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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

**SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE**  
**Twenty-fourth session**  
**Bonn, 18–26 May 2006**

**Item 6 of the provisional agenda**  
**Reducing emissions from deforestation in developing countries**

**Issues relating to reducing emissions from deforestation in developing countries and recommendations on any further process**

**Submissions from Parties**

1. The Conference of Parties (COP), at its eleventh session, invited Parties and accredited observers to submit to the secretariat, by 31 March 2006, their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. The COP invited Parties also to submit recommendations on any further process to consider the issues. It requested the secretariat to compile the submissions from Parties in a miscellaneous document and to post those from accredited observers on the UNFCCC website (FCCC/CP/2005/5, para. 81).

2. The secretariat received 18 submissions from Parties. 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 received 16 submissions from accredited observers by 10 April 2006. As requested by the COP, the secretariat will post these submissions on the UNFCCC website ([http://unfccc.int/documentation/documents/document\\_lists/items/2960.php](http://unfccc.int/documentation/documents/document_lists/items/2960.php)).

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\* 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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<sup>1</sup> This submission is supported by Bulgaria, Romania, Croatia, Albania, Bosnia and Herzegovina, Serbia and Montenegro, The former Yugoslav Republic of Macedonia and Turkey.

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<sup>3</sup> This submission is supported by Bolivia.

PAPER NO. 1: AUSTRALIA

**Submissions by Australia to the UNFCCC**

**Views relating to reducing emissions from deforestation in developing countries**

At its eleventh session, the Conference of the Parties invited Parties to submit their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. Australia is pleased to provide its views on this matter.

Deforestation is a major contributor to global emissions, second only to fossil fuel combustion. Consistent with Convention Article 4.1, it is timely that the SBSTA return its attention to this issue, and it is important that we make progress over the two years allotted to us by the Conference of the Parties. In Australia's view, an optimal outcome can only be achieved if we respect the complexity of the issue and sensitivities related to it.

**Overarching considerations**

There are several overarching issues that, in Australia's view, need to be borne in mind in approaching this issue in the SBSTA.

First, we must recognise that national circumstances vary significantly between countries, and may have a profound effect on national practices and outcomes in relation to forests. Any narrowly focused approach to tackling deforestation is likely to be applicable to all countries.

Second, it is important that we keep in mind the origins of this agenda item. This discussion has been initiated by developing countries as a practical means of addressing destruction of their forests and reducing the accompanying greenhouse gas emissions. In keeping with this constructive spirit of trust, the focus must remain on positive and facilitative outcomes that respect national sovereignty.

Finally, we should take care not to overreach in our efforts to address this issue. Any attempt to move too quickly may lead us prematurely into politically sensitive areas prior to the resolution of key underpinning issues. This could risk derailing the process, or lead to actions that in the future are found to be based on an incomplete or incorrect understanding of the economic, social and scientific issues surrounding deforestation.

**Topics for discussion at the workshop**

In Australia's view, the two-year process to address deforestation issues, including the workshop, should initially focus on building a technical understanding of forest cover change and land use change and their effect on greenhouse gas emissions.

Key issues for exploration during the two-year process include:

- . Establishing what is meant by deforestation.
  - SBSTA must consider the issues of temporary and permanent forest cover change, land use change, harvest activities, and legal and illegal activities in determining what is meant by “deforestation” in this context<sup>1</sup>
- . Approaches to measuring and monitoring the rates of forest cover change and land use change and resultant emissions over time.
  - Cataloguing the methods and approaches including the technological tools and techniques that are available to monitor forest cover change
  - Consideration of how data on forest cover change can be incorporated in a greenhouse gas inventory
  - Consideration of methods to establish certainty in emissions estimation standards and accounting compliance (e.g. wall to wall and comprehensive accounting; Tier 3 spatially explicit accounting; assessment at a national and/or regional scale)
- . Understanding the scale, drivers and patterns of forest cover change and the importance of national circumstances<sup>2</sup>.
  - Consideration of the economic and social aspects of deforestation, including leakage.
- . Conduct a stocktake of existing efforts to monitor and address forest cover change in developing countries, including for reasons other than climate change (eg biodiversity)<sup>3</sup>.
- . Exchanging national experiences in managing forest resources.

To Australia, this list highlights the enormity of the task facing the SBSTA over the next two years. Australia looks forward to a constructive discussion of this item at SBSTA 24.

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<sup>1</sup> This process should include establishing the scale and significance of the various activities across a number of countries.

<sup>2</sup> National responses to deforestation may differ between countries according to the driver for deforestation, eg land clearing for agricultural purposes and logging for timber.

<sup>3</sup> This may enable identification of synergies and additional benefits, as well as reducing risk of duplicating work already being done elsewhere.

PAPER NO. 2: AUSTRIA ON BEHALF OF THE EUROPEAN COMMUNITY  
AND ITS MEMBER STATES

**SUBMISSION BY AUSTRIA ON BEHALF OF THE EUROPEAN  
COMMUNITY AND ITS MEMBER STATES**

**This submission is supported by Bulgaria, Romania, Croatia, Albania, Bosnia and Herzegovina, Serbia and Montenegro, former Yugoslav Republic of Macedonia and Turkey**

Vienna, 31 March 2006

**Subject:** Reducing emissions from deforestation in developing countries:  
Approaches to Stimulate Action  
Views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives.  
Recommendations on any further process to consider the issues

**1. Introduction**

The Conference of Parties at its 11th session invited Parties and accredited observers to submit views on issues relating to reduced emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. The COP also invited Parties to submit recommendations on any further process relating to the issue. The EU is taking this opportunity to respond to these requests.

Austria, on behalf of the European Community and its Member States welcomes the Submission from Papua New Guinea and Costa Rica supported by eight countries (FCCC/CP/2005/Misc.1) entitled Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action.

**2. General Remarks**

Climate change requires an urgent global response in order to meet the ultimate objective of the Convention. The EU welcomes the decision to initiate consideration of further commitments for Parties included in Annex I to the Convention for the period beyond 2012 and the decision to engage in the Convention dialogue (Montreal Action Plan). The EU considers the Montreal Action Plan as a strategic approach in search of enhanced cooperation and further action to meet the ultimate objective of the Convention. The EU appreciates the start of the process of discussing issues related to deforestation in developing countries, which contributes about 20 % of global anthropogenic greenhouse gas emissions, and notes that effective action to reduce deforestation in developing countries could contribute towards achieving the objective of Article 2 of the Convention.

Furthermore, the EU recalls that the sixth session of the United Nations Forum on Forests (UNFF) agreed on a global objective to “reverse the loss of forest cover worldwide through sustainable forest management, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation”. The EU believes that the process under the UNFCCC could make an important contribution to this objective and that deforestation should be considered in a broad context, including all aspects of forest loss.

This submission presents some of the key issues relating to reducing emissions from deforestation in developing countries as a basis for further discussion.

### **3. Policy goals and priorities**

According to the report of the Intergovernmental Panel on Forests (IPF E/CN.17/IPF/1996/2), deforestation is the result of a number of interlinked national and international factors, which are complex, operate over different spatial and temporal scales, vary in importance among nations and regions, and have a socio-economic context. It is evident that any approach to avoid deforestation must be based on an understanding of the underlying drivers.

The EU believes that any effective approach should contribute to the ultimate objective of the Convention by resulting in demonstrable and long-term reductions in emissions from deforestation as well as

- support the development of national and international policies of sustainable land management,
- foster the sustainable use of forest ecosystems and the conservation of forest biological diversity, and take account of non-carbon forest values,
- promote synergies of actions at national and local levels and with international initiatives and processes, such as the UNFF, CBD, UNCCD, ITTA and regional initiatives e.g. to combat illegal logging,
- encourage long-term action, and sustained management and protection of carbon stocks, while avoiding the creation of perverse incentives,
- be based on sound, robust and transparent methodologies and a comprehensive set of definitions.

### **4. Scientific, technical and methodological issues**

Any international policy regime that aims to reduce emissions from deforestation in developing countries will require considerable scientific, technical and methodological inputs. This section gives a brief overview of the key topics that need to be considered when designing an international regime aimed at demonstrable reductions in emissions from deforestation in developing countries.

Addressing deforestation at national level, as suggested by Papua New Guinea and Costa Rica, provides an interesting basis for considering methodological issues.

#### *Monitoring and Reporting*

The IPCC guidelines for greenhouse gas inventories provide assistance and methods for estimating, measuring and reporting greenhouse gas emissions and removals by sinks. The EU

believes that changes in carbon stocks and anthropogenic greenhouse gas emissions in relation to deforestation in developing countries should be assessed using comparable methods to IPCC Guidelines, Good Practice Guidance and any further methodologies provided by the IPCC.

Remote sensing is an important tool for monitoring land cover, including changes in forest cover, all over the world. Some aspects of monitoring that may still require development and refinement are, among others, detection of forest losses short of deforestation and estimation of forest biomass. The EU notes that remote sensing for area identification is a technique covered by the IPCC 2003 Good Practice Guidance and anticipates that a combination of ground-based techniques and remote sensing may be needed.

The EU notes that capabilities and cost effective approaches of monitoring and reporting emissions from deforestation have to be addressed. Sharing experiences and efforts among countries will help and arrangements for further development of national and regional technical capabilities will play an important role.

#### *Baselines, Additionality, Leakage and Permanence*

Some methodological elements like baseline, additionality, leakage and permanence have already been addressed in the context of the Kyoto Protocol Clean Development Mechanism. The EU believes that in exploring options for achieving effective action to reduce emissions from deforestation in developing countries, these elements, as far as they are applicable, should be reconsidered, taking into account the following:

##### **Baselines and Additionality**

Baselines should be assessed in a fair way and should take account of different situations in order to achieve broad participation. They should be defined in a way to promote activities additional to business-as-usual, while not penalising early action. Furthermore, inter-annual variability should be taken into account.

##### **Leakage**

Leakage is an important issue for successful climate-change mitigation policy formulation. The EU believes that the formulation of national policies aiming at reducing deforestation within national boundaries is a promising way towards reducing negative leakages.

On a national level, verifying negative leakage as a consequence of e.g. forest protection would require an area-wide effective monitoring system.

On an international level, leakage from one country to another can be reduced by including all relevant Parties, especially those with high forest cover in an international reduction regime.

##### **Permanence**

A future framework should consider that reductions in deforestation are potentially reversible, therefore it should provide for long term action, and sustained management and conservation of forests. Furthermore the implication of natural events (i.e. natural fires, storms, flooding, etc.) on carbon stocks needs to be considered.

## **5. Positive Incentives**

The EU believes that reducing deforestation can result in significant benefits (water, air, soil, plants, animals, livelihoods, biodiversity etc.) to developing countries at national and local levels. However, it is recognised that in many cases, developing countries have neither the capacity nor the financial resources to establish national mechanisms to address the issue. In order to enable developing countries to tackle the issue at the earliest possible stage and to actively contribute to global GHG emissions' reduction, appropriate mechanisms and incentives should be considered, including e.g. bilateral and multilateral cooperation or public-private-partnerships.

Appropriate strategies to reduce emissions from deforestation will largely depend on, social, economic and regulatory factors at both national and international levels. Therefore, a range of instruments has to be considered to enable these strategies and measures to be tailored to specific regions, countries and localities.

Identification of incentives should be based on the contribution to long-term sustainable land and forest management, while reducing pressures towards unsustainable land use or land-use changes. Incentives should be defined in a way to help each participating Party overcoming obstacles to implementing measures for long-term sustainable forest management.

## **6. Initial views on further process to consider this issue**

The EU looks forward to discussing options for the possible development of an international framework aiming at encouraging and facilitating national efforts to reduce emissions from deforestation in developing countries, and would also be willing to discuss possibilities for promoting action set before 2012. However, the EU would like to underline that the relevant decisions (e.g. Marrakesh Accords, decisions in the context of afforestation and reforestation under the CDM) should not be reopened.

The EU is of the view that the further process should include the following elements:

- Consideration of information contained in the submissions and of the scope of the workshop at SBSTA 24. The EU believes that relevant policy and technical issues addressed in this submission should be incorporated into the scope of the workshop.
- A workshop to address deforestation in developing countries prior to SBSTA 25.
- The secretariat to prepare a technical paper on emissions associated with deforestation in developing countries and on policies and measures implemented to combat deforestation. The paper should synthesise and analyse data and information contained in the National Communications submitted by non-Annex I Parties and other relevant information.
- Consideration of information from the workshop and any other relevant information at SBSTA 25.
- The submission of further views, for example on the secretariat paper, by Parties and accredited observers in early 2007.
- Consideration of information contained in the submissions at SBSTA 26.
- Consideration of the report to the COP, including any recommendations, at SBSTA 27.

We look forward to further contributions by developing country partners, and to exchange relevant information and experiences on addressing deforestation.

**Agenda Item #6: Reducing Emissions from Deforestation in Developing Countries:  
Approaches to Stimulate Action**

**Submission by Bolivia**

**1) Mandate**

The COP at its eleventh session invited Parties and accredited observers to submit to the secretariat, by 31 March 2006, their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. The COP invited Parties also to submit recommendations on any further process to consider the issues.

The COP requested the Subsidiary Body for Scientific and Technological Advice (SBSTA) to consider the information in the submissions, beginning at its twenty-fourth session (May 2006).

Bolivia welcomes the opportunity to start de discussion on Agenda Item N° 6 and ratify its support to the Submission of Peru on behalf of several Latin-American countries and also recognize the coordinated work done with PNG and other rainforest coalition Parties to develop a unified submission. And would like to present further considerations on the Agenda Item N° 6.

**Guiding Principles**

1. Equitable Access: Reduction for Deforestation and the implementation of potential incentive mechanisms inside poor countries should primarily address poverty reduction and access to dignify living conditions for relevant actors. The indigenous communities, peasants and small farmers, among others.
2. In the global community, the equitable access of poor countries to a potential benefit of reducing deforestation and the implementation of potential incentive mechanism should be prioritized.
3. Plain field: All countries should and have the right to receive additional financial and technical support to be prepared to participate in an equalitarian conditions to any incentive mechanism design to reduce deforestation.
4. The environmental service that forests ecosystems provide to the atmosphere by sequestering and fixing GHG, must be recognize by the international community and valued.
5. Developing countries with forest ecosystems as Bolivia will be willing to reduce is deforestation rates if by doing so, will no hinder economic growth, will support sustainable development and most of all if by doing so can reduce poverty.

**Policy approaches**

1. To address driver for deforestation must recognize the value of using in a sustainable way forest ecosystems,

2. Sustainable management of forest, reducing the impact in the biomass but at the same time use the natural resource for income generation and sustainable economic growth should be in consideration
3. Improve the efficiency in agriculture practices, cattle ranging and over all provide alternatives for subsistence agriculture practices.
4. To support a global effort of reducing deforestation and by doing so reducing GHG emissions, the international market related drivers for deforestation must be address; alternatives to improve the quality of demand of wood should be analyzed. Develop countries should consider incentives for Certificate wood products, sending a clear signal to the markets to reduce deforestation and promote sustainable management.
5. The effort that developing countries are willing to consider only will be successful if develop countries also support this efforts by analyzing international deforestation drivers and by doing so doesn't hinder sustainable growth in developing countries.
6. Pilot programs: There is the need to learn from on the ground experiences, to support the south south technical cooperation and support for addressing in a proper way the monitoring and control challenges, therefore countries willing to participate in early stages developing experience must be encourage. Every region and in the region countries should be encourage and received the adequate support for developing experience that can be easy transfer to other countries to level the plain field for a equitable country participation.
7. Bolivia is ready and open to share its experience in natural resource policies and management and technical aspects from our experience in the Noel Kempf Mercado emissions avoidance project with the international community.

#### **Annex 1: Country Experiences & Exchange of Relevant Information, BOLIVIA**

##### **1. Climate Change and its Implications in Bolivia**

The GHG emissions from Bolivia reach only 0.097% of the Global emissions<sup>1</sup>, 80% of which come from the land use and land use change and forestry (LULUCF) sector. As for the scale of its energy sector, the emissions of the whole country are so small, that only one urban area from the United States, namely Manhattan, has 26.74 times the emissions of the energy sector of Bolivia.

The impacts of climate change have been growing in the last decades, with the presence of extreme events like droughts and floods, with the alarming retraction of glaciers (more than 60 % in some cases) and consequently higher levels of vulnerability in natural ecosystems, water resources, food security health and lost of infrastructure.,

Recent evaluations in Bolivia have shown that extreme climatic events produced an estimate of 250 millions losses in the agriculture sector, cattle ranging and road infrastructure for the hydrological year 2005-2006. Health risks due to the expansion of disease vectors due to temperature and rainfall and humidity patterns changes have increased especially in the case of malaria and dengue among others.

In parallel, poverty problems related to environment degradation and the increment of vulnerability to climate change enhance the problem. Unfortunately the major impacts are foreseen in the rural areas where more of the poor people live. The main issues to consider when analyzing rural livelihoods<sup>2</sup> are:

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<sup>1</sup> Based on IPCC estimations for 1990 and national inventories of GHGs for 1990 for Bolivia

<sup>2</sup> Plan Quinquenal del Programa Nacional de Cambios Climáticos.

- a) **Dependence on the ecosystem**, the rural population depends directly from the use of natural resources and environmental services from the ecosystems as a primary or secondary support of their life system. Forest ecosystems provide basic requirements, fuel, food, medicines and shelter. The loss of these ecosystems increases the vulnerability of rural populations.
- b) **Access to water:** scarcity of water is already a major problem in arid and poor areas of the country, and excess of floods in plains. The loss of forests upstream in watersheds along without adequate management has increased frequency and intensity of floods. Additionally, the reduced development of hydraulic infrastructure determines a strong vulnerability to lack of water because the country is not prepared for this type of events.
- c) **Access to land use**, the limited access to productive land is other aspect that might be worsened by climate change, due to the reduction of productive areas as a consequence of temperature rise.
- d) **Forest resources degradation**, Bolivia has high deforestation rates, around 250,000 ha /year and there is a tendency to increase this number. The emissions for 2000 from the land use and land use change sector represent 80% of the total GHG emissions which come from a combination of energy and land habilitation uses. This clearly shows the high potential of the country to participate in the climate change battle through the reduction of deforestation.

The main goal of all strategic instruments both in adaptation and mitigation are created to generate development policies for poverty eradication through the sustainable use of natural resources.

## 2. Present Deforestation in Bolivia

Bolivia is among the 10 countries with greatest biodiversity in the world – a megadiverse country. More than 52% of the Bolivian territory is covered by forests. It is the sixth country in the world in terms of the highest quantity of natural tropical forests and world leader in the voluntary forest certification of natural tropical forest with over 2 million hectares certified. Forest loss is a current and real threat to the conservation of Bolivia's natural resources, biodiversity, economic growth and development. Over the period 1993-2000 the Forest Superintendency estimates that the annual national average of deforestation was 270,333 ha. In 2004 large scale deforestation (> 25 ha) reached 276,000 ha. Principal drivers for this trend are land use change to cash crop production and cattle ranching, forest fires, illegal logging, and new settlements.

### Legal Framework

Bolivia has made enormous efforts to improve and to support the sustainable use of natural resources. The legal and institutional framework related to the use of natural resources is very well developed.

Bolivia has two laws which directly regulate land use in the country, the first one is the law on environment (No 1333) approved in 1992 and the other is the Forest Law (no 1700) approved in 1996. Both laws have the aim to regulate human en relation to nature, and the environment. Besides, there's the Law on Land Reform (Ley 1715) which was established in 1996 to improve the unclear land tenure situations in the country and regulate access to land.

Bolivia's forest development policy takes the principles of sustainable development as guidelines for meeting socio-economic challenges, managing the natural heritage, organizing technological updating and building institutions.

### **Forest management: legal framework and actors**

The approach mentioned above was incorporated when formulating Forest Law 1700, which represented the country's first application of sustainability principles per sector. This law established a Forest Code, which has the objective of regulating the sustainable use and protection of forests and forest lands for the benefit of present and future generations, while coordinating such activities with the country's social, economic and environmental interests.

The forestry régime of Law 1700 extended access to the forest and its benefits in Bolivia. This law norms the use of forestry lands, opening the way for new sectors, and improving the conditions for all those who want to work in the Bolivian forestry industry. In the case of forest use, the situation demanded orientation and laws that balance economic, social and environmental aspects. Since the application of this Law, access to forestry resources has been transformed, formally including rural settlers, private properties and the TCOs within the new régime. Nowadays Local Social Groups (ASLs), the Original Community Lands (TCOs) and the private farms on the land, are added to the already-existing concessions scheme.

The regulations, especially regarding the use of natural resources, are indispensable to safeguard these resources, and to be able to sustain productive activity over time.

Without doubt, implementation of the Law implies a process of technology transfer, adopting new practices and forms to undertake the work. However, the results seen today demonstrate that it is a régime that guarantees the forestry sector's sustained stability and growth.

Under Bolivia's new Forest Law, the institutional structure of the forestry sector when created was: the Ministry of Sustainable Development and the Environment is in charge of implementing the Forest Code as national policy-making institution, the Superintendence as regulatory institution and the National Forest Development Fund as financial institution, while prefectures and municipalities provide support. The Regulatory System for Renewable Natural Resources, also established by the Forest Law and working with the Forest Superintendence, has the objective of regulating, controlling and supervising the sustainable use of renewable natural resources.

Currently, 47 ASLs, and 35 TCOs have been formed in the country. There are 208 private properties and 78 concessions, with a total of approximately 8 million hectares. Of these forests, 2 million hectares have voluntary forestry certification, and Bolivia has become the world's leading country in this regard. This demonstrates that the forestry régime regarding its environmental variable is working, and the forestry actors are applying a Law that is indispensable for the country.

The forestry areas granted in concession to companies total 5,091,086 hectares, all under General Plans of Forestry Management. This means that, of the forestry actors in Bolivia, they are the ones that work the greatest forest areas, protecting this natural resource based on Forestry Law 1700.

The following table shows who are the main actors by right in the forest sector and how they have been increasing over time.

**Table 1. Forest access by right (hectares managed according to authorised plans)**

Years	Industrial* Concessions	Local Community Associations	Long-term* Concessions	Indigenous Territories	Private Properties	Total
1997	5,498,017	0	361,721	0	0	<b>5,859,738</b>
1998	5,516,615	0	339,000	121,609	93,443	<b>6,070,667</b>
1999	5,330,853	0	294,022	141,150	199,791	<b>5,965,816</b>
2000	5,302,520	0	294,022	238,259	239,670	<b>6,074,471</b>
2001	4,972,447	407,721	112,000	444,406	351,344	<b>6,287,918</b>
2002	4,443,012	423,203	112,000	555,681	561,911	<b>6,095,807</b>

Source: Boscolo y Vargas 2002. In Bolivia case study illegal logging Chap 9

Access to forestry concessions is through the Forestry Superintendence, which calls a public bid to grant each concession, on the minimum base of annual forestry rentals and the list of referential prices established by the Ministry of Sustainable Development and Environment. That is to say, the best offer is awarded the concession. It must be noted that to date, and since the approval of Forestry Law 1700 in June 1996, no bids have been held. The current concessions existed prior to the Forestry Law.

Like other forestry actors, the concessionaires must follow the procedures in the Forestry Law, which regulates the use of this natural resource. As an indispensable requirement to initiate forestry operations, the concessionaire must have the respective management plan approved, and realize the technical instruments called for by the norm.

Forestry concessions are granted for 40 years, renewable every five years, after an audit of fulfillment of the Program of Sustainable Forestry Management.

Forest Management Regulations are of a very high standard reason why Bolivia companies and indigenous territories have been able to certify 2 million hectares of natural forest according the criteria of the Forest Stewardship Council (FSC) Certification is an instrument, a group of steps that protect the environment and social surroundings. This provides an evaluation of the baseline for the forest, and the planning of productive capacity, taking into account the social factors surrounding the production. Finally, it gives a long-term strategy of the future goals of that forest, and not only how to manage the forests but also how to develop the chain of custody.

However it is necessary to recognize the differences between the actors and their need to use the forestry resource, involving forestry management so that it is productive. This way, the national, foreign, large and small investor should have an investment modality with sustainable forest management. The design of forestry policies that consider these differences and promote use of the forest resource is important.

In this regard the Original Community Lands (TCOs) are rural areas granted to the country's communities of native people. For the native people, such as the Confederation of Native People of Bolivia (CIDOB), the TCO constitutes "the global space where the social and cultural experiences, the animals, the forests, the air, the waters and the human being develop; are interrelated and interact; all this comprises the territory." Under this view, the State gives preference to their requests for lands, and contemplates this in the Law, also guaranteeing exclusivity in forestry use in the TCO properly recognized by the State.

The involved area dedicated to forestry use is subject to the Forestry Rental and its consequent Forestry Management Plan. According to the land's suitability for use, the TCO can have available determined surfaces for forestry use, which are worked by the community's native people. The number of jobs depends on the decision of each community. The more wood volume they want to use, the more jobs are generated for their members.

Currently, the TCO national demands is 17.7 million hectares, in which the total titled surface is 3.8 million hectares. Of these, only 441,285 hectares are dedicated to forestry production, equivalent to 12% of the titled lands.<sup>3</sup>

Table 2. Bolivia: land tenure and forest rights

Land distribution by type of owner	Area in thousand ha		With approved FMP (a)
	Highlands	Lowlands	
<b>Forest areas in the country</b>	8,900	44,500	8,500
Total forested lands (b)	4,018	24,682	
Permanent production forest areas (c)			
<b>Private lands by actor</b>	4,381	43,249	1,078
Medium- and large-scale farmers (d)	1,323	3,744	723
	10,678	2,151	
Small-scale farmers (d)	12,111	19,516	
Community lands (d)	749	4,249	
Indigenous areas (TCO) claimed and admitted (e)	178	56	
Indigenous territories (TCO) titled areas (e)			
Number of indigenous demands (e)			
<b>Forestry rights in public lands</b>	0	5,399	5,399
	0	2,500	906
Forest concessions (f)	0	2,200	488
Forest concessions for non-timber products (g)	0	488	
Municipal forest reserves (h)	4,237	14,096	
Long term contracts and research concessions (f)			
Protected areas (i)			
<i>Notes:</i> a) areas in lowland Bolivia with an approved Forest Management Plan (FMP) in 2003. Information based on annual reports of the Superintendencia Forestal (SF), taken from Terrazas (2005), b) areas with any type of forest cover taken from MDSMA (1995), c) areas declared for sustainable forest management according to DS. 26075 of February 2001, d) correspond to land distributed by INRA and INC from 1953-2002, based on Balderrama (2002), e) based on INRA, f) adapted from SF (2005), g) personal communication from Director of Land Sanitation, INRA, h) data obtained from Direcci—n Forestal, MDS i) quoted in Bojanic (2005) based on SERNAP.			

<sup>3</sup> Bolivian Forestry Chamber

The forestry regime has proved to be able to demonstrate that maintaining forests and use them properly, development and poverty reduction can be achieved, nevertheless the 8.5 million hectares under this law represent only 16.0 % of the total forest in the country. The deforestation is still a risk in the rest 84% and therefore there is the need to strengthen the implementation of the Law and to use new mechanisms to provide alternatives to land use change. **Environmental payments for reducing deforestation has the potential to complement all the effort already done in the country.**

### **3. Noel Kempff Mercado Project: Reducing deforestation experience in implementation**

The project began in 1997, when 832,000 hectares of tropical forest adjacent to the Noel Kempff Mercado National Park in northeastern Bolivia, where large areas of the forest were threatened with timber harvesting and deforestation. The Government of Bolivia through the National Program of Climate Change, a Bolivian conservation organization: Fundación Amigos de la Naturaleza (FAN) and The Nature Conservancy created the Noel Kempff Climate Action Project. Together with three energy companies, the partners terminated the logging rights and the land was incorporated into the national park. Then the project partners launched a rigorous scientific program to measure the carbon stored in those 832,000 hectares and the carbon emissions avoided by the project.

In November 2005 an internationally accredited certifier evaluated and certified the Noel Kempff Climate Action Project design and its emissions reductions. It is the first forest emissions reductions project to be fully certified using rigorous standards based on those used in the Clean Development Mechanism. The Noel Kempff project provides an excellent working example of how carbon sequestered in the living biomass of forests, and emissions reductions achieved through forest conservation, can be scientifically quantified, monitored and certified.

This type of activity will need to be accomplished at a much larger scale to make a significant difference to greenhouse gas concentrations.

The results of that monitoring and third party certification show that from 1997 to 2005, a total of 989,622 tons of carbon dioxide that is sequestered in the forests would have been released into the atmosphere if not for the project.

#### **Project Actors**

Project Developers/ Managers: The Nature Conservancy and Fundación Amigos de la Naturaleza (FAN)  
Project Investors: Government of Bolivia, American Electric Power Company (AEP), BP-Amoco, PacifiCorp  
Lead Carbon Measurement Partner: Winrock International Institute for Agricultural Development  
Certification: Emissions reductions, certified in November 2005 by Société Générale de Surveillance (SGS)

#### **Main Project Benefits**

- Emission reductions: Without the project, 989,622 tons CO<sub>2</sub> would have been released into the atmosphere between 1997 and 2005
- Carbon benefits from the project guaranteed through 2026
- Preserves a rich and biologically diverse forest ecosystem among the Amazonian, Chaco and Cerrado ecoregions
- Residents of villages in the park achieved legal status as “Communities of Native Peoples,” and application for their official land title is under way

- Provides alternative, environmentally sustainable economic opportunities for the local population by the establishment of a community forestry program among others.

### **Project Design**

Carbon Credits: Carbon emission reductions were generated by this project through two specific activities:

i) Deforestation avoidance through cessation of logging in former concessions.

Logging right of concessions previously operating in the project area were retired with funds generated for project activities.

ii) Enforcing the deforestation ban in protected areas within the park by reducing slash-and-burn agriculture and initiating alternative income programs for the surrounding communities.

Additionality: The project provided carbon financing to stop logging in the park and deforestation around communities. Without this funding, these activities would have continued, leading to the loss of forest cover and release of carbon dioxide.

Project leakage: A non-linear dynamic optimization model was used to quantify how the project might cause the loss of carbon benefits outside of the project boundary (e.g., shifting timber production elsewhere in the region and reducing the overall carbon benefits of the project). The project included programs and activities explicitly designed to minimize leakage as much as possible. Project partners detected the leakage was arising in three ways: a shift of logging to areas outside the project boundaries, logging by communities in former concessions and shift of domestic timber supply internationally. From 1997 to 2005, project partners calculated a loss of 171,618 tons of CO<sub>2</sub> benefit from leakage. This loss was factored into the calculation of the final net carbon benefits from the project.

Permanence: The project area is now protected under the auspices of the National Service of Protected Areas and FAN Bolivia. The project finances 27 rangers and an infrastructure to protect the park.

Monitoring: The project design includes a comprehensive plan to monitor biomass increments, socioeconomic impacts, development of timber markets and deforestation dynamics.

Certification: The certification process involved assessing the project's design document and methodologies. These included assessment of additionality, baseline, leakage, monitoring, and environmental and social impacts.

### **3.1 Community development**

Local communities are responsible for and beneficiaries of forest conservation. To improve the livelihood of the seven communities living out and inside the park and to strengthen their organization structure two sequential programs have been initiated. APOCOM (1997-2001) improved access to basic services (health, education, communication), PRODECOM (2002 –2006) emphasises community development by securing land titling, self-organisation, and income generating activities (community forestry, micro enterprises). Amongst others, the following activities have been supported:

**Organization empowerment:** Traditional organizations and grouping of indigenous councils into the Central Indígena Bajo Paraguá (CIBAPA) has been supported. Today, CIBAPA is registered as an organisation with legal standing representing the indigenous communities around the park.

**Land tenure and community property rights:** Before the project started, none of the communities bordering the park had any property rights to the land they had historically live on. Today, the entitlement demand of 360,565 ha of Native Communal Land has advanced by nearly 80% of its due course.

**Elementary and high school education:** Scholarships were given to 120 students to continue their studies in courses that are not available in the communities.

**Capacity training:** 4 communities were trained in sustainable community forestry. Agricultural promoters were educated and special scholarships in strategic areas (business administration, tourism, agricultural and forest engineering) financed.

**Income generation:** Amongst other income generating activities the project supported the elaboration of the community forest management plan and the establishment of the community forest concession. Today, IBAPA is running its own sawmill being the first indigenous community with a timber selling point in the capital of the Department of Santa Cruz.

**Land use planning:** To enhance access to livelihood means and to mitigate leakage the project financed the elaboration of a land use plan covering the overall indigenous territory.

**CERS benefits:** The Government of Bolivia owns a 49% of the emissions reductions achieved in the lifetime of the Project, after cashing the CERS the money generated will be used as follows: To cover the activities of park protection and fundamentally to support the communities development and wellbeing.

The project represents a success history, first for the institutional framework where the government of Bolivia along with national and international NGOs, and Energy Companies has been able to support the implementation of the NKMP, improving the park and overall supporting the sustainable development of the communities, while providing a service to the world reducing GHG emissions that are certified. This is an example proving that this can be done in a technically and scientifically manner but also supporting sustainable development in the host country.

