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COMPILATION OF VIEWS, EXPERIENCES, AND OPTIONS IN THE IMPLEMENTATION OF THE PROGRAMME OF WORK ON INCENTIVE MEASURES

Note by the Executive Secretary

I. INTRODUCTION

1. In paragraph 1 of decision VIII/26, the Conference of the Parties decided to "initiate a structured, transparent and inclusive preparatory process for the in-depth review of work on incentive measures with a view to identify, for consideration by the Conference of the Parties at its ninth meeting, the further outcomes that would be required from a revised programme of work on incentive mechanisms to meet obligations under the Convention and the requirements of Parties, and possible options for a future programme of work."

2. In paragraph 3 of the same decision, the Conference of the Parties invited Parties, other Governments, international organizations and stakeholders to communicate to the Executive Secretary their experiences in the implementation of the programme of work on incentive measures contained in decisions V/15, VI/15 and VII/18 and provide views on elements such as:

(a) Lessons learned and key challenges in implementing the existing programme of work, based on practical examples and case-studies from national implementation, where available, including whether the measures initiated or adopted by Parties have maintained or improved the conservation and sustainable use of components of biodiversity;

(b) Options to address the challenges identified;

(c) Priorities for a future programme of work including requirements for effective national implementation, including financial and institutional support and capacity-building;

* UNEP/CBD/COP/9/1.

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(d) Key gaps in the work to date, and gaps and obstacles in the existing programme of work that are impeding its implementation at the national level;

(e) Interface with other international initiatives and instruments in this area;

(f) Linkages to other programmes of work under the Convention.

3. An invitation for submissions thereon was transmitted to Parties, other Governments, relevant international organizations and stakeholders by notifications 2007-032 and 2007-33 on 13 March 2007, with reminders being sent on 9 November 2007 (notifications 2007-139 and 2997-140). The Executive Secretary subsequently received submissions from the following Parties: Argentina, the European Community (including also pertinent information from the Czech Republic, Finland, Slovenia, and Sweden), India, and Oman. Submissions were also received from the following organizations and stakeholders: the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the DIVERSITAS EcoSERVICES Core Project, the Food and Agriculture Organization of the United Nations (FAO), the Organization for Economic Cooperation and Development (OECD), the Global Forest Coalition, and the United Nations Environment Programme (UNEP).

4. In paragraph 4 of the decision, the Conference of the Parties requested the Executive Secretary to, *inter alia*, compile and provide a summary of the above-mentioned views and experiences, including a summary of the options provided by Parties, and to make them available for consideration by the Conference of the Parties at its ninth meeting. The present document provides the compilation of views and experiences received by the Executive Secretary pursuant to this invitation and are circulated in the form and language in which they were received by the Secretariat. Where a submission is provided in a language other than English, it is followed by an unofficial translation into English.

II. COMPILATION OF VIEWS, EXPERIENCES, AND OPTIONS PROVIDED BY PARTIES

1. Argentina

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Aporte de la Argentina a la discusión sobre Incentivos en el marco de la CDB

Consideramos que la cuestión de los incentivos relacionados con la diversidad biológica debe plantearse sobre nuevas bases, a partir de parámetros claros y ampliamente aceptados por las Partes. En este sentido, la falta de avances en el tratamiento de esta cuestión se debió a que las propuestas puestas a consideración carecían de una base aceptable.

Entendemos que todavía resta un debate profundo y multilateral sobre los criterios necesarios para determinar cómo afectan los incentivos a la diversidad biológica. La ausencia de mecanismos de consenso y vigilancia en cuanto a incentivos conlleva el peligro de que se implementen medidas con objetivos distintos, y a veces opuestos, a los de la conservación de la biodiversidad.

Por otra parte, hay que considerar la importancia de los temas que se están negociando en el Comité de Comercio y Medio Ambiente de la OMC[1]. En este sentido, debemos resaltar la relevancia del párrafo 31 de la Declaración Ministerial de Doha, en particular el inciso i) en cuanto a la aplicabilidad de las normas de la OMC entre las partes en los AMUMA.

En el párrafo 32 de la Declaración se resaltan tres cuestiones a las que el mencionado Comité debe prestarle mayor atención: 1) el efecto de las medidas medioambientales en el acceso a los mercados y aquellas situaciones en que la eliminación o reducción de las restricciones y distorsiones del comercio pueda beneficiar al comercio, al medio ambiente y al desarrollo; 2) las disposiciones pertinentes del Acuerdo sobre los Aspectos de los Derechos de Propiedad Intelectual relacionados con el Comercio; y 3) las prescripciones relativas al etiquetado con fines medioambientales. En particular, el punto 1) del párrafo 32 resulta relevante en el debate actual que se está llevando a cabo en la CDB.

