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

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

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

Submissions from Parties

Addendum

1. In addition to the 19 submissions contained in document FCCC/SBSTA/2007/MISC.2, three further submissions have been received.

2. 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.

[*] 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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PAPER NO. 1: INDONESIA

REDUCING EMISSIONS FROM DEFORESTATION IN DEVELOPING COUNTRIES (REDD)
Submitted by: Indonesia

A. INTRODUCTION

Forest resources in many developing countries play important roles in national economic development as well as source of income and other customary uses for local people. In the context of global climate change, **deforestation and forest degradation in developing countries** contributes significantly to global CO2 emission. Significant emission reduction could be made, however, if appropriate compensation mechanisms can be created.

Indonesia is a country with forest land about 60 % of the country area. Our forest is important not only for national economy development and livelihood of local people, but also for global environment. Indonesia is the home of mega diversity and one of the custodians of the world tropical peat land. Peatland alone, recorded as the highest carbon storage as well as source of emission, covers about 10 percent of the country area, and plays important role not only for environment, but also economic and social functions.

Indonesia put a high interest on the issue of REDD as we are currently facing the challenge of deforestation and forest degradation which could contribute to global CO2 emission. On the other side, effort on sustainable forest management, rehabilitation of degraded forest and non-forest land, and protected area management could contribute positively in reducing global emission and restoration of other global environmental function.

B. SCOPE OF SUBMISSION

Draft Conclusions proposed by Chair in the **Twenty-fifth session of Subsidiary Body For Scientific And Technological Advice in Nairobi, 6–14 November 2006 on Agenda item 5 Reducing emissions from deforestation in developing countries, contained in** FCCC/SBSTA/2006/L.25 13 November 200 stated that :

Paragraph 4. The SBSTA decided to continue discussing range of topics considered at the first workshop, including the submissions referred to in paragraph 5, and at the second workshop that will focus on: the discussions of ongoing and potential policy approaches and positive incentives, and technical and methodological requirements related to their implementation; assessment of results and their reliability; and improving the understanding of reducing emissions from deforestation in developing countries.

Paragraph 5. SBSTA invited Parties and accredited observers to submit to the secretariat, by 23 February 2007, their views on the topics referred to in paragraph 4 above. The SBSTA requested the secretariat to make available this information for discussion at the workshop and to compile this information for consideration by the SBSTA at its twenty sixth session.

Paragraph 6. The SBSTA invited Parties, in their submissions to consider relevant provisions of other conventions, including the Convention on Biological Diversity, the United Nations Convention to Combat Desertification, the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) and also the work of multilateral organizations, including the United Nations Forum on Forests, the International Tropical Timber Organization, and the World Trade Organization.

Paragraph 7. The SBSTA invited Parties not included in Annex I to submit to the secretariat, by 23 February 2007, any updated information and data additional to that provided in their latest national communications and synthesized in the background paper prepared for the first workshop, on emissions and trends in deforestation, data needs, and policies and programmes in place or being considered to address deforestation and its root causes. The SBSTA requested the secretariat to compile and make available the information at the second workshop, and to provide a short presentation at the workshop.

C. ISSUES AND INDONESIAN VIEWS

1. Ongoing and Potential Policy Approaches and Positive Incentives

a. Policy Approaches

Deforestation in developing countries especially in the tropics was recorded to contribute approximately 20 % of the global carbon emissions. The drivers are varies among countries but in most cases are economic background. The rationale behind deforestation is obvious i.e unique role of forest in climate stabilization and as live support system have not adequately been recognized neither under current climate related mechanism nor under existing market system for forest products and services.

Based on Stern Review, total CO_2 stored in earth vegetation and soils approximately 7500 Gton, larger than what is in oil stocks and more than twice amount accumulated in the atmosphere. The fact that forest resource plays important roles in national development of many developing countries and resource where many local people depend for their source of income, to reduce emissions from deforestation in developing countries need appropriate policy approaches that would not jeopardize their economic development and local people livelihood while maintaining the interest of global community as well as future generation.

Reducing emissions from deforestation in developing countries requires contribution from international communities, taking into account the following guiding principles : common but differentiated responsibilities, real benefits for the climate and integrity with other international regimes related to forestry, sovereign rights of the country where the forest located, and sustainable development objectives.

Policy approaches on reducing emission from deforestation in developing countries must be broad enough to ensure that the approaches could best fit different national circumstances. National circumstances of developing countries are diverse and policy/programmes/activities that contribute towards global efforts in reducing emission from LULUCF sector are also varies. In this basis, country may consider various initiatives and schemes for example : promotion of Payment for Environmental Services (PES), Sustainable Forest Management (SFM), Protected Area management, community based forest management, combating illegal logging, forest fire management, and rehabilitation of degraded lands, as part of the whole efforts that contribute to reducing emission from LULUCF sector.

b. Positive Incentives

International climate regimes available for forestry sector are limited to A/R CDM and non-market approaches such as through SCCF, adaptation fund, and ODA.

b.1. A/R CDM

CDM was believed as a win-win mechanism between Annex I and non-Annex I countries in the effort of stabilization of GHGs concentration in the atmosphere and supporting sustainable development in developing countries (non-Annex I). Unfortunately, the existing CDM projects concentrate only in few countries. Furthermore, despite the recognition that CDM in forestry bring a number of ancillary benefits, very few A/R CDM have been implemented. Indonesia, is one among countries with very few CDM projects, up to now there has not been forestry project implemented in Indonesia despite the readiness of the country in terms of institutional and regulatory as well as scientific, technical and methodological aspects. One major reason is difficulties in finding eligible land which meet the definitions of forest, afforestation, and reforestation used for CDM-forestry. Furthermore, the fact that CDM rules and procedures are not simple have reduced the interest of project proponents towards CDM-forestry and investing in other forestry projects/activities may be more profitable than in CDM projects. One of the advantages for non LULUCF CDM is preference of the buyers/potential investors towards energy sector compared to CDM forestry.