#### **4. Financial Instruments use to secure resources for National Parks system**

The National Protected Areas System (SNAP) was established by the Government of Bolivia in 1992, and presently includes 22 protected areas of national interest covering 10.68 million of ha (representing 17 percent of the Bolivian territory) of which 19 areas (encompassing 15% of national territory) are currently under SERNAP management. SNAP is very ambitious, given the human and financial constraints Bolivia faces. The Government of Bolivia (GOB) has taken steps to establish a policy framework to support biodiversity conservation and to closely link this to social development and poverty alleviation.

The Foundation for the Development of the National System of Protected Areas (FUNDESNAP) was created in 2000 and is legally recognized as a private foundation by the La Paz department prefecture. Its mission is to raise, channel, and administer financial and non-financial resources that enable the National Service of Protected Areas (SERNAP) to advance the principles, policies and strategic goals of Bolivia's National Protected Areas System (SNAP).

FUNDESNAP currently manages \$11.1 million in permanent endowment funds, a \$2.1 million sinking fund from which both capital and earnings may be spent, and \$4.8 million in project funds. As a private, non-profit foundation, FUNDESNAP is characterized by transparent procedures and is free from political interference. Given its role in supporting SERNAP, it is operationally linked but not subsidiary to the Bolivian government.

In five years, FUNDESNAP has demonstrated the financial management and administrative capacity needed to realize conservation and development goals in Bolivia's protected areas. The initial impetus for its formation was the failure of a public entity to adequately manage public resources intended to generate investment income and project funds to cover Bolivia's protected area costs. Endowment resources totaling \$9.95 million were transferred to FUNDESNAP management in 2001 and have grown an average of 6.9 percent per annum over the last three years under its stewardship. Previous management had attained a return of only 1 to 2 percent on average over 4 years. FUNDESNAP's maximum decision-making and representational body is its founder's Assembly comprised of nine representatives of the Bolivian government, the private sector, civil society, international cooperation, and representatives of the protected area management committees.

FUNDESNAP financing ensures that the best technical tools are available and used to advance protected area management including the Protected Areas Planning System (SIPAP) and Monitoring Effective Management System (MEMS). The SIPAP provides an orderly framework for the generation of annual operating plans for each area and for the overall protected area system. At present, six of the eight areas have long-term management plans. The MEMS, based on The Nature Conservancy's Scorecard, monitors the fulfillment of planned activities. With Critical Ecosystems Partnership Fund (CEPF) support, SERNAP is currently working to strengthen this system. Ultimately, SERNAP aims to take its planning and monitoring efforts beyond protection and distraction to enable others to work effectively on environmental education and sustainable development.

FUNDESNAP and SERNAP together present the institutional capacity needed to finance and implement long-term management of Bolivia's protected areas.

**This represent a good experience for a public and private framework that can manage financial resources, capacity that is require for the implementation of incentive mechanism on the ground for reduction emissions from deforestation.**

#### **4. Technical and scientific aspects**

The following points outline some technical and scientific recommendations based on Bolivian experiences and the ongoing dialogue between the Government of Bolivia and Bolivian institutions focussing on forests and deforestation.

##### **Definition of forest cover**

Considering, that changes in some non forest vegetation types might cause considerable emissions, too, devegetation of non forest areas should be taken into account, in a broad analysis of definitions.

##### **Types of eligible interventions**

The Marrakech Accords define deforestation as "the direct human-induced conversion of forested land to non-forested land" (FCCC/CP/2001/13/Add.1 p. 55). Apart from that, forest degradation and devegetation are leading to substantial anthropogenic GHG emissions (IPCC 2003) and should be included in a system of Full Carbon Accounting in post 2012. Based on this comprehensive approach, the following activities should be considered under a comprehensive accounting system of avoided LULUCF emissions:

- Deforestation
- Selective logging
- Shifting and shifted cultivation
- Fires
- Other types of intervention (roads, settlements, clearing, fragmentation)

### **Quantifying and monitoring area of eligible interventions**

To allow for internationally consistent accounting procedures, standards for classification schemes, data processing, and monitoring should be established. Today, state of the art methods in remote sensing, forest inventories and biomass measurements are available to accurately measure and detect changes in carbon forest stocks:

- Bolivia is already monitoring large scale deforestation annually, using the MODIS product MOD13, which detects deforestation exceeding 6 ha with an accuracy of 80%. Cross comparison with data of LANDSAT ETM class sensors can increase this accuracy, substantially.
- Fine scale measurements of land cover change are needed to track small scale deforestation (1 - 5ha) annually at a national level. Although the SLC failure of LANDSAT 7 represents a significant drawback, alternatives exist (ASTER, SPOT, DMC) providing high resolution data for monitoring at a regional scale.
- Recent scientific work (Asner et al. 2005) indicates, that it is technically feasible to detect, estimate and monitor forest degradation, specifically caused by selective logging. As this promising work is hampered by the fact that it builds on LANDSAT ETM efforts should be made to identify alternative data products suitable for this type of analysis.
- While wall to wall approaches to detect active fires and burnt area at medium resolution (250m-1km) are already operational (MODIS, AVHRR), detection of fire radiative power (FRP) is still at an experimental stage (BIRD). Processing FRP measurements showed promising results when converting the remotely sensed signals into a CO<sub>2</sub> emissions estimate. Additionally, fire scar mapping gives reliable estimates of GHG emissions at a regional scale (Archard et al. 2004).

These experiences show, that it is already technically feasible, to detect and monitor the impact of different types of forest degradation and deforestation at a national level with an appropriate temporal and spatial resolution. Taking into account the rapid technology change in remote sensing, further high-resolution sensor products will be available before 2012 to estimate GHG emissions.

Demand of Cost effectiveness, limited resources, or data constraints might impede a wall to wall monitoring of all activities in the beginning. Thus, a sub national monitoring and projection of selected interventions (fire, logging, slash and burn) should be allowed during an initial phase. These measurements can be projected to a national level using robust scientific methods. Technology transfer and training in remote sensing, as well as preferential data access for developing countries at minimum cost are important to improve the monitoring capacity in tropical countries.

### **Quantifying and monitoring emissions**

Accurate biomass measurements for each forest type are needed to convert area measurements to emission volumes. Multilateral institutions like IPCC and FAO already facilitate the exchange of measurements and methodologies. Joint efforts are needed to establish consistent inventory approaches covering agreed vegetation classes, calibration and monitoring protocols. Complementary remote sensing based mechanisms (LIDAR, airborne videography) to directly measure biomass have been tested, successfully, and might be operational in the near future.

Carbon accounting schemes at a national scale should build on already agreed methods: IPCC GHG inventory methods (IPCC 1996, and currently under revision) and the LULUCF GPG (IPCC2003) already contain methods and default values for various processes and pools. Soon, revised guidelines will be available (IPCC 2006 AFOLU Guidelines forthcoming).

Both, already operational remote sensing and state of the art biomass measurement methods provide for valid data to establish national accounting schemes of emissions from deforestation, degradation, and devegetation.

### **Key elements of a baseline approach**

To provide for robust projections of avoided deforestation, degradation, and devegetation agreed definitions are needed on historical baseline periods, projection methods, and validation procedures.

As deforestation, degradation, and devegetation show different regional dynamics in tropical countries, each Party could propose country specific base line periods. Parties with large forest cover, relatively low deforestation rates and low economic development should be allowed to use higher deforestation rates in their projections than countries with low forest cover or good economic performance. Spatiotemporal coverage of remote sensing data is an important criterion to select the appropriate baseline period in differentiated country based approaches.

To establish robust projections the detected areas of intervention have to be related to corresponding biomass values. These biomass values might be specific for different vegetation types or a mean over a broad spectrum of different vegetations. Default values for various vegetation types already exist (IPCC LULUCF GPG 2003). Using them or other biomass measurements requires knowledge, where and how much deforestation, degradation, or devegetation will be avoided in the future. Different LULUCF models are already in use (i.e. GEOMOD, CLUE-S) to spatially project land use change. The Noel Kempff Climate Action Project (NKCAP) uses GEOMOD to allocate the projected area deforested based on change detection analysis (FAN 2005). Its certification shows, that this model complies with rigorous certification criteria used by SGS as a DOE. Spatial LULUCF modelling might play an important role in detecting areas under high risk of deforestation, degradation, and devegetation. Furthermore, model results can be used to allocate economic incentives to those areas, where marginal changes in profitability of sustainable forestry could make a difference.

Standards should be agreed, that allow for a model independent validation of spatially explicit land use change models. A feasible and rigorous proposal already exists (Pontius et al. 2004) and has been successfully applied in NKCAP. The use of mean values might be feasible, when it is impossible to allocate avoided interventions ex ante.

Avoiding deforestation implies that land use change will be avoided. Full Carbon Accounting approaches have to account for the biomass of avoided secondary land use using IPCC default values or other appropriate measurements as proxies, as well as robust assumptions about the type, spatial, and temporal distribution of this secondary land use.

The combination of principal and underlying causes of deforestation is changing over time: New roads are built, new settlements emerge, markets for timber and agricultural products show dynamic behaviour. Thus, the selected combination of drivers for deforestation, degradation, and devegetation have to be revised periodically and, if needed, the baseline has to be modified. Apart, baseline adjustments should be possible after an approved period, to count for technology change in remote sensing and LULUC-modelling.

### **Leakage**

Leakage has been one of the main concerns preventing the Parties from including avoided deforestation. Different aspect of leakage should be treated separately:

- The spatial domain: Leakage might occur at different scales. NKCAP shows, that leakage caused by activity shifting can be calculated using a combination of inventory, remote sensing, and econometrics' modelling approaches (Sohngen and Brown (2004); FAN (2005)) providing for robust leakage estimates at local, regional, and national scale. This approach is particularly useful to monitor leakage of project or regional based approaches. Avoiding deforestation in one country might leak to non-participating countries. International leakage remains an issue, but can be either reduced under a

comprehensive framework for avoided deforestation of the UNFCCC or monitored extending already existing econometric models (Sohngen and Brown (2004); Murray et al. (2006)).

- The intra-sectoral domain: Reducing the intensity of interventions and limiting the amount of available land for land use change might change species' specific harvesting intensities in the forestry sector. This type of leakage can be monitored if appropriate remote sensing and inventory methods will cover all productive areas within a country.
- The cross-sectoral domain: Successful policies avoiding deforestation might cause factor price changes as land might get scarce. Scarcity of land might stimulate technological change in agricultural production eventually causing changes in inputs and throughputs and sector emissions. For example, a farmer might extend his cash crop production on a limited amount of land by a more intensive use of fertilizers. Economic input-output models are suitable to estimate these effects, if appropriate.

In general, leakage can be estimated with state of the art remote sensing technology and econometric modelling approaches. Thus, leakage should no longer be used as an argument against including avoided deforestation under the UNFCCC. As the current definition of leakage within LULUCF relates to project based approaches, a more comprehensive and operational definition should be agreed considering different sectoral and spatial domains. SBSTA should have a closer look at the issue of international leakage in general, and recent econometric modelling approaches, in particular. Furthermore, SBSTA should stimulate scientific exchange on these issues.

### **Additionality**

As deforestation is constantly increasing on a global scale, one could argue, that national reductions of deforestation rates under an extended comprehensive climate regime are per se additional. Nevertheless, the issue remains, that efforts to reduce deforestation beyond UNFCCC will continue. ODA should have a complementary role in conserving global forests. Additionality can be ensured by comprehensive reporting schemes, which should document the efforts of the Parties in reducing deforestation, the origin of its finance, and the use of incentives stimulated under the UNFCCC.

### **Permanence**

Different approaches are discussed to tackle the challenge that avoided LULUCF emissions show higher permanence risks. If parties identify certain areas, where emissions are avoided and appropriate leakage monitoring is operational, changes in vegetation cover can be monitored. Banking carbon credits as a risk buffer for future commitment periods could be appropriate, too, depending whether a Party will choose either binding or nor-regret targets.

### **Full carbon Accounting**

Current provisions under the Kyoto Protocol (KP) led to a fragmentation and inconsistencies in the LULUCF system. Considering, that human activities in forest, cropland, rangeland and grasslands can have significant impact on the level of emissions, a more comprehensive approach is needed in a post 2012 climate regime. Art. 3.3, 3.4 and 3.7 already allow for Annex I countries to include revegetation, forest management, cropland management, and grazing land management into their emission accounting. A Full carbon Accounting Approach would allow for a comprehensive accounting of all stock changes on terrestrial surfaces.

PAPER NO. 4: BOLIVIA, COSTA RICA, NICARAGUA, PAPUA NEW GUINEA

**United Nations Framework Convention on Climate Change**

**Submission of Views**

**11<sup>th</sup> Conference of the Parties, Agenda Item #6:**  
*Reducing Emissions from Deforestation in Developing Countries:  
Approaches to Stimulate Action*

**Submitted by:**

Bolivia

Costa Rica

Nicaragua

Papua New Guinea

**Supported by**

Central African Republic

Dominican Republic

Solomon Islands

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**Annex 1:** Draft Terms of Reference for Workshop(s)

**Annex 2:** Bolivia – Country Experience

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**Annex 5:** Papua New Guinea -- Country Experience

1) **Mandate**

The COP at its eleventh session invited Parties and accredited observers to submit to the secretariat, by 31 March 2006, their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. The COP invited Parties also to submit recommendations on any further process to consider the issues.

The COP requested the Subsidiary Body for Scientific and Technological Advice (SBSTA) to consider the information in the submissions, beginning at its twenty-fourth session (May 2006).

2) **Scope**

This ‘Submission of Views’ has been developed in consultation with several regionally-oriented Submissions on the matter of ‘reducing emissions from deforestation in developing countries.’ The objective here is to facilitate consensus within the respective geographic regions while advancing this important dialogue through a unified interregional and intergovernmental Submission.

Further, this Submission seeks to demonstrate unity of commitment and solidarity of vision related to reducing emissions from deforestation across continents and island chains – from Africa, the Caribbean, Central American, Oceania and South America.

Therefore, the Parties supporting this ‘Submission of Views,’ who are cooperating through the interregional and intergovernmental *Coalition for Rainforest Nations*, seek to highlight the collaborative regionally-oriented policy development processes ongoing to which they contribute:

- a. Central American Commission on Environment & Development, Climate Change Committee
- b. Commission des Forêts d’Afrique Centrale (COMIFAC)
- c. Submission by Peru along with certain Latin American Countries
- d. Pacific Islands Forum & Melanesian Spearhead Group

In good faith and with highest consideration, with regard to reducing emissions from deforestation in developing countries, this ‘Submission of Views’ seeks to highlight the importance of action, propose a range of policy approaches and positive incentives, present views on technical and methodological issues, and make recommendations for the ongoing process.

3) **Introduction:**

- a) **Deforestation:** Deforestation represents a triple-threat to climate stability. First, 10%-25% of annual global GHG emissions, or about 5.5 G-tonnes of carbon dioxide are produced by land use change, which itself is dominated by deforestation in developing countries. Second, deforestation destroys ecosystems that are sequestering CO<sub>2</sub> and thereby counteract accumulation within the atmosphere. Third, deforestation alters historical land surface conditions that moderate global climate and regional weather patterns.

The causes of deforestation in developing countries are multiple, complex and vary both within and among countries and regions. Deforestation rates are further intensified poverty and by the existing system of perverse international market incentives for agriculture, timber production,

energy sources, infrastructure, etc. Developing countries face difficult challenges in the endeavor to promote economic growth, determine sustainable use of natural resources (including forestry), manage international market pressures, and provide basic services for general societal wellbeing.

Despite many well-intentioned efforts to address deforestation in developing countries, success has been extremely limited at the necessary scale and additional actions must be undertaken. Any measures to control emissions from deforestation, however, must take into account local, regional, national and international perspectives and context. Developing countries will require additional financial mechanisms, as well as technical support, to effectively and significantly reduce emissions from deforestation. Therefore, Parties must consider employing a wide range of policy and incentive instruments.

- b) **Climate Change:** Climate change and some of its early effects are beginning to be felt worldwide. Climate change will disproportionately affect developing nations that lack the resources to adapt or mitigate the consequences of such change. Specifically, the climatic implications related to sea-level rise will have particularly devastating effects on Small Island States and those Parties with low-lying coastal areas. Similarly, temperature change impacts fragile ecosystems in mountain areas, such as the Andes. Therefore, the Parties must resolve to limit climate change to relatively modest impacts – such as, limiting global atmospheric temperature rise below 2°C.<sup>1</sup>

Covering only 10% of the land surface of the planet, the tropical forest biome – most of which is found in developing countries – contains over 25% of all terrestrial carbon in plants and soils.<sup>2</sup> The IPCC estimates that land-use changes, dominated by tropical deforestation, released between 0.8 and 2.4 Giga-tonnes of carbon per year during the 1990's,<sup>3</sup> equivalent to 10% - 25% of global human induced emissions. Given its importance in global GHG emissions, reducing tropical deforestation will be decisive in overall efforts to stabilize GHG concentrations at levels that avoid dangerous interference in the climate system in a manner consistent with Article 2 of the UN Framework Convention on Climate Change ("Climate Change Convention").

Reducing emissions from deforestation is critically important when seeking to mitigate the worst impacts of global climate change. Further, more than half of the world's plant and animal species are harbored in tropical forests. These species provide humankind immeasurable benefit and value. Similarly, intact forests help maintain the resilience of diverse ecosystems. Maintaining forests will help ecological and social communities cope with a changing climate and achieve sustainable development.

- c) **The UN Framework Convention on Climate Change:** For developing nations seeking emissions reductions by reducing deforestation rates there is currently no way to meaningfully effect those reductions through either the Climate Change Convention nor its associated Kyoto Protocol. Similarly, there are essentially no financial or market incentives in place to limit deforestation.

The atmosphere is equally damaged by greenhouse-gas emissions wherever they occur and equally helped by emissions cuts wherever they are made.<sup>4</sup> Therefore, the Parties must be encouraged to develop thoughtful and creative actions and mechanisms that address deforestation

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<sup>1</sup> EU Council of Ministers, 1939th Council Meeting, Luxembourg, 25 June 1996.

<sup>2</sup> Sabine, C.L. et al. 2003.

<sup>3</sup> IPCC. 2000. Land Use, Land-Use Change, and Forestry. Cambridge University Press.

<sup>4</sup> [http://unfccc.int/essential\\_background/feeling\\_the\\_heat/items/2881.php](http://unfccc.int/essential_background/feeling_the_heat/items/2881.php)

and the significant carbon emissions that accordingly result. Further, we must acknowledge that achieving the ultimate objective of the Climate Change Convention will be more difficult and costly for all Parties, if not impossible, unless emissions reductions from all major sources are adequately addressed.

Therefore, Parties must oversee a coordinated process that facilitates meaningful outcomes – cooperating ‘in accordance with their common but differentiated responsibilities and respective capabilities.’ Within this context, we recommend that the SBSTA Process be undertaken as follows:

- first, the Parties must focus on addressing ‘policy approaches and positive incentives,’ within the context of ‘country experience’,
- next, the Parties must address the appropriate ‘scientific, technical and methodological issues’ to ensure that robust climatic objectives are fulfilled, in order for
- the Parties to develop and apply a flexible range of incentive mechanisms and instruments that fairly and equitably address climate change.

#### 4) **Guiding Principles:**

- a) ***Real Benefits for the Climate:*** Any future action to mitigate climate change should pursue the ultimate objective of the UNFCCC as stated in its Article 2. To achieve real and measurable benefits for the climate, policy approaches and positive incentives should be appropriate, sufficient and credible to address emissions from deforestation at an adequate scale. Further, such policy approaches and positive incentives should be implemented as soon as possible and should not prevent any delays in other emission reduction efforts.
- b) ***Common but Differentiated Responsibilities:*** Recalling the principle of ‘common but differentiated responsibilities’, all Parties have the responsibility to collaborate to reduce GHG emissions and combat their adverse effects on climate. There are historical differences in the contribution to the current composition of the atmosphere by industrialized and developing countries, as well as differences in Parties’ respective economic and technical capabilities to address the resulting environmental implications. Reducing GHG emissions from deforestation offers a unique opportunity to enhance the effective participation of developing countries in the climate regime on a ‘voluntary’ basis, while also providing industrialized countries an opportunity to positively fulfill their historical commitments for additional financing to support forest conservation and reduce deforestation in developing countries.
- c) ***State Sovereignty & Intergenerational Responsibility & Sustainable Development:*** Parties have the sovereign right to define sustainable development and resource utilization pursuant to national priorities in order to fulfill their present needs without limiting the options for future generations. Toward these objectives, forest-based ecosystem-services need to be recognized and valued by the international community in order to allow developing countries with rainforests to capitalize on these services on a voluntary basis. Therefore, not only should the Parties’ participation in efforts to reduce emissions from deforestation be voluntary, Parties alone shall decide how to implement specific measures.
- d) ***Equitable and Fair:*** Any effort to reduce GHG emissions from deforestation should insure a fair distribution of the responsibilities and benefits both within and among countries. Learning from the experience of the CDM process, we must ensure that all countries have equal and fair access

to policy and incentive instruments and are assisted to overcome any comparative capacity and technical disadvantages. Further, market regulations and methodological issues should not be applied more stringently for developing countries – or for the forestry sector as compared to other sectors.

- e) ***Cost Effectiveness:*** Policy approaches and positive incentives should be designed and implemented in ways that improve the cost-effectiveness of climate change mitigation. Incentives should be sufficient to cover implementation costs of the measures taken to reduce GHG emissions from deforestation, including opportunity costs, and should also assist countries that assume emissions reduction targets to address poverty alleviation while pursuing the ultimate objective of the UNFCCC.
- f) ***Supplemental Funding and Capacity Building:*** Supplementary resources should be made available for developing countries to build the technical, market and regulatory capacity necessary to implement actions aimed at reducing or avoiding emissions of GHGs from deforestation. Funding for financing emission reduction from deforestation should be supplemental to current and already planned ODA.
- g) ***Enhancing Biodiversity as a Capital Resource:*** Many developing countries have difficulty putting into effect policies for maintaining or increasing acreage of terrestrial biodiversity habitats due to lack of human, technological and financial capacity. Well constructed mechanisms to reduce emissions from deforestation would have multiple benefits for sustainable development in developing countries, as intact forests function as a tangible capital resource that provides a diverse set of ongoing ecosystem services related to air and water quality, improved agricultural production, healthy coral reefs and fisheries, control of infectious diseases, medicinal cures, aid to social stability, etc.
- h) ***Need to Act Quickly while Protecting the Integrity of Existing Mechanisms:*** Any delay in addressing emissions from deforestation is counterproductive to the objectives of the Climate Change Convention and will increase the costs of climate change mitigation unnecessarily. However, new policies and incentives related to reducing emissions from deforestation should be consistent, where possible, with existing mechanisms for reducing GHG emissions, should not undermine emissions reduction efforts by Annex I countries, and should complement existing flexibility mechanisms within the Kyoto Protocol.

## 5) **Policy Approaches**

- a) ***Leverage Effective Policy Experience:*** Innovative approaches are required to address the diverse causes of emissions of GHGs from deforestation. Such approaches should take into account specific national circumstances and enable a variety of measures building on existing positive experiences, such as:
  - promotion of private sector as well as local and indigenous communities participation in the sustainable management of forests,
  - design and implementation of positive incentives through economic and financial mechanisms and instruments,
  - enhancement of conservation activities inside and outside protected areas,
  - promotion of sustainable forest management and productive activities, and

- design and implementation of sustainable and more efficient activities on non-forested land (agriculture, ranching, etc.) to reduce pressure on forests.
- development of market mechanisms and instruments, like markets for carbon offsets, as a means to stimulate action to reduce emissions from deforestation in developing countries.

Activities to be undertaken in pursuit of the objective of reducing emissions from deforestation should be coordinated with social and economic development in an integrated manner, bearing in mind that the burden of reducing or avoiding deforestation often falls on stakeholders such as peasants, small and medium-sized farmers, ranchers, indigenous/local communities, among others. Instruments must involve all ‘actors’ in a equitable way taking into full account the legitimate needs of developing countries to achieve sustained economic growth and eradicate poverty as agreed globally by the United Nations’ ‘World Summit’ Outcome Document of September 2005<sup>5</sup>.

To strengthen actions to reduce GHG emissions from deforestation, national institutions will possibly need to engage *inter alia*, by:

- insuring the implementation, monitoring and enforcement of existing and/or new measures to control deforestation,
  - modifying existing legislation to remove institutional/legal incentives to deforest, and
  - investing in programs of payment for environmental services (both tangible and non-tangible) in order to improve the incentive systems and diversify the revenue streams available for natural resource management.
- b) **Credit for Early Action:** The Parties must develop policies and incentives that encourage and support bold early action by Parties that might later effect baseline formulation and consequently result in fewer tradable emissions credits in the future. For example, credit for ‘early action’ should be considered for expanding or consolidating networks of ‘protected areas,’ reduced-impact forestry, and efforts to rehabilitate areas of degraded forest. Parties must avoid inadvertently creating mechanisms that primarily reward past deforestation activities. Furthermore, ‘early action’ should be creditable in future commitment periods – thereby providing an immediate mechanism to finance such activities.
- c) **National Level Pilot Initiatives to Inform Policy Development:** Specifically with regard to anticipated technical and methodological issues, it will be useful for Parties to collaborate on voluntary ‘National Level Pilot Initiatives’, at the appropriate time, in advance of COP-13 to inform the Recommendation process. For example, such voluntary initiatives could help develop robust methods for base-interval development and address the opportunity costs associated with various land-use options – as has been the case with AIJ and JI projects. Countries from different regions could deliver experiences from the field to support the development of positive incentive schemes within the SBSTA/SBI process.
- d) **Requirement for Capacity Building:** The Parties must expand institutional capacity building and technology development/transfer within developing nations to allow the implementation of GHG

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<sup>5</sup> <http://www.un.org/summit2005/>

emissions reduction policies while strengthening agencies in charge of monitoring and controlling deforestation. Such initiatives should include additional support for the consolidation and enforcement of protected areas. Such capacity building efforts must take into account the situation in each developing country and support their respective capabilities to undertake any of the instruments available to reduce emissions from deforestation.

- e) **2007 Deadline for Negotiations Related to 2<sup>nd</sup> Commitment Period:** Time is of the essence when contemplating positive incentives for reducing emissions from deforestation in developing countries. The Parties must work constructively to allow ‘due consideration’ of emissions reductions from deforestation for the ‘Second Commitment Period’ of the Kyoto Protocol, along with any instruments that provide incentive for ‘early action.’

6) **Positive Incentives**

**Approaches to Stimulate Action:** Deforestation is a complex issue spanning many nations with varying development profiles, social structures, economic drivers, legal and regulatory frameworks, and capacities for enforcement, monitoring and verification. In order to be effective, Parties must consider a multifaceted and flexible set of ‘policy and incentive’ instruments that will allow non-Annex Parties to implement, monitor and enforce a variety of approaches that are designed to maximize Party participation and climatic benefit. All options should be on a voluntary basis and should not be ‘mutually exclusive.’ For example, the Parties could consider support for:

- a) **Official Development Assistance (ODA) Approach:** Within the context of Clauses 3.3, 3.4 and 4.7 of the Climate Change Convention, the Parties could coordinate ODA resources at a scale sufficient to meaningfully reduce emissions from deforestation in developing countries. It is essential to recall, however, that the principle of supplemental financing for new initiatives on reducing GHG emissions from deforestation should not be done at the expense of other programs and sectors. Actions taken to curb GHG emissions from deforestation will be more effective if a range of supportive tools are developed:
- To initiate any action, financial mechanisms making adequate resources available up-front are essential. Up-front financing could come from debt-for-nature swaps, revolving funds, advanced payments, and new donor programs, among others.
  - To create capacities, financial assistance, bilateral and multilateral agreements, public-private partnerships or other collaborative mechanisms could be explored.
  - To balance impacts, concrete proposals to initiate a tax or fee system in Annex 1 countries on airline emissions, carbon-intensive commodities and services, or on the trade of military goods and related services, could be developed.
- b) **Sectoral CDM Approach:** With minimal adjustment, the basic methodological architecture is in place to incorporate a sectoral-based approach to deforestation within the CDM mechanism. To address ‘project-based’ leakage concerns, a national baseline method would need to be instituted across the forestry sector. When ‘national baselines’ are considered within the CDM, however, the mechanism begins to encroach upon the ‘cap and trade’ methodologies used for Annex-B Parties. Therefore, the Parties would be required to rectify the pricing anomalies and comparative risk profiles carried by a CER (increased regulatory, additionality and project risk) versus a national baseline-driven AAU/EUA-type credit.

- c) **Annex C: The National Approach:** Developing countries could consider participating in a ‘Voluntary Annex-C’ specifically designed to address deforestation. In exchange for an AAU/EUA-type emissions allowance, this approach would incorporate voluntary ‘national targets’ for emissions reduction utilizing a ‘cap and trade’ methodology similar in structure to that applied for Annex-B Parties.’ However, it must be noted, that by using a national baseline approach to overcome the project-based leakage issues and project performance risk there would be minimal transactional or performance risk issues remaining that currently justify CER-type valuation discounts. Therefore, the emissions credits issued under the ‘National Approach’ should be fully fungible with AAU/EUA emissions allowances. Credit should be considered for action in advance of the ‘Second Commitment Period’.
- d) **Bilateral or Multilateral Emissions Trading Agreements:** Some Parties may support the development of independent bilateral or multilateral agreements to reduce emissions from deforestation in developing nations. A variety of regional and national emissions reductions markets are currently in place, or under development, that could be leveraged by Parties to reduce emissions from deforestation in developing countries.
- e) **Optional Protocol:** It is possible that bilateral and/or multilateral emissions trading agreements could be aggregated into a new ‘Optional Protocol’ under the Climate Change Convention. This option would require further analysis with regard to incentive structures and would entail more time and effort to implement than would the other options outlined above. To be effective at scale, however, a system of fungible credits (within some future commitment period) would need to be developed.

## 7) **Technical and Methodological Issues**

‘Technical and Methodological Issues’ must be driven by agreement related to the structure of ‘policy and incentive’ mechanisms. Therefore, the modalities and procedures to address GHG emissions from deforestation should be discussed only after policy approaches and positive incentives are defined; as these issues depend entirely on which policy measures and positive incentives are adopted. Thus, discussions related to technical issues should not prevent or delay the adoption of adequate and equitable ‘policy approaches and positive incentives.’

The relevant ‘Technical and Methodological Issues’ include:

- a) **Scale:** Considering the magnitude and complexity of efforts necessary to achieve meaningful actions to curb GHG emissions from deforestation, technological and methodological issues may need to be ‘flexible’ in order to allow voluntary implementation at the project, national and/or regional scale.
- b) **Baselines:** Reference scenarios for GHG emissions from deforestation should take into account historical trends and other national and regional circumstances at the appropriate scale and should not disadvantage countries that have taken early actions.
- c) **Leakage:** A ‘national approach’ to monitoring deforestation is critical to addressing leakage issues and will require an effective area-wide monitoring system. Issues related to concerns for ‘international leakage’ must be applied fairly across sectors and among Parties.
- d) **Permanence:** Permanence issues can be addressed using a variety of instruments, including temporary credits, a ‘banking’ mechanism or incorporating commercial insurance services to address natural events, such as fires, storms, flooding, etc.

- e) **Monitoring and Reporting:** Remote sensing is an important tool for monitoring changes in land cover and can be refined to include detection of forest degradation at various levels. In addition, econometric models can be used to quantify international leakage, if any. Socioeconomic impact assessments should be included to track the effects of established national incentive schemes. However, Parties must balance accuracy considerations against cost implications to ensure that adopted definitional standards can be addressed at sufficient scale.
- f) **Definitions:** Where appropriate, Parties should use the ‘IPCC 2003 Good Practice Guidance’, while also seeking increase participation of Parties in reducing GHG emissions through a review of definitions that could support a broader range of activities affecting deforestation, selective logging and forest degradation.

## 8) Recommendations on any Further Process to Consider the Issues

The discussions regarding reducing emissions from deforestation in developing countries can continue under the Climate Change Convention. However, the option of introducing GHG emissions reductions from deforestation in the ‘Second Commitment Period’ of the Kyoto Protocol should not be excluded. Also, capacity building issues, policy approaches and positive incentives should be addressed by SBI as soon as possible to allow capacity building and implementation.