Como consecuencia de lo apuntado anteriormente es imperioso que las medidas de este tipo que se tomen en los AMUMA no actúen como subsidios que perjudiquen el desarrollo de terceros países ni como barreras encubiertas al comercio y al desarrollo. Para los países en desarrollo es primordial que las medidas medioambientales que se articulen, no actúen como una barrera al acceso a los mercados de los países desarrollados.

En el marco de la CDB el acceso a los mercados no ha sido ampliamente debatido como uno de los incentivos positivos más importantes para la protección de la biodiversidad. No debe dejar de destacarse que el compromiso de perseguir objetivos ambientales y de abordar al mismo tiempo las preocupaciones relacionadas con el desarrollo, implica necesariamente abordar cuestiones de acceso y liberalización del comercio. La CDB no debe ser ajena a ello. Una cuestión fundamental para la protección de la biodiversidad en los países en desarrollo es la liberalización

[1] Declaración Ministerial de Doha. Párrafo 31. Con miras a potenciar el apoyo mutuo del comercio y el medio ambiente, convenimos en celebrar negociaciones, sin prejuzgar su resultado, sobre:

i) la relación entre las normas vigentes de la OMC y las obligaciones comerciales específicas establecidas en los acuerdos multilaterales sobre el medio ambiente (AMUMA). El ámbito de las negociaciones se limitará a la aplicabilidad de esas normas vigentes de la OMC entre las partes en el AMUMA de que se trate. Las negociaciones se harán sin perjuicio de los derechos que corresponden en el marco de la OMC a todo Miembro que no sea parte en ese AMUMA;

ii) procedimientos para el intercambio regular de información entre las secretarías de los AMUMA y los Comités pertinentes de la OMC, y los criterios para conceder la condición de observador;

iii) la reducción o, según proceda, la eliminación de los obstáculos arancelarios y no arancelarios a los bienes y servicios ecológicos.

del mercado agroalimentario y el establecimiento en los países desarrollados de ramas de producción que no reproduzcan las pautas de consumo de energía y agotamiento de la diversidad biológica. Ello sólo será posible si se permite a los países mejorar su capacidad comercial en aquellos sectores en los cuales tienen ventajas comparativas derivadas de sus condiciones naturales.

Este punto reviste particular importancia, ya que las políticas de subsidios a la producción agrícola en los países centrales y los altísimos aranceles para el acceso a determinados productos provoca en definitiva daños a la biodiversidad en países en desarrollo, los cuales se ven obligados a concentrarse en aquellos escasos productos que pueden ingresar en los países desarrollados. En este sentido, las directrices emanadas en el marco de la CDB deberían alentar a que, en los foros correspondientes, se corrijan las actuales asimetrías de los mercados agrícolas que tienen impactos negativos en la diversidad biológica. Al respecto, deberá analizarse de qué forma la facilitación del comercio mediante la reducción y/o eliminación de los aranceles y la eliminación de las barreras para-arancelarias pueda actuar como incentivo positivo para la biodiversidad.

Incentivos perversos

La Argentina considera que hasta el momento tampoco se ha puesto suficiente énfasis en la cuestión de los incentivos perversos para la conservación de la biodiversidad. En este sentido, el trabajo futuro en materia de incentivos debe comenzar por la elaboración de directrices que insten a los miembros a eliminar los incentivos perversos que degradan la biodiversidad, evitando aspectos controvertidos tratados en el pasado.

Los incentivos perversos en la agricultura, la pesca y la actividad forestal brindan sustento a prácticas de explotación intensiva de los recursos naturales y son una causa principal en la destrucción de la biodiversidad[2]. Consecuentemente, no puede considerarse seriamente la implementación de incentivos sin que antes se avance en la supresión de los efectos de los incentivos que alientan la degradación de la biodiversidad.

Los incentivos perversos requieren particular atención, dado que provocan daños a la biodiversidad ante los cuales toda medida de incentivo positivo puede resultar insuficiente. Por ejemplo, actúan como incentivos perversos aquellos subsidios que prevén una mayor producción agrícola o que establecen un sistema de garantía de precios, como así también los subsidios a la exportación, provocan mayor producción de determinados productos por sobre otros.

[2] Sobre los efectos sobre la diversidad biológica de medidas de subsidios a la agricultura, ver el documento: "A vision For the Common Agricultural Policy 2005, HM Treasury / Department For Evironment, Food and Rural Affairs of the United Kingdom:

2.34 However, much of the Common Agricultural Policy, and in particular high levels of market price support, has encouraged farmers to intensify agricultural production. This has exacerbated both agriculture's contribution to diffuse water pollution, and the negative impact of modern agriculture on bio-diversity and wildlife.