b.2. REDD mechanism

REDD mechanism is one that could complement A/R CDM. Based on Stern Review, emission from deforestation is expected to reach 40 Gt CO_2 between 2008-2012, increasing about 2ppm CO_2 at the atmospheric level if no prompt action is taken. However, cutting deforestation in developing countries may be done relatively rapidly without requiring development of new technology if challenges associated with it can be tackled especially drivers of deforestation. Deforestation drivers are dynamic and sensitive to global market development. For this reason, efforts by developing countries need to be backed by international communities, especially industrialized countries, where they have reached certain level of national economic development and receive benefits from voluntary actions by developing countries. Depending on the readiness of each country, the REDD mechanism should open for both market and non-market options.

b.3. Forest Climate Related Mechanism (FCRM)

This mechanism is to account for any other efforts that reduce emission from LULUCF or enhance carbon stocks from LULUCF that are not eligible for A/R CDM and REDD mechanisms. This mechanism is to refer to the principle that the new mechanism should best fit different national circumstances including the drivers of deforestation as well as policy/programmes/activities taken to tackle the problem of deforestation.

Some countries may not gain benefit from both A/R CDM and REDD mechanisms, on the other hand their efforts clearly contribute to reversing emissions from LULUCF sector, hence on the stabilization of GHGs in the atmosphere, for example, by creating new forests, enhancing soil capacity to store carbon, and other sustainable practices. The FCRM is proposed to accommodate activities recognized in forestry

terms such as SFM (both natural and man made forests), Environmental Services, and rehabilitation of degraded lands through (non-CDM) afforestation and reforestation.

2. Technical and methodological requirements related to their implementation, Assessment of results and their reliability

Despite some technical difficulties in measuring accurately the contribution of tropical deforestation to carbon-dioxide emission, and hence to global warming, estimates are readily available. Techniques and methods currently available may be used to measure reduction of GHGs emission from deforestation in developing countries with sufficient degree of accuracy. Existing tools on remote sensing and forest inventories may be used to estimate forest area changes, forest stratification, and allometry to estimate carbon stocks. The combination between the two will produce estimated emission from deforestation. National Communications, National Report for forest related international agreements or forum, IPCC Guidelines relevant to forests, assessment of emission reduction factors and review procedures provide a system for data quality assurance. The methodologies allow developing countries to voluntarily participate in this global effort according to their national circumstances.

Remotely sensed forest cover and its changes combined with robust verification and ground check of forest types and associated carbon stocks are the most feasible techniques to monitor emission from deforestation in Indonesia, since there are many variety of methods applicable, varying to many circumstances such as MODIS, which meet cost constraints and high accuracy for forests diversity and characteristics.

a. Baseline and Leakage

Estimates of deforestation rate in Indonesia vary considerably. Forestry Statistics of Indonesia published by the Ministry of Forestry, quotes a constant figure, which can be used to model historical and projection rate of deforestation in Indonesia for business as usual case. Concept of setting a cap can be done by estimating emission reduction target (Figure 1).. Change in forest area and the associated carbon stocks monitored with acceptable degree of accuracy will be compared with the target to calculate emissions reduction due to deforestation.

b. Monitoring and Verification

Wherever available, wall to wall mapping of forest cover change could be carried out using moderate low cost spatial resolution sensors. Ground check involving local community can be carried out at a regular basis.

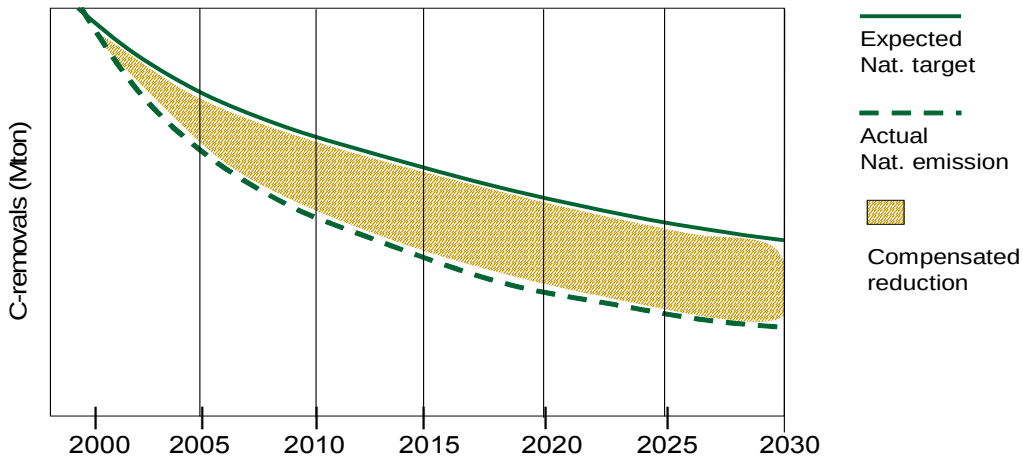

Figure 1. Hypothetical Indonesia's Potential of C-Removal from REDD

D. PROPOSED METHOD

Below is a proposal on a simple approach how developing nations can create a cash flow which allow them to protect their forest resources.

1. Definition of Deforestation

   Definition of deforestation varies from one country to other countries. Adoption of one definition for deforestation is essential to ensure the fairness of providing incentive for developing nations. In the context of Kyoto Protocol deforestation is defined as a direct human induced conversion of forested land to non-forested land. In many developing countries most of forests have been exposed to intensive logging and repeated fires, these forests may change into grassland or critical lands. Considering this condition, incentive mechanisms should also be provided to parties who can recover the carbon stock in degraded forests. In this regards, Government of Indonesia proposes an alternative definition for deforestation. The deforestation should refers to the loss of forest due to human activities which include conversion of forest to other uses that have lower carbon stocks, and loss of forest due to continuous degradation resulted from repeated fires, and illegal logging. As the consequence of adopting this definition, voluntary actions done by developing countries which include (i) enrichment planting in secondary forests, (ii) targeted emission reduction through avoid conversion of forest to other land uses that have lower carbon stock, (iii) targeted emission reduction through combating illegal logging and fires, and (iv) conserving carbon through forest conservation, should be eligible for the compensation.