Within this context, a step-by-step Process is recommended below:

- a) **SBSTA 24** (May 2006): Agree on Terms of Reference for Workshop(s) and Process Timeline (refer to Annex 1, attached hereto.)
- b) **Post SBSTA 24** (July 2006): Parties, assisted by the Secretariat, review and synthesize the Submission of Views related to ‘Sharing of Country Experience and Information’ in advance of First Workshop – Secretariat to publish Synthesis.
- c) **First Workshop** (August 2006): Leverage ‘Synthesis of Country Experience and Information’ to frame ‘Policy & Incentive Options’ with purpose to inform COP-12 & SBSTA 25
- d) **COP-12 & SBSTA 25** (November 2006): Finalize ‘Summary of Options: Policy Approaches & Positive Incentives’ at SBSTA 25 and provide ‘Summary’ as Progress Update to COP-12. Refer to SBI to address implementation issues.
- e) **Second Workshop** (March 2007): Assessment of Technical and Methodological Implications related to ‘Summary of Options related to Policy Approaches and Positive Incentives’ in order to identify key issues for consideration at SBSTA 26.
- f) **SBSTA & SBI 26** (May 2007): SBSTA to consider ‘Technical and Methodological Implications’ related to ‘Summary of Options: Policy Approaches and Positive Incentives.’ SBI to consider issues related to ‘implementation’ of policy and incentive instruments.
- g) **Third Workshop** (August 2007): Draft Recommendation for COP-13.
- h) **COP-13 and SBSTA/SBI 27** (November 2007): Finalize recommendations at SBSTA/SBI 27 and submit to COP-13.

**Annex 1: Draft Terms of Reference for Workshop(s)**

**FCCC, COP-11, Agenda Item 6**

Reducing Emissions from Deforestation in Developing Countries:  
Approaches to Stimulate Action

1. The Conference of the Parties (COP) takes note of the submission by the Governments of Papua New Guinea and Costa Rica contained in document FCCC/CP/2005/MISC.1, the President's Conclusions contained in the document FCCC/CP/2005/L2, and the Secretariat's compilation of the 'Submission of Views' of the Parties contained in document FCCC/CP/2006/MISC.?
2. The COP invited Parties and accredited observers to participate in a workshop on this item, scheduled 30 August to 1 September 2006, after which the Secretariat will prepare a report for consideration at the twenty-fifth session (November 2006) of the Subsidiary Body for Scientific and Technological Advice (SBSTA).
3. The scope of the Workshop will consider 'policy approaches and positive incentives' for reducing emissions from deforestation in developing countries, within the context of 'country experience.'
4. For purposes of the workshop, information and for consideration will be limited to the 'Submission of Views' by the Parties and accredited observers contained in FCCC/CP/2006/MISC? [Add: IPCC, FAO, UNDP, UNEP, etc.?]
5. The COP requests that the Secretariat prepare a report from the workshop for consideration at the twenty-fifth session of SBSTA that identifies the 'policy approaches and incentive options' agreed for further consideration within the process outlined in paragraph 6.
6. The Parties agree to further consider this item according the process summarized as follows:
  - a) *Post SBSTA 24* (July 2006): Parties, assisted by the Secretariat, review and synthesize the Submission of Views related to 'Sharing of Country Experience and Information' in advance of First Workshop – Secretariat to publish Synthesis.
  - b) *First Workshop* (August 2006): Leverage 'Synthesis of Country Experience and Information' to frame 'Policy & Incentive Options' with purpose to inform COP-12 & SBSTA 25
  - c) *COP-12 & SBSTA 25* (November 2006): Finalize 'Summary of Options: Policy Approaches & Positive Incentives' at SBSTA 25 and provide 'Summary' as Progress Update to COP-12. Refer relevant matters to SBI to address implementation issues.
  - d) *Second Workshop* (March 2007): Assessment of Technical and Methodological Implications related to 'Summary of Options related to Policy Approaches and Positive Incentives' in order to identify key issues for consideration at SBSTA 26.
  - e) *SBSTA & SBI 26* (May 2007): SBSTA to consider 'Technical and Methodological Implications' related to 'Summary of Options: Policy Approaches and Positive

Incentives.’ SBI to consider issues related to ‘implementation’ of policy and incentive instruments.

- f) *Third Workshop* (August 2007): Draft Recommendation for COP-13.
  - g) *COP-13 and SBSTA/SBI 27* (November 2007): Finalize recommendations at SBSTA/SBI 27 and submit to COP-13.
7. Workshop Agenda: Secretariat to Prepare.

## **Annex 1: Bolivia: Country Experiences & Exchange of Relevant Information**

### **1. Climate Change and its Implications in Bolivia**

The GHG emissions from Bolivia reach only 0.097% of the Global emissions<sup>6</sup>, 80% of which come from the land use and land use change and forestry (LULUCF) sector. As for the scale of its energy sector, the emissions of the whole country are so small, that only one urban area from the United States, namely Manhattan, has 26.74 times the emissions of the energy sector of Bolivia.

The impacts of climate change have been growing in the last decades, with the presence of extreme events like droughts and floods, with the alarming retraction of glaciers (more than 60 % in some cases) and consequently higher levels of vulnerability in natural ecosystems, water resources, food security health and lost of infrastructure.,

Recent evaluations in Bolivia have shown that extreme climatic events produced an estimate of 250 millions losses in the agriculture sector, cattle ranging and road infrastructure for the hydrological year 2005-2006. Health risks due to the expansion of disease vectors due to temperature and rainfall and humidity patterns changes have increased especially in the case of malaria and dengue among others.

In parallel, poverty problems related to environment degradation and the increment of vulnerability to climate change enhance the problem. Unfortunately the major impacts are foreseen in the rural areas where more of the poor people live. The main issues to consider when analyzing rural livelihoods<sup>7</sup> are:

- a) **Dependence on the ecosystem**, the rural population depends directly from the use of natural resources and environmental services from the ecosystems as a primary or secondary support of their life system. Forest ecosystems provide basic requirements, fuel, food, medicines and shelter. The lost of these ecosystems increases the vulnerability of rural populations.
- b) **Access to water**: scarcity of water is already a major problem in arid and poor areas of the country, and excess of floods in plains. The lost of forests upstream in watersheds along without adequate management has increased frequency and intensity of floods. Additionally, the reduced development of hydraulic infrastructure determines a strong vulnerability to lack of water because the country is not prepared for this type of events.
- c) **Access to land use**, the limited access to productive land is other aspect that might be worsened by climate change, due to the reduction of productive areas as a consequence of temperature rise.
- d) **Forest resources degradation**, Bolivia has high deforestation rates, around 250,000 ha /year and there is a tendency to increase this number. The emissions for 2000 from the land use and land use change sector represent 80% of the total GHG emissions which come from a combination of energy and land habilitation uses. This clearly shows the high potential of the country to participate in the climate change battle through the reduction of deforestation.

The main goal of all strategic instruments both in adaptation and mitigation are created to generate development policies for poverty eradication through the sustainable use of natural resources.

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<sup>6</sup> Based on IPCC estimations for 1990 and national inventories of GHGs for 1990 for Bolivia

<sup>7</sup> Plan Quinquenal del Programa Nacional de Cambios Climáticos.

## 2. Present Deforestation in Bolivia

Bolivia is among the 10 countries with greatest biodiversity in the world – a megadiverse country. More than 52% of the Bolivian territory is covered by forests. It is the sixth country in the world in terms of the highest quantity of natural tropical forests and world leader in the voluntary forest certification of natural tropical forest with over 2 million hectares certified. Forest loss is a current and real threat to the conservation of Bolivia's natural resources, biodiversity, economic growth and development. Over the period 1993-2000 the Forest Superintendence estimates that the annual national average of deforestation was 270,333 ha. In 2004 large scale deforestation (> 25 ha) reached 276,000 ha. Principal drivers for this trend are land use change to cash crop production and cattle ranching, forest fires, illegal logging, and new settlements.

### a. Legal Framework

Bolivia has made enormous efforts to improve and to support the sustainable use of natural resources. The legal and institutional framework related to the use of natural resources is very well developed.

Bolivia has two laws which directly regulate land use in the country, the first one is the law on environment (No 1333) approved in 1992 and the other is the Forest Law (no 1700) approved in 1996. Both laws have the aim to regulate human en relation to nature, and the environment. Besides, there's the Law on Land Reform (Ley 1715) which was established in 1996 to improve the unclear land tenure situations in the country and regulate access to land.

Bolivia's forest development policy takes the principles of sustainable development as guidelines for meeting socio-economic challenges, managing the natural heritage, organizing technological updating and building institutions.

### **b. Forest management: legal framework and actors**

The approach mentioned above was incorporated when formulating Forest Law 1700, which represented the country's first application of sustainability principles per sector. This law established a Forest Code, which has the objective of regulating the sustainable use and protection of forests and forest lands for the benefit of present and future generations, while coordinating such activities with the country's social, economic and environmental interests.

The forestry régime of Law 1700 extended access to the forest and its benefits in Bolivia. This law norms the use of forestry lands, opening the way for new sectors, and improving the conditions for all those who want to work in the Bolivian forestry industry. In the case of forest use, the situation demanded orientation and laws that balance economic, social and environmental aspects. Since the application of this Law, access to forestry resources has been transformed, formally including rural settlers, private properties and the TCOs within the new régime. Nowadays Local Social Groups (ASLs), the Original Community Lands (TCOs) and the private farms on the land, are added to the already-existing concessions scheme.

The regulations, especially regarding the use of natural resources, are indispensable to safeguard these resources, and to be able to sustain productive activity over time.

Without doubt, implementation of the Law implies a process of technology transfer, adopting new practices and forms to undertake the work. However, the results seen today demonstrate that it is a régime that guarantees the forestry sector's sustained stability and growth.

Under Bolivia's new Forest Law, the institutional structure of the forestry sector when created was: the Ministry of Sustainable Development and the Environment is in charge of implementing the Forest Code as national policy-making institution, the Superintendence as regulatory institution and the National Forest Development Fund as financial institution, while prefectures and municipalities provide support. The Regulatory System for Renewable Natural Resources, also established by the Forest Law and working with the Forest Superintendence, has the objective of regulating, controlling and supervising the sustainable use of renewable natural resources.

Currently, 47 ASLs, and 35 TCOs have been formed in the country. There are 208 private properties and 78 concessions, with a total of approximately 8 million hectares. Of these forests, 2 million hectares have voluntary forestry certification, and Bolivia has become the world's leading country in this regard. This demonstrates that the forestry régime regarding its environmental variable is working, and the forestry actors are applying a Law that is indispensable for the country.

The forestry areas granted in concession to companies total 5,091,086 hectares, all under General Plans of Forestry Management. This means that, of the forestry actors in Bolivia, they are the ones that work the greatest forest areas, protecting this natural resource based on Forestry Law 1700.

The following table shows who are the main actors by right in the forest sector and how they have been increasing over time.

**Table 1. Forest access by right (hectares managed according to authorised plans)**

Year	Industrial* Concessions	Local Community Associations	Long-term* Concessions	Indigenous Territories	Private Properties	Total
1997	5,498,017	0	361,721	0		<b>5,859,738</b>
1998	5,516,615	0	339,000	121,609	93,443	<b>6,070,667</b>
1999	5,330,853	0	294,022	141,150	199,791	<b>5,965,816</b>
2000	5,302,520	0	294,022	238,259	239,670	<b>6,074,471</b>
2001	4,972,447	407,721	112,000	444,406	351,344	<b>6,287,918</b>
2002	4,443,012	423,203	112,000	555,681	561,911	<b>6,095,807</b>

Source: Boscolo y Vargas 2002. In Bolivia case study illegal logging Chap 9

Access to forestry concessions is through the Forestry Superintendence, which calls a public bid to grant each concession, on the minimum base of annual forestry rentals and the list of referential prices established by the Ministry of Sustainable Development and Environment. That is to say, the best offer is awarded the concession. It must be noted that to date, and since the approval of Forestry Law 1700 in June 1996, no bids have been held. The current concessions existed prior to the Forestry Law.

Like other forestry actors, the concessionaires must follow the procedures in the Forestry Law, which regulates the use of this natural resource. As an indispensable requirement to initiate forestry operations, the concessionaire must have the respective management plan approved, and realize the technical instruments called for by the norm.

Forestry concessions are granted for 40 years, renewable every five years, after an audit of fulfillment of the Program of Sustainable Forestry Management.

Forest Management Regulations are of a very high standard reason why Bolivia companies and indigenous territories have been able to certify 2 million hectares of natural forest according the criteria of the Forest Stewardship Council (FSC) Certification is an instrument, a group of steps that protect the

environment and social surroundings. This provides an evaluation of the baseline for the forest, and the planning of productive capacity, taking into account the social factors surrounding the production.

Finally, it gives a long-term strategy of the future goals of that forest, and not only how to manage the forests but also how to develop the chain of custody.

However it is necessary to recognize the differences between the actors and their need to use the forestry resource, involving forestry management so that it is productive. This way, the national, foreign, large and small investor should have an investment modality with sustainable forest management. The design of forestry policies that consider these differences and promote use of the forest resource is important.

In this regard the Original Community Lands (TCOs) are rural areas granted to the country's communities of native people. For the native people, such as the Confederation of Native People of Bolivia (CIDOB), the TCO constitutes "the global space where the social and cultural experiences, the animals, the forests, the air, the waters and the human being develop; are interrelated and interact; all this comprises the territory." Under this view, the State gives preference to their requests for lands, and contemplates this in the Law, also guaranteeing exclusivity in forestry use in the TCO properly recognized by the State.

The involved area dedicated to forestry use is subject to the Forestry Rental and its consequent Forestry Management Plan. According to the land's suitability for use, the TCO can have available determined surfaces for forestry use, which are worked by the community's native people. The number of jobs depends on the decision of each community. The more wood volume they want to use, the more jobs are generated for their members.

Currently, the TCO national demands is 17.7 million hectares, in which the total titled surface is 3.8 million hectares. Of these, only 441,285 hectares are dedicated to forestry production, equivalent to 12% of the titled lands.<sup>8</sup>

The forestry regime has prove to be able to demonstrate that maintaining forests and use them properly, development and poverty reduction can be achieved, nevertheless the 8.5 million hectares under this law represent only 16.0 % of the total forest in the country. The deforestation is still a risk in the rest 84% and therefore there is the need to strengthen the implementation of the Law and to use new mechanisms to provide alternatives to land use change. **Environmental payments for reducing deforestation has the potential to complement all the effort already done in the country.**

### **3. Noel Kempf Mercado Project: Reducing deforestation experience in implementation**

The project began in 1997, when 832,000 hectares of tropical forest adjacent to the Noel Kempff Mercado National Park in northeastern Bolivia, where large areas of the forest were threatened with timber harvesting and deforestation. The Government of Bolivia through the National Program of Climate Change, a Bolivian conservation organization: Fundación Amigos de la Naturaleza (FAN) and The Nature Conservancy created the Noel Kempff Climate Action Project. Together with three energy companies, the partners terminated the logging rights and the land was incorporated into the national park. Then the project partners launched a rigorous scientific program to measure the carbon stored in those 832,000 hectares and the carbon emissions avoided by the project.

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<sup>8</sup> Bolivian Forestry Chamber

In November 2005 an internationally accredited certifier evaluated and certified the Noel Kempff Climate Action Project design and its emissions reductions. It is the first forest emissions reductions project to be fully certified using rigorous standards based on those used in the Clean Development Mechanism. The Noel Kempff project provides an excellent working example of how carbon sequestered in the living biomass of forests, and emissions reductions achieved through forest conservation, can be scientifically quantified, monitored and certified.

This type of activity will need to be accomplished at a much a larger scale to make a significant difference to greenhouse gas concentrations.

The results of that monitoring and third party certification show that from 1997 to 2005, a total of 989,622 tons of carbon dioxide that is sequestered in the forests would have been released into the atmosphere if not for the project.

Table 2. Bolivia: land tenure and forest rights

Land distribution by type of owner	Area in thousand ha		With approved FMP (a)
	Highlands	Lowlands	
<b>Forest areas in the country</b>	8,900	44,500	8,500
Total forested lands (b)	4,018	24,682	
Permanent production forest areas (c)			
<b>Private lands by actor</b>	4,381	43,249	1,078
Medium- and large-scale farmers (d)	1,323	3,744	723
	10,678	2,151	
Small-scale farmers (d)	12,111	19,516	
Community lands (d)	749	4,249	
Indigenous areas (TCO) claimed and admitted (e)	178	56	
Indigenous territories (TCO) titled areas (e)			
Number of indigenous demands (e)			
<b>Forestry rights in public lands</b>	0	5,399	5,399
	0	2,500	906
Forest concessions (f)	0	2,200	488
Forest concessions for non-timber products (g)	0	488	
Municipal forest reserves (h)	4,237	14,096	
Long term contracts and research concessions (f)			
Protected areas (i)			
<i>Notes:</i> a) areas in lowland Bolivia with an approved Forest Management Plan (FMP) in 2003. Information based on annual reports of the Superintendencia Forestal (SF), taken from Terrazas (2005), b) areas with any type of forest cover taken from MDSMA (1995), c) areas declared for sustainable forest management according to DS. 26075 of February 2001, d) correspond to land distributed by INRA and INC from 1953-2002, based on Balderrama (2002), e) based on INRA, f) adapted from SF (2005), g) personal communication from Director of Land Sanitation, INRA, h) data obtained from Direcci—n Forestal, MDS i) quoted in Bojanic (2005) based on SERNAP.			

#### a. Project Actors

Project Developers/ Managers: The Nature Conservancy and Fundación Amigos de la Naturaleza (FAN)

Project Investors: Government of Bolivia, American Electric Power Company (AEP), BP-Amoco, PacifiCorp

Lead Carbon Measurement Partner: Winrock International Institute for Agricultural Development

Certification: Emissions reductions, certified in November 2005 by Société Générale de Surveillance (SGS)

**b. Main Project Benefits**

- Emission reductions: Without the project, 989,622 tons CO<sub>2</sub> would have been released into the atmosphere between 1997 and 2005
- Carbon benefits from the project guaranteed through 2026
- Preserves a rich and biologically diverse forest ecosystem among the Amazonian, Chaco and Cerrado ecoregions
- Residents of villages in the park achieved legal status as “Communities of Native Peoples,” and application for their official land title is under way
- Provides alternative, environmentally sustainable economic opportunities for the local population by the establishment of a community forestry program among others.

**c. Project Design**

Carbon Credits: Carbon emission reductions were generated by this project through two specific activities:

- i) Deforestation avoidance through cessation of logging in former concessions.  
Logging right of concessions previously operating in the project area were retired with funds generated for project activities.
- ii) Enforcing the deforestation ban in protected areas within the park by reducing slash-and-burn agriculture and initiating alternative income programs for the surrounding communities.

Additionality: The project provided carbon financing to stop logging in the park and deforestation around communities. Without this funding, these activities would have continued, leading to the loss of forest cover and release of carbon dioxide.

Project leakage: A non-linear dynamic optimization model was used to quantify how the project might cause the loss of carbon benefits outside of the project boundary (e.g., shifting timber production elsewhere in the region and reducing the overall carbon benefits of the project). The project included programs and activities explicitly designed to minimize leakage as much as possible. Project partners detected the leakage was arising in three ways: a shift of logging to areas outside the project boundaries, logging by communities in former concessions and shift of domestic timber supply internationally. From 1997 to 2005, project partners calculated a loss of 171,618 tons of CO<sub>2</sub> benefit from leakage. This loss was factored into the calculation of the final net carbon benefits from the project.

Permanence: The project area is now protected under the auspices of the National Service of Protected Areas and FAN Bolivia. The project finances 27 rangers and an infrastructure to protect the park.

Monitoring: The project design includes a comprehensive plan to monitor biomass increments, socioeconomic impacts, development of timber markets and deforestation dynamics.

**Certification:** The certification process involved assessing the project's design document and methodologies. These included assessment of additionality, baseline, leakage, monitoring, and environmental and social impacts.

### **3.1 Community development**

Local communities are responsible for and beneficiaries of forest conservation. To improve the livelihood of the seven communities living out and inside the park and to strengthen their organization structure two sequential programs have been initiated. APOCOM (1997-2001) improved access to basic services (health, education, communication), PRODECOM (2002 –2006) emphasises community development by securing land titling, self-organisation, and income generating activities (community forestry, micro enterprises). Amongst others, the following activities have been supported:

- a. Organization empowerment:** Traditional organizations and grouping of indigenous councils into the Central Indígena Bajo Paraguá (CIBAPA) has been supported. Today, CIBAPA is registered as an organisation with legal standing representing the indigenous communities around the park.
- b. Land tenure and community property rights:** Before the project started, none of the communities bordering the park had any property rights to the land they had historically live on. Today, the entitlement demand of 360,565 ha of Native Communal Land has advanced by nearly 80% of its due course.
- c. Elementary and high school education:** Scholarships were given to 120 students to continue their studies in courses that are not available in the communities.
- d. Capacity training:** 4 communities were trained in sustainable community forestry. Agricultural promoters were educated and special scholarships in strategic areas (business administration, tourism, agricultural and forest engineering) financed.
- e. Income generation:** Amongst other income generating activities the project supported the elaboration of the community forest management plan and the establishment of the community forest concession. Today, IBAPA is running its own sawmill being the first indigenous community with a timber selling point in the capital of the Department of Santa Cruz.
- f. Land use planning:** To enhance access to livelihood means and to mitigate leakage the project financed the elaboration of a land use plan covering the overall indigenous territory.
- g. CERS benefits:** The Government of Bolivia owns a 49% of the emissions reductions achieved in the lifetime of the Project, after cashing the CERS the money generated will be use as follows: To cover the activities of park protection and fundamentally to support the communities development and wellbeing.

The project represents a success history, first for the institutional framework where the government of Bolivia along with national and international NGOs, and Energy Companies has been able to support the implementation of the NKMP, improving the park and overall supporting the sustainable development of the communities, while providing a service to the world reducing GHG emissions that are certified. This is an example proving that this can be done in a technically and scientifically manner but also supporting sustainable development in the host country.

#### **4. Financial Instruments use to secure resources for National Parks system**

The National Protected Areas System (SNAP) was established by the Government of Bolivia in 1992, and presently includes 22 protected areas of national interest covering 10.68 million of ha (representing 17 percent of the Bolivian territory) of which 19 areas (encompassing 15% of national territory) are currently under SERNAP management. SNAP is very ambitious, given the human and financial constraints Bolivia faces. The Government of Bolivia (GOB) has taken steps to establish a policy framework to support biodiversity conservation and to closely link this to social development and poverty alleviation.

The Foundation for the Development of the National System of Protected Areas (FUNDESNAP) was created in 2000 and is legally recognized as a private foundation by the La Paz department prefecture. Its mission is to raise, channel, and administer financial and non-financial resources that enable the National Service of Protected Areas (SERNAP) to advance the principles, policies and strategic goals of Bolivia's National Protected Areas System (SNAP).

FUNDESNAP currently manages \$11.1 million in permanent endowment funds, a \$2.1 million sinking fund from which both capital and earnings may be spent, and \$4.8 million in project funds. As a private, non-profit foundation, FUNDESNAP is characterized by transparent procedures and is free from political interference. Given its role in supporting SERNAP, it is operationally linked but not subsidiary to the Bolivian government.

In five years, FUNDESNAP has demonstrated the financial management and administrative capacity needed to realize conservation and development goals in Bolivia's protected areas. The initial impetus for its formation was the failure of a public entity to adequately manage public resources intended to generate investment income and project funds to cover Bolivia's protected area costs. Endowment resources totaling \$9.95 million were transferred to FUNDESNAP management in 2001 and have grown an average of 6.9 percent per annum over the last three years under its stewardship. Previous management had attained a return of only 1 to 2 percent on average over 4 years. FUNDESNAP's maximum decision-making and representational body is its founder's Assembly comprised of nine representatives of the Bolivian government, the private sector, civil society, international cooperation, and representatives of the protected area management committees.

FUNDESNAP financing ensures that the best technical tools are available and used to advance protected area management including the Protected Areas Planning System (SIPAP) and Monitoring Effective Management System (MEMS). The SIPAP provides an orderly framework for the generation of annual operating plans for each area and for the overall protected area system. At present, six of the eight areas have long-term management plans. The MEMS, based on The Nature Conservancy's Scorecard, monitors the fulfillment of planned activities. With Critical Ecosystems Partnership Fund (CEPF) support, SERNAP is currently working to strengthen this system. Ultimately, SERNAP aims to take its planning and monitoring efforts beyond protection and distraction to enable others to work effectively on environmental education and sustainable development.

FUNDESNAP and SERNAP together present the institutional capacity needed to finance and implement long-term management of Bolivia's protected areas.

**This represent a good experience for a public and private framework that can manage financial resources, capacity that is require for the implementation of incentive mechanism on the ground for reducing emissions from deforestation.**

#### **4. Technical and scientific aspects**

The following points outline some technical and scientific recommendations based on Bolivian experiences and the ongoing dialogue between the Government of Bolivia and Bolivian institutions focusing on forests and deforestation.

##### **a. Definition of forest cover**

Considering, that changes in some non forest vegetation types might cause considerable emissions, too, de-vegetation of non forest areas should be taken into account, in a broad analysis of definitions.

##### **b. Types of eligible interventions**

The Marrakech Accords define deforestation as “the direct human-induced conversion of forested land to non-forested land” (FCCC/CP/2001/13/Add.1 p. 55). Apart from that, forest degradation and devegatation are leading to substantial anthropogenic GHG emissions (IPCC 2003) and should be included in a system of Full Carbon Accounting in post 2012. Based on this comprehensive approach, the following activities should be considered under a comprehensive accounting system of avoided LULUCF emissions:

- Deforestation
- Selective logging
- Shifting and shifted cultivation
- Fires
- Other types of intervention (roads, settlements, clearing, fragmentation)

##### **c. Quantifying and monitoring area of eligible interventions**

To allow for internationally consistent accounting procedures, standards for classification schemes, data processing, and monitoring should be established. Today, state of the art methods in remote sensing, forest inventories and biomass measurements are available to accurately measure and detect changes in carbon forest stocks:

- Bolivia is already monitoring large scale deforestation annually, using the MODIS product MOD13, which detects deforestation exceeding 6 ha with an accuracy of 80%. Cross comparison with data of LANDSAT ETM class sensors can increase this accuracy, substantially.
- Fine scale measurements of land cover change are needed to track small scale deforestation (1 - 5ha) annually at a national level. Although the SLC failure of LANDSAT 7 represents a significant drawback, alternatives exist (ASTER, SPOT, DMC) providing high resolution data for monitoring at a regional scale.
- Recent scientific work (Asner et al. 2005) indicates, that it is technically feasible to detect, estimate and monitor forest degradation, specifically caused by selective logging. As this promising work is hampered by the fact that it builds on LANDSAT ETM efforts should be made to identify alternative data products suitable for this type of analysis.
- While wall to wall approaches to detect active fires and burnt area at medium resolution (250m-1km) are already operational (MODIS, AVHRR), detection of fire radiative power (FRP) is still at an experimental stage (BIRD). Processing FRP measurements showed promising results when converting the remotely sensed signals into a CO<sub>2</sub> emissions estimate. Additionally, fire scarf mapping gives reliable estimates of GHG emissions at a regional scale (Archard et al. 2004).

These experiences show, that it is already technically feasible, to detect and monitor the impact of different types of forest degradation and deforestation at a national level with an appropriate temporal and spatial resolution. Taking into account the rapid technology change in remote sensing, further high-resolution sensor products will be available before 2012 to estimate GHG emissions.

Demand of Cost effectiveness, limited resources, or data constraints might impede a wall to wall monitoring of all activities in the beginning. Thus, a subnational monitoring and projection of selected interventions (fire, logging, slash and burn) should be allowed during an initial phase. These measurements can be projected to a national level using robust scientific methods. Technology transfer and training in remote sensing, as well as preferential data access for developing countries at minimum cost are important to improve the monitoring capacity in tropical countries.

**d. Quantifying and monitoring emissions**

Accurate biomass measurements for each forest type are needed to convert area measurements to emission volumes. Multilateral institutions like IPCC and FAO already facilitate the exchange of measurements and methodologies. Joint efforts are needed to establish consistent inventory approaches covering agreed vegetation classes, calibration and monitoring protocols. Complementary remote sensing based mechanisms (LIDAR, airborne videography) to directly measure biomass have been tested, successfully, and might be operational in the near future.

Carbon accounting schemes at a national scale should build on already agreed methods: IPCC GHG inventory methods (IPCC 1996, and currently under revision) and the LULUCF GPG (IPCC2003) already contain methods and default values for various processes and pools. Soon, revised guidelines will be available (IPCC 2006 AFOLU Guidelines forthcoming).

Both, already operational remote sensing and state of the art biomass measurement methods provide for valid data to establish national accounting schemes of emissions from deforestation, degradation, and devegetation.

**e. Key elements of a baseline approach**

To provide for robust projections of avoided deforestation, degradation, and devegetation agreed definitions are needed on historical baseline periods, projection methods, and validation procedures.

As deforestation, degradation, and devegetation show different regional dynamics in tropical countries, each Party could propose country specific base line periods. Parties with large forest cover, relatively low deforestation rates and low economic development should be allowed to use higher deforestation rates in their projections than countries with low forest cover or good economic performance. Spatiotemporal coverage of remote sensing data is an important criterion to select the appropriate baseline period in differentiated country based approaches.

To establish robust projections the detected areas of intervention have to be related to corresponding biomass values. These biomass values might be specific for different vegetation types or a mean over a broad spectrum of different vegetations. Default values for various vegetation types already exist (IPCC LULUCF GPG 2003). Using them or other biomass measurements requires knowledge, where and how much deforestation, degradation, or devegetation will be avoided in the future. Different LULUCF models are already in use (i.e. GEOMOD, CLUE-S) to spatially project land use change. The Noel Kempff Climate Action Project (NKCAP) uses GEOMOD to allocate the projected area deforested based on change detection analysis (FAN 2005). Its certification shows, that this model complies with rigorous certification criteria used by SGS as a DOE. Spatial LULUCF modelling might play an important role in detecting areas under high risk of deforestation, degradation, and devegetation. Furthermore, model results can be used to allocate economic incentives to those areas, where marginal changes in profitability of sustainable forestry could make a difference.

Standards should be agreed, that allow for a model independent validation of spatially explicit land use change models. A feasible and rigorous proposal already exists (Pontius et al. 2004) and has been

successfully applied in NKCAP. The use of mean values might be feasible, when it is impossible to allocate avoided interventions ex ante.

Avoiding deforestation implies that land use change will be avoided. Full Carbon Accounting approaches have to account for the biomass of avoided secondary land use using IPCC default values or other appropriate measurements as proxies, as well as robust assumptions about the type, spatial, and temporal distribution of this secondary land use.

The combination of principal and underlying causes of deforestation is changing over time: New roads are built, new settlements emerge, markets for timber and agricultural products show dynamic behaviour. Thus, the selected combination of drivers for deforestation, degradation, and degradation have to be revised periodically and, if needed, the baseline has to be modified. Apart, baseline adjustments should be possible after an approved period, to count for technology change in remote sensing and LULUC-modelling.

#### e. Leakage

Leakage has been one of the main concerns preventing the Parties from including avoided deforestation. Different aspects of leakage should be treated separately:

- The spatial domain: Leakage might occur at different scales. NKCAP shows, that leakage caused by activity shifting can be calculated using a combination of inventory, remote sensing, and econometrics' modelling approaches (Sohngen and Brown (2004); FAN (2005)) providing for robust leakage estimates at local, regional, and national scale. This approach is particularly useful to monitor leakage of project or regional based approaches. Avoiding deforestation in one country might leak to non-participating countries. International leakage remains an issue, but can be either reduced under a comprehensive framework for avoided deforestation of the UNFCCC or monitored extending already existing econometric models (Sohngen and Brown (2004); Murray et al. (2006)).
- The intra-sectoral domain: Reducing the intensity of interventions and limiting the amount of available land for land use change might change species' specific harvesting intensities in the forestry sector. This type of leakage can be monitored if appropriate remote sensing and inventory methods will cover all productive areas within a country.
- The cross-sectoral domain: Successful policies avoiding deforestation might cause factor price changes as land might get scarce. Scarcity of land might stimulate technological change in agricultural production eventually causing changes in inputs and throughputs and sector emissions. For example, a farmer might extend his cash crop production on a limited amount of land by a more intensive use of fertilizers. Economic input-output models are suitable to estimate these effects, if appropriate.

In general, leakage can be estimated with state of the art remote sensing technology and econometric modeling approaches. Thus, leakage should no longer be used as an argument against including avoided deforestation under the UNFCCC. As the current definition of leakage within LULUCF relates to project based approaches, a more comprehensive and operational definition should be agreed considering different sectoral and spatial domains. SBSTA should have a closer look at the issue of international leakage in general, and recent econometric modeling approaches, in particular. Furthermore, SBSTA should stimulate scientific exchange on these issues.

#### f. Additionality

As deforestation is constantly increasing on a global scale, one could argue, that national reductions of deforestation rates under an extended comprehensive climate regime are per se additional. Nevertheless,

the issue remains, that efforts to reduce deforestation beyond UNFCCC will continue. ODA should have a complementary role in conserving global forests. Additionality can be ensured by comprehensive reporting schemes, which should document the efforts of the Parties in reducing deforestation, the origin of its finance, and the use of incentives stimulated under the UNFCCC.

**g. Permanence**

Different approaches are discussed to tackle the challenge that avoided LULUCF emissions show higher permanence risks. If parties identify certain areas, where emissions are avoided and appropriate leakage monitoring is operational, changes in vegetation cover can be monitored. Banking carbon credits as a risk buffer for future commitment periods could be appropriate, too, depending whether a Party will choose either binding or nor-regret targets.

