. Deforestation thus continues to be an issue of high priority on the international political agenda.

Global Objectives on Forests
Global Objective 1
Reverse the loss of forest cover worldwide through sustainable forest management, Including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation;

Global Objective 2
Enhance forest-based economic, social and environmental benefits, including by improving the livelihoods of forest dependent people;

[1] ECOSOC Resolution 2006/49

Global Objective 3
Increase significantly the area of protected forests worldwide and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests;

Global Objective 4
Reverse the decline in official development assistance for sustainable forest management and mobilize significantly increased new and additional financial resources from all sources for the implementation of sustainable forest management;

The broad mandate of the UNFF and the forthcoming adoption of a non-legally binding instrument on all types of forests is the culmination of a steadily growing and evolving negotiation process that is founded on the outcomes of the 1992 UN Conference on Environment and Development (UNCED). Chapter 11 of Agenda 21, entitled "Combating Deforestation" and the Forest Principles[2], adopted by Heads of State, represent the first global consensus on forests. Both Agenda 21 and the Forest Principles outline the ecological and socio-economic importance of forests, placing an emphasis on national sovereignty in decision making as well as the importance of public participation, capacity building, and creating a national and international enabling environment for management, conservation and sustainable development of all types of forests. Together, these agreements represent the beginning of a more nuanced view of sustainability and environmental conservation at the global level, fully cognoscente of the tension between protection and development.

Though there was a proposal for a legally binding convention on forests as an outcome of the UNCED, member States decided to initiate an Intergovernmental Panel on Forests (IPF) under the auspices of the United Nations Commission on Sustainable Development. The IPF had a two year mandate from 1995-1997. Upon review of progress made, member States agreed to raise the profile be creating the Intergovernmental Forum on Forests (IFF), again under the auspices of the UN Commission on Sustainable Development, with a mandate to function for two years. These processes provided a forum for member States to further discuss and build consensus around the critical components of sustainable forest management and reducing deforestation. During these years, member States agreed on 270 Proposals for Action for sustainable forest management which continue to function as the foundation of policy guidance for countries at both the international and national levels.

Increased consensus around forest-related issues as well as the recognition of a need to increase the political profile of forests led to the creation by ECOSOC in 2000 of the United Nations Forum on Forests as a full functional commission of ECOSOC with universal membership.

III. Inter-governmental Decisions Related to Deforestation

Intergovernmental Panel on Forests

The underlying causes of deforestation were a topic of extensive discussion during the IPF/IFF process. The Intergovernmental Panel on Forests considered the issue at its second, third and fourth sessions in 1996-1997. The IPF "noted the critical need to understand the underlying causes of deforestation and forest degradation, which are often country-specific".[3] The fact that the causes of deforestation can come from both within and outside the forest sector was acknowledged as was the synergistic effect of these forces. Factors that have a strong influence on deforestation were identified as: production and consumption patterns; international trade; poorly regulated investment; market distortions, subsidies and relative prices, including those of agricultural commodities; undervaluation of wood and non-wood forest

[2] Officially named Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forest
[3] E/CN.17/1997/12 paragraph 18

products; land tenure patterns; land speculation and land markets; illegal logging; illegal land occupation and illegal cultivation; grazing pressures; unsustainable agriculture; the demand for fuel-wood and charcoal to meet basic energy needs; refugee-related problems; mining and oil exploitation in forested countries not conducted in accordance with appropriate national legislation; and natural climatic events and forest fires.[4]

The importance of using national policy frameworks for sustainable forest management and land use plans was highlighted as a way of assessing whether changes in forest cover are needed and beneficial in providing required goods and services now and in the future. The increasing demands both for forest products and services as well as for competing land-use pointed toward a need for better inter-sectoral policy making. Member States also recognized that there are rational justifications for changes in forest cover that must be considered by countries in their land use planning.