2. Approach for Determining the Amount of Compensation/Incentive

   Referring to the above deforestation definition, the ultimate objective of any mechanism defined to avoid further deforestation is the protection and conservation of

carbon pools as well as improvement of carbon pools in degraded forests relative to the baseline condition. The amount of the compensation will be determined based on the ability of participating country in maintaining the forest area not less than reference case (RC) and ability in increasing carbon stock in the forest areas above the reference case (RC).

The reference case for the forest area should be developed on country basis considering the population density. Many studies indicate that population density is strongly correlated with deforestation rate, with the correlation increasing with the number of rural landless families (Ludeke et al. 1990; Reis and Margulis (op. cit.), 1991; Adger and Brown 1994; Harrington 1996; Sisk et al. 1994; Kaimowitz 1997; Ochoa-Gaona and Gonzales-Espinosa 2000). The relationship between population density and percentage of forest cover in tropical Asian countries has been established by Matsuoka *et al.* (1994) (see Figure 2). The relationship between forest fraction and population density for Indonesia has been updated by Murdiyarso *et al.* (2005; see Figure 3).

In this approach, a country interested in participating in the mechanism should define officially the forest fraction under the RC based on the population density along with information on percentage of disturbed (secondary forests) and undisturbed forest area (pristine forest) at national or sub-national level. Process and methodology for developing the relationship between population density and forest fraction should use a transparent, consistent and scientifically-based method. To claim the credit, the country should then define targeted forest areas to be included in the mechanism. Different carbon counting system will apply for disturbed and undisturbed forests. The following paragraphs discuss the claimant process under disturbed and undisturbed forests.

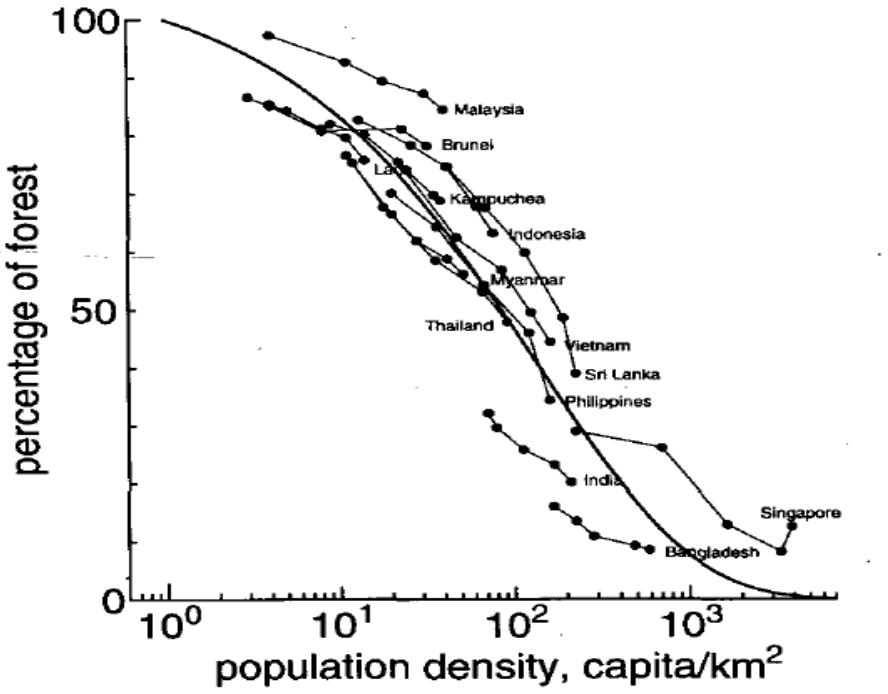

Figure 2. Relationship between percentage of forest area and population density in tropical Asian countries (Matsuoka et al., 1994)

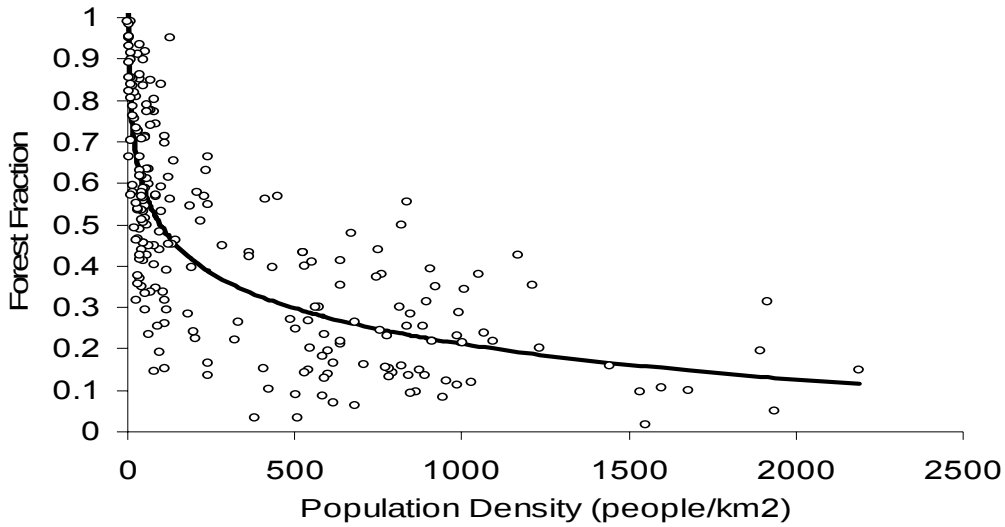

Figure 3. Relationship between Population Density and Paddy Rice Fraction/Forest Fraction in Indonesia (Murdiyarso *et al.*, 2005)

a. Undisturbed Forests (Pristine Forests where no significant carbon stock may occur)