**h. Full carbon Accounting**

Current provisions under the Kyoto Protocol (KP) led to a fragmentation and inconsistencies in the LULUCF system. Considering, that human activities in forest, cropland, rangeland and grasslands can have significant impact on the level of emissions, a more comprehensive approach is needed in a post 2012 climate regime. Art. 3.3, 3.4 and 3.7 already allow for Annex I countries to include revegetation, forest management, cropland management, and grazing land management into their emission accounting. A Full carbon Accounting Approach would allow for a comprehensive accounting of all stock changes on terrestrial surfaces.

**END**

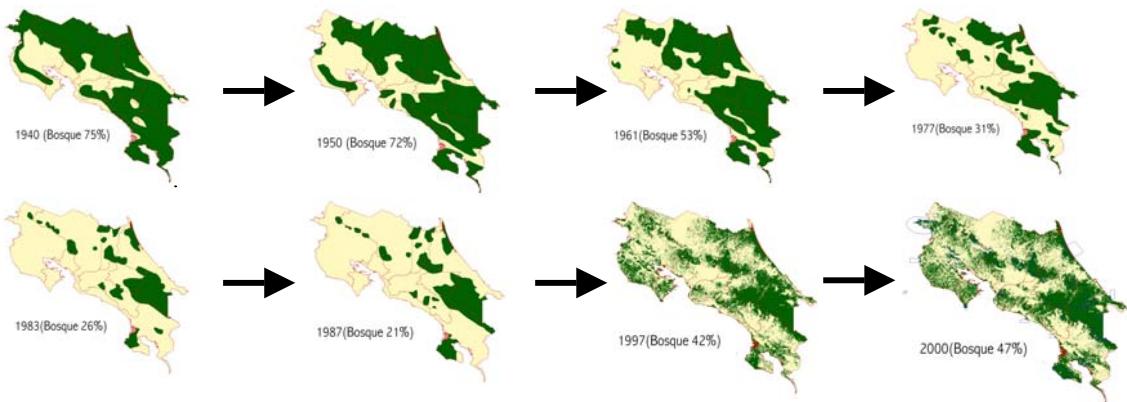
### **Annex 3: Costa Rica: Country Experiences & Exchange of Relevant Information**

Costa Rica is a country of 4 million inhabitants, covering 5 million hectares on the Central American isthmus. The oldest democracy in Latin America, it has a per capita income of US\$ 4,670 (2004), a high literacy rate, a rapidly growing population and energy demand. Its most important economic sectors are: tourism, manufacturing industry, services and agriculture.

Costa Rica contains 5-7% of the world's biodiversity. More than 75% of Costa Rica was covered by forest in 1940. However, its land area today is less than 50% forested. Approximately 1.5 million hectares of forest remain, most of which is under government protection of some type. Outside those areas, however, deforestation and forest degradation has proceeded rapidly, resulting in an increasingly fragmented forest landscape.

Based on land use capability, less than 40% of Costa Rica's land is suitable for agriculture and approximately 60% is suitable for forests. Of the 35% of Costa Rica's land in pasture, only 8% is appropriate to that use.

Figure No 1. Deforestation in Costa Rica



The establishment of the National System of Protected Area (SINAC) under the Ministry of Environment and Energy (MINAE) in 1995, resulted in a unified but decentralized system for administrating protected areas and coordinating conservation activities on a regional basis. The expansion and strengthening of the country's protected area system has been important in arresting the loss of forest.

As in many Latin-American countries, formal protected areas in Costa Rica comprise lands under a range of different tenure status, public and private. Because Costa Rica's constitution strongly emphasizes private property rights, there has long been uncertainty about the degree of actual protection afforded in protected areas that are not securely registered as part of the national forestry patrimony of the state.

This can be overcome through outright purchase of private lands, and through a variety of legal procedures and surveying activities necessary to regularize and transfer the ownership of these forested lands as a forestry patrimony of the state.

The Costa Rican government has a goal of bringing 25% of the national territory under state protection, including ecologically valuable areas that contain 90% of its biological diversity. It hopes to achieve this goal partially through enhancing the privately owned forest lands that serve as buffer zones around the state owned areas.

In 1996, Costa Rica adopted a new Forestry Law (No. 7575), which explicitly permits landholders to be compensated for providing environmental services. The Forestry Environmental Services Programme (FESP) under the new forestry law recognizes the following environmental services:

*Carbon Emissions Reductions*: is the largest monetizable forest environmental service. By refraining from deforestation, the Costa Rican landholder reduces carbon emissions to the atmosphere, and thereby reduces the economic impacts of global climate change.

*Biodiversity*: The potential loss of biodiversity has probably been the largest source of concern surrounding deforestation in Costa Rica. Much of this biodiversity, however, is not represented in protected areas and is therefore at risk. Biodiversity has instrumental and intrinsic values. The instrumental values include contributions to revenues from ecotourism and from bioprospecting ventures; these values accrue at the national level. The intrinsic values include the "existence value" or notional willingness-to-pay for preservation.

*Watershed protection*: Loss of forest cover can result in erosion and sedimentation of streams and rivers. Sedimentation reduces the quality of drinking water. Siltation also penalizes hydroelectric power generation by reducing the effective size of reservoirs, and by damaging equipment. Loss of forest cover can also result in 'peaky' response of streamflow to rainfall. This increases the risk of flooding, and results in the loss of potential electricity generation at run-of-river hydroelectric plants, as the excess water is spilled-over and lost for energy generation purposes. Under some circumstances, it is conceivable that deforestation could reduce dry season basic flows.

*Ecotourism and scenic values*: Forests are an attraction of growing importance to Costa Rica's large tourist industry. The annual number of visitors to the national parks has ranged from 500 to 600 thousand visitors in recent years.

Implementing rules, including sources of financing (e.g. local fossil fuel tax and loans from multilateral entities) and rules for disbursing forestry environmental services payments mainly through conservation of forested lands, were adopted in 1997. Since its inception funds are channeled through the National Forestry Financing Fund (FONAFIFO), which had been established in 1991 to handle an earlier generation of forestry incentives.

Some services are provided directly by the government from national parks and other public lands; however, the most innovative part of the system is the provision of services by private landowners under contract. Under the later, the obligation to protect the forest for a period of 20 years is noted in the public land register and applies to future purchasers of the land.

Costa Rica's new approach to forestry links the provision of environmental services from the financing of these services. The Government acts as an intermediary in the sale of services. Funds from the sale of these services to domestic and international buyers are used to finance these services. However, there is substantial excess on demand for over the availability of funds.

The government of Costa Rica foreseen the financial compensation for carbon offsets related with the reduction of deforestation as the major potential funding source for the territorial consolidation of the SINAC and the financial sustainability of the FESP program, the two main environmental debt of Costa Rica.

The former is addressed by the Protected Area Project (PAP), by placing 422,800 hectares of land in national parks and biological reserves, under the firm legal ownership of the state in exchange of its claim

to avert the release of 11 million tones of carbon under a 20 year stream of offsets. Offsets will be compensated in four annual tranches. The key assumption is that in the absence of external project financing, the government would be limited in its ability to prevent deforestation.

The later, the Private Forestry Project (PFP) will be similar to the PAP. However, the offsets will be based on averted deforestation on private lands. These actions will be accomplished by funneling offsets revenues through the FESP program. The ultimate scope of the project has not been precisely determined but it could encompass more than 700 thousand hectares.

Therefore, Costa Rica supports the development of a market of carbon offsets as a mean to stimulate action to reduce emissions from deforestation in developing countries, either as a voluntary contribution to environmental improvement or in order to meet local regulatory limits of emissions.

**END**

## **Annex 4: Nicaragua: Country Experiences & Exchange of Relevant Information**

### **1. Impacts of Climate Change**

Nicaragua, because of its geographical position, is part of a very vulnerable region due to the continuing occurrence of the extreme events, such as tropical storms and hurricanes, and to the climatic variability caused by ENSO.

Conservative estimates of the costs in damages Hurricane Mitch left behind are of approximately US\$8.5 Billion dollars, and amount which is greater than the Gross Domestic Product of Honduras and Nicaragua together, the two countries more adversely affected by this extreme event. It is more than evident that this extreme event had at least a ten year set back on the development process of Nicaragua.<sup>9</sup>.

The vulnerability to climatic events rises in magnitude and intensity due to the deforestation process, land erosion, sedimentation, advancement of the agricultural frontier, inadequate use of land resources and to the deterioration of natural resources in general. This vulnerability also increases due to the poverty conditions, high and extreme, in which a great portion of the rural population live, as well as to the reduced socioeconomic opportunities they have.

It is highly probable that climate change will greatly affect Nicaragua, and this will be manifested through an increase in the frequency and severity of extreme events and climatic variability.

To evaluate the degree of vulnerability and the possible impacts of climate change in the country several projections were made utilizing the General Atmospheric Circulation Model (HADCM2) to see how the climate would change in Nicaragua in different time horizons of time (2010, 2030, 2050, 2070 y 2100).

#### **a. Temperature**

According to the results from the climatic scenarios, an increase in the average annual temperature (AAT) for 2010 could be between .8 y 0.9° Celsius for the three scenarios (pessimist, moderate and optimist) in both the Pacific and Caribbean regions. For the year 2050, the AAT, under the pessimistic scenario, could increase between 1.9° (Caribbean region) and 2.1°C (Pacific region); under the moderate and optimistic scenarios the AAT could increase between 1.5° y 1.7°C. By 2100, the uncertainty is greater and the values of the AAT is likely to increase between 3.3° - 3.7°C in the pessimistic scenario and 1.9° - 2.1°C in the optimistic one.

#### **b. Sea Level**

The estimated sea level rise, based on the climate change scenarios, has not been significantly studied in Nicaragua and there is an urgent need to do so.

#### **c. Changes in climate**

For Nicaragua, climate change scenarios show the tendency toward a drier future climate, with less precipitation, reduced surface runoff water, less cloudiness, greater temperatures and evaporation, all of which will have an impact on the hydrological cycle. The increment in the occurrences of extreme events and climatic variability sets the future of certain economic activities and sector at great risks.

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<sup>9</sup> Janet N. Abramovitz, "Averting Unnatural Disasters" in "State of the World", Chapter 7 pp. 123-142, 2001.

With regards to the average annual precipitation, a general decrease is foreseen for all the scenarios. For 2010 this reduction could be between -7% to -10%; for 2100 the pessimistic scenario shows values of -36%, the optimistic -21%, both in the Pacific and Caribbean regions. Considering the reduction of precipitation the more significant changes in the Pacific region is expected in the dry lands/areas, especially in the northern part of the municipalities of Leon and Chinandega. This poses a worrisome scenario, especially because some of these areas could enter into a process of desertification, something which in turn might limit rained agricultural areas and that in turn could reduce food security at the national level.

#### **d. Relationship between forest cover and adaptation**

The Nicaraguan territory, of which 11.9 million de hectares are above sea level, most of it, 6.6 millions (55.3% of the total), are cataloged for forestry use, conservation of wild life and biodiversity, including the areas for ecotourism, such as swamps, beaches, mangroves, among others. The rest, 5.3 million hectares (44.7%), have good conditions for agricultural and cattle production, but only 6.9% of that area is good for agriculture.

In the last 50 years deforestation, pushed primarily by the agricultural frontier and population growth, has had significant consequences over land use patterns. Between 1960 and 1998, 6.3 million hectares previously covered with vegetation changed its use to agricultural production/cattle ranching. The most important environmental impact of this transformation was the substantive reduction of forest cover which decreased by half, from 8 million hectares to 4.

There are multiple causes for the lost of forest cover in Nicaragua, such as forest fires, pests, extreme weather events, slash and burn agriculture, the burning of agricultural residues, illegal extraction of timber, extensive cattle ranching and agriculture, among others. Just as an example, in 1998, Hurricane Joan damaged more than 500,000 hectares of dense forest.

The factors previously cited and the inadequate use of the land resources increases the vulnerability of the forest ecosystems. The use of lands with forestry vocation for agriculture and cattle ranching has caused massive erosion processes and the depreciation of land resources, affected the hydrological cycle and the local climate. The deforestation of the most important and watersheds and of the hillsides, increase the risks of floods, land slides, and puts the population in situations of high environmental vulnerability and risk. Furthermore, the advancement of the agricultural frontier results in environmental degradation and leads to the lost of biodiversity and water resources.

Furthermore, these circumstances have diminished the capacity of the forest ecosystems to adapt to climate change and this in turn has lead to an urgent need to promote a dual adaptation/mitigation strategy. This strategy should base itself in a process of land planning which takes into account the best use of the land based on its vocation, the development of policies and market mechanisms, the prevention of forest fires and the reforestation of the most important watersheds.

## **2. Data Drivers for Deforestation**

In the first GHG inventory Nicaragua prepared there were great uncertainties with regard to the LULUCF sector, however it showed that the larger emissions of GHG came from deforestation and that the larger sink of GHG was the natural regeneration of forests.

These uncertainties are due to the lack of up to date data, regional and national, that could be provided by a Forest Inventory, which could have helped to quantify with greater degree of certainty the areas with forest and the annual rate of deforestation

With the preparation of the first GHG inventory, to correct the lack of data in this sector, the annual deforestation rate the, the method of "expert judgment" was utilized. A workshop was organized with national forest experts and an annual deforestation rate of 120,000 hectares was agreed by consensus for the period 1993-1995.

In addition, there is other important other forestry data which is not available in Nicaragua, such as the rate of natural regeneration of the different types of forest, the dynamics of abandoned lands, local emission factors from different forest types and soil carbon in areas with forest vocation. For the first GHG inventory, the lack of this data required the use of default factors (IPCC) which brought along greater uncertainty.

Nicaragua has approximately 55,977 Km<sup>2</sup> of forest, which represents approximately 43% of the national territory. Approximately 78% of the national forest is located in Atlantic region, 17% in the Central region and only 5% is located in the Pacific Region. (Forestry Map Ministry of Agriculture and Forestry, 2001) For more detailed information see tables I and II and the end of this document.

Of the total forest ecosystems cover, approximately 1,673,000 hectares, which represent 30% of the country's area covered by forest, is under some type/category of protected area and is part of the National System of Protected Areas (SINAP).

In 1983 the country estimated it had a total forestry cover of 76,668 Km<sup>2</sup>. For the year 2000 the forest cover was estimated at 55,977Km<sup>2</sup>. Of this total, a lost of 20,691 Km<sup>2</sup> is estimate, land change used which switch to agriculture/cattle production and settlements. Therefore, in 17 years Nicaragua lost 27% of its forest cover, this represents a rate of land use change of 1.6%. The principal effect of deforestation of the tropical forest, calculated between 65,000 to 150,000 hectares per year, is land erosion and its consequences that are multiple.

Much of Nicaragua's deforestation is concentrated along the nation's "agricultural frontier", a north-south line that extends across the country, moving eastward, ever closer to the Caribbean Sea. Along this frontier, forests are continually being burned or cut in order to clear the land for agriculture. It is clear that the poverty conditions of the rural population and their low employment rate have had an impact on deforestation. Sometimes the sale of timber for these Nicaraguans becomes the only source of available income.

Agricultural production including livestock made up 15 percent of Nicaragua's GDP in 2003. Coffee is still for Nicaragua the single largest export; it declined from an export value of \$161 million in 2000 to \$86 million in 2003 in the face of falling global coffee prices and lower-cost production in southeast Asia. An upward trend in coffee prices in 2004 may help in a short-term recovery, but Nicaragua has focused efforts on developing a niche in production of specialty coffees as well as diversification to other crops.

Cattle production has grown steadily since 1998, coming close to coffee as an export earner. In 2003, exports of Nicaraguan beef, mainly to El Salvador, Mexico, and Honduras, were nearly \$84 million. Sugar, Nicaragua's third most important agricultural export, declined from earnings of \$49 million in 2001 to \$26 million in 2003. Cotton, once a major export, virtually fell out of production over the 1980s and 1990s, but is experiencing renewed interest. Exports of non-traditional agricultural products such as peanuts, melons, onions, okra, and exotic fruits like pitahaya taken together were worth \$103 million in 2003. Rice, red beans, and white corn grown mainly for domestic

consumption, as well as high-quality tobacco for domestic production of exported cigars, are other important crops.

Forestry made up another one percent of Nicaragua's GDP in 2003. Tropical hardwoods including mahogany are both exported as logs and used in local furniture manufacture, but are subject to international environmental restrictions and tight governmental regulation.

The Nicaraguan government has not been able to effectively prevent illegal logging. The National Forest Institute (INAFOR), the national institution in charge of stopping these illegal activities, has been highly limited by the lack of resources. According to information provided by the 'State of the Environment 2003' report (Estado del Ambiente en Nicaragua 2003, Ministerio del Ambiente y los Recursos Naturales) illegal logging generates great losses for the country, since a considerable percentage of the timber, that could be generating income and taxes, is lost through the border areas of the South and North of Nicaragua. According to this report, the amount of illegal logging can not be estimated.

The study and detection of forest fires through seven years (1996-2003) has shown that the most affected forest ecosystem is the tropical forest, broad leaf/evergreen, with a total of 12,774 fires, followed by the tropical deciduous/broad leaf forest with 4,203 fires.

Plagues have also affected the Nicaraguan forests. The 6673.78 hectares of pine forest disappear due to the most recent plague of the pine forest; the economic loss of this event has been estimated in approximately 39 million dollars.

The growing use of firewood, for basic energy needs, is putting great pressure on the forest ecosystems of Nicaragua, especially to the dry tropical forests located in the Pacific region of Nicaragua, where 60% of the population has concentrated.

### **3. National Experiences**

The two most significant and recent actions with regard to the forestry sector have been the definition and approval of a National Forestry Policy and the enactment of a new Forestry Law. Both acknowledge that the forestry sector is fundamental and key for the socio-economic development of the country.

On June, 2003, the Nicaraguan Assembly passed "The Law for the Conservation, Promotion and Sustainable development of the Forestry Sector". The main objectives of this law are as follows: the sustainable management of the natural forests; the increase of the forest cover; the protection and conservation of the national forests; the promotion of research; and the improvement of technology used in this sector.

Through this law the Nicaraguan State establishes an incentive regime with the objectives of promoting the sustainable development of the forestry sector, the attraction of larger numbers of investors to the sector, the promotion of reforestation activities and the halting of the process of deforestation.

One of the greatest achievements of this new Law is that it makes clear that the owner of the land is the forest cover and the benefits derived from it. It also makes clear that the owner of the land is responsible for the management of the forest resource. It is expected that this simple legal clarification will lead to the increase investment in the sector, since this legal uncertainty was a previously identified barrier for investment.

This Law also clarifies the roles and responsibilities of the different institutions involved in the sector. It creates the National Administration of the Forestry System ( Sistema Nacional de Administracion Forestal – SNAF), which is made up on public and private institutions involved in this sector. It also creates the National Forestry Registry, administer by the National Institute of Forestry (INAFOR). The National Fund for the Development of the Forestry Sector (FONADEFO) was also created by this law, with the objective of financing programs and projects that will help achieve the objectives of the Law.

It is still too early to evaluate the impact of this law on the national forestry sector, especially if you take into account that the normative for the use of the incentives regime it provides has just been recently developed.

### **Environmental Services Payment Experiences**

In the past few years pilot efforts have been made in Nicaragua to use environmental services payment schemes to promote the protection of forests which provide environmental services to communities. These pilot experiences have been mostly small and centered around the provision of water related environmental services.

**Most of these pilot experiences with environmental services payment schemes have demonstrated that they can help reduce deforestation and increase forest cover. The Program for Sustainable Agriculture in the Hillsides of Central America (PASOLAC) has been key in the development of these initiatives and through them it has been demonstrated that small scale ES initiatives can help protect forest and increase forest cover, as well as help improve the conditions of the small farmers. Furthermore, the first studies of the PASOLAC cases clearly show that the quality and quantity of water has improved.**

The Ministry of the Environment and Natural Resources is presently leading an initiative aimed at developing the institutional and legal framework which will allow the country to implement these Environmental Services Payment Initiatives in larger scales and numbers, and in the long run a national system/program for ES. Capacity Building and sharing of successful experiences with the implementation of environmental services payments are needed at the national and local levels. Bilateral and multilateral climate change programs should promote south/south cooperation and the exchange of experiences on use of this type of financial mechanism, which has proven to help stop deforestation and promote reforestation.

Table I: TERRITORIAL COVER

Type of actual land use	Área (Km2)	% percentage per/type
Open Broad Leave Forest	19,401.53	14.88
Closed Broad Leave Forest	31,683.44	24.30
Open Conifer Forest	3,950.15	3.03
Close Conifer Forest	1,160.21	0.90
Forest Fallow	4,836.20	3.73
Bush type vegetation	4,618.87	3.54
Agriculture/cattle	48,875.06	37.49
Mangroves	690.47	0.53
Wetlands	1,419.93	1.00
Grassland	2,379.19	1.82
Palm forest	486.18	0.37
Land with no vegetation	569.54	0.44
Urban area	270.23	0.21
Water	10,033.93	7.77
<b>Total</b>	<b>130,374.9</b>	<b>100.0</b>

Table II: ESTIMATED TYPE OF FOREST COVER FOR THE YEAR 2000

Actual land use	Area(Km2)	Porcentage %
Open Broad leave Forest	19,401.53	14.88
Closed Broad leave Forest	31,683.44	24.30
Open Conifer Forest	3,950.15	3.03
Closed Conifer Forest	1,160.21	0.90
Forest fallow	4,836.20	3.73
Mangrove	690.47	0.53
Palm forest	486.18	0.37
<b>Total</b>	<b>62,208.2</b>	<b>47.7</b>

END

## **Annex 5: Papua New Guinea: Country Experiences & Exchange of Relevant Information**

### ***Introduction***

Papua New Guinea (PNG) occupies the eastern half of the Island of New Guinea with a total land area of 452,8600km<sup>2</sup>; sharing a common border with the Indonesian Province of West Papua (formerly, Irian Jaya) to the west, Australia to the south, the Solomon Islands to the east and the Federated States of Micronesia to the north. It is surrounding by 600 islands of which the four largest ones are New Britain, New Ireland, Manus and Bougainville, with a population of 5.2 million. The country is rich in natural resources such as forests, minerals, gas and oil. It also has considerable biological diversity, estimated at between 5-7% of the world within an area of less than 0.1% of the global land mass.

The intact natural forests cover 65% (29.437 million ha) of the country with a further 10% (4.474 million ha) comprising other wooded lands.

PNG also has an area of 2.4 million km<sup>2</sup> Exclusive Economic Zone encompassing some 17,000km<sup>2</sup> of coastline, almost 2000 coastal villages, with a population of well over 500,000 people.

Ninety-seven percent (97%) of all the land is customarily owned by various clans, which speak well over 800 different languages.

### **1. Impacts of Climate Change**

The impacts of climate change has already being experienced in the country for the past thirty years, especially in regard to the following:

#### ***a) Temperature and Rainfall***

- i. Both temperature and precipitation trends resemble the global and regional trends respectively. Longer periods of wet season have been experienced throughout the country over the past five years, with some areas experiencing an almost wet years with no marked dry periods. This has resulted in large areas in the highlands and on low lands which have been denuded somewhat to have frequent landslips causing deaths and massive floodings;
- ii. The increase in the mean near surface temperatures has been greater than that of the mean maximum temperatures since 1970, an average increase of 0.5°C and a range of between 0.5 – 2°C has been experienced over the past 5-10 years;

#### ***b. Climate/Weather Change***

- i. The detection of climate change is still uncertain as it is based on the current data sets, which have a short period of observations;
- ii. The dry seasonal patterns exhibit weakening La Nina impacts during the dry season and that of the weakening is eventually being converted into weak dry conditions – implying longer decadal phases of dry conditions;
- iii) There is an obvious need for a widespread climate network to effectively monitor climatic variables unique to this part of the world. This may include the careful

observation of the northwest monsoonal flows necessary for the detection of the onset of the El Nino episodes;

*c. Sea Level Rise*

There is already a relative sea level rise around the country, but this is strongly influenced by El Nino and La Nina signals. Nevertheless, in some low lying coastal areas as well as around small atoll and volcanic islands evidence of sea level rise are quite obvious. Examples of submergence and erosion presumably due to sea level rise could be observed on the Cartarets Islands, northeast of Bougainville and in the Duke of York Islands of East New Britain province, and along most of the coastlines of both the main land and major islands. In addition, over the past few years incidences of frequent occurrence of sea surges have increased both in terms of frequency and intensity such that last year a number of coastal communities (400 in Western Province) have to be relocated due to their villages being destroyed by the sea surges.

## **2. Data and Drivers for deforestation**

The natural forests cover about 65% or 29.437 million ha of the total land area, while another 4.447 million ha comprise other forms of wooded lands. From 1990 to 2005 a total of 2.086 million ha of forest have been deforested, with a rate of 4.54% pa. The drivers of deforestation in the country are basically related to increasing population growth, which is currently estimated at 3.7% per year and the desire of the government for economic. The major drivers of deforestation in the country are forest logging, large-scale commercial agriculture, subsistence agriculture (slash and burn), urban expansion, infrastructure development (e.g., roads, airstrips, etc), mining, gas and oil exploration and extraction. Presented below are the annual estimates of areas deforested by these major drivers of deforestation:

<u>Drivers of deforestation</u>	<u>Average Area (ha)pa</u>
Logging	139,050
Agriculture (Commercial)	70,000
(Shifting Cultivation)	260,000
Infrastructure	30,000
Urban Expansion	67,000
Mining	150,000
Oil and gas Exploration/Exploitation	50,000

## **3. Experiences**

Over the past 10-15 years the government has been trying its utmost to reduce unnecessary and illegal deforestation activities, especially in areas of logging. Such that following its Royal Commission into forest activities in the late 1980s, the government acted a new Forestry Act in 1991 that created an Authority – the PNG National Forest Authority. In addition to the Act there is also the Policy (1991) and the National Forest Development Guidelines (1993), all of which are aimed at regulating the management and utilization of the natural forests of the country. Another important initiative was the development of a National Forest Plan (1996). This plan comprises the forest development plans from all the 18 provinces of the country. Further, two addition policies have been developed and are awaiting the approval from the National executive Council (NEC). These are the Eco-Forestry and Reforestation Policies.

The adoption of the acquisition of customary forest resources through the concept of Forest Management Agreement (FMA) under this new Act is directed towards sustainable forest management through selective logging using a 35-year cutting cycle. Under the FMA clear felling of natural forests is not permitted. Furthermore, the adoption of the PNG Logging Code of Practice is among other measures taken by the government to minimize impacts on the environment.

The Environment Act 2000 (“the Act”) enacted in the National Parliament of Papua New Guinea also reiterates the government’s commitment to properly manage and develop the country’s natural resources, including the forests. This new Environment Act comprises an amalgamation of three legislations including the *Environment Planning Act (1978)*, the *Environment Contaminants Act (1978)* and the *Water Resources Act (1982)* building on new approaches in environment protection and management.

Pertinent features of the Act include a three-tiered process in environmental permitting based on the nature of environmental harm that may be caused by a proposed activity. Those activities that have the potential to cause serious environmental harm (Prescribed Level 3 Activities) are subjected to a more rigorous process involving the need to undertake an environment impact assessment (EIA) and preparation of an environment impact statement, which is reviewed and a recommendation made by the Environment Council on the proposal. Other more minor proposals (Prescribed Level 2 activities) are dealt with under the normal environment permitting process with the Director of Environment making the final decision to issue an environment permit.

A large improvement from previous environment legislation and an important feature of the Act are the high penalty fines and stage enforcement procedures. The Act also provides for Provincial Environment Policies to be developed. These policies however need to be consistent with national environment protection and management policies, which can be made for a whole range of matters or for the policy to cover a defined geographical area to protect a defined beneficial value.

In regard conservation and protection efforts, the government has to date demarcated about 1 million ha of forests for such purposes and is aiming to further increase the extent of protected areas to at least 20% of the land. However, the government is faced with a number of problems to further its aim of increasing the acreage of protected areas as well as taking control of forest management and development due to the fact that it does not own the resources and also there so many opportunity costs involved in acquiring the resources for any type of development that the government planned to implement.

Thus the government of PNG fully supports the development of a market of carbon trading under this reduce emissions from deforestation in developing countries, not only to assist its development approaches, but also to further enhance its environment protection and conservation efforts and the livelihoods of its rural population.

**END**

PAPER NO. 5: BRAZIL

**Brazilian Submission on Issues related to Reducing Emissions from Deforestation in Developing Countries**

The Government of Brazil wishes to contribute to the discussion on issues relating to reducing emissions from deforestation in developing countries with the following elements:

2. The consideration of issues relating to reducing emissions from deforestation in developing countries is based on the assumption that these issues are going to be further considered solely under the Framework Convention on Climate Change. The Government of Brazil does not envisage any mechanism related to reducing emissions from deforestation in developing countries that could be used by Annex I countries to meet their quantified greenhouse gas emission limitation and reduction commitments under the Kyoto Protocol.

3. The possible adoption of an arrangement related to reducing emissions from deforestation in developing countries to be negotiated under the auspices of the UNFCCC must aim at contributing to the ultimate objective of the Convention, which is the achievement of the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with climate change.

4. Brazil acknowledges the importance of considering issues related to reducing emissions from deforestation in developing countries, taking into account that the UNFCCC recognises that all Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

\* Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;

\* Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;

\* Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems.

5. The UNFCCC also recognises clearly that the emissions of non-Annex I

Parties are expected to grow so as to accommodate their needs for development and the extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.

6. The Government of Brazil believes that, in this context, efforts undertaken by developing countries to reduce emissions from deforestation in their territories can only be characterized as voluntary and, therefore, cannot be linked or associated to goals, targets and timeframes.

7. Despite the fact that, in accordance with the principle of common but differentiated responsibilities of countries, the Government of Brazil does not have commitments to reduce or limit its anthropogenic emissions of greenhouse gases, there are many programs in Brazil that result in a considerable reduction of greenhouse gas emissions. Several other initiatives that are being implemented, in particular to reduce the annual rate of gross deforestation, as well as to promote sustainable forestry management, have also contributed to changing the curve of greenhouse gas emissions in Brazil.

8. The Government of Brazil strongly believes that the discussion on issues relating to reducing emissions from deforestation should touch upon the convenience of establishing a new arrangement, within the Convention, to provide positive incentives to developing country Parties in this context. Such incentives should encompass the provision of new and additional financial resources and transfer of technology, as well as capacity building and enhancement of endogenous capacities, to be channeled to government programmes containing measures that contribute to reduce emissions from deforestation in developing countries.

9. The Government of Brazil recommends that the process to consider the issues relating to reducing emissions from deforestation in developing countries be furthered in the context of the "Dialogue on long-term cooperative action to address climate change by enhancing implementation of the Convention" (Decision /CP. 11).

**REPUBLIC OF COSTA RICA  
Ministry of Environment and Energy**

**PARTIAL PROPOSAL**

**Reducing emissions from deforestation in developing countries:  
Approaches to stimulate action**

**Preamble:**

According to document FCC/CP/2005/L.2, Parties and accredited observers are requested to submit to the Secretary of the United Nations Framework Convention on Climate Change (UNFCCC) their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. The COP also invited Parties to submit recommendations on any further process to consider the issues, to prepare with the help of the Secretariat, a miscellaneous document for consideration of the Parties at the twenty-fourth session of the Subsidiary Body for Scientific and Technological Advice (SBSTA).

In order to contribute to this process, Costa Rica submits to the Secretariat of the UNFCCC, some initial positions on the requested elements.

**Tropical deforestation**

Although current emissions of GHG from deforestation amount to about 25% of the global anthropogenic emissions, the Kyoto Protocol does not make, on its Article 12, provisions for tropical deforestation. On the contrary, it allows *inter alia*, activities of LULUCF for Annex I parties under its articles 3.3 and 3.4, misleading Annex I emissions reductions from their real emission sources, such as related fossil fuels and other sectors (see Table 1).

**Table No 1. Share of global anthropogenic emissions of CO<sub>2</sub> by source and Annex**

Emission Sources	Annex I (%)	Non-Annex I (%)	Total (%)
Deforestation	2	23	25
Fossils and others sectors	61	14	75
Total	63	37	100

In virtue of the above, the new environmental value of standing forest in Annex I countries constitutes a potential threat of an inter-Annex leakage which would easily halve the global impact of the Kyoto Protocol.

Although tropical forests account for less than half of the global forest area, trees in tropical forests hold about 50% more carbon per hectare than in temperate forests. Current emissions of GHG from deforestation amount to about 25% of all anthropogenic emissions of GHG. But deforestation in developing countries- typically tropical deforestation- is currently the major

source of emissions from these countries. If current trends continue, tropical deforestation will release 50% as much carbon to the atmosphere as has been emitted from the combustion of fossil fuels since the start of the industrial revolution. Therefore, the potential for avoided deforestation to reduce future emissions is significant.

In this context, without any bridge to economically connect the Annex I to non Annex parties under the frame of the UNFCCC, the Kyoto Protocol environmental integrity will be at stake and above all, the developing countries commitment to mitigation.