2.38 Intensification has also had a negative impact on habitats and bio-diversity, both through the use of herbicides, pesticides and inorganic fertiliser, and because of the moves away from mixed farming. Farmland birds are regarded as a good indicator of the general state of biodiversity in the farmed environment because they are high in the ecological food chain. Numbers have been in steep decline in the EU and on a Pan- Europe level. For instance the UK's farmland bird population declined by almost 50 per cent between 1977 and 2003. Only now, are we beginning to see early signs in the UK that agri-environment schemes are having an effect in halting that decline.

Incentivos positivos

La Argentina oportunamente planteó la necesidad de que las propuestas sobre incentivos positivos tuvieran en cuenta las obligaciones derivadas de otros acuerdos internacionales. En ese contexto, se señaló que algunas de las medidas de incentivos consideradas constituyen subsidios regulados por los Acuerdos de Agricultura y de Subvenciones y Medidas Compensatorias de la Organización Mundial del Comercio.

Señalar la relación entre incentivos positivos y las disciplinas sobre subsidios en el marco de la OMC no significa negar que aquellos puedan otorgarse. Por el contrario, aquellos incentivos positivos que constituyan subsidios pueden ser otorgados, puesto que el Anexo II del Acuerdo sobre la Agricultura de la OMC, admite este tipo de medidas cuando se efectúan en el marco de programas ambientales y cumplen el requisito de que no tengan "efectos de distorsión en el comercio ni en la producción o, a lo sumo, lo tengan en grado mínimo".

Creemos que este principio debería también ser incorporado a los criterios de los incentivos positivos. De otra manera, la utilización de incentivos que distorsionan al mercado estaría alentando la sobreproducción, lo cual está fuera tanto de los objetivos de la OMC como de los de la CDB.

En este contexto, no puede comprenderse la reticencia de algunas delegaciones a incorporar referencias a las obligaciones internacionales aplicables, incluyendo las derivadas de la OMC. Tales referencias, lejos de constituir un debilitamiento de los objetivos de conservación, brindan la seguridad de que esos incentivos tendrán efectos positivos y no estarán influidos por la necesidad de mantener subsidios que de otra manera deberían desmantelarse.

En virtud de lo expuesto y teniendo en cuenta el principio jurídico básico del derecho internacional según el cual las disposiciones de un acuerdo no deben significar el incumplimiento de otras normas jurídicas por las cuales las Partes Contratantes están obligadas, se entiende indispensable que las propuestas sobre incentivos positivos refieran a otras obligaciones internacionales, incluyendo una mención explícita a aquellas derivadas de la OMC.

Sugerencias para el trabajo futuro sobre incentivos

Consideramos que sólo partiendo de un abordaje integral y equilibrado es posible realizar un aporte efectivo a la conservación y el uso sostenible de la biodiversidad. Para ello deberían elaborarse disposiciones claras y de aplicación voluntaria, relativas a la aplicación de incentivos, que sean compatibles con las normas de derecho internacional y, en especial, directrices que alienten la eliminación de los efectos nocivos para la biodiversidad provocados por incentivos perversos y las restricciones al acceso a los mercados.

En este sentido, el trabajo futuro debería estructurarse teniendo en cuenta los siguientes criterios:

1. Podrían establecerse estudios y análisis anuales sobre el impacto de la política de incentivos positivos y perversos y procurar la eliminación de los últimos y que los positivos no tengan efectos distorsivos en el mercado ni en la biodiversidad.

2. Las propuestas deben ser realistas, claramente delimitadas y de aplicación voluntaria.

3. Las distintas propuestas deben referir adecuadamente a las obligaciones de las Partes Contratantes en otros acuerdos internacionales, en particular, los acuerdos comerciales.

4. A fin de dotar a las propuestas de mayor coherencia y equilibrio, el documento que sirva de base a las discusiones debería incluir en el mismo texto las medidas/políticas sobre incentivos positivos y sobre incentivos perversos.

[Unofficial translation]

Argentina's contribution to the discussion on incentives under the CBD

We consider that the issue of incentives linked to biological diversity must be reformulated according to new premises, based on clear parameters that are widely accepted by the Parties. In this respect, the lack of progress in dealing with this issue is linked to the absence of an acceptable basis for the proposals made to date.

It is our understanding that an in-depth multilateral debate must take place on the necessary criteria to determine how incentives affect biological diversity. The absence of consensus and monitoring mechanisms for incentives creates the risk of implementing measures with objectives that are different from, if not counter to, the goal of biodiversity conservation.

It is also necessary to consider the significance of the issues being a negotiated by the WTO Committee on Trade and Environment.1 In this respect, we must highlight the relevance of paragraph 31 of the Doha Ministerial Declaration, in particularly subparagraph i) regarding the applicability of WTO rules among MEA Parties.