A number of Proposals for Action were agreed in this regard, and the Panel:

a) urged countries to develop, test and implement appropriate participatory mechanisms for integrating timely and continuous multidisciplinary research into all stages of the planning cycle;[5]

b) encouraged countries to elaborate systems, including private and community forest management systems, for planning, implementing, monitoring and evaluating national forest programmes that identify and involve, where appropriate, a broad participation of indigenous people, forest dwellers, forest owners and local communities in meaningful decision-making regarding the management of state forest lands in their proximity, within the context of national laws and legislation;[6]

c) urged countries, as relevant and appropriate, with the support of international organizations and the participation of major groups, where relevant:

(i) to prepare in-depth studies of the underlying causes at the national and international levels of deforestation and forest degradation;

(ii) to analyze comprehensively the historical perspective of the causes of deforestation and forest degradation in the world, and other international underlying causes of deforestation and forest degradation, including trans-boundary economic forces;

(iii) to provide new factual information on the significance of trans-boundary pollution[7]

d) urged countries to assess long-term trends in their supply and demand for wood, and to consider actions to promote the sustainability of their wood supply and their means for meeting demand, with a special emphasis on investment in sustainable forest management and the strengthening of institutions for forest resource and forest plantations management;[8]

e) urged countries to recognize and enhance the role of forest plantations as an important element of sustainable forest management complementary to natural forests;[9]

f) encouraged countries to undertake, as needed, the following activities:

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[4] E/CN.17/1997/12 paragraphs 20 and 24
[5] E/CN.17/1997/12 paragraph 17e
[6] E/CN.17/1997/12 paragraph 17f
[7] E/CN.17/1997/12 paragraph 27
[8] E/CN.17/1997/12 paragraph 28 (a)
[9] E/CN.17/1997/12 paragraph 28 (b)

(i) to formulate and implement national strategies, through an open and participatory process, for addressing the underlying causes of deforestation, and, if appropriate, to define policy goals for national forest cover as inputs to the implementation of national forest programmes;

(ii) To develop mechanisms, such as environmental impact assessments, to improve policy formulation and coordination, through an open and participatory process;

(iii) to formulate policies aiming at securing land tenure for local communities and indigenous people, including policies, as appropriate, aimed at the fair and equitable sharing of the benefits of forests;[10]

g) encouraged countries and international organizations:

(i) to provide timely, reliable and accurate information on the underlying causes of deforestation and forest degradation, where needed, as well as on the multiple roles of forests, as a foundation for public understanding and decision-making;

(ii) to assist developing countries in promoting an integrated approach towards the formulation and application of national policy frameworks, and in conducting strategic analyses of relevant political, legal and institutional policies that have contributed to deforestation and forest degradation, as well as of policies that have had a positive effect;[11]

h) urged developed countries and multilateral and international organizations, including regional development banks, to assist developing countries and countries with economies in transition in those activities;[12]

i) encouraged countries, within their respective legal frameworks, international organizations and financial institutions, to enhance, subject to national legislation, community financing as an important strategy to promote sustainable forest management, and to establish policy and programmatic mechanisms and instruments that facilitate local investments in sustainable forest management by, inter alia, indigenous groups and forest owners;[13]

Intergovernmental Forum on Forests

The issue was again addressed at the second, third and fourth session of the Intergovernmental Forum on Forests in 1998 and 1999[14]. The IFF stressed the importance of policy consistency inside and outside the forest sector and emphasized the need for effective policy coordination. Member States agreed that the underlying causes of deforestation are often socio-economic in character and could include poverty, lack of secure land tenure patterns, inadequate recognition of the rights and needs of forest-dependent indigenous and local communities within national laws and jurisdiction, inadequate cross-sectoral policies, undervaluation of forest products and services, lack of participation in decision making, issues of governance, absence of a supportive economic climate that supports sustainable forest management, lack of capacity, lack of an enabling environment, at both the national and international levels, and national policies that may distort markets and encourage forest land conversion. It was further reaffirmed that the underlying causes of deforestation and forest degradation as well as the approaches to deal with them are often country specific.