The total credit that can be claimed by country who has defined the targeted areas for the mechanisms is total area of the targeted protected forests multiplied by the carbon stock per unit area. Suppose the total targeted areas are 1000000 ha located in 10 districts and average carbon stock is 600 ton CO_2e/ha, the total credit would be 600,000,000 ton CO_2e. If the agreed price of per ton CO_2 is 5 USD, then the country would be eligible to get total amount of compensation as much as 3 billion USD. The country could decide to sell the carbon credit on annual basis or for certain periodical basis. The country can get the full amount of compensation as long as the forest can be maintained (no deforestation occurs) and there are no decrease in forest fractions in the administrative areas where the targeted areas are located. With this approach the problem of leakage is addressed. The distribution of the compensation among districts can be decided internally by the country.

b. Disturbed Forest (Secondary Forest)

In this system, the total credit that can be claimed by country may change overtime as the carbon stock may increase as the forests growing. The minimum credit that can be claimed by the country would be the total area of the targeted forests multiplied by the carbon standing stock per unit area at the time of the project start. Additional compensation can be obtained if the carbon stock in the targeted forests increased from the level at the time of the project start.

In summary, the approach to determine compensation for avoiding deforestation will follow five steps:

Step 1: The eligible countries should define the forest fraction under RC based on population density

Step 2: Proportion between disturbed and undisturbed forests in each administrative area of the countries should be reported and documented using a transparent, consistent and scientifically-based method

Step 3: Delineation of forest areas under threat or at risk going to be targeted for the mechanism in each administrative area. Criteria of forests under threat or at risk should be defined bilaterally or between parties involved.

Step 4: Monitoring the change in area of the targeted forests and total forest fraction in participating districts and measuring the carbon stock

Step 5: Providing incentive to the country based on the achievement of maintaining the targeted forest areas and forest fraction in the administrative areas (country).

E. Improving the understanding of REDD :

Improving understanding on REDD should include understanding on the drivers of deforestation. Although drivers of deforestation vary among countries, also timing of occurrence, they share common drivers, mainly economic, in some cases social aspects.

In Brazil, for example, deforestation was driven by the increase demand of soybean and beef in international market during mad-cow disease in Europe. Deforestation in Indonesia was driven by high demand in timber and palm oil as well as rubber during Indonesian forestry sector had been the second back bone of national economic development between 1980s – 1990s. In terms of direct employment, the sector accounted in 1990 for about 1.35 % of labor force, and if indirect employment attributable to forestry were added, the percentage increased to 5.4 %. Forestry sector provided livelihood for some 4 million families. The recorded contribution of forest royalties to the national budget was US $ 65 million in 1997/1998, while the gross total royalties and other government revenues from forest operation exceeded US $ 1.1 billion per annum (FAO, 1998; Nasendi, 1997).

Other cause of deforestation was forest conversion for settlements to support transmigration programme during 1980s. Transmigration was one of national priority programmes intended to balance population and development between Java and outer islands as well as to improve well being of the migrated people. For these purposes and to anticipate the needs for land in the future, by law it was allocated 26.6 million ha of forest land which could be converted to other land uses.

Population increase has also contributed to deforestation because of the demand of land, forest products and servives. Indonesian population in early 1980s was about 147 million, deforestation rate accounted for 1 million ha/year, while in 2000 Indonesian population was 206 million, and deforestation rate data showed about 2 million ha/year. And so, deforestation, without any incentive intervention, will continue to occur as naturally needed along with the increase of world population and their needs for lands, forest products and services.

Illegal conversion such as encroachment by local people including shifting cultivation and other actors for commercial purposes was recorded as one of the drivers of deforestation. Shifting cultivation especially which applied cut and burn techniques was not a serious problem with small population, however, along with the increase of people practicing shifting cultivation, the problem then recognizable and will be a main cause of deforestation without appropriate positive incentives to tackle its root cause.

Forest fire both because of natural phenomenon and human induced fires has also been a predominant cause of deforestation in Indonesia. Forest fire occurred in 1997/1998 was a combined El-Nino effect and human induced fire, caused forest lost of about 10 million ha and increase 1 Gt C equivalent to 2 ppm CO_2. Forest fire on peat lands in 2005 contributes a significants amount of carbon emissions. Controlling forest fire in peat land is technically and economically challenging for Indonesia. Peatland alone, recorded as the highest carbon storage as well as source of emission, covers about 10 percent of the country area, and plays important role not only for environment, but also economic and social functions.

F. Relevant Provisions of Other Conventions, including CBD, CCD, RAMSAR Convention, UNFF, ITTO, WTO

At the international level, other than under UNFCCC, CBD, and CCD, forestry sector is also regulated under various conventions and international agreements or forum such as RAMSAR Convention, UNFF, ITTO, WTO/GATT and a number of other international and regional agreements or forum. While each convention and/or agreements or forum emphasize the importance of maintaining the sustainability of the resource in providing goods and services, non of these agreements provide adequate economic incentives that could encourage country which own the forest voluntarily doing so. For example, SFM which is dealt in ITTO, WTO, UNFF, does not receive market incentives, rather, the requirement to practice SFM is more as *non-tariff barriers* for many producer (mostly developing) countries.

PAPER NO. 2: PARAGUAY

Submisión del Gobierno de Paraguay
a la Convención Marco de las Naciones Unidas sobre Cambio Climático
Reducción de las emisiones a través de la deforestación evitada

Considerando la importancia del rol de los bosques en el complejo sistema climático la República del Paraguay considera necesario establecer un mecanismo que aborde la problemática de la deforestación.

La República del Paraguay esta convencido que la creación de incentivos financieros flexibles es uno de los componentes clave para la consolidación de una propuesta.