Paragraph 32 of the declaration raises three issues to which the above-mentioned committee should give particular attention: 1) the effect of environmental measures on market access, especially in relation to developing countries, in particular the least-developed among them, and those situations in which the elimination or reduction of trade restrictions and distortions would benefit trade, the environment and development; 2) the relevant provisions of the Agreement on Trade-Related Aspects of Intellectual Property Rights; and 3) labelling requirements for environmental purposes. Point 1 of paragraph 32 is particularly relevant to the current debate underway within the CBD.

It is therefore of the utmost importance for measures of this type taken by MEAs to serve neither as subsidies that hinder the development of third countries, nor as hidden barriers to trade and development. For developing countries, any environmental measures put forth must not hinder access to developed-country markets.

Within the context of the CBD, market access has not been widely debated as one of the most important positive incentives for the protection of biodiversity. We must not fail to highlight that the compromise of seeking environmental objectives while addressing development concerns necessarily entails the examination of issues linked to trade access and liberalization. The CBD must not remain on the margins. A fundamental issue for the protection of biodiversity in developing countries is precisely that of liberalizing of the agri-food market and establishing chains of production that do not perpetuate patterns of energy consumption and biological diversity depletion. This will only be possible if countries are allowed to improve their trade capacity in sectors where they have a comparative advantage linked to their natural conditions.

1/ Doha Ministerial Statement. Paragraph 31. With a view to enhancing the mutual supportiveness of trade and environment, we agree to negotiations, without prejudging their outcome, on:

(i) the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements (MEAs). The negotiations shall be limited in scope to the applicability of such existing WTO rules as among parties to the MEA in question. The negotiations shall not prejudice the WTO rights of any Member that is not a party to the MEA in question;

(ii) procedures for regular information exchange between MEA Secretariats and the relevant WTO committees, and the criteria for the granting of observer status;

(iii) the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services.

This takes on particular importance in the context of agricultural subsidies in central countries with very high tariffs for access to specific products. This effectively harms biodiversity in developing countries, seeing as they must concentrate on the few products that are able to make it onto developed countries' markets. In this respect, the guidelines issued within the framework of the CBD should encourage a correction, in the relevant fora, of the current lack of symmetry among agricultural markets, which is having a negative impact on biological diversity. There is a need to examine how facilitating trade through the reduction and/or elimination of tariffs and non-tariff barriers can act as a positive incentive for biodiversity.

Perverse Incentives

It is Argentina's view that, to date, insufficient emphasis has been placed on the issue of perverse incentives for the conservation of biodiversity. Future work on incentives must therefore start with the drafting of guidelines urging members to eliminate perverse incentives that erode biodiversity, avoiding controversial aspects dealt with in the past.

Perverse incentives in agriculture, fishery, and forestry activities support the intensification of natural-resource exploitation practices and are a main cause of biodiversity destruction.2/ Consequently, the implementation of incentives cannot be considered in a thoroughgoing manner without first moving toward the elimination of perverse incentives' biodiversity-eroding effects.

Special attention must be paid to perverse incentives, seeing as the damage they can cause to biodiversity may go beyond what can be sufficiently addressed by any positive incentive measure. For example, subsidies that provide for greater agricultural production or establish a price guarantee system act as perverse incentives, as do export subsidies, seeing as they lead to greater production of specific products in relation to others.

Positive incentives

Argentina stated, at the relevant time, that it was necessary for proposals on positive incentives to take into account obligations arising from other international agreements. In that context, it was pointed out that some of the incentive measures being considered were in fact subsidies regulated by the World Trade Organization's agreements on Agriculture and on Subsidies and Countervailing measures.

Pointing out the relationship between positive incentives and the rules regarding subsidies within the framework of the WTO does not amount to denying the possibility of granting positive incentives. To the contrary, positive incentives that constitute subsidies can be granted, seeing as Annex II of the Agreement on Agriculture of the WTO allows such measures when they are part of environmental programs and meet the requirement of having "no, or at most minimal, trade-distorting effects or effects on production".

2/ Regarding the impact of agricultural subsidies on biological diversity, see document: "A Vision for the Common Agricultural Policy 2005, HM Treasury/Department for Environment, Food and Rural Affairs of the United Kingdom:

2.34 However, much of the Common Agricultural Policy, and in particular high levels of market price support, has encouraged farmers to intensify agricultural production. This has exacerbated both agriculture's contribution to diffuse water pollution, and the negative impact of modern agriculture on biodiversity and wildlife.

2.38 Intensification has also had a negative impact on habitats and bio-diversity, both through the use of herbicides, pesticides and inorganic fertilizer, and because of the moves away from mixed farming. Farmland birds are regarded as a good indicator of the general state of biodiversity in the farmed environment because they are high in the ecological food chain. Numbers have been in steep decline in the EU and on the pan-Europe level. For instance, the UK's farmland bird population declined by almost 50% between in 1977 and 2003. Only now are we beginning to see early signs in the UK that agri-environment schemes are having an effect in halting that decline.