In virtue of this, Costa Rica suggests to financially compensate project-based emissions reductions stemming from the reduction of the deforestation in developing countries through the pilot phase of the Activities Implemented Jointly (AIJ) mechanism, as a means of facilitating significant non Annex Parties' contribution to the ultimate objective of the Convention.

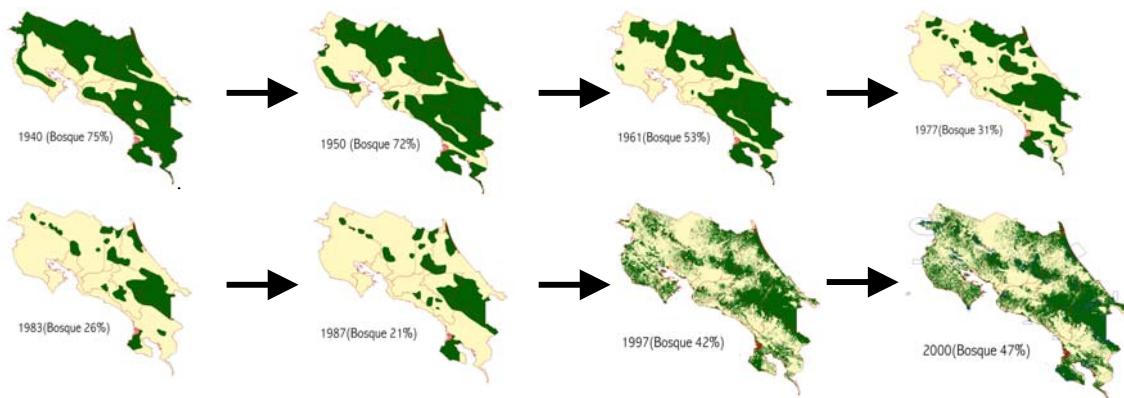
Within this context, Non Annex parties that voluntarily elect or have early elected as a national policy to reduce their emissions from deforestation, on a project by project basis, during the six years previous to the end of the first commitment period of the Kyoto Protocol, would be financially compensated by Annex I parties on the basis of their performance taking into account an average representative annual deforestation rate over some agreed period in the past, measured with satellite imagery techniques, as a baseline.

#### **Experiences with government policies aimed at reducing tropical deforestation: The Costa Rican case**

Costa Rica is a country of 4 million inhabitants, covering 5 million hectares on the Central American isthmus. The oldest democracy in Latin America, it has a per capita income of US\$ 4,670 (2004), a high literacy rate, a rapidly growing population and energy demand. Its most important economic sectors are: tourism, manufacturing industry, services and agriculture.

Costa Rica contains 5-7% of the world's biodiversity. More than 75% of Costa Rica was covered by forest in 1940. However, its land area today is less than 25% forested. Approximately 1.5 million hectares of forest remain, most of which is under government protection of some type but still a significant portion of lands is pending payment by the government and thus not necessarily consolidated fully into the protected areas system. Outside those areas, however, deforestation and forest degradation has proceeded rapidly, resulting in an increasingly fragmented forest landscape.

Figure No 1. Deforestation in Costa Rica



Based on land use capability, less than 40% of Costa Rica's land is suitable for agriculture and approximately 60% is suitable for forests. Of the 35% of Costa Rica's land in pasture, only 8% is appropriate for that use.

The establishment of the National System of Protected Areas (SINAC) under the Ministry of Environment and Energy (MINAE) in 1995, resulted in a unified but decentralized system for managing protected areas and coordinating conservation activities on a regional and local basis. The expansion and strengthening of the country's protected area system has been important in arresting the loss of forest.

As in many Latin-American countries, formal protected areas in Costa Rica comprise lands under a range of different tenure status, public, community and private. Because Costa Rica's constitution strongly emphasizes private property rights, there has long been uncertainty about the degree of actual protection afforded in protected areas that are not securely registered as part of the national forestry property of the state.

This can be overcome through outright purchase of private lands, and through a variety of legal procedures and surveying activities necessary to regularize and transfer the ownership of these forested lands as a forestry property of the state.

The Costa Rican government has a goal of bringing near a 45% of the national territory under state protection, including ecologically valuable areas that contain 90% of its biological diversity. It hopes to achieve this goal partially through enhancing the privately owned forest lands that serve as buffer zones around the declared protected areas.

In 1996, Costa Rica adopted a new Forestry Law (No. 7575), which explicitly permits landholders to be compensated for providing environmental services to the society. The Forestry Environmental Services Programme (FESP) under this law recognizes the following environmental services:

**Carbon Emissions Reductions:** is the largest monetizable forest environmental service. By refraining from deforestation, the Costa Rican landholder reduces carbon emissions to the atmosphere, and thereby reduces the economic impacts of global climate change.

**Biodiversity:** The potential loss of biodiversity has probably been the largest source of concern surrounding deforestation in Costa Rica. Much of this biodiversity, however, is not represented in protected areas and is therefore at risk. Biodiversity has instrumental and intrinsic values. The instrumental values include contributions to revenues from ecotourism and from bioprospecting ventures; these values accrue at the national level. The intrinsic values include the "existence value" or notional willingness-to-pay for preservation.

**Watershed protection:** Loss of forest cover can result in erosion and sedimentation of streams and rivers. Sedimentation reduces the quality of drinking water and also penalizes hydroelectric power generation by reducing the effective size of reservoirs, and by damaging equipment. Loss of forest cover can also result in 'peaky' response of streamflow to rainfall. This increases the risk of flooding, and results in the loss of potential electricity generation at run-of-river hydroelectric plants, as the excess water is spilled-over and lost for energy generation purposes. Under some circumstances, it is conceivable that deforestation could reduce dry season basic flows.

**Ecotourism and scenic values:** Forests are an attraction of growing importance to Costa Rica's large tourist industry. The annual number of visitors to the national parks has ranged from 500 to 600 thousand visitors in recent years.

Implementing rules, including sources of financing (e.g. local fossil fuel tax, water tariffs and loans from multilateral entities) and rules for disbursing forestry environmental services payments mainly through conservation of forested lands and forestry plantations, as well as agro-forestry systems, were adopted from 1995 on. Funds are channeled through the National Forestry Financing Fund (FONAFIFO), which had been established in 1991 to handle an earlier generation of forestry incentives.

Some environmental services are provided by the government in national parks and other public lands; however, the most innovative part of the system is the provision of services by private landowners under contract. Under the latter, the obligation to protect the forest for a period of 5 up to 20 years is registered in the public land registry and is binding for future owners of the land.

The government of Costa Rica foresees that the financial compensation for carbon offsets stemming from the reduction of deforestation could be a major potential funding source for the territorial consolidation of the SINAC and the financial sustainability of the FESP program, the two main environmental debts of Costa Rica.

The former is addressed by the Protected Area Project (PAP), by placing 422,800 hectares of land in national parks and biological reserves, under the firm legal ownership of the state in exchange of its claim to avert the release of 11 million tones of carbon under a 20 year stream of offsets. Offsets will be compensated in four annual tranches. The key assumption is that in the absence of external project financing, the government is limited in its ability to prevent deforestation.

The latter, the Private Forestry Project (PFP) will be similar to the PAP. However, the offsets will be based on averted deforestation on private lands. These actions will be accomplished by funneling offsets revenues through the FESP program. The ultimate scope of the project has not been precisely determined but it could encompass more than 700 thousand hectares.

Costa Rica supports the development of a market of carbon offsets as a means to stimulate action to reduce emissions from deforestation in developing countries, either as a voluntary contribution to environmental improvement or in order to meet local regulatory limits of emissions.

#### **Technical and methodological issues to consider**

The ability to quantify tropical deforestation is critically important for assessing carbon credits from reduced deforestation. Costa Rica supports that the actions to curb GHG emissions from deforestation should be implemented at the project level; a project may be implemented up to the regional or national scale. The baseline on GHG emissions from deforestation should take into account historical trends and other circumstances at the appropriate scale and should not disadvantage countries that have taken early actions.

Methodologies to address technical issues, such as those arising from the scale of implementation (e.g. leakage, monitoring, etc.), exist and can be adapted as necessary. Therefore, the discussion on technical issues should not prevent or delay the adoption of adequate and equitable policy approaches and positive incentives.

Modalities and procedures to address GHG emissions from deforestation should be discussed once policy approaches and positive incentives are defined; these issues depend on what policy measures and positive incentives are adopted. Definitions should allow the participation of all Parties and the use of different types of activities for reducing GHG emissions from deforestation.

### **Financial resources**

It is essential to recall the principle of supplemental financing as new initiatives on reducing GHG emissions from deforestation should not be done at the expense of other sectors. Actions taken to curb GHG emissions from deforestation will be more effective if there is a variety of ways in which they can be supported.

Supplemental financial assistance should be made available to developing countries to compensate for any expenses linked to implementing actions pursuing the reduction of GHG emissions from deforestation. Funding for financing actions undertaken to curb GHG emission from deforestation in developing countries should be supplemental to the current and already planned ODA commitments.

However, to reduce GHG emissions from deforestation at a scale that would be adequate for pursuing the ultimate objective of the UNFCCC, positive incentives should be based on market mechanisms or on other innovative financial approaches, such as tax or fees on carbon intensive commodities and services in Annex 1 countries, or on the trade of military goods and related services, etc

### **Recommendations for possible future processes**

The discussions regarding GHG emissions from deforestation should continue under UNFCCC. However, the option of eventually addressing GHG emission from deforestation in the second commitment period of the Kyoto Protocol should not be excluded. Capacity building issues, policy approaches and positive incentives should be addressed by SBI as soon as possible, to allow a prompt start of capacity building and implementation. Within this context, a progressive step-by-step Process is recommended below:

- a) **SBSTA 24** (May 2006): Agree on Terms of Reference for Workshops and Process Timeline
- b) **Post SBSTA 24** (July 2006): Parties, assisted by the Secretariat, review and synthesize the Submission of Views related to 'Sharing of Country Experience and Information' in advance of First Workshop – Secretariat to publish Synthesis.
- c) **First Workshop** (August 2006): Leverage 'Synthesis of Country Experience and Information' to frame Policy & Incentive Options with purpose to inform COP-12 & SBSTA 25
- d) **COP-12 & SBSTA 25** (November 2006): Finalize 'Summary of Options: Policy Approaches & Positive Incentives' at SBSTA 25 and provide 'Summary' as Progress Update to COP-12. Refer to SBI to address implementation issues.

- e) **Second Workshop** (March 2007): Assessment of Technical and Methodological Implications related to 'Summary of Options related to Policy Approaches and Positive Incentives' in order to identify key issues for consideration at SBSTA 26
- f) **SBSTA 26** (May 2007): Consider 'Technical and Methodological Implications' related to 'Summary of Options: Policy Approaches and Positive Incentives.'
- g) **Third Workshop** (August 2007): Draft Recommendation for COP-13.
- h) **COP-13 and SBSTA 27** (November 2007): Finalize and Present Recommendations to COP-13.

## **Reducing emissions from deforestation in developing countries: approaches to stimulate action**

**Submission by El Salvador**

### **Mandate**

The President of COP11 of the UNFCCC calls for Parties to send submissions to the Secretariat on their views regarding issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. Draft conclusions by the President on this issue are contained in document FCCC/CP/2005/L.2, under item 6 of the agenda.

#### **A. Scientific issues:**

According to the TAR<sup>1</sup>, “terrestrial and freshwater ecosystems will be impacted by global climate change. Species composition and dominance will change, resulting in ecosystem types that may be quite different from those we see today”. “Populations of many species already are threatened and are expected to be placed at greater risk by the synergy between the stresses of changing climate, rendering portions of current habitat unsuitable, and land use change that fragments habitats. There is high confidence that loss or reduction of species would impact the services provided by wildlife through roles within an ecosystem (e.g.: pollination, natural pest control), recreation (e.g.: sport hunting, wild life viewing), and cultural and religious practices of indigenous people”.

“In areas affected by hurricanes, El Niño/La Niña and other climatic extreme events, and disturbances, such as fires, changes in the frequencies of these events could lead to loss of productivity, thus potential land degradation, potential loss of stored carbon, or decrease in the rate of carbon uptake<sup>2</sup>”. Impacts of climate change on forest ecosystems will be one of the causes of emissions from deforestation.

As per the SAR<sup>3</sup>, “models project that a sustained increase of 1°C in global mean temperature is sufficient to cause changes in regional climates that will affect the growth and regeneration capacity of forests in many regions. In several instances this will alter the function and composition of forest significantly. As a consequence of possible changes in temperature and water availability, a substantial fraction of the existing forested area of the world will undergo major changes in broad vegetation types”. “In low latitudes, temperatures would generally be increased to higher levels than now exist. Furthermore, the species composition of forest is likely to change; entire forest types may disappear, while new assemblages of species, hence new ecosystems, may be established”.

“Although net primary productivity could increase, the standing biomass of forests may not because of more frequent outbreaks and extended ranges of pests and pathogens, and increasing frequency and intensity of fires. Large amounts of carbon could be released into the atmosphere during transitions from one forest type to another because the rate at which carbon can be lost during times of high forest mortality is greater than the rate at which it can be gained through growth to maturity”.

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<sup>1</sup> IPCC-Third Assessment Report.

<sup>2</sup> Climate Change 2001: Impacts, Adaptation and Vulnerability (IPCC-TAR).

<sup>3</sup> IPCC-Second Assessment Report.

One of the relevant findings of the TAR concerning adaptation for Latin America, is that “adaptation measures have the potential to reduce climate related losses in agriculture and forestry”. The current challenge is to develop adaptation strategies and measures to minimize or avoid the impacts, and the resulting emissions due to deforestation.

## **B. Information exchange and policy approaches**

It is important to highlight the issue of reducing emissions from deforestation in developing countries, within the policies and measures already agreed within the UNFCCC multilateral process, namely:

### **1. Five-year work program on impacts, vulnerability and adaptation**

It is recommended to include the issue of reducing emissions from deforestation in developing countries within the SBSTA five-year work program on the impacts of climate change, vulnerability and adaptation, taking into account, either the scope of activities or the modalities for implementation. The aforementioned issue should be highlighted in both thematic areas of the program, namely: a) impacts and vulnerability, and b) planning, measures and activities related to adaptation.

### **2. Special Climate Change Fund**

It is worth noting that it is feasible to promote the design and execution of projects that reduce emissions from deforestation in developing countries within the Special Climate Change Fund (SCCF), identifying and taking advantage of the appropriate sectors and thematic areas already established under the SCCF guidelines, namely: a) forestry, b) soil planning and management, c) fragile ecosystems, including mountainous systems, and d) planning and integrated management in coastal zones.

### **3. Synergy among multilateral environmental agreements in the context of integrated adaptation and mitigation strategies**

It is important promoting that national or regional adaptation initiatives (strategies, programs, projects or measures) adopt a synergetic approach, integrating the concerns and goals related to mitigation and other multilateral environmental agreements. Activities that reduce emissions from deforestation could facilitate such synergies, integrating actions that contribute to: biodiversity conservation, fighting against desertification and droughts, wetlands conservation, adapting to climate change and carbon storage.

Financing integrated and synergetic approaches should be prioritized within the SCCF, the Adaptation Fund under the Kyoto Protocol and GEF operational programs, such as the Ecosystems Integrated Management Program (OP.12), the Sustainable Land Management Program (OP.15) and the Priority Small Grant Program (SGP).

### **4. The Adaptation Fund**

With the view to optimize resources to be allocated under the Adaptation Fund, it should be suggested to prioritize adaptation initiatives based on the synergies between adaptation and mitigation, and among multilateral environmental agreements. Some forests activities, such as those reducing emissions from deforestation, should be promoted and supported, namely:

- Ecological conservation and restoration of tropical forests in degraded or marginalized soils, through natural or assisted regeneration.
- Conservation and restoration of native forests to establish or consolidate environmental corridors, in the context of current efforts to strengthen natural protected areas systems, including riparian, estuarine and ecotonal forests.
- Conservation and restoration of forest ecosystems that contribute to biodiversity conservation, taking into account, *inter alia*: variety and density of species, endemic and endangered species, species contributing to human health, food security or that are relevant for wild life.

## **5. Bilateral and multilateral cooperation programs**

Bilateral and multilateral programs already implemented or to be established within the UNFCCC multilateral process or the ODA, should prioritize project activities including synergies between adaptation and mitigation and among multilateral environmental agreements. Some forest initiatives should be identified and prioritized due to their multiple global environmental benefits.

In most developing countries, the design and establishment of appropriate mechanisms to organize small rural land owners interested in developing forestry projects, should be promoted and supported, through technical and financial assistance. As well, the appropriate management and monitoring of such mechanisms, at national, regional or local level, will require training, technical assistance and demonstrative experiences to be effective and sustainable.

PAPER NO. 8: GABON ON BEHALF OF CAMEROON, CENTRAL AFRICAN REPUBLIC, CHAD, CONGO, DEMOCRATIC REPUBLIC OF THE CONGO, EQUATORIAL GUINEA AND GABON

## United Nations Framework Convention on Climate Change

### - SBSTA 24 -

**Agenda Item #6 :** Reducing Emissions from Deforestation in Developing Countries : Approaches to Stimulate Action.

### Submission of Views of the Congo Basin Countries

The following views are submitted by the Congo Basin Countries meeting as part of the Commission des Forêts d'Afrique Centrale (COMIFAC), consistent with the 1999 Declaration of the Heads of States, known as the 'Déclaration de Yaoundé' and related to the conservation and sustainable management of forest ecosystems in Central Africa.

The 10 following countries are members of the COMIFAC : Burundi, Cameroon, Congo, Gabon, Equatorial Guinea, Central African Republic , Democratic Republic of the Congo, Rwanda, Sao Tomé and Principe, and Chad.

Angola is currently an observer.

The COMIFAC was created by the Heads of State with the purpose of managing Congo Basin forests in a concerted manner through a common platform, the 'Plan de Convergence', which includes ten strategic components. The first component puts special emphasis on the 1992 Rio Conventions and among them, the United Nations Framework Convention on Climate Change (UNFCCC).

The 'Partenariat pour les Forêts du Bassin du Congo' (PFBC), launched in 2002 during Johannesburg World Summit on Sustainable Development, is composed 30 members: Congo Basin Countries, international NGOs and development partners (bilateral and multilateral).

Assisting the COMIFAC countries, several PFBC members contribute to the implementation of the 'Plan de Convergence'. This assistance focuses inter alia in improving the integration of forests in the post-2012 regime.

The present submission was prepared and "elaborated in collaboration with South American, Central American and Asia/Pacific countries, which attended two workshops respectively held in :

- New York (USA) – March 13-14<sup>th</sup> 2006
- Lima (Peru) – March 16-17<sup>th</sup> 2006

Supporting the general framework of the submissions presented by the countries who attended the New York and Lima workshops, it focuses on the specificities of Central African forests, widely engaged in a sustainable management process through management plan.

Recalling the 'Déclaration de Yaoundé' and Articles 3.3, 3.4, 4. and 4.1.d of the United Nations Framework Convention on Climate Change, Central Africa thinks that reducing emissions from deforestation is essential to ensure that the worst impacts of global climate change are significantly addressed.

## Introduction

In the context of this submission, deforestation should be understood as a process leading to emissions of greenhouse gases (GHG) due to human activities. Deforestation includes two distinct situations :

- reduction / destruction of forest cover leading to land use change
- forest degradation : diminution of carbon stock per hectare which does not result in a reduction / destruction of forest cover.

Causes of deforestation are multiple, complex, and differ within and across countries and regions. Any measure taken to control emissions from deforestation should duly take into account these national and regional specificities. Deforestation is mainly driven by socio-economic and/or cultural reasons and must therefore be addressed using appropriate policy and economic instruments.

Despite many efforts to address deforestation in developing countries, there are not enough success stories.

Vulnerability to climate change requires additional efforts to effectively address emissions from deforestation. To this end, developing countries, especially those from Central Africa, need new and additional financial resources, technical support and a range of partnerships.

In the context of Central African countries, reduction / destruction of forest cover followed by land use change is a consequence from the extreme poverty of populations and is relatively limited compared to other regions of the world.

However, degradation resulting from uncontrolled commercial logging is an important phenomenon that could affect around 60% of the total productive area of Congo Basin forests.

Aware of the need for conservation and sustainable management of its forest ecosystems, Central Africa created a regional body, the ‘Commission des Forêts d’Afrique Centrale’ (COMIFAC), to improve consistency of the regional policy framework promoting the sustainable management of the Congo Basin forests.

Encouraging progress has already been made. Currently, 55% of forest concession areas have started a management plan process, representing 23% of the total productive area.

Central African countries think that those efforts benefit the climate and that they should be encouraged. To this end, they are asking for their integration in the future regime.

Reducing GHG emissions from degradation offers an opportunity to consolidate and amplify actions that have already started.

## 1. Scientific Issues

Covering only 10% of the land surface of the planet, the tropical forest biome – most of which is found in developing countries – contains over 25% of all terrestrial carbon in plants and the soil.<sup>1</sup>

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<sup>1</sup> Sabine, C.L. et al. 2003.

The IPCC estimates that land-use changes, dominated by tropical deforestation, released between 0.8 and 2.4 Gt C/year during the 1990's,<sup>2</sup> equivalent to 10% - 25% of global human induced emissions. More recent work<sup>3</sup> is consistent with this range, although some evidence suggests land use change emissions are at the lower end of this range of estimates. Given its importance in global greenhouse gas (GHG) emissions, slowing tropical deforestation will be decisive in overall efforts to stabilize GHG concentrations at levels that avoid dangerous interference in the climate system in a manner consistent with Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC).

Deforestation delivers a triple blow for climate stability. First, 10%-25% of annual global GHG emissions, or about 5.5 Gtons of carbon dioxide are caused by land use change, which itself is dominated by deforestation in developing countries. Second, deforestation destroys ecosystems that are sequestering CO<sub>2</sub> already in the atmosphere. Third, deforestation alters historical land surface conditions that modulate global climate and weather patterns.

Climate change is already happening and some of its early effects are starting to be felt worldwide. Limiting climate change impacts – such as a 2°C rise in global temperatures – is necessary. This ongoing phenomenon is of critical importance to developing nations as the climatic consequences will be most severe on non-Industrialized Parties that lack the resources for adaptation and mitigation.

Reducing emissions from deforestation is one of the most important things that can be done to ensure that the worst impacts of global change are lessened. Intact forest will help maintain the resilience of adjacent forests that could be stressed by climate change. Many of the world's plant and animal species are harbored in tropical forests. These species, in addition to their own intrinsic value, may provide humankind with valuable tools to counter the worst impacts of climate change. Maintaining forests will help ecological and social communities cope with a changing climate.

## **2. Guiding Principles**

Deforestation represents 20% to 25% of global anthropogenic greenhouse gas emissions and is yet an untapped opportunity to achieve cost-effective and substantial emission reductions with positive collateral effects.

Any discussion should be guided by the following principles :

### **2.1 – Real benefits for the climate**

Any future action to mitigate climate change should be adequate to pursue the ultimate objective of the UNFCCC as stated in its Article 2.

To achieve real and measurable benefits for the climate, policy approaches and positive incentives should be :

- (a) appropriate and sufficient to address emissions from deforestation at an adequate scale,
- (b) implemented as soon as possible,
- (c) prevent any delay in other emission reduction efforts.

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<sup>2</sup> IPCC. 2000. Land Use, Land-Use Change, and Forestry. Cambridge University Press.

<sup>3</sup> Houghton, 2003; Achard et al., 2002 and 2004; DeFries et al., 2002.

## **2.2 – Common but Differentiated Responsibilities**

Recalling the principle of ‘Common but Differentiated Responsibilities’, we acknowledge that all Parties have the responsibility of collaborating to reduce GHG emissions and combat their adverse effects on the climate. There are historical differences in the contribution of developed and developing countries to the current composition of the atmosphere, as well as differences in Parties’ respective economic and technical capabilities to tackle environmental problems.

Reducing GHG emissions from deforestation offers a unique opportunity to enhance the participation of developing countries in the climate regime, on a voluntary basis.

To achieve significant GHG emissions reduction from deforestation, Central African countries think that positive incentives should be based on market mechanisms, linked with substantial emissions reduction commitments in developed countries.

## **2.3 – State Sovereignty and Sustainable Development**

Countries have the responsibility to meet their present needs without limiting the options of future generations and the right to promote sustainable development.

Parties have the sovereign right to define sustainable development and use their own resources pursuant to their own national priorities.

Therefore, not only should the Parties’ participation in the efforts to reduce or avoid deforestation be voluntary, they alone should decide how to implement measures to that end, consistent with their national priorities.

Activities to be undertaken in pursuit of the objective of reducing emissions from deforestation should be coordinated with social and economic development in an integrated manner :

- (a) bearing in mind that the burden of reducing or avoiding deforestation falls on stakeholders such as peasants, small farmers and ranchers;
- (b) taking into full account the legitimate needs of developing countries to achieve sustained economic growth and eradicate poverty as agreed globally at the ‘UN Millennium Summit’ in September 2005.

## **2.4 - Equity**

Any effort to reduce GHG emissions from deforestation should ensure a fair distribution of the responsibilities and potential benefits both between and within countries, including at the local level.

Furthermore, market regulations and/or methodological processes should not be applied more stringently upon developing countries.

To ensure fairness at the international level, differences in the national extent of forest cover should be taken into account when developing methodologies. The possibility that large countries may benefit disproportionately from the mechanism or may impair its smooth operation should be of concern.

## **2.5 – Cost effectiveness**

Policy approaches and positive incentives should be designed and implemented in ways that can effectively improve the cost-effectiveness of climate change mitigation.

Incentives should be sufficient to cover implementation costs of the measures taken to reduce GHG emissions from deforestation, including opportunity costs.

Measures taken in order to reduce GHG emissions from deforestation will facilitate achieving the emission reduction targets countries are committed to while pursuing the ultimate objective of the UNFCCC.

## **2.6 – Supplemental funding**

Consistent with the Stockholm Declaration, supplementary resources should be made available for developing countries to build the technical, operational, regulatory and market capacity necessary to implement actions aiming to reduce or avoid emissions of GHG from deforestation.

Funding for financing emission reduction from deforestation should be supplemental to the current and already planned aid transfers.

## **2.7 – Need to act quickly while protecting the Integrity of Existing Mechanisms**

Any delay in addressing emissions from deforestation is counterproductive for pursuing the objective of the UNFCCC and will increase the costs of climate change mitigation unnecessarily.

However, mechanisms related to reducing GHG emissions from deforestation should not undermine emission reduction efforts by developed countries, nor weaken the existing flexibility mechanisms within the Kyoto Protocol.

# **3. Policy approaches and positive incentives**

Policy approaches and positive incentives are required to:

- a) Create appropriate enabling conditions in developing countries, including technical, technological and institutional capacity building allowing to engage in, and sustain, efficient action against deforestation ;
- b) Provide economic incentives to make adequate resources available up-front and compensate opportunity costs for land use.

## **3.1 - Policy approaches**

Innovative approaches are required to address the diverse causes of GHG emissions from deforestation. Such approaches should take into account specific national circumstances and enable a variety of measures building on existing positive experiences, such as:

- the promotion of private sector as well as local and indigenous communities participation in the sustainable management of forests,
- the design and implementation of positive incentives through economic and financial mechanisms and instruments,

- the extension of national and cross-border protected area networks and the enhancement of conservation activities inside and outside protected areas
- the promotion of sustainable management in productive forests
- the design and implementation of sustainable activities on non-forested land (agriculture, ranching, etc..) to reduce pressure on forests.

To strengthen actions to reduce GHG emissions from deforestation, national institutions will possibly need to :

- (a) ensure the implementation of existing and new measures to control deforestation,
- (b) improve existing legislation in order to remove institutional/legal incentives to deforest,
- (c) ensure that land tenure regulation allows a fair distribution of the benefit amongst stakeholders,
- (d) invest in payment programs for environmental services.

### **3.2 – Positive incentives**

Actions to reduce deforestation need to be considered both at the national/regional and the local level. Different types of incentives are necessary at both levels.

At the national/regional level, the countries will need financial support for, amongst other:

- Institutional capacity building to allow the implementation of emission reduction policies in the land use sector and create and/or strengthen organizations in charge of monitoring and controlling deforestation ;
- Technical capacity building and technology transfer ;
- Consolidation and enforcement of Protected Areas ;
- Extension of the national and cross-border Protected Areas networks ;
- Pursuing efforts focusing on sustainable management planning (concessions, community forest, etc.)

At the local level, financial incentives are necessary to compensate for the opportunity costs of land use, capitalize on traditional knowledge, engage in new agricultural practices (*inter alia* agro-sylvo-pastoral, carbonization, smoking, bio-prospecting) and cover transaction costs.

### **3.3 – Possible sources of financing**

It is essential to recall the principle of supplemental financing as new initiatives to reduce GHG emissions from deforestation should not be done at the expense of other sectors. Actions taken to curb GHG emissions from deforestation will be more effective if funded at different levels :

- To initiate any action, financial mechanisms making adequate resources available up-front are essential. Up-front financing could come from revolving funds, advanced payments, ODA, new donor programs, amongst others.
- To create capacity, ODA, bilateral and multilateral agreements, public-private partnerships or other mechanisms could be used. For prompt-starting experiences, without excluding market-based approaches, voluntary agreements should be promoted.
- To achieve adequate volumes of GHG emissions reductions from deforestation, fees on carbon intensive commodities and services in developed countries (such as energy production - air, marine and ground transportation, the trade of military goods and related services, etc.) might be developed.

However, new positive incentives should be based first on an ambitious cap and trade system and market mechanisms.

#### **4. Methodological and technical issues**

The modalities and procedures to address GHG emissions from deforestation should be discussed in parallel to defining policy approaches and positive incentives. Those issues are related to each other. Thus thinking simultaneously about both themes will allow mutual enrichment.

Considering the magnitude and complexity of efforts to be implemented, and the necessary coordination between the different sectoral activities, Central African countries propose to adopt the sectoral approach at a national and/or regional level, and sees it as the most promising to significantly reduce GHG emissions from deforestation.

Reference scenarios should take into account historical trends and other national and regional circumstances at the appropriate scale and should not disadvantage countries that have taken early actions. Methodologies to address GHG emissions from degradation should be based on areas under approved management plan and/or certification, compared to a reference scenario.

Methodologies to address technical issues, such as those arising from the scale of implementation (e.g. leakage, monitoring, etc.), exist and can be adapted as necessary. Therefore, the discussion on technical issues should not prevent or delay the adoption of adequate and equitable policy approaches and positive incentives.

Definitions and the use of different types of activities for reducing GHG emissions from deforestation should allow the participation of all Parties.

The opportunity of using definitions based on biomes should be considered.

#### **5. Recommendations on any Further Process to Consider the Issues**

The discussions regarding deforestation in developing countries should continue under the UNFCCC. However, the option of potentially introducing GHG emission reductions from deforestation in the second commitment period of the Kyoto Protocol should not be excluded.

The Parties must first consider the country information and experience to inform a matrix of policy approaches and positive incentive options feasible under the UNFCCC and the Kyoto Protocol.

However, capacity building issues, policy approaches and positive incentives should be addressed by SBI as soon as possible.

Within this context, a step-by-step Process is recommended below:

- a) **SBSTA 24** (late May 2006): Agree on Terms of Reference for Workshops and Process Timeline
- b) **Post SBSTA 24** (late July 2006): Parties, assisted by the Secretariat, review and synthesize the Submission of Views related to ‘Sharing of Country Experience and Information’ in advance of First Workshop – Secretariat to publish Synthesis.
- c) **First Workshop** (late August 2006): Leverage ‘Synthesis of Country Experience and Information’ to frame Policy & Incentive Options and start identifying related methodological and technical issues with the purpose to inform COP-12 & SBSTA 25.
- d) **COP-12 & SBSTA 25:** Finalize ‘Summary of Options: Policy Approaches & Positive Incentives’ at SBSTA 25 and provide ‘Summary’ as Progress Update to COP-12. Refer to SBI to address implementation issues.
- e) **Second Workshop** (mid March 2007): Assessment of Technical and Methodological Implications related to ‘Summary of Options related to Policy Approaches and Positive Incentives’ in order to identify key issues for consideration at SBSTA 26
- f) **SBSTA 26** (late May 2007): Consider ‘Technical and Methodological Implications’ related to ‘Summary of Options: Policy Approaches and Positive Incentives.’
- g) **Third Workshop** (late August 2007): Draft Recommendation for COP-13.
- h) **COP-13 and SBSTA 27** (late November 2007): Finalize and Present Recommendations to COP-13.

## Convention Cadre des Nations Unies sur les Changements Climatiques

### - SBSTA 24 -

**Point 6 de l'ordre du jour :** Réduction des émissions résultant du déboisement dans les pays en développement : démarches propres à favoriser des initiatives dans ce domaine

#### Soumission des vues des Pays du Bassin du Congo

Cette soumission est présentée par les Pays du Bassin du Congo réunis au sein de la Commission des Forêts d'Afrique Centrale (COMIFAC), conformément à la Déclaration des Chefs d'Etat de 1999, dite « Déclaration de Yaoundé », relative à la conservation et à la gestion durable des écosystèmes forestiers d'Afrique Centrale.