Nuestro país ha visto en los últimos años como nuestros recursos forestales se han agotado drásticamente, no obstante en los últimos 2 años el Gobierno a través de las gestiones de la Secretaria del Ambiente, ha puesto su esfuerzo en revertir esta tendencia a través de una estrategia que contempla un estricto control y monitoreo de las actividades de cambio de uso de la tierra, a través de la aplicación de la ley 2524 que prohíbe estas actividades en la región oriental de nuestro país, la mencionada legislación ha hecho que la tasa de deforestación en Paraguay para la mencionada se haya reducido en más del 50%.

Acciones como las emprendidas por el Gobierno de Paraguay en cumplimento a la Política Ambiental Nacional pueden tomarse como claros ejemplos de cómo una política de estado concreta puede contribuir a la disminución de las emisiones provenientes de la deforestación, apoyado en otros mecanismos establecidos bajo acuerdos bilaterales como el caso del canje de deuda por naturaleza, los cuales serán invertidos en proyectos de conservación y recuperación de bosques. Es por ello que debemos ser flexibles en cuanto a los posibles mecanismos que puedan proveer los incentivos positivos y establecer vínculos de cooperación entre gobiernos y organizaciones de la sociedad civil.

Mecanismos flexibles

Paraguay ha implementado acciones a fin de reducir la conversión de bosques a otros tipos de cambio de uso de la tierra, en el marco de la aplicación de la Ley N° 2524 que recientemente fue ampliada por dos años hasta diciembre del 2008, que este año será a vinculada a una Ley de Servicios Ambientales la cual representa un mecanismo innovador en el cual se otorgan incentivos financieros a aquellos propietarios que han optado por conservar su superficie boscosa en un porcentaje mayor a lo exigido por ley, permitiendo que estos puedan ofrecer en forma de certificados ambientales a aquellos que por el contrario no han cumplido con el 25 % exigido por ley y por tanto se encuentran obligados a comprar certificados de servicios ambientales por su pasivo ambiental.

Este mecanismo en el cual se concede un valor monetario a la superficie boscosa como servicio podría ser replicado a escala global, en el cual el país no incluido en el Anexo I de la convención presente un inventario de áreas boscosas y ofrezca el stock de carbono presente en esas áreas en forma de certificados de carbono a ofertarse como bonos de compensación por emisiones.

No obstante para lograr este objetivo se debe realizar acciones tendientes a:

- Implementar alianzas y fortalecer acuerdos ya existentes por ejemplo acuerdo de canje de deuda por naturaleza
- Mejorar el monitoreo de la deforestación con inventarios de campo
- Fortalecer un mecanismo institucional ya existente (Fondo Ambiental , o misma comisión que atiende canje de deuda por naturaleza)
- Definir Deforestación , degradación y bosques que sea mas amplio que MDL

- ❖ Incluir actividades de reforestación que no califican para MDL deben ser incluidas en este mecanismo
- ❖ Desarrollar un inventario a nivel nacional que valide los datos de densidad de carbono y desarrollar un banco de datos nacional del stock de carbono.
- ❖ Diseñar un mecanismo adaptado a las circunstancias nacionales
- ❖ Incluir red de áreas protegidas públicas y privadas

Creemos conveniente que en primer se debe establecer la arquitectura del mercado de incentivos para luego avanzar en cuestiones técnicas y metodológicas, a fin de avanzar de manera efectiva en función a los plazos establecidos por las negociaciones considerando que sólo se disponen de 9 meses para definir una estructura consistente que logre el consenso de las naciones.

Asunción, febrero de 2007

PAPER NO. 3: TUVALU

Submission by the Government of Tuvalu

Reducing Emissions from Deforestation in Developing Countries

At its twelfth 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 ongoing and potential policy approaches and positive incentives, and technical and methodological requirements related to their implementation; on assessment of results and their reliability; and on improving the understanding of reducing emissions from deforestation in developing countries taking into consideration, as appropriate, relevant provisions of other conventions and also the work of multilateral organizations (FCCC/SBSTA/2006/L.25, paragraphs 5 and 6). The Government of Tuvalu is pleased to provide its views on this matter.

In the consideration of potential policy approaches and positive incentives the Government of Tuvalu recalls the conclusions it made at the first workshop on Reducing Emissions from Deforestation (RED). In summary these conclusions stated:

- It is difficult to differentiate between deforestation and forest degradation;
- The underlying causes of deforestation and forest degradation are complex;
- If logging is a major cause of deforestation and forest degradation then leakage is going to be a major factor;
- If logging is a major cause of deforestation and forest degradation then carbon exchange projects (e.g. CDM or other similar trading activities) are unlikely to derive any atmospheric benefit;
- Setting aside reserves in exchange for carbon credits will not create atmospheric benefits unless the causes of deforestation are proximate
- Ensuring permanence for reducing emissions activities, even for proximate causes, is difficult and creates many challenges

The conclusions were based on matrix by presented by the Government of Tuvalu at the first UNFCCC Workshop on Reducing Emissions from Deforestation in Developing Countries, Rome, Italy, 30 August - 1 September 2006 (see Appendix A). The matrix was based on conclusions from the Oceania Regional Workshop on the Underlying Causes of Deforestation and Forest Degradation held in September 1998 in Nadi, Fiji.

The Government of Tuvalu considers that a new funding approach is needed to address the issue of reducing emissions from deforestation. In this context it proposes a Forest Retention Incentive Scheme. Details of this scheme are provided below:

The Forest Retention Incentive Scheme

The causes of deforestation[1] and forest degradation are complex. Finding the right incentive mechanisms to allow communities to protect their forests and reduce emissions needs economic measures that will guarantee that emissions from deforestation and forest degradation activities are reduced or eliminated

[1] While the term deforestation is well defined in the context of decisions under the Kyoto Protocol for the purposes of considering avoiding emissions from deforestation a broader scope should be considered. A significant percentage of emissions from forests in Developing Countries comes from the process of forest degradation. Forest degradation should be included within any arrangement or decision associated with this concept.

without creating "false" carbon credits.[2] For this reason it is considered that a carbon trading scheme (including the CDM or other Kyoto Mechanism) would not achieve the necessary guarantees for an effective and long lasting regime to avoid emissions from deforestation.