We believe that this principle should also be incorporated into the criteria for positive incentives. Otherwise, the use of trade-distorting incentives would encourage overproduction, and thus bypass the objectives of both the WTO and the CBD.

Given this context, the reticence on the part of some delegations to incorporate references to applicable international obligations, including those arising from the WTO, is incomprehensible. Such references, far from weakening the objective of conservation, would ensure that those incentives will have a positive effect, and not be influenced by the need to maintain subsidies that should otherwise be dismantled.

In light of the above, and taking into account the basic legal principle of international law pursuant to which the provisions of an agreement must not entail non-compliance of other legal rules binding the Contracting Parties, it is seen as absolutely necessary for proposals regarding positive incentives to refer to other international obligations, including an explicit reference to obligations arising from the WTO.

Suggestions for further work on incentives

In our view, an effective contribution to the conservation and sustainable use of biodiversity can only be achieved through a comprehensive and balanced approach. This will require clear and voluntary provisions linked to the application of incentives, which must be compatible with the rules of international law and, particularly, guidelines that encourage the elimination of adverse effects on biodiversity caused by perverse incentives and market access restrictions.

To this end, future work should be organized with the four following criteria in mind:

1. Annual studies and analyses could be conducted on the impact of positive and perverse incentive policies, in order to eliminate perverse incentives and make sure that positive incentives do not have a distorting effect on the market or on biodiversity.

2. Proposals must be realistic, clearly defined and voluntary in nature.

3. The various proposals must make an appropriate reference to the obligations of Contracting Parties of other international agreements, in particular with regard to trade agreements.

4. In order to make proposals more consistent and balanced, the document to be used as a basis for discussion should include the measures/policies on positive incentives and perverse incentives in the same text.

2. European Community

5. Subject: The EU Submission in reply to CBD Notification 2007-139 (2007-033) - "Decision VIII/26 on incentive measures: preparation for the in-depth review of the work on incentive measures

Dear Dr. Djoghlaf,

In reply to notification 2007-139 (2007-033), Slovenia and the European Commission, on behalf of the European Community and its Member States, would like to transmit the following EU submission.

(a) Lessons learned and key challenges in implementing the existing programme of work, based on practical examples and case studies from national implementation where available, including whether the measures initiated or adopted by Parties have maintained or improved the conservation and sustainable use of components of biodiversity.

(b) Options to address the challenges identified under (a)

The European Community and its Member States have already provided relevant information in 2004 and in their Third National Reports. Furthermore, they have recently contributed to an OECD-analysis of the use of economic instruments for biodiversity that will also be submitted to the CBD by the OECD-secretariat. In addition, the Annex to this submission includes further information and observations provided by some Member States in response to questions (a) and (b).

(c) Priorities for a future programme of work including requirements for effective national implementation, including for financial and institutional support and capacity-building.

6. The loss of biodiversity continues at an alarming pace. An unprecedented effort is required to reduce current rates of biodiversity loss as agreed by the WSSD in 2002. Such efforts also need to include the adoption of economically and socially sound measures, including legal ones,that act as incentives for the conservation and sustainable use of biological diversity.

7. <u>The overall priorities of the PoW on incentive measures continue to be relevant.</u>

The overall priorities of the current programme of work on incentive measures as adopted by Decision V/15 seem still valid. In particular, there seems to be a continuing need to support Parties, governments and organisations in developing practical policies and projects that create positive incentives for the conservation and sustainable use of biological diversity.

The continuing relevance of the current programme of work is also confirmed when checking against its expected results (Decision V/15.2):

- There has been progress in assessing representative existing incentive measures, in reviewing case-studies and in the dissemination of related information.
- There seems to have been little progress in informing consumers about biodiversity-impacts of their decisions.
- There is increasing recognition of the urgency to assess and establish the values of biodiversity for social and economic well-being.
- Biodiversity concerns are increasingly considered in liability schemes, both at the international level (for instance, in the current negotiations on rules and procedures on liability and redress under the Cartagena Protocol on Biosafety) as well as in liability rules adopted at national and regional levels (for instance, the EC's Environmental Liability Directive).

- The lack of mainstreaming biodiversity-related considerations into sectoral policies is recognised as one of the major drivers for the loss of biodiversity. Therefore, there continues to be a strong need for the creation of incentives for the integration of biodiversity concerns in all sectors.

8. In addition, it seems important to note that the implementation of the programme of work presents a "moving target." In increasingly open markets, national incentive structures are affected by changes at the global level. Increased demand for food, bioenergy, biomass, biofuels have the potential to substantially modify current incentives.