[10] E/CN.17/1997/12 paragraph 29
[11] E/CN.17/1997/12 paragraph 30
[12] E/CN.17/1997/12 paragraph 31 (b)
[13] E/CN.17/1997/12 paragraph 70 (c)
[14] E/CN.17/IFF/1999/25, D/1 paragraphs 1-8

It was agreed that combating deforestation requires the involvement of many actors, including national and sub-national governments, civil society, forest owners, international organizations, the private sector, research organizations, and international and bilateral aid agencies as well as broad participation of indigenous and local communities.

A number of Proposals for Action were agreed in this regard. These include:

(a) further study and take practical measures to address the chains of causality of the underlying causes of deforestation and forest degradation within each country, including the impact of poverty as well as the impact of processes outside the forest sector;

(b) create appropriate procedures in order to promote effective participation of all interested parties in decision-making about forest management;

(c) support appropriate land tenure law and/or arrangements as a means to define clearly land ownership, as well as the rights of indigenous and local communities and forest owners, for the sustainable use of forest resources, taking into account the sovereign right of each country and its legal framework;

(d) develop mechanisms, as appropriate, to improve land access and use of forest resources on a sustainable basis;

(e) support capacity-building in communities, in particular for those with responsibilities in forest management, including in low forest cover countries, and create awareness in the society at large on the importance of issues related to deforestation and forest degradation;

(f) promote maintenance and enhancement of forest resources through sustainable forest management practices, and promote the creation of new forest resources through the establishment of planted forests and other means, such as rehabilitation of degraded forests, taking into consideration their social, cultural and environmental impacts, and economic costs and benefits;

The IFF further encouraged countries to recognize the actual and potential impacts of economic instruments and tax policies as a means of providing incentives to engage in activities that avoid deforestation and forest degradation and that support sustainable forest management practices; and to examine, in collaboration with international organizations, when requested, the role of forest policy failures and policies in other sectors as a contributing factor in deforestation, forest degradation or unsustainable forest management; and to collaborate with international organizations in developing mitigating policies.[15]

United Nations Forum on Forests

Placing a strong emphasis on the political importance of the issue of deforestation and forest degradation, the United Nations Forum on Forests considered underlying causes of deforestation at its second session in 2002. This session also included a High Level Ministerial segment.

Ministers, in their Declaration, expressed their concern about the continuing high rate of worldwide deforestation, as well as forest and land degradation, and committed themselves to work to reverse these trends[16].

Through its resolution 2/2[17], the UNFF:

[15] E/CN.17/IFF/1999/25, D/6 paragraph 8 (c)
[16] E/CN.18/2002/14, Ministerial Declaration, paragraph 3
[17] E/CN.18/2002/14, Resolution 2/2, paragraphs 4-7

a) urges Governments and encourages initiatives by Governments and interested stakeholders to address domestic forest law enforcement and illegal international trade in forest products, including in forest biological resources, with the support of the international community;

b) urges countries to promote trade policies and practices to support sustainable forest management, including in the World Trade Organization (WTO), and encourages countries to participate in the negotiations of WTO in the context of the work programme adopted at Doha in order to implement, inter alia, relevant IPF/IFF proposals for action related to trade;

c) invites countries and the members of the Collaborative Partnership on Forests to review and report on the state of knowledge on subsidies that may result in deforestation and forest degradation;

d) urges countries to strengthen international cooperation on finance, trade, transfer of environmentally sound technology and capacity-building in order to combat deforestation and forest degradation, taking into account the importance of that issue for sustainable forest management in developing countries.

Though subsequent sessions of the UNFF do not explicitly address the issue of combating deforestation and forest degradation, the policy guidance provided to further promote and enhance sustainable forest management at all levels also contributes to a better understanding of how deforestation and forest degradation can be prevented.