As a means of attempting to address some of the concerns identified in the discussion paper for the first workshop, a new arrangement, which Tuvalu calls the Forest Retention Incentive Scheme (FRIS), is proposed.

Forest Retention Incentive Scheme (FRIS)
The FRIS would be established by a decision under the Conference of Parties to the UN Framework Convention on Climate Change. The FRIS would be based on three key components:

1. Community Forest Retention Trust Accounts
2. Forest Retention Certificates
3. International Forest Retention Fund

Community Forest Retention Trust Accounts
Communities that wish to set aside forest areas or manage them on a sustainable basis and hence reduce emissions from deforestation or forest degradation activities would seek funding to establish a Community Forest Retention Trust Account (CFRT Account). Sources of funding for the CFRT Account could include:

- The International Forest Retention Fund (see later description)
- Bilateral ODA
- Corporate sponsorship
- NGO contributions
- Government contributions (including through debt for nature swaps and other similar measures)

The funds received for the forest retention project would be put into the CFRT Account and the community could draw on a prescribed percentage of this Account to establish measures to combat emissions from deforestation and forest degradation. The remaining amount would be set aside in the CFRT Account. A community could then draw upon the interest from the Account on an annual basis, based on the concept of being paid an annual "rent for environmental services".

Forest Retention Certificates
Once the CFRT Account was established communities could apply for Forest Retention Certificates. These Certificates would be based on an estimate of the amount of greenhouse gas emissions reduced by the project over a period of time. This estimate would be based on emission trends calculated at the commencement of the project compared with potential actions to reduce these emission trends.

At the end of a prescribed period, possibly 5 years, certificates equivalent to a determined amount of tonnes of CO_2 equivalent of reduced emissions would be issued. Certificates would be issued by national governments. The issuance of certificates by the national government would help reduce transaction costs currently experience in the Clean Development Mechanism. Governments issuing certificates would need to report annually to the COP. A committee established under the COP would be established to ensure that there was not an over-issuance of these certificates.

At the end of a prescribed period of time, possibly 10 years, the area of forest originally set aside or sustainably managed by a community would be assessed by an independent assessor. An independent auditor would also assess whether the CFRT Account was still in operation. If the project and the

[2] Tuvalu, being one of the countries most vulnerable to the impacts of climate change, is extremely sensitive to accounting schemes that do not create real climate change benefits.

account were endorsed by the assessor and auditor, communities could redeem a prescribed percentage of their Certificates. This process would be repeated every 10 years. The purpose of this certification scheme would be to guarantee an ongoing source of funding for communities, hence helping to maintain effort to reduce emissions from deforestation and forest degradation.

International Forest Retention Fund
Funding for the redemption of these Certificates would come from an International Forest Retention Fund established under the Convention. Source of funding for the International Forest Retention Fund could come from:

- The Special Climate Change Fund[3]
- Voluntary contributions from governments
- International financial institutions
- Corporate donations
- NGO contributions

The redemption of the Certificates would be granted *ex poste*. In other words, communities would need to show that they had retained the forest they had set aside and had maintained their CFRT Account, before they would be eligible for redemption of a percentage of their certificates. This would hopefully create a significant incentive to retain their forests. National Governments would apply for funds from the IFRF based on the number of certificates they had issued or were about to issue.

Communities could deposit the redeemed Certificates into their CFRT Account (hence allowing a higher annual rent for environmental services) or use the money as the community sees fit. Procedures for assessment and auditing would be kept as simple as possible to minimise transaction costs.

The Certificates can only be redeemed to the International Forest Retention Fund. The fundamental component of this scheme is founded on the principle that the certificates could not be sold, transferred or traded.

Data needs and availability
In order to provide the necessary data to ensure that correct emissions rates are calculated at the commencement of the project and during ex poste assessments, communities may need to draw on technical expertise to assist them. Communities could draw from the Community Forest Retention Trust Accounts to employ appropriate technicians to assist in undertaking assessments.

Purpose of a New Funding Arrangement
The purpose of a new funding arrangement under the Convention is to provide the necessary financial incentives to allow communities in Developing Countries to set aside forests or sustainably manage their forests and avoid economic pressures to lose their forests or see them degraded. This is an alternative to carbon trading as there are inherent problems associated with carbon trading (including the CDM) in the context of avoiding emissions from deforestation or forest degradation.

There are both advantages and disadvantages to this proposal. These include:

Advantages of FRIS

- It would not devalue price of tradable carbon credits
- It would not divert financial resources from major sources of GHG emissions (energy and transport)

[3] Some governments have suggested that funding for RED could come from expanding the share of proceeds from the sale of CERs and other trading mechanisms under the Kyoto Protocol. The Government of Tuvalu believes that this would be inadvisable as funding from the share of proceeds is a Kyoto Protocol funding source and should be directed towards the Adaptation Fund.

- It provides resources directly to communities where deforestation and degradation is occurring
- The implications of leakage are less significant due to non-linkage to carbon markets
- The Trust funds and certificate redemption give an opportunity for long term funding and help address permanence issues
- It does not upset the Marrakech Accords, therefore the proposal would be eligible for early action
- It is less likely to infringe on the rights of Indigenous and local communities because the communities would be directly involved in the management of the activity
- As it is not linked to CDM, it reduces the pressure on Annex B countries to significantly increase their emission reduction targets in the second commitment period to offset against RED removals

Disadvantages of FRIS

- It may not address non-proximate (underlying) causes of deforestation and degradation
- It is limited to voluntary sources of funding
- It may not address leakage if leakage is due to non-proximate causes of deforestation and degradation

The Forest Retention Incentive Scheme is not fool proof and could be undermined by unscrupulous players. However, quarantining the Scheme from carbon trading may remove some of the incentives to fraud the system or to gain carbon credits where no real and long term climate benefits are achieved. Hopefully it will provide the necessary incentives to reduce emissions from deforestation and forest degradation.