9. Issues within the existing PoW that should receive greater attention in the future

Issues requiring greater attention in the EU's view are assessments of the value(s) of biodiversity and the development and more widespread implementation of tools to inform consumers about the biodiversity-impacts of their decisions.

10. Since it can be difficult to evaluate biological diversity at an operational level, methods for assessing the cost-effectiveness of different measures could be helpful in the design of systems of incentive measures. Support for such evaluation could be an element of the programme.

11. In order to further the integration of biodiversity concerns into sectoral policies, more attention should be paid in the PoW to the concept of ecosystem goods and services, their valuation, their integration into the market prices and the creation of new markets. Ecosystem goods and services are fundamental to the business case for biodiversity.

12. Closely linked to valuation of biodiversity are efforts to put a price upon and commercialise ecosystem services associated with biodiversity. With such efforts becoming more common, there is a need to investigate their potential as well as fall-backs.

13. The need to better inform consumers and citizens about biodiversity impacts of their decisions also points to the important role of communication, information and advice as well as to participatory approaches in the management of biodiversity. Incentives such as certification schemes are relevant examples in this regard.

14. Conscious of the political sensitivity to some Parties, the EU also sees value in continuing work particularly on positive and perverse incentives. Perverse incentives are unnecessarily contributing to the deterioration of biodiversity, often without any conscious weighing of different political goals and ambitions against each other. CBD guidelines in this field should be finalised on the basis that they are voluntary. In developing guidelines, CBD should draw from experiences already analysed and synthesised by OECD.

15. An alternative strategy for working on positive and perverse incentives could be practical workshops on the mitigation and removal of perverse incentives for public servants involved in the design and implementation of incentive measures.

16. A potentially important focus of work in this regard is supporting Parties in assuring that measures established in order to mitigate or adapt to climate change do not create perverse incentives in relation to biodiversity. This would also link to the component in the PoW concerned with activities on incentive measures in other international organisations or agreements.

17. Overall, in the future, more emphasis should be put on the implementation of the PoW. This would benefit from focussing on case studies and other practical experience resulting from the implementation of the PoW as well as a strengthening of the sharing of information on lessons learned, best practices and difficulties encountered.

18. *(d) Key gaps in the work to date, and gaps and obstacles in the existing programme of work that are impeding its implementation at the national level.*

There have been major difficulties in implementing parts of the PoW, particularly in developing general international-level guidance on the introduction of positive incentive measures and on the removal of perverse incentives. As stated above, the EU continues to see value in work on positive and perverse incentives. Particularly perverse incentives are unnecessarily contributing to the deterioration of biodiversity, often without any conscious weighing of different political goals and ambitions against each other. CBD guidelines in this field should be finalised on the basis that they are voluntary.

19. It should be possible to retrieve further relevant information from the information already provided by Parties in their third national reports.

20. *(e) Interface with other international initiatives and instruments in this area.*

Other international institutions and initiatives undertake relevant work on biodiversity-related incentive measures, including the FAO, OECD, UNCTAD, UNDP, UNEP, IUCN.

21. *(f) Linkages to other programmes of work under the Convention.*

Incentive measures are a cross-cutting issue. They are related to the implementation of all of the CBD's Thematic Programmes and also to some of the other cross-cutting issues such as access and benefit-sharing, invasive alien species, impact assessments, sustainable use etc.

Sincerely yours,

[SIGNED]

Gordana Beltram
CBD Focal Point
The Environment Directorate
Ministry of the Environment
and Spatial Planning,
SLOVENIA

[SIGNED]

Hugo-Maria Schally
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Annex: Compilation of further information and observations in response to questions (a) and (b) provided by the Czech Republic, Finland, Slovenia and Sweden

ANNEX

Compilation of further information and observations in response to questions (a) and (b) provided by the Czech Republic, Finland, Slovenia and Sweden

Czech Republic

22. As mentioned in the Czech Republic submission on incentives in September 2004, The Ministry of the Environment (MoE) carried out a research project focused on analysing the possible adverse impact of public subsidies on the environment in years 2001 and 2002. The final result of this project was a set of six case studies and till now Czech Environmental Institute (since 2005 called CENIA - Czech Environmental Information Agency) has analysed about two other types of subsidies each year, but the capacity of the Institute is insufficient.