La COMIFAC regroupe les 10 pays suivants : Burundi, Cameroun, Congo, Gabon, Guinée Equatoriale, République Centrafricaine, République Démocratique du Congo, Rwanda, Sao Tomé et Principe et Tchad.

L'Angola est actuellement membre observateur.

La COMIFAC est un organe créé par les Chefs d'Etat en vue de gérer de manière concertée les forêts du Bassin du Congo à travers une plate-forme commune dénommée « Plan de Convergence », qui comprend dix axes stratégiques. Le premier de ces axes met un accent tout particulier sur les Conventions de Rio de Janeiro de 1992 dont la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).

Le Partenariat pour les Forêts du Bassin du Congo (PFBC), lancé en 2002 lors du Sommet Mondial sur le Développement Durable de Johannesburg, regroupe 30 membres composés des pays du Bassin du Congo, des ONG internationales et des partenaires au développement (bilatéraux et multilatéraux).

Pour appuyer les pays de la COMIFAC, plusieurs membres du PFBC contribuent à la mise en œuvre du Plan de Convergence. Dans ce cadre, un appui est apporté à cette organisation pour assurer une meilleure prise en compte de la forêt dans le régime post-2012.

La présente soumission a été préparée et élaborée en collaboration avec les pays d'Amérique du Sud, d'Amérique Centrale et d'Asie / Pacifique, présents lors des séminaires tenus respectivement à :

- New York (USA) du 13 au 14 mars 2006
- Lima (Pérou) du 16 au 17 mars 2006

Elle intègre les spécificités des forêts d'Afrique Centrale, largement engagées dans un processus de gestion durable à travers l'aménagement forestier, tout en reprenant le cadre général des soumissions présentées par les pays représentés aux séminaires de New York et de Lima.

Considérant la “Déclaration de Yaoundé” et rappelant les articles 3.3, 3.4, 4. et 4.1.d de la Convention Cadre des Nations Unies sur les Changements Climatiques, l'Afrique Centrale considère que la réduction des émissions provenant de la déforestation est capitale pour assurer une diminution significative des impacts du changement climatique.

## Introduction

Dans le contexte de cette soumission, le terme “déforestation” désigne un processus conduisant à l’émission de gaz à effet de serre (GES) relevant d’activités humaines. La déforestation inclut notamment deux situations distinctes :

- la réduction / disparition du couvert forestier avec changement d’usage des terres
- la dégradation de la forêt : baisse du stock de carbone à l’hectare ne conduisant pas à la réduction / disparition du couvert forestier.

Les causes de la déforestation sont multiples et complexes et diffèrent entre et au sein des pays et régions. Toute mesure prise pour contrôler les émissions liées à la déforestation devront prendre en compte ces spécificités nationales et régionales. La déforestation est principalement due à des facteurs socio-économiques et/ou culturels et doit être combattue par des politiques et instruments économiques appropriés.

En dépit des nombreux efforts effectués pour lutter contre la déforestation dans les pays en développement, les expériences réussies sont peu nombreuses .

La vulnérabilité face au changement climatique exige des efforts supplémentaires pour diminuer effectivement les émissions liées à la déforestation. A cet effet, les pays en développement, particulièrement ceux d’Afrique Centrale, ont besoin de ressources financières nouvelles et additionnelles, d’assistance technique accrue et de partenariats divers.

Dans le contexte des pays d’Afrique Centrale, la réduction / disparition du couvert forestier conduisant à un changement d’utilisation des terres est due à l’extrême pauvreté des populations. Elle reste relativement modeste comparée à d’autres régions du monde.

La dégradation liée à une exploitation commerciale non maîtrisée des bois est quant à elle un phénomène important. Elle est susceptible de concerner près de 60% de la superficie totale des forêts du Bassin du Congo (surface productive).

Soucieux de la nécessité de conserver et de gérer durablement ses écosystèmes forestiers, l’Afrique Centrale s’est dotée d’un organe régional, la Commission des Forêts d’Afrique Centrale (COMIFAC) qui assure la cohérence de la politique régionale de gestion durable des forêts du bassin du Congo.

Des progrès encourageants ont déjà été réalisés. A ce jour, 55% des surfaces forestières concédées sont engagées dans un processus d’aménagement, ce qui représente 23% de la surface productive.

Les pays de l’Afrique Centrale considèrent que les efforts réalisés sont bénéfiques pour le climat et qu’ils méritent d’être appuyés. A ce titre, ils revendiquent leur prise en compte dans le régime futur. La réduction des émissions de GES liées à la dégradation offre une opportunité de consolider et renforcer les actions engagées.

## 1. Questions scientifiques

Le biome des forêts tropicales, qui couvre seulement 10% de la surface de la planète (dont la majorité dans des pays en développement) contient plus de 25% de tout le carbone terrestre présent dans les plantes et dans les sols.<sup>1</sup>

Le Groupe d'experts Intergouvernemental sur l'Evolution du Climat (GIEC) estime que les changements d'utilisation des terres, dominés par la déforestation tropicale, a relâché entre 0,8 et 2,4 Gt C/an pendant la décennie 1990<sup>2</sup>, ce qui est équivalent à 10 à 25% des émissions induites par l'homme. Les résultats de travaux plus récents<sup>3</sup> sont en ligne avec cet intervalle, bien que certaines estimations suggèrent que les changements d'utilisation des terres puissent se situer à l'extrême basse de la fourchette. Compte tenu de son importance dans les émissions globales de gaz à effet de serre (GES), ralentir la déforestation tropicale sera décisif dans l'effort général pour stabiliser les concentrations de GES à des niveaux qui évitent une interférence dangereuse avec le système climatique, conformément à l'Article 2 de la CCNUCC.

La déforestation porte un triple coup à la stabilité du climat :

- En premier lieu, 10 à 25% des émissions annuelles de GES, ou environ 5,5 Gt de dioxyde de carbone, proviennent de changement d'utilisation des terres, lequel est dominé par la déforestation dans les pays en développement.
- Deuxièmement, la déforestation détruit des écosystèmes qui séquestrent du dioxyde de carbone de l'atmosphère.
- Troisièmement, la déforestation altère les conditions historiques de la surface terrestre qui conditionnent le climat global et la météorologie générale.

Le changement climatique est déjà à l'œuvre et certains de ses effets précoce commencent à être ressentis dans le monde. Limiter les impacts du changement climatique – à une augmentation de 2°C de la température moyenne – est nécessaire. Ce phénomène en cours prend une importance critique dans les pays en développement, très vulnérables, dans la mesure où les conséquences climatiques sont plus sévères dans ces pays, qui manquent par ailleurs de ressources pour l'adaptation et l'atténuation.

Réduire les émissions provenant de la déforestation est capital pour assurer une diminution des impacts du changement global. Les forêts intactes aideront à conserver la résilience des forêts adjacentes qui peuvent être stressées par le changement global. Une partie importante des espèces végétales et animales mondiales sont hébergées par les forêts tropicales. Ces espèces, en plus de leur valeur intrinsèque, pourront fournir à l'humanité un outil important pour atténuer les impacts du changement global.

Préserver les forêts aidera les communautés écologiques et humaines à s'adapter à un climat changeant.

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<sup>1</sup> Sabine, C.L. et al. 2003.

<sup>2</sup> IPCC. 2000. Land Use, Land-Use Change, and Forestry. Cambridge University Press.

<sup>3</sup> Houghton, 2003; Achard et al., 2002 and 2004; DeFries et al., 2002.

## **2. Principes clés**

La déforestation représente 20 à 25% de la globalité des émissions de GES anthropogéniques et il existe encore une opportunité non saisie de réaliser des réductions d'émissions substantielles, présentant un bon rapport coût/efficacité et des effets positifs collatéraux.

Toute discussion devra être guidée par les principes suivants :

### **2.1 - Bénéfices réels pour le climat**

Toute action future en vue d'atténuer le changement climatique devra contribuer à l'objectif ultime de la CCNUCC comme énoncé dans son article 2.

Pour se traduire par des bénéfices réels et mesurables pour le climat, les approches politiques et les incitations positives :

- (a) devront être appropriées et suffisantes pour agir sur les émissions liées à la déforestation à une échelle adéquate ;
- (b) devront être mises en œuvre le plus tôt possible ;
- (c) ne devront pas retarder les autres efforts de réduction d'émission.

### **2.2 - Responsabilités communes mais différencierées**

Rappelant le principe de "Responsabilités communes mais différencierées", les Pays d'Afrique Centrale reconnaissent qu'il est de la responsabilité de toutes les Parties de collaborer pour réduire les émissions de GES et combattre leurs effets négatifs sur le climat. Il existe des différences historiques entre les contributions respectives des pays développés et en développement à la composition actuelle de l'atmosphère, de même que des différences entre les capacités économiques et techniques des Parties pour résoudre les problèmes environnementaux.

La réduction des émissions liées à la déforestation offre une opportunité unique pour développer la participation des pays en développement au régime climatique, sur une base volontaire.

Pour permettre des réductions significatives des volumes de GES émis par la déforestation, les pays d'Afrique Centrale pensent que les incitations devront être fondées sur des mécanismes de marché, associés à des engagements de réduction conséquents dans les pays développés.

### **2.3 - Souveraineté des Etats et développement durable**

Il est de la responsabilité des pays de remplir leurs besoins présents sans limiter les options des générations futures et le droit à promouvoir un développement durable.

Les Parties ont un droit souverain à définir le développement durable et à utiliser leurs ressources selon leurs propres priorités nationales.

C'est pourquoi, la participation des Parties aux efforts de réduction ou d'évitement de la déforestation devra non seulement être volontaire, mais les Parties seules devraient décider des mesures destinées à lutter contre la déforestation, conformément à leurs priorités nationales.

Les activités à entreprendre dans l'objectif de réduire les émissions de GES résultant de la déforestation devront s'intégrer au développement économique et social, en gardant à l'esprit que :

- (a) la réduction ou l'évitement de la déforestation repose sur des acteurs tels que les paysans, les petits agriculteurs et les éleveurs ;
- (b) les besoins légitimes des pays en développement de réaliser une croissance économique soutenue et d'éradiquer la pauvreté comme affirmé lors du "Sommet du Millénaire des Nations Unies" de septembre 2005.

#### **2.4 - Équité**

Tout effort pour réduire les émissions de GES provenant de la déforestation devra assurer une distribution équitable des responsabilités et bénéfices possibles tant entre qu'au sein des pays, y compris au niveau local.

De plus, les règles du marché et/ou les procédures méthodologiques ne doivent pas s'appliquer de façon plus stricte pour les pays en développement.

Pour garantir l'équité au niveau international, les différences entre pays au niveau de l'extension du couvert forestier national devront être prises en compte lors du développement de méthodologies. Il faudra veiller à ce que de grands pays ne puissent bénéficier de façon disproportionnée des mécanismes créés ou compromettre leur fonctionnement normal.

#### **2.5 - Rapport coût-efficacité**

Les approches politiques et les incitations positives devraient être conçues et mises en œuvre par des voies susceptibles d'améliorer le rapport coût-efficacité de l'atténuation du changement climatique. Les incitations devraient être suffisantes pour couvrir les coûts de mise en œuvre des mesures prises pour réduire les émissions de GES provenant de la déforestation, y compris l'éventuel différentiel économique entre les usages des terres (coûts d'opportunité).

Les mesures prises pour réduire les émissions de GES provenant de la déforestation faciliteront la réalisation des engagements de réduction souscrits par les pays tout en contribuant à l'objectif ultime de la CCNUCC.

#### **2.6 - Ressources additionnelles**

En conformité avec la Déclaration de Stockholm, des ressources additionnelles devraient être apportées aux pays en développement pour renforcer les capacités techniques, opérationnelles, réglementaires et d'intervention sur les marchés financiers du carbone, nécessaires pour la mise en œuvre des actions visant à réduire ou éviter les émissions de GES provenant de la déforestation.

Le financement des réductions d'émission provenant de la déforestation devra être additionnel par rapport aux montants des aides en cours ou déjà programmées.

## **2.7 - Besoin d'agir rapidement tout en préservant l'intégrité des mécanismes existants**

Tout report de la réduction des émissions liées à la déforestation est contreproductif du point de vue de la réalisation de l'objectif de la CCNUCC et augmentera inutilement les coûts de l'atténuation du changement climatique.

Toutefois, les mécanismes de réduction des émissions de GES provenant de la déforestation ne devront en aucun cas saper les efforts de réduction des émissions des pays développés, ni affaiblir les mécanismes de flexibilité du Protocole de Kyoto.

## **3. Approches politiques et incitations positives**

Des approches politiques et des incitations positives sont nécessaires pour :

- a) Créer les conditions appropriées dans les pays en développement , notamment en termes de renforcement des capacités techniques, technologiques et institutionnelles pour permettre un engagement dans une action soutenue et efficace contre la déforestation ;
- b) Créer des incitations économiques pour rendre les ressources adéquates disponibles par anticipation (acompte) et compenser les coûts d'opportunité de l'utilisation des terres.

### **3.1 - Approches politiques**

Des approches innovantes sont nécessaires pour faire face aux diverses causes d'émissions de GES provenant de la déforestation. De telles approches devront prendre en compte les circonstances nationales spécifiques et permettre des mesures diversifiées, qui devront s'appuyer sur les expériences positives existantes, à savoir :

- La promotion de la participation du secteur privé et des communautés autochtones à la gestion durable des forêts ;
- La conception et la mise en œuvre d'incitations positives reposant sur des mécanismes et instruments économiques ;
- L'extension des réseaux nationaux et transfrontaliers d'aires protégées et le renforcement des activités de conservation dans et en dehors de ces aires protégées ;
- La promotion de la gestion durable des forêts de production ;
- La conception et la mise en œuvre d'activités durables sur les terres non boisées (agriculture, élevage, etc...) afin de diminuer la pression sur les forêts existantes.

Pour renforcer les actions de réduction des émissions de GES provenant de la déforestation, les institutions nationales auront probablement besoin :

- (a) de s'assurer de la mise en œuvre effective de la réglementation existante et nouvelle ;
- (b) d'améliorer la législation existante afin de supprimer toute incitation à la déforestation ;

- (c) de s'assurer que la réglementation foncière permet une juste redistribution des bénéfices entre les acteurs ;
- (d) d'investir dans des programmes de paiement des services environnementaux.

### **3.2 - Incitations positives**

Les actions contre la déforestation doivent être menées tant au niveau national/régional que local. Des types d'incitations différentes sont nécessaires à ces deux niveaux.

Au niveau national/régional, les pays auront besoin de soutien financier pour, entre autres :

- renforcer les capacités institutionnelles pour permettre la mise en œuvre de politiques de réduction des émissions dans le secteur de l'utilisation des terres et créer et/ou renforcer les structures en charge du suivi et du contrôle de la déforestation ;
- renforcer les capacités techniques et le transfert de technologies ;
- consolider et rendre opérationnelles les Aires Protégées existantes ;
- étendre le réseau des Aires Protégées nationales et transfrontalières ;
- poursuivre les efforts d'aménagement durable des forêts (concessions, forêts communautaires...).

Au niveau local, des incitations financières sont nécessaires pour compenser les coûts d'opportunité de l'utilisation de la terre, capitaliser les connaissances traditionnelles, s'engager dans de nouvelles pratiques (agrosylvopastorales, de carbonisation, de fumage, de bioprospection, ...) et couvrir les coûts de transaction.

### **3.3 - Sources de financement possibles**

Il est important de rappeler ici le principe de l'additionalité financière dans la mesure où les nouvelles incitations pour réduire les émissions de GES provenant de la déforestation ne devraient pas être mises en œuvre au détriment de celles entreprises dans d'autres secteurs.

Les actions pour réduire les émissions provenant de la déforestation seront plus efficaces si elles peuvent être financées à différents niveaux :

Pour initier toute action, des mécanismes financiers permettant de rendre les ressources nécessaires disponibles par anticipation sont nécessaires. Ce financement anticipé pourrait entre autres provenir de fonds revolving, paiements anticipés, aide au développement, programmes nouveaux bailleurs ;

Pour créer les capacités, l'aide au développement, les accords bilatéraux et multilatéraux, les partenariats public / privé et autres mécanismes pourraient être utilisés. Pour initier des expériences, sans exclure des approches de marché, les accords volontaires seront privilégiés ;

- Toutefois, pour réaliser des réductions significatives des volumes de GES émis par la déforestation, des taxes sur les produits et services à fort impact en carbone dans les pays développés (taxes sur la production d'énergie, la consommation de carburants liée au transport aérien, maritime, routier, le commerce des armes et les services liés etc...)

pourraient être envisagées mais les incitations positives devront être fondées prioritairement sur un système “cap and trade” ambitieux et des mécanismes de marché.

#### **4. Questions méthodologiques et techniques**

Les modalités et procédures concernant la réduction des émissions de GES provenant de la déforestation devront être discutées en parallèle à la définition des approches politiques et des incitations positives. Ces questions sont interdépendantes et les réflexions engagées sur les deux volets s’alimenteront mutuellement.

Compte tenu de l’ampleur et de la complexité des efforts à mettre en oeuvre et de la nécessité d’une coordination entre les différents secteurs d’activité, les Pays d’Afrique Centrale proposent de retenir l’approche sectorielle à un niveau national et/ou régional qui leur semble la plus adaptée pour réussir des réductions significatives des émissions de GES provenant de la déforestation.

Les scénarii de référence devront prendre en compte les tendances historiques et toutes autres circonstances nationales et régionales à l’échelle appropriée et ne devront pas désavantager les pays ayant engagé des actions précoce. Les aspects méthodologiques traitant de la réduction des émissions provenant de la dégradation de la forêt pourront avantageusement utiliser les surfaces aménagées durablement et/ou certifiées, comparées à un scénario de référence.

Les méthodologies portant sur les questions techniques, telles que celles relevant de l’échelle de mise en œuvre (ex : fuites, monitoring, etc...) existent et pourront être adaptées en tant que nécessaire. C’est pourquoi la discussion sur les questions techniques ne devrait pas empêcher ou retarder l’adoption d’approches politiques et incitations positives appropriées et équitables.

Les définitions et l’utilisation de différents types d’activités pour réduire les émissions de GES provenant de la déforestation devront permettre la participation de tous les pays en développement.

L’utilisation de définitions fondées sur les biomes pourrait être envisagée.

#### **5. Recommandations pour le processus futur**

Les discussions portant sur la réduction de la déforestation dans les pays en développement devraient continuer à se dérouler dans le cadre de la CCNUCC. Toutefois, l’option d’inclure les réductions de GES provenant de la déforestation dans la seconde période d’engagement du Protocole de Kyoto ne devrait pas être écartée.

Les Parties doivent en premier lieu considérer les informations et expériences des pays pour analyser les options politiques et les incitations positives envisageables au titre de la CCNUCC et du Protocole de Kyoto.

Les questions de renforcement des capacités, d’approches politiques et d’incitations positives devraient être soumises au SBI le plus rapidement possible.

Dans cette perspective, un calendrier de travail est proposé ci-dessous :

- a) **SBSTA 24** (fin mai 2006) : Accord sur les termes de référence pour les ateliers et le calendrier du processus.
- b) **Après SBSTA 24** (fin juillet 2006) : les Parties, assistées par le Secrétariat, étudient et synthétisent une soumission portant sur “Le partage des expériences et de l’information des pays” en anticipation du Premier Atelier. Le Secrétariat publie la synthèse.
- c) **Premier Atelier** (fin août 2006) : exploitation de la “Synthèse de l’expérience et de l’information des pays” pour définir les Options Politiques et d’Incitations et aborder les questions méthodologiques et techniques dans l’objectif d’informer la COP 12 et le SBSTA 25
- d) **COP-12 & SBSTA 25**: Finalisation du “Résumé des options : approches politiques et incitations positives” au SBSTA 25 et fourniture du “Résumé” en préparation de la COP12. Saisine du SBI pour traiter des questions de mise en œuvre.
- e) **Deuxième Atelier** (mi mars 2007) : Examen des Implications Méthodologiques et Techniques du “Résumé des options d’approches politiques et d’incitations positives” afin d’identifier les questions clés à considérer par le SBSTA 26.
- f) **SBSTA 26** (fin mai 2007) : Considération des Implications Méthodologiques et Techniques du “Résumé des options d’approches politiques et d’incitations positives”
- g) **Troisième Atelier** (fin août 2007) : Projet de Recommandations à adresser à la COP-13.
- h) **COP-13 et SBSTA 27** (fin novembre 2007) : finalisation et présentation des recommandations à COP 13.

PAPER NO. 9: INDONESIA

**SUBMISSION OF INDONESIA ON REDUCING EMISSION FROM DEFORESTATION IN DEVELOPING COUNTRIES : approaches to stimulate action**

Jakarta, 31<sup>st</sup> March 2006

**VIEWS** on issues relating to reducing emission from deforestation in developing countries : relevant scientific, technical and methodological issues, the exchange of relevant information and experiences, issues related to policy approaches and positive incentives, and **RECOMMENDATION** on any further process to consider the issues.

COP 11 invited Parties and accredited observers to submit their views on the above issues and recommendation on further process to address the issues, to be considered by SBSTA beginning at its 24<sup>th</sup> session (May 2006), to be reported at SBSTA-27 (December 2007).

**INTRODUCTION**

Developing countries especially in the tropics have given considerable contribution in meeting the demand of man kind for forest products and environmental services. With high level of biological diversity tropical forests in tropical developing countries have offered significant numbers of products and services including for research and knowledge development.

In the context of climate change, tropical forest in developing countries play important role in climate mitigation through carbon conservation and carbon enhancement. However, because of deforestation tropical forests may also contribute to the increase in carbon emission.

Deforestation in developing countries can not be separated from the rapid increase in human population and problem of poverty. Considering these circumstances, there is a need to create mechanism which could help developing countries in their efforts to reduce deforestation, so that they could contribute to the effort in reducing negative impact of climate changes in the long term.

**SCIENTIFIC, TECHNICAL AND METHODOLOGICAL ISSUES**

A number of scientific approaches, technical and methodological aspects have been studied/analyzed and published. Each of them brings certain consequences when it comes to implementation. For this reason, there is a need to agree on the approach and methodologies that may be implemented by developing countries without sacrificing other national development programmes and priorities.

The use of satellite imageries is integral part in determining forest cover both at baseline and after project conditions. There is tradeoff between area coverage, degree of temporal and spatial resolutions with the costs. And so, referring to Article 3.3 UNFCCC, policies and measures to deal with climate change should be cost effective to ensure global benefits at the lowest possible cost.

Definition of forest and deforestation, baseline, and monitoring in the context of emission reduction from deforestation are critical and have technical, social and economic implications in their implementation. Existing forestry related definitions vary among countries and among purposes under international regimes. Definitions applied to *reducing emission from deforestation and forest degradation* should enable all parties' participation and the inclusion of broad array of activities. A number of scientific, technical and methodological questions in baseline determination need to be solved including the

*boundary* and based year to be used. In monitoring carbon stock change, cost-effective and robust monitoring system should be conducted.

Scientific, technical and methodological (STM) aspects are driven by policy and incentive mechanisms, and so, negotiation on STM should be preceded by the clarity on policy and incentive mechanisms. However, methodological approaches could be identified during the next two year process for example :

1. Estimation on reduction of emission rate caused by deforestation (land use change) and forest degradation (change in carbon stock) based on : (a) historical data and national circumstances, and (b) methodology to asses the lost of carbon pools caused by deforestation and forest degradation using GPG and IPCC inventories.
2. Exercise on using national or regional baseline with methodology already approved or reported internationally. Increasing deforestation avoidance to the level above baseline rate or reducing deforestation to below baseline rate. The result, however, will depend on the quality and accuracy of the data used. For this reason, approaches to determine baselines should accommodate national circumstances and need to be negotiated at the proper time.
3. Modelling approach (e.g. GEOMOD) with precautionary measures especially when is applied in local scale caused by the difficulty in dealing with leakage. On the other hand it is not easy to be applied at the regional level.

The principle of the need for certainty in emission reduction from deforestation requires a credible reporting in the National Communication. In this regards, national circumstances should be considered, and capacity building as well as technology transfer are crucial especially in order to improve deforestation monitoring capacity.

## **POLICIES APPROACHES AND POSITIVE INCENTIVES**

Deforestation contributes significantly to GHGs emission, accounted for about 20 % of the total emission in the world. Many developing countries have taken effort through rehabilitation of degraded forest, conservation of the remaining forest, and practicing sustainable management of forest resources. This national effort has contributed to global benefit not only reducing emission from LULUCF activities but also securing biological diversity and improving other environmental conditions. These national policy and actions of developing countries in reducing emission from deforestation have not been included in international mechanism, while the same actions carried out by Annex I countries have been part of their *National Inventory Report* (NIR). For this reason, actions by developing countries in reducing emission from deforestation should receive appropriate compensation or incentive to assure long term effectiveness of forest conservation and sustainable forest management (SFM). Effective implementation of incentive mechanism to reduce emission from deforestation and forest degradation under the UNFCCC will have synergy effects on activities under CBD, CCD, UNFF, ITTO, FAO.

Compensation or incentive is needed in order to encourage developing countries to reduce emission from deforestation beyond their national capacity. In this case, any action beyond national target of developing countries to reduce emission from deforestation should be given compensation or incentive. Furthermore, the mechanism should be kept simple and integrated in the existing and/or future climate regimes (in the framework of the convention or protocol beyond 2012).

Lessons learnt from a number of projects promoting environmental services have suggested that incentive mechanism in environmental services payment could work if :

1. there is economic value of the services that is marketable,
2. there exists seller and buyer of the services,

3. there is negotiation process to reach agreement to give incentive in the form of environmental services payment, and
4. consensus to carry out monitoring.

In this regards, a stable market should be secured with a balanced supply and demand considering a discount for carbon credits from avoided deforestation. Pilot projects for the voluntary markets should be implemented, to provide a way to build the capacity of developing countries through learning by doing process. Up-front financial support is essential to initiate the activities.

## **RECOMMENDATION ON FURTHER PROCESS TO CONSIDER THE ISSUES**

Among international law principles the UNFCCC consist both ‘precautionary principle’ and ‘common but differentiated responsibilities/CBDR’, but it does not consider ‘polluter pays principle’ and ‘internalization of externalities’.

The mechanism criteria should be seen from political, legal, and sustainable development criteria. Political aspect should consider the acceptability by both developed and developing countries, as well as national interest. From legal aspects it should in line with international law principles. From sustainable development points of view, it should promote conservation of natural forest and biological diversity, consistent with global environment priority, and local community benefits, benefit sharing, capacity building, and technology transfer.

Indonesia views that further process on this issues should consider some principles under international legal instruments as follows :

1. Common but differentiated responsibilities (Article 3.1 UNFCCC) that each Party has the same obligation to protect the climate system but has differentiated responsibilities in combating climate change and its adverse effects,
  2. Precautionary measures (Article 3.3 UNFCCC) that each Party should take precautionary measures to anticipate, prevent or minimize the causes of climate change and its adverse impacts. The effort may be carried out through cooperation among Parties. Hence, emission reduction from deforestation including financial mechanism should be based on this Article.
  3. Principle of internalization of environmental services, that externality costs be born by developing countries to reduce emission from deforestation contribute to the achievement of stabilization of atmospheric GHGs. And so, externality costs to internalization costs for environmental services should be the basis for negotiation on incentive to conserve forest and sustainable forest management to contribute to stabilization of GHGs in the atmosphere.
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30 March, 2006

**Submission by the Government of Japan on “Reducing emissions from deforestation in developing countries: approaches to stimulate action”**

At the eleventh session of the Conference of the Parties, Parties and accredited observers were invited to submit to the secretariat, by 31 March 2006, their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. The Parties were also invited to submit recommendations on any further process to consider the issues. Japan welcomes the opportunity to submit its views as follows.

Under the item, “Reducing emissions from deforestation in developing countries: approaches to stimulate action”, Japan expects wide range of discussion, taking into account of consistency with United Nations Framework Convention on Climate Change (UNFCCC), its Kyoto Protocol, their decisions and Good Practice Guidance for Land-Use, Land-Use Change and Forestry etc.

*1. Promotion of Sustainable Forest Management*

Japan thinks that current decisions under UNFCCC and its Kyoto Protocol has not fully evaluated the implications for policies and measures towards sustainable forest management though the Article 4, Paragraph 1 (b) of the UNFCCC refers to “*promote sustainable management ..., including ... forests*”. In this regard, the coming discussion should focus on how efforts for sustainable forest management be assessed and accounted under UNFCCC, which needs to take into account harmonization and consistency with discussions on sustainable forest management under relevant international organizations and forums, *inter alia* UNFF.

Japan thinks it is important to start the discussion where the participants sharing scientific facts on the forests including that forests can have attributes both as sources and as sinks and/or reservoirs at the same time. The deliberation on “reducing emissions from deforestation” should pay attention to this reversible feature of the forests. Japan recognizes the importance to reduce and further reverse the loss of worldwide forest coverage through sustainable forest management, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation.

*2. Scientific, Technical and Methodological Issues*

For the consideration of scientific, technical and methodological issues, Japan suggests the following points as the necessary categories of discussion: 1) causes of deforestation, 2) practicability, 3) consistency of current system and 4) other technical issues.

**1) Causes of Deforestation**

Japan believes that causes of deforestation should be fully reviewed at first in order to ensure different policies and measures be appropriately applied with causes of deforestation taken into consideration. For example, in a case where unsustainable deforestation occurs

by collecting firewood, firewood may be replaced by fossil fuels, while emission from combustion of fossil fuels would increase.

## **2) Practicability**

One of the important roles of sustainable forest management is to ensure practicability to reduce and further reverse the loss of forests. Technical applicability, including limitation of efficient remote sensing technology and data availability on forest resources, should be fully assessed. In addition, reversible feature of forests which can be both sources and sinks and/or reservoirs should also be noted.

## **3) Consistency of Current System**

Japan believes that consistency with the policy measures under the Kyoto Protocol, such as Clean Development Mechanism (CDM), should be discussed under this item. One of the major issues to be examined here is the relationship between the idea of “reducing emissions from deforestation” and that of “afforestation and reforestation CDM”. For example, it potentially includes the risk of double counting because afforestation and reforestation activity contributes to increase carbon sequestration while it also contributes to reduce emission at the same time.

## **4) Other technical issues**

Other technical issues are referred in submission by the Governments of Papua New Guinea and Costa Rica (FCCC/CP/2005/MISC.1). Japan would like to point out several questions to be discussed in the table below:

**Table: Questions to be discussed**

Technical issues	Questions to be discussed
Additionality	Is it possible to establish appropriate baseline? Does the rate of deforestation work to reverse the loss of forests?
Leakage	Is it possible to establish national level baseline?
Permanence	How do we think about the length of commitment period and continuity to third commitment period?
Monitoring	Is satellite the only technology to monitor? How do we exclude double counting?
Other	How do we keep accounting consistency when forests had reversed from sources to sinks/reservoirs?

### 3. Synergy with Relevant Organizations

Japan believes it is efficient path to synergy with other relevant organizations, including United Nations Forum on Forests (UNFF), Food and Agriculture Organization (FAO), International Tropical Timber Organization (ITTO), and Center for International Forestry Research (CIFOR).

PAPER NO. 11: MALAYSIA

**UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)**

**Submission by Malaysia**

The 11<sup>th</sup> Session of the Conference of Parties (COP), in Agenda item 6, Reducing emissions from deforestation in developing countries: approaches to stimulate action, invited Parties and accredited observers to submit to the Secretariat, by 31 March 2006, their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives. The COP invited Parties also to submit recommendations on any further process to consider the issues. Malaysia welcomes this opportunity to make a submission and presents the following views.

**Background; Malaysia's Forest Policy and Sustainable Management Protocol**

The forestry sector is one of the important economic sectors in Malaysia. Malaysia also recognises the immense importance of the forest resource in providing environmental protection, particularly those related to climate change. In this regard the issue of deforestation being addressed under the United Nations Framework Convention on Climate Change (UNFCCC) is a relevant and important issue for Malaysia.

Malaysia has stated in previous submissions that the primary priority in the fight against climate change should be the reduction of emissions at source and that sinks should play only a transitional role and thus, be included as an activity for the short term. We continue to emphasise the greater importance of sustainable management of existing sinks and reservoirs, this being amongst the commitments of the UNFCCC, while Land Use, Land Use Change and Forestry (LULUCF) activities should promote the long-term sustainable management of forests and their resources.

Malaysia has an extensive forest resource, with natural forest land cover approaching 60 percent. Malaysia remains committed to manage her forests sustainably. Forest management objectives are clearly specified in the National Forestry Policy. The conservation of forests and their resources is also in tandem with the commitments outlined in the Convention on Biological Diversity, which Malaysia ratified in 1994. Malaysia's forests can be categorised according to the degree of protection and land use classification. Management of forested land falls under three broad categories:

- i. Totally protected areas (Wildlife sanctuaries, National and State Parks, numbering in excess of 50);
- ii. Permanent Reserved Forests (PRFs), which comprise over 75% of the natural forests in Malaysia, and include both protection and production forests, to be maintained and managed sustainably, and
- iii. Stateland (conversion) forests which are land reserved for future development purposes.