Appendix A

Emissions Reduction Effectiveness Matrix:

The following matrix was presented by the Government of Tuvalu a the first UNFCCC Workshop on Reducing Emissions from Deforestation in Developing Countries, Rome, Italy, 30 August - 1 September 2006. The matrix was based on conclusions from the Oceania Regional Workshop on the Underlying Causes of Deforestation and Forest Degradation held in September 1998 in Nadi, Fiji.

The strategies to address the underlying causes of deforestation and forest degradation identified in the Oceania workshop have been matched against carbon accounting issues and emissions reduction effectiveness criteria to create the following matrix[4]:

	Carbon Accounting Issues and Emissions Reduction Effectiveness						
Strategies to Address Underlying Causes	**Feasibility**	**Emissions displacement (leakage)**	**Short and long term effectiveness (permanence)**	**Potential as a credit exchange project (e.g. CDM-like project)**	**Potential as funded activity other than through credit exchange**	**Environmental or social effects**	**Overall effectiveness with respect to CO2 changes in atmosphere**
Promote consumer education programmes in consumer countries	High demand countries unlikely to accept	Reduction in global demand will reduce leakage	Likely to last only as long as education programmes last	Difficult to link project to source of emissions	Worthy project to fund	May push market to other GHG intensive products e.g. steel	Potentially significant but requires considerable effort
Promote timber certification strategies (e.g. FSC criteria) in key timber products markets	Resistance by consumer countries. May have WTO complications	Leakage highly likely unless global coverage	Market demands may override consumer awareness	Difficult to define project and establish baseline	Possible but outcomes uncertain	Potential to have positive env. and social effects due to value added products	Limited effectiveness due to leakage
Encourage participation in, and community awareness of, the effect of globalization on the timber trade in the region.	Difficult to do, due to pressure from logging companies	Leakage highly likely unless global coverage	Economic pressures likely to override awareness	Difficult to define project and baseline	Potential ODA project	May have positive spin-offs that support local industries	Limited effectiveness due to leakage
Establish national parks and forestry reserves	Limited local support due to limited income opportunities	Leakage highly likely if deforestation due to timber trade	Generally long term benefits if effectively policed	Possible as credit exchange project but leakage would be major obstacle	Potential funding from NGOs	Both positive and negative effects depending on local involvement	Limited effectiveness due to leakage. If undertaken as carbon exchange project could result in increase in emissions
Develop eco-tourism enterprises and other economic alternatives to logging	Has potential but would face opposition from logging companies	Leakage highly likely if deforestation due to timber trade	Economic viability needs to be assured to have long term effectiveness	Difficult to define baseline	Potential ODA or NGO project	Likely to have positive environmental and social effects	Limited effectiveness due to leakage

[4] It should be noted that the activities relate only to the causes of deforestation and forest degradation in the Oceania region, though parallels may be found in other regions.

Strategies to Address Underlying Causes	**Feasibility**	**Emissions displacement (leakage)**	**Short and long term effectiveness (permanence)**	**Potential as a credit exchange project (e.g. CDM-like project)**	**Potential as funded activity other than through credit exchange**	**Environmental or social effects**	**Overall effectiveness with respect to CO_2 changes in atmosphere**
Legislate to enshrine Reduced Impact Logging and Sustainable Forest Management practices	Difficult to enforce, reluctance due to market pressures and governance issues	Leakage highly likely if deforestation due to timber trade	Enforceability biggest obstacle	Possible to establish as project but complex	Potential ODA project	Enforcement may infringe community rights but may have positive environmental effects	Limited effectiveness due to leakage
Strengthen investigative and prosecutorial capacities of law enforcement institutions to ensure good leadership and good governance	Difficult to do due to pressure from logging companies and sensitivities within government	Leakage highly likely if deforestation due to timber trade	Laws may change due to market demand changes	Difficult to identify as project with forestry outcomes	Potential ODA project	Potential positive environmental. and social effects	Worthy action but limited effectiveness due to leakage
Initiate dialogue with IMF and other IFIs to review structural adjustment policies that downsize public sector and promote fee payments for health and education in poor communities	Difficult to change IMF ideology	Only effective if undertaken in all timber exporting countries	Economic circumstances may change placing greater pressure on government expenditure	Difficult to define as a project	May be difficult to find a sponsor for this activity	Potential positive environmental and social effects	Worthy action but limited effectiveness due to leakage
Develop downstream processing of timber products	Difficult due to market pressures and influence of logging companies	Leakage highly likely if deforestation due to timber trade	Potential long term effectiveness if industry made viable	Possible project but may be difficult to define baseline. Unlikely due to leakage	Potential ODA project of foreign direct investment	Potential positive environmental and social effects if wastage can be controlled	Limited effectiveness due to leakage
Negotiate trade measures in regional and international trade regimes that support sustainable forest management practices (e.g. timber certification)	Highly unlikely due to WTO complications	Could potentially address leakage if global coverage	If applied may have long term benefits	Difficult to define as project	May be difficult to find a sponsor for this activity	Potential positive environmental and social effects	May have overall benefits if global coverage