The protection of nature and the landscape in the Czech Republic uses the following economic instruments: positively stimulating (positive non-market instruments) – financial subsidies, grants, loans and negatively stimulating (negative non-market instruments) – entry fees for cars in national parks and

charges for cutting down trees. The compensatory instruments in the nature and the landscape conservation include mainly: financial compensation for losses resulting from the declaration of a provisionally protected area, compensation for aggravating conditions for farming and forestry and compensation for some damages caused by selected specially protected animals. Their use is regulated by Act No. 114/1992 Coll., on the Protection of Nature and the Landscape (Section 69, 24, 13, 58). The provision of Section 9, para 3, 4 of the above Act has not have the executive act which would specify the amount of these charges. The compensatory measures are dealt also in the Act No. 115/2000 Coll., on the Provision of Compensation for Damage Caused by Some Selected Specially Protected Species of Fauna, as amended.

National Subsidy Programmes

23. The River System Restoration Programme was established in 1992 in order to remedy the impacts of the devastation of the landscape's water regime. The main focus is on the restoration of the water regime in the basins of minor streams through measures such as revitalisation of watercourses, headstreams, marshlands, inappropriately dewatered plots, construction of fish ladders, revitalisation and establishment of retention areas, etc. The majority of the financial resources is used to build sewage systems and WWTP which represents almost a half of the programme's total yearly resources. At the time of its establishment, the resources available to the programme totalled CZK 20 million, while in 2006 it was CZK 384 million. Over the course of time and since any intervention into the nature or the landscape must be performed on a complex basis, it proved to be necessary to complement the investment programme with a non-investment programme.

24. So, in 1996 the Landscape Management Programme was established. In 2006, CZK 190.6 million was distributed within this programme. It consists of two sub-programmes: The Sub- Programme for Landscape Management aims to implement open-landscape measures (protection against erosion, maintenance of the cultural condition of the landscape and biodiversity support), while the Sub-Programme for the Management of Specially Protected Parts of Nature and Bird Areas aims to implement measures in specially protected areas, their protective zones and bird areas.

25. In connection with the preparation of the FIS Nordic World Ski Championships LIBEREC 2009, the Programme for Forest Stabilisation in Jizerské Mountains and on Ještěd was set up, which provides non-investment purpose-bound subsidies for compensatory measures in the area where the championship will be held. The programme makes it possible for the financial resources to be drawn for measures supporting the stability of forest ecosystems, for compensation measures in the adjacent non-forest landscape, for anti-erosion protection of the area and for project preparation. Close to CZK 4.1 million has been drawn in 2006.

European Subsidy Programmes

26. Since the Czech Republic's accession to the European Union, the range of programmes with measures for nature and landscape conservation has widened considerably, due mainly to the measures of Common Agricultural Policy. In the period 2004–2006, the fundamental role rested with the Horizontal Rural Development Plan's agri-environmental programmes (including the support of eco-farming) and support for Less Favoured Areas (LFA) and Environmental Less Favoured Areas (E-LFA) with environmental restrictions. Within the Infrastructure Operational Programme, it was possible to use resources of the European Regional Development Fund, among other things, for measure 3.1. Renewal of the Environmental Functions of the Territory. The implementation of nature and landscape protection projects from the LIFE project's resources and within the EEP and Norway Financial Mechanisms has been started.

27. As mentioned in the last notifiaction - The result of the project „Comparison of approaches in valuing selected segments of nature in the Czech Republic and EU aimed at unification of such approaches", carried out in 2001 - 2003, was a brochure reviewing the outputs of the project. There was

no other work by Czech Ecological Institute following this project. On the other hand there is a simultaneous work of experts (from Universities in Brno and Prague and from Forest Management Institute).

28. Since 1991 the State Environmental Fund of the Czech Republic (The Fund) is the key public financial instrument providing positive stimulation in the area of the environment. Subsidies and loans are focused on water protection, air protection, nature and landscape conservation, utilisation of natural resources, waste management, technologies and renewable energy sources. The Fund‘s income consist of charges payed by polluters and of fines for breaking the environmental law. In recent years the Fund served also for managing some programs financed by EU (sources from the Cohesion Fund, the ERDF).

29. The measures / projects supported by the Fund are always evaluated in the respect of their environmental benefits. These are quantified for example as reduction of pollution and made public in the annual report of the Fund.

Other information which we mentioned in our last response and we did not update them are still valid.

Finland

30. Economic incentives, advice, guidance and the development and application of sustainable land use principles encouraging voluntary conservation measures are becoming increasingly important in various sectors, in addition to legislative controls. Economic instruments designed to promote biodiversity have already been applied in Finland, but their use has so far been limited. There is a clear need for improved work on incentives, as has also been noticed internationally, for example, in the OECD work done on this topic.

31. The Ministry of the Environment in Finland commissioned a basic study of biodiversity as an economic issue*: Biodiversity as an economic issue in 2006* (48/2006). The study was based on decisions and recommendations of the OECD Working Group on Economic Aspects of Biodiversity and the CBD. It includes concrete options and recommendations (research, creation of markets, direct incentives, policy instruments, administration and infrastructure) for applying economic incentives and measures to promote the conservation and sustainable use of biodiversity in Finland. The role of biodiversity in the economy and related business opportunities are also considered, particularly with regard to market-based approaches. The report thus aims to initiate a discussion about the role of the private sector in the conservation and sustainable use of biodiversity. Examples are presented of both successful economic incentives in relation to their impacts on the preservation of biodiversity.