IV. Implementing Decisions

National Policy Measures

Apart from explicit policy guidance, the United Nations Forum on Forests has also supported a number of other means of ensuring sustainable forest management. National Forest Programs (NFP) were conceived as a tool for policy implementation in the context of the UNCED. They have proven quite effective in facilitating cross-sectoral analysis and a participatory approach to identifying problems as well as formulating, implementing and monitoring policies, strategies and actions. The consultation required to create such a framework for national level policy can be helpful in aligning forests with the wider national development goals and ensuring financial commitments. It is hoped that they would also contribute to and be in line with national Poverty Reduction Strategies.

Substantial efforts have also been made to create criteria and indicators for sustainable forest management through nine regional processes involving more than 140 countries. Such processes are useful in helping to create region specific conceptualizations of what it means for a forest management system to be sustainable as well as in monitoring and assessing changes in the forests as well as effectiveness of policy interventions.

Means of Implementation

Agenda 21 and the decisions of the IPF/IFF and UNFF place strong importance of the means of implementation for ensuring that inter-governmental decisions are translated into action on the ground. The three primary means of implementation are financing, transfer of environmentally sound technology and capacity building. Many countries report difficulties in implementing the agreed decisions of UNFF because of a lack of such means.

At its sixth session, the UNFF identified a comprehensive, but not exhaustive, assessment of the means required to help implement the Global Objectives on Forests and to further promote sustainable forest

management[18]. Member States highlighted the importance of further developing national forest programmes, increasing efforts at capacity building, expanding research and improving transfer of environmentally sound technology.

Member States agreed to reverse the decline in official development assistance for sustainable forest management; strengthen existing forest-related funds including the National Forest Programme facility (hosted by the FAO), the Programme on Forests (hosted by the World Bank) and the Bali Partnership Fund (hosted by the ITTO); mobilize and provide significant new and additional resources for sustainable forest management; and develop innovative financial mechanisms for generating revenue to support sustainable forest management. The creation of a funding mechanism for reducing deforestation in developing countries could be one way of fulfilling this commitment.

Conclusions

The current discussion on reducing emissions from deforestation in developing countries is a welcome and potentially important contribution to the ongoing efforts by member States to combat deforestation and forest degradation. Since the adoption of Agenda 21 and the Forest Principles at the UN Conference on Environment and Development in 1992, member States have been deliberating on how best to achieve the objective of reducing the loss of forest cover while recognizing the particular social and economic needs of countries. The Intergovernmental Panel on Forests, the Intergovernmental Forum on Forests and now the United Nations Forum on Forests have consistently provided policy guidance to countries on strategies to achieve this objective. With the four new Global Objectives on Forests adopted by ECOSOC in 2006 and the potential adoption of a non-legally binding instrument on all types of forests that further supports these Objectives, member States have maintained the need to address the loss of forest cover as a high priority on the political agenda. Member States of the United Nations Forum on Forests will thus continue to address the issue of the loss of forest cover in its forthcoming sessions as they seek to further promote the implementation of the Global Objectives.

The possibility of creating a financial mechanism by the UN Framework Convention on Climate Change that would support efforts by developing countries in combating deforestation and reducing emissions would thus provide a unique opportunity to address the issues of concern of both political processes. By providing such financial support, Parties would be helping to implement both the goals of the Framework Convention as well as the intention of Agenda 21 and the Global Objectives on Forests. It should be noted that the Climate Change Secretariat and the UNFF Secretariat are among the members of the Collaborative Partnership on Forests (CPF), which was formed in 2001 to support the work of the UNFF and to enhance coordination among the forest-related international organizations, instruments and institutions. Because of its mandate to address deforestation and sustainable forest management issues in a comprehensive and holistic manner, the United Nations Forum on Forests would be a strong and effective partner to the UNFCCC in ensuring further policy guidance that may be required in this regard.

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[18] E/CN.18/2006/18, paragraphs 5-6