Malaysia's 'best practices' approach to forest management has been able to conserve the biological resources and carbon stocks by avoiding the deforestation cycle. Unlike the situation in many developing countries, where harvesting is followed by burning and a gradual conversion to agricultural or grazing land, Malaysian forests under the PRFs do not undergo a change in land use. This is illustrated by the fact that the area of Malaysian forest under the PRFs has not changed substantially in the last 10 years. However, deforestation activities do occur and are confined to Stateland and alienated forests. This is because these areas have been long earmarked for development and represent the respective State land banks. Based on these practices, Malaysia has had limited opportunities for Afforestation and Reforestation (A&R) activities under the CDM.

**Reducing Emissions from Tropical Deforestation**

Deforestation is generally defined as the transition from any forest type to any non-forest type (which involves a land-use change) while forest degradation is used to describe the transition from closed forest to open or fragmented forests (no land-use change). Malaysia recognises the relationship of

deforestation/forest degradation with the increase in emissions of greenhouse gasses (GHGs) and the reduction of carbon sequestration potential. Malaysia will support global efforts to curb deforestation and to provide incentives for reducing deforestation and forest degradation. However a conservative and cautious approach will be adopted to ensure that a clear and fair approach is developed that will address the issues dealing with leakage, permanence and additionality that recognizes the socio-economic impacts to developing tropical countries with relatively large areas of forests and where forestry is an important economic sector.

Rates of deforestation/forest degradation need to be viewed from a holistic perspective i.e. taking into consideration the root causes and impacts. In assessing current conditions and activities, a historical perspective would also provide a more balanced consideration of the issue which at this point in time seems to be occurring in developing countries. A more balanced consideration of the drivers of deforestation/forest degradation in the past and present would provide a better assessment of the situation.

Reducing emissions from tropical deforestation/forest degradation can take any of the following three avenues:

- i. Totally setting aside and protecting forested land with any degree of forest cover;
- ii. Ensuring that minimal forest degradation occurs in permanent production forests (no land-use change) through Sustainable Forest Management (SFM) practices, and
- iii. Conducting deforestation activities (involving a land-use change) in a manner that is environmentally sensitive and reduces or minimises emissions.

Totally protected areas, including Wildlife sanctuaries, National and State Parks, along with the Virgin Jungle Reserves (for conservation of biological resources, flood mitigation and amelioration of soil erosion and river siltation) located within the confines of PRFs, all point to Malaysia's prudent use of the first avenue of emissions reduction through the setting aside of areas that will not be subjected to any type of forest degradation. Due to decreasing marginal returns, any further setting aside of land area through a program such as Compensated Reduction (CR) will come at a higher cost and result in less land being set aside per unit cost.

The second avenue for emissions reduction hinges on minimising emissions from harvesting activities in PRFs. The production forests within the PRFs are managed sustainably under two management systems, the Malayan Uniform System (MUS), based on a 55-year cutting cycle and the Selective Management System (SMS) based on a 30 year cutting cycle. In addition, Malaysia developed its own Criteria and Indicators (MC & I) based on ITTO Guidelines for Sustainable Management of Natural Tropical Forests and Criteria for the Measurement of Sustainable Tropical Forest Management, in 1994. Currently, Malaysia is implementing the MC & I (2002) based on the Forest Stewardship Council (FSC) template. Implementing the MC & I to reduce emissions and improve sustainability has increased production cost by 62% and decreased the volume of wood currently extracted, but long-term yield is projected to increase by 10%.

The Stateland (conversion) forests were designated, from their inception, for eventual conversion to meet demands for additional lands for agricultural, urban or other non-forest purposes. These are forests are set aside for alternative uses and will be developed in a planned and systematic manner. This development-driven conversion, however, can include provisions that reduce emissions through the third avenue. For example, all new developments are required by law to leave untouched 25% of the land area to be designated as green space. Furthermore, all development projects require the filing of an Environmental Impact Assessment (EIA) and must be approved by the Environmental Protection Agency (EPA).

### **Summary**

Malaysia has shown strong commitment in implementing SFM. As a developing nation, Malaysia also has to ensure that her social, economic and environmental needs are met in a sustainable and balanced manner. As such, the conversion of land will be done in line with long-term development plans. In this regard, Malaysia should also be given further incentives for being able to protect and manage the forest

area currently under the PRFs. Because of Malaysia's 'Best Practices' approach, additionality criteria often do not favour countries like Malaysia that have already set aside large tracts of natural tropical forests for protection and sustainable management.

Malaysia is concerned that countries that are anticipating the passage of this mechanism will have a perverse incentive to increase their timber harvests in the remaining years prior to the onset of the first commitment period in 2008 so as to have a more favourable baseline from which to calculate emissions credits thereafter.

Malaysia is not in favour of an optional protocol to address the issue of deforestation as it would be difficult and time consuming. Efforts to consider the matter would best be done under the current protocol. Furthermore, any effort for consideration on the issue of deforestation should be undertaken under negotiations for the second commitment period.

In the interest of further reducing emissions from all deforestation/forest degradation activities in the tropics, however, Malaysia will actively participate in any discussions and negotiations on this matter to ensure that the concerns of all Parties are addressed and that the environment will benefit from any decisions made.

Prepared by:

*Forest Research Institute Malaysia  
Ministry of Natural Resources and Environment Malaysia*

## **La réduction des émissions dans les pays en développement à partir de la déforestation**

### **1. Préambule**

Le Maroc salue l'initiative de proposition soumise par la Papouasie Nouvelle Guinée et le Costa Rica à COP11 de discuter de la réduction des émissions occasionnées par la déforestation dans les Pays en voie de Développement (PED). Il considère qu'il s'agit d'une question de la plus haute importance, non seulement pour les PED, mais pour l'ensemble des nations et que le SBSTA doit examiner avec le plus grand soin. Le Maroc, reconnaissant la grande complexité scientifique et technique des questions relatives à la déforestation, demande que le temps nécessaire aux discussions soit accordé aux experts et aux négociateurs pour trouver des solutions efficaces et équitables.

### **2. Contexte marocain**

La forêt marocaine, qui relève dans sa quasi totalité du domaine forestier de l'Etat, est grevée de droits d'usage reconnus au populations riveraines dont les effectifs et les besoins sont croissants.

Toutes les analyses établissent que la dynamique dégressive des écosystèmes forestiers risque d'atteindre le seuil d'irréversibilité à moyen terme, si des programmes significatifs de reconstitution, de conservation et de développement des forêts ne sont pas mis en œuvre et soutenus sur une durée compatible avec le rythme de renouvellement des forêts.

Cette dégradation, due notamment aux prélèvements excessifs en bois de feu par les populations pour la satisfaction de leurs besoin énergétiques domestiques et au surpâturage ( qui dépassent tous les deux 3 fois les possibilités des forêts ) met notre pays face à des enjeux et des défis importants en rapport avec le cycle de l'eau, l'amplification des phénomènes d'érosion et d'envasement des barrages, la perte de la biodiversité, la rupture des équilibres socio-économiques et environnementaux...

La politique du gouvernement, construite à travers un long processus participatif et intersectoriel d'analyses, de débats et de planification, vise la gestion durable des ressources forestières dans sa triple dimension économique, sociale, et environnementale sur la base d'une approche participative et partenariale impliquant l'ensemble des acteurs concernés.

Aussi, l'action de lutte contre la dégradation des forêts est conçue dans le cadre d'une programmation décennale déclinée en projets triennaux territorialisés en tenant compte des priorités et capacités d'interventions.

Cependant et malgré les efforts déployés, les moyens et ressources mobilisés restent insuffisants pour faire face aux multiples causes de la déforestation dont les manifestations se trouvent exaspérées par les changements climatique globaux.

Ainsi, les effets de la déforestation sont perçus, non seulement par les communautés locales qui perdent progressivement les services offerts par les forêts, mais également par la communauté internationale, qui devra assumer les conséquences d'émissions croissantes en GES.

Bien que la contribution des forêts aux émissions de GES au niveau national ne soit que 7 %, la prévention de la déforestation revêt une importance stratégique pour la convention de la biodiversité, la

protection des bassins versants, la production de revenus additionnels et l'amélioration des conditions de vie des populations locales.

L'appui aux pays en développement dans le domaine de la lutte contre la déforestation est à promouvoir dans le cadre des dispositions de la Convention Cadres des Nations Unies sur les Changements Climatiques.

### **3. Soumissions du Maroc : quelques éléments à prendre en considération**

- Le Maroc est soucieux de voir le SBSTA commencer par établir des principes clairs qui constitueraient la base des discussions (e.g. l'engagement international dans le processus de lutte contre la déforestation, garantie que les émissions des forêts seront effectivement réduites, garantie d'actions à long terme, etc.).
- Le Maroc considère qu'il est important que l'architecture du système qui sera adopté, soit rigoureuse mais en même temps suffisamment souple pour convenir aux différentes circonstances nationales et régionales.
- Le Maroc souhaite un engagement des pays de l'Annexe I à fournir l'assistance nécessaire (institutionnelle, technique et financière) pour permettre aux PED de participer pleinement au processus de réduction de la déforestation (mise en œuvre des programmes, leur suivi et évaluation).
- Le Maroc souhaite que l'engagement des pays Annexe I concernant la réduction de la déforestation soit additionnel à leurs objectifs de réduction des émissions de GES.
- Le Maroc, vulnérable aux effets des changements climatiques, propose que le fonds spécial pour le changement climatique, créé sous la CCNUCC, et le fonds d'adaptation du Protocole de Kyoto soient complémentaires au FEM pour ce qui concerne l'adaptation du domaine forestier aux changements climatiques.
- Le Maroc souhaite que le système qui sera établi prenne en considération les éventuels impacts négatifs des programmes sur les populations riveraines des forêts et sur l'environnement.
- Une approche consisterait en l'établissement de taux de déforestation de référence par les différents pays en développement concernés, par recours notamment aux données des inventaires forestiers nationaux. La technologie de télédétection permet de nos jours de bien cerner l'évolution des changements dans le couvert forestier dus aussi bien aux facteurs de dégradation qu'aux mesures de protection et de réhabilitation.

PAPER NO. 13: NEW ZEALAND

**Avoided Deforestation**

**New Zealand views**

New Zealand thanks the Governments of Papua New Guinea and Costa Rica for their submission entitled “Reducing emissions from deforestation in developing countries: approaches to stimulate action” (document FCCC/CP/2005/MISC.1 refers).

The Conference of the Parties has invited Parties for views on issues relating to relevant scientific, technical and methodological issues, including policy approaches and positive incentives.

An effective global response to climate change will require all countries – developed and developing – to contribute as best they can. Anything less than broad and balanced participation and action will be inadequate to deal with the magnitude of the challenge. A global response should include action to protect and enhance forest sinks and reservoirs.

Deforestation is an issue requiring the active and urgent attention of all countries. Deforestation carries far-reaching environmental, economic and social impacts. New Zealand is supportive of actions that will help stem deforestation. This action would reduce the emissions of carbon from forests and facilitate the participation of countries in global efforts to mitigate climate change.

On technical and methodological issues, we note that these can be problematic, for example, the establishment of baselines to determine avoided deforestation, and monitoring and verification issues. The issues of leakage, additionality and permanence will also need to be explored and adequately addressed to ensure that solutions to deforestation are durable, and have environmental, scientific and economic integrity. These issues are not insurmountable. We note that the UNFCCC has built up considerable expertise on these issues over recent years, including as part of the methodological approval process for the Clean Development Mechanism.

The Papua New Guinean and Costa Rican submission (see page 4) states that “...in the absence of revenue streams from standing forests, communities and governments in many developing nations have little incentive to prevent deforestation.” It is appropriate in considering approaches to stimulate action to reduce deforestation emissions from developing countries, that we explore the range of possible avenues for creating a revenue stream from standing forests. We remain open minded on the appropriate institutional vehicle to deliver this revenue stream.

We welcome the views of others and look forward to working constructively to advance this issue.

## **REDUCING EMISSIONS FROM DEFORESTATION IN DEVELOPING COUNTRIES: APPROACHES TO STIMULATE ACTION**

*Views submitted by Norway, March 2006*

### **1. Introduction**

Reference is made to FCCC/CP/2005/L.2 in which Parties and accredited observers are invited to submit to the secretariat their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives, as well as recommendations on any further process to consider these issues. Norway welcomes this opportunity to provide initial views and proposals on approaches to stimulate action relating to reducing emissions from deforestation in developing countries

Reducing emissions from deforestation in developing countries was introduced as a new agenda-item at COP 11, on the basis of a submission from Papua New Guinea and Costa Rica (FCCC/CP/2005/MISC.1). In this document the two Parties provide information on rates of deforestation in developing countries and argue why slowing tropical deforestation is important in order to achieve the ultimate objective of the UNFCCC. They further propose two possible approaches in order to provide incentives for achieving such emission reductions:

- Crediting emission reductions from avoided deforestation in developing countries under the Clean Development Mechanism (CDM);
- Establishing a new, optional protocol under the UNFCCC addressing emissions from deforestation.

### **2. General**

Norway shares the concern of Papua New Guinea and Costa Rica with regard to the large amounts of CO<sub>2</sub> emitted from deforestation in tropical countries and the significant contribution to global warming from these emissions. The deforestation may also have devastating effects on biodiversity and livelihood for indigenous peoples. According to the Third Assessment Report (TAR) of the Intergovernmental Panel on Climate Change (IPCC, 2001), about three quarters of the anthropogenic emissions of CO<sub>2</sub> to the atmosphere during the past 20 years is due to fossil fuel burning, while the rest is predominantly due to land-use change, especially deforestation. The IPCC has projected the atmospheric CO<sub>2</sub> concentration to arrive at 540 to 970 parts per million (ppm) by 2100 based upon the SRES scenarios and carbon cycle models. The TAR (Summary for Policymakers, WG I) states that “[h]ypothetically, if all the carbon released by historical land-use changes could be restored to the terrestrial biosphere over the course of the century (by e.g. reforestation), CO<sub>2</sub> concentration would be reduced by 40 to 70 ppm”. In our view, this illustrates the challenge we face.

According to Article 4.1(d) of the UNFCCC all Parties have a commitment to promote the conservation of forests (“promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems”).

Annex I countries have an additional incentive to reduce emissions from deforestation, since these emissions are to be accounted for against their commitments to limit or reduce greenhouse gas emissions under the Kyoto Protocol (Article 3.3 of the Kyoto Protocol). Norway fully agrees with Papua New

Guinea and Costa Rica that the Parties to the UNFCCC should start considering how to provide incentives to reduce the significant emissions from deforestation in non-Annex I countries.

Avoiding deforestation in developing countries could lead to substantial reductions in greenhouse gas emissions, and would have additional benefits in terms of biodiversity protection and sustainable development. We therefore welcome a discussion under the UNFCCC of ways to limit deforestation and related emissions from a climate policy perspective.

### **3. Relevant elements for assessing policy options**

One of the approaches proposed by Papua New Guinea and Costa Rica is the inclusion of projects that reduce emissions from deforestation in the CDM. It is stated in their submission that Article 12 of the Kyoto Protocol, which establishes the CDM, does not promote or prevent such projects. During the deliberations on the modalities and procedures for forestry project activities under the CDM it was discussed whether projects on avoided deforestation or forest conservation should be included. One of the reasons for not including avoided deforestation was that the uncertainty with regard to additionality, baselines, leakage and permanence was considered unacceptably high.

The decision on modalities and procedures for afforestation and reforestation project activities under the CDM in the first commitment period was adopted by COP/MOP 1. Norway prefers not to reopen the discussion of including avoided deforestation as project activities under the CDM for the first commitment period. It is possible to discuss the issue again during the deliberations under Article 3.9 of the Kyoto Protocol on the second commitment period. Whether avoided deforestation should be reconsidered as a possible CDM option will in our view depend e.g. on the availability of new information indicating reductions in uncertainty concerning additionality, baselines, leakage and permanence in relation to forest conservation projects.

There are also other possible approaches to stimulate action to reducing emissions from deforestation in developing countries, including e.g. a separate protocol, funding programs, capacity building and a combination of these. With the long term perspective and complexity of this issue, ways to stimulate reductions in carbon loss from tropical deforestation should also be a topic for further consideration in the Dialogue established by COP 11 on long-term cooperative action to address climate change. In the following we provide some preliminary views with regard to elements we consider being relevant for the further policy discussion.

#### **3.1 Baselines**

Establishing baselines for emissions and related activities is always challenging due to uncertainty about the future. Establishing deforestation emissions baseline rates at country level may be particularly difficult. Major challenges include shortcomings of knowledge about past trends, problems of estimating carbon loss as a consequence of different kinds of disturbance, and the regional variations of deforestation dynamics.

Recent estimates of deforestation at global, national and regional levels have large uncertainty ranges, a problem which may also make it difficult to obtain the historical deforestation data needed for establishing a baseline. Historical baselines for forest cover and historical deforestation rates are issues of contention in many regions and the focus of much recent scholarly work. Variations in biomass of different forest types also contribute to the uncertainty in the estimates. Tropical forests vary between open dryland forests to dense tropical rainforests, and different forest varieties contain widely different amounts of carbon in the stem, branches and root systems. Moreover, there are uncertainties related to the distribution of various forest types across regions. There may also be patchworks of various forest types, where average "carbon content" may prove difficult to estimate within tolerable limits of uncertainty.

### **3.2 Crediting reduced deforestation**

Estimation of national deforestation baseline rates may prove difficult for the reasons outlined above. Consequently, introducing credits based on such baselines to the international market for emissions permits and credits under the Kyoto Protocol, or other future agreements, could influence the overall effectiveness of the agreement.

It could be possible to find solutions to such problems, e.g. by means of quantitative restrictions to crediting, similar to the limits on the use of credits from afforestation and reforestation project activities under the CDM. Another possibility could be to focus on the existing forest area of a country and changes in this area, rather than to look at historical levels of deforestation or projections of future emissions. Baselines based on estimates of forest areas for a given year and related carbon stocks could be more reliable than baselines based on historical levels of deforestation, as mentioned above.

### **3.3 Monitoring**

Deforestation monitoring is a challenging operation, but may be greatly facilitated by progress in satellite monitoring over recent decades. However, many developing countries do not presently have the equipment or technology to produce reliable estimates of land-use changes on their own land. An associated problem is that satisfactory monitoring cannot be achieved by means of satellites or planes alone, but must be done in combination with analyzing local samples in cooperation with local and regional experts. Thus, independent of the possibility to more actively draw on satellite monitoring, local and regional competence building is therefore essential in many countries. This means that relatively large resources are necessary to achieve sufficiently precise estimates of deforestation. On the other hand, initiating such processes in major forest countries can be part of a broader policy to increase domestic awareness about the scale of deforestation and in this way contribute to sustainable development.

### **3.4 Capacity building**

Substantial capacity building would be required to establish satisfactory monitoring in a baselines and crediting scenario. Improved monitoring and managing capacity is crucial to any strategy to reduce deforestation in developing countries and related emissions. One approach for addressing deforestation emissions under the UNFCCC would therefore be to give priority to capacity building and technology transfer.

### **3.5 Other policy incentives for reducing deforestation**

The primary objective of possible new instruments under the UNFCCC must be to combat climate change. Conservation of forests, particularly native forests, has many positive effects in addition to the reduction of emissions of greenhouse gases, in particular related to biodiversity, sustainable forest management, prevention of desertification and the preservation of water resources. Reversing the loss of forest cover is an objective of several international bodies, such as the Convention on Biological Diversity (CBD), the Convention to Combat Desertification (CCD) as well the UN Forum of Forests (UNFF).

### **3.6 Possible reduction regimes - conclusion**

Norway has always been in favour of a broad, committing system under the UNFCCC covering the largest possible amount of global anthropogenic greenhouse gas emissions. We therefore welcome the proposal of Papua New Guinea and Costa Rica of seeking ways and means to reduce emissions from deforestation in a future climate regime.

We are open for discussing a variety of approaches to stimulate reducing emissions from deforestation in developing countries. We do, however, have some initial views relating to some of the possible instruments: The main goal of including emissions from deforestation under the UNFCCC should in our view be to contribute to reduction in global greenhouse gas emissions. At the same time we recognise that this objective also has several other benefits in contributing to sustainable development which should be taken into account, e.g. on the prevention of biodiversity, sustainable forest management, prevention of desertification and watershed protection.

Including reduced emissions from forest conservation projects in the CDM is not an option in the first commitment period, but could be considered for the second commitment period. Whether avoided deforestation should be reconsidered as a possible CDM option will in our view depend e.g. on the availability of new information indicating reductions in uncertainty concerning additionality, baselines, leakage and permanence in relation to forest conservation projects, and whether these issues can be dealt with methodologically in a satisfactory manner.

Other ways of creating incentives for reducing emissions from deforestation in developing countries have been mentioned. Among these possibilities are a new agreement (protocol) on deforestation emissions, establishing a fund for forest conservation projects, capacity building and technology transfer and combinations of these.

Norway would like to participate in exploring ways to promote reduced deforestation, also those that are not linked to broader greenhouse gas permits or credit markets. We see this as an important part of the discussions under the Dialogue for long-term cooperative action to address climate change.

#### **4. Further process under the UNFCCC**

It was decided by COP 11 that this issue should be forwarded to SBSTA. Furthermore, it was agreed that the first considerations should take place at SBSTA 24, and that a workshop should be organized by SBSTA before SBSTA 25. It is our understanding that the views submitted by Parties and accredited observers will be discussed at SBSTA 24. We suggest broad participation at the workshop, and that representatives from research communities, policy makers, NGOs etc. are invited to make presentations.

The views put forward in the submissions from Parties and organizations together with views and information presented during the workshop should provide a good basis for the further consideration of the issue within SBSTA. A possible way forward could be to request the secretariat to develop a paper presenting the different policy options proposed along with their technical challenges, based inter alia on Parties' and other participants' views expressed in submissions and during the workshop. We propose that such a document be developed before SBSTA 26, so that it would also benefit from discussions at SBSTA 25.

In our view the discussion on reducing emissions from deforestation should be broadly based and therefore conducted under the UNFCCC. According to the COP 11-decision, the SBSTA should report at its 27<sup>th</sup> session on issues mentioned above, including any recommendations. We look forward to further discussions on this issue within the UNFCCC at SBSTA 24 and future meetings.

PAPER NO. 15: PANAMA ON BEHALF OF COSTA RICA, EL SALVADOR, GUATEMALA,  
HONDURAS, NICARAGUA AND PANAMA

**Reducing emissions from deforestation in developing countries:  
Approaches to stimulate action**

**Submission by:**

**The Countries of Central America  
Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama**

**I. Mandate**

UNFCCC COP11 in its document FCCC/CP/2005/L.2: “Reducing emissions from deforestation in developing countries: approaches to stimulate action”, Draft conclusions proposed by the President, calls for Parties to send submissions to the Secretariat as follows:

“The COP invited Parties and accredited observers to submit to the Secretariat, by 31 March 2006, their views on issues relating to reducing emissions from deforestation in developing countries, focusing on relevant scientific, technical and methodological issues, and the exchange of relevant information and experiences, including policy approaches and positive incentives...”

**II. Preamble**

This document presents the views of Central America on reducing emissions due to deforestation in developing countries. Taking into account that the document FCCC/CP/2005/MISC.1 submitted to COP by Papua New Guinea (PNG) and Costa Rica with the support of Guatemala and Nicaragua amongst others, provides a good general overview of the links between deforestation and climate change, we have focused our analysis on key principles, questions and methodological issues that we wish to bring to the attention of the COP. Consequently, this submission is divided into four sections: (1) Preamble, (2) Principles, (3) Scientific and methodological aspects, and (4) Information and Exchange of Experiences on Matters of Policies.

*Central America's Vulnerability to Climate Change*

Central American countries are deeply concerned with Climate Change because of their high vulnerability to the impact of changing weather patterns, including but not limited to increasing frequency of hurricanes and tropical storms.

The Central American Isthmus is one of the regions of the world most frequently affected by climate related disasters: hurricanes, floods, droughts, land slides, etc. These events exact a high toll of human lives and cause enormous damages to national infrastructures and productivity. Data from regional disaster management agencies (CEPREDENAC) and for United Nations sources (ECLAC), indicate that, due to such events, the Isthmus has lost thousands of lives and has suffered losses for more than US\$30 billions since 1960.

*The Central American Context*

In an attempt to fight environmental degradation and implement more sustainable land use, the Central American Forestry Strategy (EFCA) was approved during the XXXIV Ministerial Meeting of the Central American Commission on the Environment and Development (CCAD), of October, 2002. The EFCA

hopes to curb the deforestation process in the region by having all Central American countries reviewing or updating their forest policies and National Forest Development Programs.

The EFCA mission is to become a permanent forum for discussions and action pertaining to sustainable forestry development in Central America. Its strategic objectives are (i) to support the implementation of the principles, actions and agreements of the Forum and Intergovernmental Forest Panel (IPF/IFF) and (ii) to position the forestry sector as an important agent of economic, social and environmental development contributing to vulnerability reduction and poverty alleviation.

The goals of EFCA are: (i) Strengthen the forest agenda in Central America, (ii) Increase forest coverage in the region, (iii) Restore degraded forests, (iv) Strengthen the Central American System of Protected Areas (CAPAS) and, (v) Promote the competitiveness of the Central American forest sector.

Within this context, the Ministerial Council of the CCAD, has approved three regional programs framed within the initiative of the Mesoamerican Biological Corridor: (a) PERTAP – Regional Program of Work in Protected Areas, (b) PERCON – Regional Program for Connectivity and (c) PROMEBIO – Regional Program for Monitoring and Evaluating Biodiversity.

#### *The causes of deforestation*

The policy undertakings highlighted above illustrate the concern of Central American countries regarding deforestation. Nevertheless the task is daunting and the probability of success of these measures is unknown. Uncertainties are linked to the complexity of the causes of deforestation and the difficulty of tackling them.

In Central America, deforestation is due mainly to land use change (expansion of the agricultural frontier, firewood consumption and urban processes). Focusing on the causes of deforestation and looking for solutions that take into account the socio-economic context are therefore essential for the success of this initiative. Central American countries wish to emphasize that a forest that is not sustainable used, is a forest that is lost.

The challenge facing Central America is to develop sustainable economic activities that will maintain natural forests dynamics, carbon stocks while maximizing social benefits. For example, activities such as ecotourism, sustainable forestry and extraction of non-timber forest products are all compatible with the idea of reducing emissions from tropical deforestation.

#### *Need for action*

The countries subscribing to this proposal recognise the importance of protecting forests to maintain their essential environmental functions, in order to avoid greenhouse gas emissions resulting from deforestation, and improve their adaptive capacity to projected impacts as a result of global climate change.

They also recognise that existing forests in the region must be conserved within the framework of both mitigation and adaptation strategies and measures. The Central American countries consider that strengthening, and taking advantage of, already existing mechanisms within the UNFCCC and the Kyoto Protocol on matters of adaptation and mitigation to reduce emissions coming from deforestation is necessary.

### **III. Principles**

The Central American proposal is based on some principles recognised at international level

#### Sustainable development and poverty eradication:

Countries have the responsibility to meet their present needs without limiting the options of future generations. In keeping with Article 3 of the Convention, activities that may be undertaken in pursuit of the objective of avoiding deforestation should be coordinated with social and economic development in an integrated manner (a) bearing in mind that the burden of reducing or avoiding deforestation falls on stakeholders such as peasants, indigenous peoples, small farmers and ranchers; (b) taking into full account the legitimate needs of developing countries to achieve sustained economic growth and eradicate poverty as stated at the September 2005 UN Summit.

#### Synergy with adaptation measures and with multilateral environmental conventions:

According to projections of the Third Assessment Report on Climate Change (TAR)<sup>1</sup> adaptation measures have the potential to reduce losses related to climate change in the forest and agricultural sectors. It is therefore important to take into account interlinkages between mitigation, adaptation and deforestation avoidance.

Furthermore, protecting existing tropical forests will help to achieve the goals of the UN Convention on Biological Diversity (CBD). Indeed tropical forests contain between 50% and 70% of all species and their importance is reflected in the 5<sup>th</sup> technical paper of the IPCC where an entire section deals with forested lands and biodiversity<sup>2</sup>. Mechanisms for avoided deforestation should reinforce synergies and cooperation among existing international agreements on sustainable development such as the abovementioned CBD and the Convention to Combat Desertification. Small countries or regions have a great importance for biodiversity conservation even though their forested areas may not be very large.

As an example of synergy, the Mesoamerican Biological Corridor provides a cooperation framework allowing to link the conventions on Climate Change, Fight Against Desertification and Drought, Biological Diversity and Wetland Protection, as well as regional initiatives such as the Alliance for Sustainable Development, the Central American System of Protected Areas, and the Central American Forest Strategy.

#### Fairness/Equity:

A regime of avoided deforestation should insure a fair distribution of the responsibilities and possible benefits both between and within countries. For example to ensure fairness at the international level, differences in the national extent of forest cover should be taken into account when developing methodologies. The possibility that large countries may benefit disproportionately from the mechanism or may impair its smooth operation should be of concern.

At the national level, and in keeping with the Principle of Sustainable Development, Central American countries would welcome discussion around avoided deforestation options that could explicitly take the need to improve the livelihoods of poor rural communities or indigenous peoples, and therefore ensuring a fair and equitable distribution of the benefits among all stake holders.

#### Additionality of financial resources:

The Central American countries would like to recall the principle of financial additionality as defined in the Stockholm Declaration. Additional resources should be made available to developing countries to

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<sup>1</sup> Climate Change 2001: Impacts, adaptation and vulnerability (IPCC-TAR).

<sup>2</sup> Gitay, H. (2002) Climate Change and Biodiversity. Technical paper V. IPCC

compensate for any expenses linked to implementing policies aiming to reduce or avoid deforestation. Aid for avoided deforestation should be additional to the current and already planned aid transfers.

Environmental integrity of existing mechanisms:

Avoided deforestation activities and measures should not weaken the environmental integrity of the UNFCCC and the Kyoto Protocol. Mechanisms for avoided deforestation should not undermine emission reduction efforts by Annex I countries, nor weaken the existing flexibility mechanisms.

#### **IV. Scientific and Methodological aspects**

*Scientific Aspects*

- Forests can act as either carbon sinks or sources; therefore they play a significant role in the global carbon cycle. Between 1990 and 2000, greenhouse gas emissions coming from global deforestation ranged between 10% and 38% of total anthropogenic emissions, including activities of forest conversion in farm and cattle land, migrating agriculture and forest crops<sup>3</sup>.
- In Central America, biomass reserves have evidenced a progressive decrease in the last years, related to different processes, such as deforestation. The total regional biomass stock decreased from 1990 of 3.4 Gt, to 2.9 Gt in 2000, and 2.7 Gt in 2005.
- According to projections of the TAR, water and land ecosystems and, within the latter forests, will be impacted by global climate change. The increase in frequency of extreme events and disturbances, such as hurricanes, El Niño Southern Oscillation (ENSO), forest fires and pests may decrease productivity, increase soil degradation, increase the loss of already stored carbon<sup>4</sup>.
- A sustained increase of 1°C in mean global temperature is enough to cause changes in regional climates, affecting the growth and regeneration capacity of forests in many regions. In some cases, this could significantly alter the function and composition of forest ecosystems<sup>5</sup>.
- According to recent projections<sup>6</sup>, in low latitudes, temperatures generally could increase. Although primary productivity of ecosystems might increase, biomass in standing forests might decrease due to a greater frequency and abundance of pest and diseases as well as greater intensity and frequency of forest fires.

*Definitions*

Definitions of forest, deforestation, avoided deforestation, and baseline should take into consideration, and be based on, the diversity of national circumstances and priorities.

*Methodological issues*

- Recalling the Principle of Synergy, the Central American countries suggest that implementation measures and actions to avoid deforestation in developing countries should be coherent with climate change adaptation objectives and already established mitigation mechanisms while taking into account other environmental conventions.

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<sup>3</sup> Houghton, R.A. (2005) *Global Change Biology*: 11, 945-958.

<sup>4</sup> *Ibid*

<sup>5</sup> Climate Change 1995: Scientific-technical assessments of impacts, adaptation and mitigation of climate change (IPCC-SAR).