Strategies to Address Underlying Causes	**Feasibility**	**Emissions displacement (leakage)**	**Short and long term effectiveness (permanence)**	**Potential as a credit exchange project (e.g. CDM-like project)**	**Potential as funded activity other than through credit exchange**	**Environmental or social effects**	**Overall effectiveness with respect to CO_2 changes in atmosphere**
Establish education programs on the connection between population increase, land use and resource issues	Possible to include in school curriculum	If overall reduction in population then local leakage may be addressed	Education priorities may change	Not feasible as project due to long term outcomes and indirect benefits	Potential ODA and NGO funded activity	Likely to have environmental benefits but may face cultural or religious resistance	Limited effectiveness
Expand family planning education programmes	Possible but may face resistance from certain cultural or religious groups	If overall reduction in population then local leakage may be addressed	Very long term benefit if effectively undertaken	Not feasible as project due to long term outcomes and indirect benefits	Potential ODA and NGO funded activity	Likely to have environmental benefits but may face cultural or religious resistance	Potential long term benefits
Develop and implements appropriate/acceptable farming systems, agroforestry	Possible but economic viability would need to be assured	Limited leakage unless people displaced	Potential short to medium term benefits if viability shown	Potential to develop as project though baseline may be difficult	Potential ODA and NGO funded activity	Potential positive environmental and social effects	Potential atmospheric benefits if long term viability assured
Undertake strategic valuation and assessment of forest values (timber, watershed, gene pool)	Complex process, would face resistance from logging companies	Leakage highly likely if deforestation due to timber trade	Economic circumstances may change	Not feasible as project due to uncertain outcomes	Potential ODA and NGO funded activity	Potential positive environmental and social effects	Limited effectiveness due to leakage
Incorporate forestry awareness programs at all levels of education	Possible but may be subverted by logging industry	Leakage highly likely if deforestation due to timber trade	Education priorities may change	Not feasible as project due to uncertain outcomes	Potential FAO, ODA and NGO funded activity	Potential positive environmental and social effects	Limited effectiveness due to leakage
Ensure all legal and contractual documents are translated and well understood by all parties.	May face resistance from logging companies	Leakage highly likely if deforestation due to timber trade	Enforceability biggest obstacle	Potential to develop as project though baseline may be difficult	Potential ODA and NGO funded activity	Potential positive environmental and social effects	Limited effectiveness due to leakage
Integrate the principles of the UN Draft Declaration on the Rights of Indigenous Peoples in programs on forestry, land use and economic development	Difficult to undertake and would face significant resistance from logging companies	Leakage highly likely if deforestation due to timber trade	Enforcement of rights may be difficult	Not feasible as project due to uncertain outcomes	May require ODA support to develop legislation	Potential positive environmental and social effects	Limited effectiveness due to leakage

Strategies to Address Underlying Causes	**Feasibility**	**Emissions displacement (leakage)**	**Short and long term effectiveness (permanence)**	**Potential as a credit exchange project (e.g. CDM-like project)**	**Potential as funded activity other than through credit exchange**	**Environmental or social effects**	**Overall effectiveness with respect to CO_2 changes in atmosphere**
Establish mechanisms and institutions to enable full and effective participation by Indigenous Peoples in decision making at local, national and regional levels	Difficult to undertake and would face significant resistance from logging companies	Leakage highly likely if deforestation due to timber trade	Enforcement of participatory rights may be difficult	Not feasible as project due to uncertain outcomes	May require ODA support to develop legislation	Potential positive environmental and social effects	Limited effectiveness due to leakage
Provide properly resourced ongoing stakeholder participation to facilitate full and inclusive involvement in natural resource management and policy	Difficult to undertake and would face significant resistance from logging companies	Leakage highly likely if deforestation due to timber trade	Ensuring on going participation may be difficult	Not feasible as project due to uncertain outcomes	Potential ODA and NGO funded activity	Potential positive environmental and social effects	Limited effectiveness due to leakage
Improve access to information sharing by providing extension services through the Forestry Department and Environment Department	Possible, but would need commitment from government to support	Leakage highly likely if deforestation due to timber trade	Only effective will programme continues	Not feasible as project due to uncertain outcomes	Potential ODA	Potential positive environmental and social effects	Limited effectiveness due to leakage
Improve community involvement in development, planning and implementation of foreign assistance programmes	Difficult to undertake due to foreign policy agendas	Leakage minimized if dealing with local deforestation activities	Would have limited longevity unless enshrined in legislation	Not feasible as project due to uncertain outcomes	May be difficult to find sponsor because of foreign policy agendas	Potential positive environmental and social effects	May have some benefits but linkage distant
Create development funds for poverty alleviation programs through non-government and community-based organisations	Feasible but coverage may be limited due to different development priorities	Leakage could be minimized due to addressing local deforestation activities	No guarantee of permanence due to change in funding or government priorities	Certain types of projects may be possible	Potential ODA and NGO funded activity	Potential positive environmental and social effects	May have overall benefits if directed against local deforestation causes

Strategies to Address Underlying Causes	**Feasibility**	**Emissions displacement (leakage)**	**Short and long term effectiveness (permanence)**	**Potential as a credit exchange project (e.g. CDM-like project)**	**Potential as funded activity other than through credit exchange**	**Environmental or social effects**	**Overall effectiveness with respect to CO_2 changes in atmosphere**
Identify and implement positive economic incentives to encourage and facilitate appropriate regimes of forest and remnant vegetation management (eg. through taxes, local rates, stewardship payments)	Possible but may face resistance from logging companies	Depending on what type of deforestation being addressed (e.g. local or international) leakage could be minimized	No guarantee of permanence due to change in funding or government priorities	May be difficult to identify baseline for a project	Potential ODA and NGO funded activity	Potential positive environmental and social effects	May have overall benefits if directed against local deforestation causes
Develop and implement national, provincial and local government sustainable development plans.	Possible, but would need commitment from government to support	Depending on what type of deforestation being addressed (e.g. local or international) leakage could be minimized	No guarantee of permanence due to change in funding or government priorities	May be difficult to identify baseline for a project	Potential ODA and NGO funded activity	Potential positive environmental and social effects	May have overall benefits if directed against local deforestation causes
Review infrastructure development strategies to avoid problems of deforestation.	Possible, but would need commitment from government to support	Leakage may be minimized by addressing local deforestation	No guarantee of permanence due to change in funding or government priorities	May be difficult to identify baseline for a project	Potential ODA and NGO funded activity	Potential positive environmental and social effects	May have overall benefits

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