<sup>6</sup> *Ibid*

- Monitoring of deforestation reduction should be undertaken every five years. Many countries, however, currently lack the required financial and human resources to carry out such a task. Resources should be made available for technical training, logistical support, technology transfer and monitoring.
- Each country should negotiate its baseline according to existing information availability and criteria for national policies. The baseline should include a monitoring plan to be executed. Methodologies used must guarantee the environmental integrity of the UNFCCC and the Kyoto Protocol.
- Avoided deforestation should be calculated upon the basis of non-deforested surface considering the agreed monitoring plan. To respect the fundamental Principle of Fairness, methods must insure that countries with traditionally low deforestation rates are not at a disadvantage and that countries with historical high rate of deforestation are not rewarded. A possible mechanism to ensure fairness is to use the global deforestation baseline for the developing world as a reference.
- Various methods exist to estimate deforestation. Each country should be able to choose its methodology, but methodologies would need to be approved by an International Accredited Certification Body or any such qualified entities (FAO, OIMT, IPCC, etc.). The Revised 1996 IPCC Guidelines and the Good Practice Guidance for Land Use, Land-Use Change and Forestry could serve as the basis to develop appropriate methodologies.
- The monitoring process must use the highest standards of reliability and transparency.

*Resources for Implementation*

- According to the Principle of Synergy, countries should optimise available resources to satisfactorily meet their objectives of adaptation, mitigation and deforestation avoidance. Such integrated approach should be prioritized within the financing of Special Climate Change Fund (SCCF), the Adaptation Fund under the Kyoto Protocol, and the operational lines under the Global Environment Facility (GEF)
- Besides the above mentioned funds, bilateral and multilateral programs already established or to be established within UNFCCC, should prioritize avoided deforestation projects that take into account mitigation and adaptation to Climate Change.
- In order to be successful, efforts to reduce deforestation in developing countries need to identify appropriate enabling sources of finance. It is essential to recall the Principle of Additionality as financing new initiatives on avoided deforestation should not be done at the expense of aid in other sectors.
- The Central American countries are open to discussions on financing through the participation of private agents such as Social Corporate Responsibility Programs, Payment for Environmental Services, etc. In this context, the Central American countries support the exploration into alternatives such as voluntary carbon markets as a means to stimulate action to reduce emissions from deforestation in developing countries.
- While the benefits from deforestation reduction should be given at the end of a monitoring period, mechanisms must be put in place to initiate the process. This will be an essential condition to foster action and this issue has to be discussed thoroughly.
- The assignment of resources must ensure the strengthening of the main actors that will intervene in this process, which may be grouped in two large categories: (i) Governmental Sector (Central Governments, local Authorities, etc.), (ii) Civil society (local communities, indigenous peoples, NGO's, private sector, Academy, among others).

*Recommendations on possible future processes*

- For the moment, we suggest that the discussions regarding deforestation in developing countries continue under the COP. It is hoped that discussions on avoided deforestation will strengthen the multilateral process of the UNFCCC and of the Kyoto Protocol.

- It is important to address avoided deforestation in developing countries within the policies already agreed by UNFCCC, on matters dealing with mitigation as well as adaptation. For this, the Central American countries proposed:

- (i) To incorporate avoided deforestation within the five-year working program<sup>7</sup> of the SBSTA on the impacts of climate change, vulnerability and adaptation. The issue should be addressed in the two thematic areas of the aforementioned program, namely: (a) Impacts and vulnerability; and (b) Planning, measures and activities related to adaptation.
- (ii) To foster the design and execution of projects to avoid deforestation within the Special Climate Change Fund (SCCF), taking advantage of already incorporated thematic sectors and areas such as: (a) forestry, (b) land planning and management, (c) fragile ecosystems, including mountainous systems, and (d) planning and integrated management of coastal areas.
- (iii) Capacity building issues, policy approaches and positive incentives should be addressed by SBI as soon as possible, to allow a prompt start of capacity building and implementation

**V. Information and exchange of experiences on matters of policies**

In Central America, a wealth of experience has been acquired from natural protected areas and is worth sharing with other signatory countries of UNFCCC. Table 1 presents a summary of the information on deforestation figures for 2005 together with an overview of effective conservation measures that have been adopted by different countries to reduce deforestation. Reference to the Mesoamerican Biological Corridor is abbreviated a CBM.

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<sup>7</sup> FCCC/CP/2005/L.3

**Table 1**

Relevant information/issues	Belize	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama	Regional Total
<b>Total area (km<sup>2</sup>)</b>	22,966	50,100	21,040	108,798	112,492	130,642	75,516	521,554
<b>Forest covered area 2005 (km<sup>2</sup>)</b> <b>% of national total</b>	17,210 69%	21,310 46%	20,20 9.6%	40,406 37.2%	54,000 48%	54,840 24%	33,640 45%	223,426 42.8%
<b>Current gross deforestation (h yr<sup>-1</sup>)</b> <b>% of national total</b>	36,000 1.5%	8000 0.16%	4000 0.19%	53,700 0.49%	90,000 0.80%	150,000 1.15%	47,158 0.62%	388,858
<b>% national territory under natural protected area systems</b>	47.2%	25.2%	0.33%	29.4%	19.7%	17.0%	26.0%	25%
<b>Modalities resulting in avoided deforestation</b>								
<b>Protected areas and nature reserves (public, private, indigenous peoples)</b>	Rio Bravo	Central Volcanic Mountain Range Conservation Area	40 natural areas under co-management regime	Cuchumatán Communal Forests	37 Cloud forests, legally protected	69 protected areas and 43 Private reserves	Darien National Park	
<b>Areas under forest management</b>	a) Columbia River b) Chiquibul	a) CODEFORSA b) FUNDECOR		Community forest awards				
<b>Payment for environmental services</b>		Voluntary agreements with private enterprises						
<b>Biosphere reserves</b>				a) Sierra las Minas b) Maya	Río Platano	Bosawas Reserva de la Biosfera del Sureste de Nicaragua	International Park La Amistad	
<b>Biological Corridors</b>		Talamanca-Caribbean	El Trifinio	El Trifinio	a) El Trifinio b) CBM	Corredor Biológico del Atlántico (Río San Juan)	Panamanian Atlantic Biological Corridor	

Source: Rodríguez, J.E., 2005. "Centroamérica en el Límite Forestal: Desafíos para la Implementación de Políticas Forestales en el Istmo" CCAD/EFCA/PROARCA/UICN

PAPER NO. 16: PERU ON BEHALF OF COLOMBIA, COSTA RICA, ECUADOR, MEXICO,  
NICARAGUA, PANAMA AND PERU

**Submission by Peru on behalf of Colombia, Costa Rica, Ecuador, México, Nicaragua and Panama,  
with the support of Bolivia.**

Lima, 30 March 2006

**Subject: Reducing emissions from deforestation in developing countries: approaches to  
stimulate action**

**Preamble**

The causes of deforestation are multiple and complex, and differ within and across countries and regions. Any action pursuing the control of greenhouse gas emissions from deforestation should take into account these national and regional specificities. Deforestation is mainly driven by socio-economic and/or cultural reasons and must therefore be addressed using appropriate policy and economic instruments as the complexity of the issue requires. Due to the above-mentioned reasons, the need to fulfill a broad range of socioeconomic priorities and despite many efforts that have been developed to address deforestation in developing countries, there are not enough successful experiences yet, and additional actions should be undertaken. Developing countries need new and supplementary financial resources as well as technical support to effectively address greenhouse gas emissions from deforestation.

Parties should address greenhouse gas emissions from deforestation by fully acknowledging the principles of Article 3 of the UNFCCC, in particular the need to undertake precautionary measures in a cost-effective manner, take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases, and comprise all economic sectors (Art. 3.3), while promoting sustainable development (Art. 3.4).

Parties should also fully acknowledge the commitments assumed under Article 4 of the UNFCCC, which states that ‘all Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall (*inter alia*): Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems’ (Art. 4.d).

In the context of this submission, deforestation should be understood as a process leading to emissions of greenhouse gases (GHG) due to human activities.

**Key Principles**

Several principles should guide further discussions of the issue.

**1. Real benefits for the climate**

Any future action to mitigate climate change should be adequate to pursue the ultimate objective of the UNFCCC as stated in its Article 2. Deforestation represents 20% to 25% of global anthropogenic greenhouse gas emissions and is yet an ungrasped opportunity to achieve cost-effective and substantial GHG emission reductions with positive collateral effects.

Any delay in addressing GHG emissions from deforestation is counterproductive for pursuing the ultimate objective of the UNFCCC and will increase the costs of climate change mitigation unnecessarily.

To achieve real and measurable benefits for the climate, policy approaches and positive incentives should be: (a) appropriate and sufficient to address GHG emissions from deforestation at an adequate scale, (b) implemented as soon as possible, and (c) prevent any delay in other emission reduction efforts.

## 2. Common but differentiated responsibilities

Recalling the principle of ‘common but differentiated responsibilities’ all Parties have the responsibility of collaborating to reduce GHG emissions and combat their adverse effects on climate. Historical differences in the contribution of developed and developing countries to current GHG concentrations in the atmosphere should be acknowledged, as well as differences in the Parties’ respective economic and technical capabilities to tackle environmental problems.

Reducing GHG emissions from deforestation offers a unique opportunity to enhance the participation of developing countries in the climate regime, on a voluntary basis, and also for industrialized countries to financially participate in assuming their historical emission reduction responsibilities.

## 3. Sustainable development

Countries have the responsibility to meet their present needs without limiting the options of future generations and the right to pursue sustainable development. Activities to be undertaken in achieving the objective of reducing GHG emissions from deforestation should be coordinated with social and economic development in an integrated manner: (a) bearing in mind that the burden of reducing deforestation falls on stakeholders such as peasants, indigenous and local population, small and medium size farmers and ranchers; and (b) taking into full account the legitimate needs of developing countries to achieve sustained economic growth and eradicate poverty as stated at the September 2005 UN Summit.

## 4. State sovereignty

Parties have the sovereign right to define sustainable development concept and strategies, and use their own resources pursuant to their own national priorities. Therefore, not only should the Parties’ participation in the efforts to reduce GHG emissions from deforestation be voluntary, they also should decide how to implement measures to that end without any external interference.

## 5. Fairness / equity

Any effort to reduce GHG emissions from deforestation should ensure a fair distribution of the responsibilities and possible benefits both between and within countries. For example, to ensure fairness at the international level, differences in the national extent of forest cover should be taken into account when developing policy approaches and methodologies. The possibility that large countries may benefit disproportionately from the mechanisms to be adopted or may impair their smooth operation should be of concern.

## 6. Cost effectiveness

Policy approaches and positive incentives should be designed and implemented to successfully increase the cost-effectiveness of climate change mitigation. Incentives should be sufficient to cover

implementation costs of the measures taken to reduce GHG emissions from deforestation, including opportunity costs of alternative land-uses, and should effectively help Parties assuming emission reduction targets, in order to achieve their commitments while pursuing the ultimate objective of the UNFCCC.

#### **7. Supplemental funding**

Supplemental financial assistance should be made available to developing countries to compensate for any expenses linked to implementing actions pursuing the reduction of GHG emissions from deforestation. Funding for financing actions undertaken to curb GHG emission from deforestation in developing countries should be supplemental to the current and already planned ODA commitments.

#### **8. Integrity of existing mechanisms**

Mechanisms for reducing GHG emissions from deforestation should not undermine GHG emission reduction efforts by Annex 1 countries, nor weaken the existing flexibility mechanisms under the Kyoto Protocol.

### **Policy approaches and positive incentives**

Policy approaches and positive incentives are required to:

- a) Create appropriate enabling conditions in developing countries, including technical, technological and institutional capacity building allowing them to engage in, and sustain, efficient action against deforestation.
- b) Provide economic incentives to (i) make adequate resources available up-front, (ii) compensate opportunity costs for land use, (iii) develop more efficient and intensive but sustainable land uses, as a measure to relieve the pressure on existing forests and prevent leakage.

*Policy approaches:*

Innovative approaches are required to address the diverse causes of GHG emissions from deforestation. These approaches should take into account specific national circumstances and enable a variety of measures while building on existing positive experiences, such as:

- The promotion of private sector as well as local and indigenous communities' participation in the sustainable management of forests.
- The design and implementation of positive incentives through economic and financial mechanisms and instruments.
- The enhancement of conservation activities inside and outside protected areas.
- The promotion of sustainable productive forest activities.
- The design and implementation of sustainable activities on non-forested land (agriculture, ranching, etc.) to reduce pressure on forests.

To strengthen actions to reduce GHG emissions from deforestation, national institutions will possibly need to engage, *inter alia*, in (a) ensuring the implementation of existing and new measures to control deforestation, (b) modifying existing legislation in order to remove institutional/legal perverse incentives that increase deforestation, and (c) investing in programs of payment for environmental services related to forest protection.

At the same time, international policies dealing with forestry and agricultural products and services should be assessed in order to enhance their consistency with efforts undertaken to reduce GHG emissions from deforestation.

*Positive incentives:*

Actions to reduce GHG emissions from deforestation need to be considered both at the national and the local level. Different types of incentives are necessary at both levels. At the national level, the countries will need financial support for, amongst other:

- Institutional capacity building to allow the implementation of GHG emission reduction policies in the land use sector and to strengthen agencies in charge of monitoring and controlling deforestation.
- Technical capacity building and technology development and transfer.
- Consolidation and enforcement of protected areas.

At the local level, financial incentives are necessary to compensate for the opportunity costs of land use, to engage in sustainable agricultural practices, and to cover transaction costs.

*Possible sources of financing:*

It is essential to recall the principle of supplemental financing as new initiatives on reducing GHG emissions from deforestation should not be done at the expense of other sectors. Actions taken to curb GHG emissions from deforestation will be more effective if there is a variety of ways in which they can be supported.

- To initiate any action, financial mechanisms making adequate resources available up-front are essential. Up-front financing could come from revolving funds, advanced payments, ODA and new donor programs, among others.
- To create capacities, ODA, bilateral and multilateral agreements, public-private partnerships or other mechanisms could be used. For prompt-starting experiences, market-based approaches are also a possibility.
- However, to reduce GHG emissions from deforestation at a scale that would be adequate for pursuing the ultimate objective of the UNFCCC, positive incentives should be based on market mechanisms or on other innovative financial approaches, such as fees on carbon intensive commodities and services in Annex 1 countries.

**Technical issues**

Actions to curb GHG emissions from deforestation should be implemented at the project level; a project may be implemented up to the regional or national scale.

Reference scenarios on GHG emissions from deforestation should take into account historical trends and other circumstances at the appropriate scale and should not leave countries that have taken early actions at a disadvantage.

Methodologies to address technical issues, such as those arising from the scale of implementation (e.g. leakage, monitoring, etc.), exist and can be adapted as necessary. Therefore, the discussion on technical issues should not prevent or delay the adoption of adequate and equitable policy approaches and positive incentives.

Modalities and procedures to address GHG emissions from deforestation should be discussed once policy approaches and positive incentives are defined; these issues depend on what policy measures and positive incentives are adopted.

Definitions should allow the participation of all Parties and the use of different types of activities for reducing GHG emissions from deforestation.

### **Recommendations for possible future processes**

The discussions regarding GHG emissions from deforestation should continue under UNFCCC. However, the option of eventually addressing GHG emission from deforestation in the second commitment period of the Kyoto Protocol should not be excluded.

Capacity building issues, policy approaches and positive incentives should be addressed by SBI as soon as possible, to allow a prompt start of capacity building and implementation.

PAPER NO. 17: REPUBLIC OF KOREA

Views of KFS on the Issues regarding  
Reducing emissions from deforestation in developing countries

By Korea Forest Service

1. The Republic of Korea has acknowledged the seriousness of deforestation happened worldwide and been participating actively in the international efforts to reduce deforestation at international level.

We became aware of increasing deforestation areas and are developing environmentally sound criteria and indicators for development in order not to do reckless exploitation. We would like to introduce our key regulations regarding this issue.

First, Act on assessment of environmental impacts caused by land use change in over certain hectares of forest was legislated that mandates pre-examination for environmental impacts on forests that worth for protection ecologically since 1993.

Second, Act on protection of the BaekDu Mountain System(BDMS, the longest series of mountain ranges in Korean Peninsula) was established to expand designation of protected areas. And the objective and reasonable criteria were set to prevent forests from unreasonable deforestation under this Act.

Also, to prevent occurring careless land exploitation, Forest Land Management Act aims to impose penalty to those who want to utilize forests for other purpose and these funds shall be used for forest projects such as afforestation and forest tending

2. We hope that the following methodological and technical issues will be addressed in advance in order to effectively deal with the issue of deforestation in developing countries.

- Detection, monitoring and mapping of deforestation and associated emissions related to accounting of reduced emissions from deforestation.
- Possible scale of supply of greenhouse gas from avoided deforestation that affects carbon prices and costs

We would believe that we have to discuss future policy pathways regarding how deforestation issue can be dealt within the current UNFCCC or Kyoto Protocol system along with the discussion of technical and methodological issues.

However, we would like to refrain from expressing specific opinions on these issues mentioned above regarding the methodological and technical issues and future policy pathway.

PAPER NO. 18: UNITED STATES OF AMERICA

**Submission of the United States  
FCCC/CP/2005/5**  
**Views on reducing emissions from deforestation in developing countries:  
Approaches to stimulate action**  
**April 5, 2006**

The United States appreciates the invitation to submit views on scientific, technical, and methodological issues relevant to reducing emissions from deforestation in developing countries, as well as on exchanges of relevant information and the sharing of national experiences. We recognize the importance of these forests in the global carbon cycle, the clearing of forests as an important global source of CO<sub>2</sub> emissions, the range of benefits their regeneration from degradation provides, and the critical economic and environmental linkages between these forests and local communities. The United States is active in implementing policies and actions to conserve and protect forest resources in developing countries, encouraging the sustainable management of these resources, and helping developing countries address problems associated with illegal logging. We welcome the opportunity to engage in discussions on how the issues, information, and experiences might be considered further.

In considering the goals of a dialogue on avoiding deforestation in developing countries – with particular attention to avoiding deforestation in tropical countries – the United States notes the submission by Papua New Guinea and Costa Rica at the 11<sup>th</sup> Conference of Parties in Montreal (FCCC/CP/2005/MISC.1) and the desire of some Parties to move toward negotiations on a future commitment, amendment, or protocol. The United States reiterates its view that to the extent that such discussions involve crediting mechanisms they should occur under the auspices of the Kyoto Protocol.

**Background**

The view of the United States is that the best way to track the effectiveness of climate change response strategies is through comprehensive accounting of all greenhouse gas (GHG) sources and sinks. Studies have established that tropical forests are among the world's largest terrestrial carbon reservoirs. According to the 2000 IPCC report, *Land Use, Land-use Change, and Forestry*, tropical forests account globally for 11.6 percent of the world's land area, 45.5 percent of the carbon stored in vegetation, and 11.7 percent of the carbon stored in soils. Studies have also established that the clearing of tropical forests is a major source of global GHG emissions – accounting for at least 20 percent of all anthropogenic CO<sub>2</sub> emissions (or 5.9 Gt of CO<sub>2</sub> per year). Given the state of knowledge, addressing greenhouse gas emissions from deforestation should be a priority response option.

In addition to the potential GHG benefits, reducing deforestation provides a variety of other important environmental, economic and social benefits. Globally, forests provide tens of millions of people in developing countries with food, fuel, shelter, clean water, stable soils, medicines, livelihood and employment. The world's tropical forests, provide habitat for an estimated 10-30 million plant and animal species – more than half the species known to exist - including endangered species, species essential to medical research and continued increases in agricultural productivity around the globe. The conservation and sustainable management of forests can help ensure the above benefits are available to future generations. Because of the diverse benefits forests provide, the United States has been a strong proponent for their protection and for better and more comprehensive forest monitoring, including forest carbon inventories. This is now institutionalized through numerous Criteria and Indicators processes for sustainable forest management. Accounting for the effects of forest loss and changes to the forest carbon cycle are internationally accepted as key aspects of the sustainable management of forest resources.

Reducing deforestation globally could help Parties achieve the UNFCCC objective of stabilizing atmospheric GHG concentrations at a level that prevents dangerous anthropogenic interference with the climate system. It is important to recognize that the economic, social, and political drivers of deforestation vary among countries and, in some cases, among different areas within a given country. These complex factors governing land use and land use change, as well as differences in national circumstances and policies affecting these factors, suggest the need for Parties to exchange views and experiences on a wide variety of technical and policy issues. This exchange of information and experiences should recognize that countries need to be able to approach avoided deforestation using technical, market, and policy tools that are appropriate and realistic for their national circumstances.

### **U.S. actions to slow deforestation in developing countries**

The United States has made a significant and sustained commitment to helping tropical countries conserve and protect their forest resources. U.S. approaches to addressing tropical deforestation target the root causes of deforestation unique to each locality. The economic, political, and social drivers of deforestation at a particular site must be analyzed in order to tailor responses according the threats faced in that particular environment.

Depending on the local context, action to reduce deforestation could include one or more of the following approaches: 1) Increased financing for sustainable forest management and protection (e.g. Tropical Forest Conservation Act, described below); 2) Harnessing of market forces to increase market opportunities for sustainably and legally-produced timber products; 3) Increasing the area under effective protected area management; 4) Strengthening forest institutions to implement and enforce forest management and protection policies and plans; 5) Transferring technologies, such as remote sensing, for improved forest cover assessment and monitoring; 6) Identifying and promoting alternative sustainable livelihoods near protected forests; 7) Strengthening civil society and increasing public awareness and participation; 8) Clarifying land use and property rights; and 9) Devolving authority in forest governance to the local level.

Below are some specific cases where one or more of these approaches has been successful in reducing rates of deforestation. Although this is not an exhaustive survey of the tropical forest conservation programs supported by the U.S., it is illustrative of the breadth and depth of U.S.-supported programs to address tropical deforestation:

#### *The Tropical Forest Conservation Act*

The Tropical Forest Conservation Act (TFCA) offers eligible developing countries options to relieve certain official debt owed the U.S. Government while at the same time generating funds in local currency to support tropical forest conservation activities. In addition to forest conservation and debt relief, TFCA is intended to strengthen civil society by creating local foundations to support small grants to NGOs and local communities. The program also offers a unique opportunity for public-private partnerships and many TFCA agreements to date have included funds raised by U.S.-based NGOs.

Recognizing the diverse set of environmental benefits provided by tropical forests, as well as critical social and economic dependencies of regional economies and local communities on these forests, TFCA provides for funding of a wide range of activities so that conservation efforts can be tailored to regional and local circumstances. These include:

- Establishment, restoration, protection and maintenance of parks, protected areas, and reserves.
- Development and implementation of scientifically sound systems of natural resource management, including land and ecosystem management practices.

- Training programs to increase the scientific, technical, and managerial capacities of individuals and organizations involved in conservation efforts.
- Restoration, protection, or sustainable use of diverse animal and plant species.
- Research and identification of medicinal uses of tropical forest plant life to treat human diseases, illnesses, and health related concerns.
- Development and support of the livelihoods of individuals living in or near a tropical forest in a manner consistent with protecting such tropical forest.

TFCA is implemented through bilateral agreements. Under the program, by the end of 2005, \$56 million of appropriated funds had been used for nine debt reduction/debt swap agreements with Bangladesh, Belize, El Salvador, Peru, the Philippines, Panama (2 agreements), Colombia and Jamaica. Through these agreements, over \$97.3 million in forest conservation funds will be generated in these countries over 10-26 years.

Bangladesh. Of Bangladesh's 14.76 million hectare land base, 2.2 million hectares remain in forest. Signed September 12, 2000, this agreement saves Bangladesh \$10 million in hard currency payments and will generate \$8.5 million in local currency payments for forest conservation. Under the agreement, the Arannayk Foundation uses these funds to achieve forest conservation through partnerships with local stakeholders aiming at capacity building and developing alternative income sources for people living in vicinity of the forests.

Belize. Concluded in August 2001, this agreement combines \$5.5 million in appropriated funds with \$1.3 million in private funds raised by The Nature Conservancy to reduce Belize's official debt to the U.S. by half. Under the agreement, the Government of Belize issued new obligations that will generate approximately \$9 million in local currency payments to help a consortium of four local non-governmental organizations administer conservation activities.

El Salvador. Signed in July 2001, this agreement reduced El Salvador's official debt to the U.S. by \$3 million. Over the life of the agreement, it will generate \$14.3 million in local currency payments for forest conservation activities. Initial conservation efforts will target reforestation of hillsides.

Peru. Signed in June 2002, this agreement combines \$5.5 million from the U.S. Government, and \$1.1 million from The Nature Conservancy, Conservation International and the World Wildlife Fund to cancel a portion of Peru's debt to the United States. Peru will issue local-currency obligations that will generate payments for conservation totaling \$10.6 million over the next 12 years. The payments will fund forest conservation activities through local NGOs. The agreement designates ten protected forested areas within Peru's National System of Protected Areas as priority conservation areas. Together these areas cover more than 27.5 million acres within the Peruvian Amazon.

Philippines. Concluded in September 2002, this debt reduction agreement will generate \$8 million for small grants for forest conservation activities over 14 years. While the funds may be used for a variety of protection and management purposes, the agreement identifies conservation of coastal forests, especially mangroves, as a priority.

Panama. Two debt-for-nature swaps have been concluded with Panama under the TFCA. An agreement signed in July 2003, combined \$5.6 million from the U.S. Government with \$1.2 million from The Nature Conservancy to generate \$10 million to improve management of the Upper Chagres River Basin in the Panama Canal Watershed. The watershed provides 50% of the water needed to operate the Panama Canal and 80% of the water needed for human consumption

in the region. The second agreement, concluded in August 2004, combined \$6.5 million from the U.S. Government with \$1.3 million from The Nature Conservancy to generate \$11 million over 12 years to help conserve 1.4 million acres (579,000 hectares) of the exceptionally rich forests of the Darien National Park bordering Colombia. The park forms a unique land bridge between North and South America and is home to such rare species as jaguar, harpy eagle, wild dog and tapir.

Colombia. Announced in April 2004, this debt-for-nature swap combines \$7 million from the U.S. Government with \$1.4 million from The Nature Conservancy, Conservation International and the World Wildlife Fund. The agreement is expected to generate \$10 million over 12 years for conservation activities throughout Columbia's system of protected tropical forests. Specific areas of focus include improving protection for areas that buffer protected forests, enhancing corridors between protected areas, and establishing an endowment to fund conservation activities in protected areas.

Jamaica. Concluded in September 2004, this debt-for-nature swap combines \$6.5 million from the U.S. Government and \$1.3 million from The Nature Conservancy to generate \$16 million over 20 years for tropical forest conservation. There are seven priority sites for the funds including the Blue and John Crow mountains National Park in the East and the Negril Protected Area in the West.

#### *President's Initiative Against Illegal Logging*

Launched in July 2003 and led by the Department of State, President Bush's Initiative Against Illegal Logging assists developing countries in their efforts to combat illegal logging, including the sale and export of illegally harvested timber, and in fighting corruption in the forest sector. The Initiative focuses on identifying and reducing threats to protected forest areas and other high value conservation forests from illegal logging through four key strategies:

- Good Governance - Building national capacities to establish and strengthen legal regimes and enforcement of laws affecting forest management, especially those aimed at illegal logging;
- Community-Based Actions - Enhancing community involvement in forest governance and related wildlife issues;
- Technology Transfer - Developing integrated monitoring systems and building in-country capacity to monitor forest activity and compliance with laws; and
- Harnessing Market Forces - Promoting good business practices, transparent markets and legal trade, including in-country capacity to implement obligations under CITES.

Viewed collectively, the actions being undertaken under the President's Initiative Against Illegal Logging represent the most comprehensive strategy being implemented by any nation to address this critical sustainable development challenge. In 2003, 2004 and 2005, U.S. Government funding for Initiative activities were, respectively, \$15 million, \$17 million, and \$15 million. Supported activities focused on three critical tropical forest regions: the Congo Basin, Amazon Basin and Central America, and South and Southeast Asia.

In the Congo Basin, Initiative activities include integrating remote sensing and ground-based monitoring of forests, enhancing training and capacity building for forest monitoring and law enforcement (including protection of wildlife), introducing reduced impact-logging techniques, and co-sponsoring an Africa-wide Forest Law and Governance Ministerial Conference.

In the Amazon Basin and Central America, Initiative activities include supporting compliance with the new CITES Appendix II listing of big-leaf mahogany, assessing and testing of forest

monitoring technologies, providing technical assistance and training, supporting sustainable forest management and market based incentives for trade in legal and sustainable forest products, strengthening protected area management, capacity building for legal logging operators, and promoting actions on forest law enforcement and governance.

In South and Southeast Asia, Initiative activities include promoting community-based forest management and protection, addressing illegal logging threatening orangutan habitat, and on follow-up actions related to the East Asia Ministerial Conference on Forest Law Enforcement and Governance held in Bali in 2001.

*U.S. Agency for International Development (USAID) Forest Protection Programs*

USAID programs help countries conserve and protect their forest resources and at the same time protect livelihoods of local communities and biodiversity conservation. These programs include The Global Conservation Program, the Sustainable Forest Products Global Alliance, Parks in Peril, and the Alternatives to Slash and Burn Program in Madagascar.

*The Global Conservation Program (GCP)* is a partnership with six U.S.-based conservation organizations: African Wildlife Foundation (AWF), Conservation International, Enterprise Works Worldwide, The Nature Conservancy, Wildlife Conservation Society, and World Wildlife Fund. The GCP has worked in over fifteen countries to help place more than 33 million hectares under improved management (1.8 million hectares since 2003). More than half of this area consists of tropical forests, roughly 40 percent grasslands and woodlands, and less than 10 percent coastal and marine areas.

*Parks in Peril (PiP)* has worked since 1990 to improve the protection of 45 critically threatened national parks and reserves in Latin America and the Caribbean. The Parks in Peril program strategy has been to strengthen partner organizations and build sustainable capacity to achieve enduring site conservation results. Protected areas were strengthened through USAID contributions to the Parks in Peril program in the Bolivia, Peru, Dominican Republic, Ecuador, Guatemala, Jamaica, Panama, and Peru.

*The Sustainable Forest Products Global Alliance (SFPGA)* is a public/private partnership that seeks to make markets work for forests and people by catalyzing businesses, public agencies, and non-governmental organizations to encourage the responsible management of forest resources, reduce illegal logging, and improve the well-being of communities. By promoting sustainable forest management, and reducing trade in illegally harvested or unsustainably managed forest products, opportunities for forest-dependent communities and low-income producers grow. By increasing the supply and demand of legally produced products from well-managed forests, this program promotes greater forest conservation, leading to increased carbon sequestration, due to reductions in forest conversion and unsustainable logging practices. In 2005, the Sustainable Forest Products Global Alliance grew to 373 trade participants (processors, manufacturers, traders, or end-users of wood or paper products) and 35 forest participants (forest owners or managers) that together sustainably manage 13.3 million hectares.

*Alternatives to Slash and Burn Agriculture in Madagascar:* A key element to reducing slash and burn agriculture is providing alternatives that transform rural natural resource use into diversified, sustainable, productive, and profitable agro-ecological farming systems. This has been accomplished by interventions at all levels – national, regional, and local – and at all stages

– production, marketing, transformation, export, and policymaking. As a result of this intervention, over 30,000 households are producing litchis for commercial export, and over 15,000 households have adopted new agricultural techniques within a farming systems approach, which has resulted in a 55% increase in income. In addition, 21,289 hectares of natural resources have been transferred to communities for local management, which has empowered local people to make decisions that directly impact the future use and conservation of the resources on which they depend. Twelve communes in priority zones for conservation earned a “green commune” designation by implementing activities to reduce slash and burn practices and promote sustainable management of natural resources.

#### **A UNFCCC process to consider tropical deforestation**

As with other GHG sources, sinks, and reservoirs, the view of the United States is that emissions related to deforestation and uptake from regeneration should be reported in Parties’ national inventories, using agreed Good Practice methods. Accurate, transparent national inventories based on agreed methods offer the best hope of assessing whether policies and actions taken to reduce deforestation at specific sites or within generally defined areas actually translate into reductions in national GHG emissions levels.

We anticipate that addressing the technical issues necessary to track and report emissions related to deforestation and forest change will be complex. National circumstances affect the processes of deforestation across countries. The ability of developing countries to implement and enforce conservation policies, as well as to measure and monitor the effects of those policies also varies.

A goal for the SBSTA would be to achieve a common recognition and understanding of the issues relevant to deforestation. Achieving this goal would allow the Parties to provide guidance to Parties on mechanisms to address and avoid deforestation.

#### **Goals of a dialogue on avoided deforestation in developing countries**

The United States supports a process under the UNFCCC for sharing views and exchanging information and experiences related to reducing deforestation in developing countries. Such a process offers an opportunity for the open examination and consideration of the key issues affecting deforestation as well as the most promising opportunities and approaches for reducing deforestation rates nationally and globally.

As the next step, the United States supports a request to the secretariat to convene a workshop before the twenty-fifth session of SBSTA through which the Parties could carry out a dialogue on the issues, opportunities, and approaches referred to above. Issues that could be addressed in the workshop include:

1. The role of tropical forests and tropical deforestation in the global carbon cycle.
2. Projected rates and drivers of deforestation and other land use change in developing and developed countries.
3. Calculating estimates and reporting emissions from deforestation and uptake from regeneration, in the context of national inventory reports.
4. Local, regional, national and international approaches to slow rates of deforestation and their results, effects, and efficiency.
5. Voluntary incentives to reduce rates of deforestation.
6. Accurate assessments of forest cover and tools to monitor land use change.

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