32. The *principle of sectoral responsibility* has been adopted in the conservation of biodiversity, meaning that each sector takes responsibility for reducing its harmful impacts on the natural environment. Progress towards such responsibility has been made within Finland’s national administration, thanks to renewed legislation and developments related to biodiversity, and for co-operation between the administrative sectors concerned and other stakeholder groups. Biodiversity considerations has been favourably integrated into new and revised Finnish legislation including the Land Use and Building Act, the Penal Code and the Gene Technology Act and Decree, as well as the Nature Conservation Act, the Forest Act and the Water Act.

33. Sectoral responsibility for the conservation, management and sustainable use of biodiversity as specified in the National Action Plan (NBSAP 2006-2016) has been duly adopted by the various branches of the administration. Stakeholder groups are committed to maintain biodiversity. In particular, the Ministries of Agriculture and Forestry, the Environment, Transport and Communications, Defence, and Education have developed their activities and planning procedures, and provided training for personnel working within their administrative spheres on issues related to biodiversity.

34. The implementation of the new biodiversity strategy and action plan (NBSAP) in the public administration is largely a matter of continuing to promote the ongoing favourable trends towards greater sectoral responsibility. The objectives of the conservation and sustainable use of biodiversity will be adopted as key principles in all administrative sectors. This involves the incorporation of these issues into strategic sectoral planning.

35. Many municipalities have already set good examples by incorporating the conservation and management of biodiversity into their own development processes. The State should encourage and support such efforts, and help to inform local residents and other municipalities about good practices. NGOs and other interest groups involved in the national action plan have also significantly promoted the conservation, management and sustainable use of biodiversity.

36. Finland has a long history of private nature reserves established on the basis of applications made by landowners. The role of such reserves in implementing conservation programmes has been growing in recent years. Counselling of farmers and forest owners has also played a central role in agriculture and forestry for many years. The *METSO Forest Biodiversity Programme for Southern Finland* has particularly helped to focus attention on various aspects of conserving biodiversity. The prominence of environmental issues in agriculture has likewise increased substantially.

37. Environmental subsidies for *agriculture* and the Act on the Financing of Sustainable Forestry (1094/1996) have significantly expanded opportunities to secure financial subsidies for measures to maintain biodiversity. The procedure developed for paying compensation for damage caused to reindeer husbandry by golden eagles, whereby financial compensation is granted to a herdsmen's committee based on the number of nests producing eagle fledglings, may also be regarded as an example of a functional system of economic guidance.

38. Widespread practical application of *voluntary conservation instruments* and the development of forest conservation incentives to support environmental management and conservation are an essential condition for promoting nature conservation in future decades. Alongside communication, counselling and practical guidelines, it is also important to allocate new agricultural, rural development and agri-environmental financing instruments in sites and purposes that are important from the point of view of biodiversity. There is also scope for improving the role of economic incentives in species conservation.

39. The only way to achieve and maintain favourable conservation statuses for forest species and biotopes is through long-term systematic actions involving co-operation between stakeholders.

40. The network of protected areas particularly requires extension in the south of Finland, to improve its representativeness and interlinkages.

41. The *METSO Forest Biodiversity Programme for Southern Finland* was approved by the Government in 2002, in order to provide long-term safeguards for forest biotopes and their important structural features and habitats for threatened species. The programme is being carried out jointly by the Ministry of the Environment and the Ministry of Agriculture and Forestry.

The METSO Programme has involved 17 areas of action. The measures applied during the initial trial phase of the programme can be divided into four main categories:

- habitat restoration and management in protected areas
- pilot projects involving new conservation means
- improvements in the natural forestry methods used in commercially managed forests
- research

42. The *new tools* to safeguard biodiversity tested in the METSO Programme – natural values trading, competitive tendering, nature management areas and co-operation networks – are all based on the voluntary participation of landowners. Criteria defined by conservation biologists have been used to

define the forest habitats and features that require action most urgently. METSO particularly aims to promote the favourable management and conservation of heathland forests with plenty of decaying wood, herb-rich woodlands, spruce mires, swampy woodlands, sunlit esker slopes, wooded pastures and meadows, and natural forests along emergent coastlines. The impacts of the METSO Programme were assessed during 2006. The results of the METSO Programme assessment has been used and attention paid to interaction between authorities and the public, to the extensive adoption of voluntary conservation instruments, and to the development of economic incentives for nature management and conservation. The programme's first phase ends during 2007, when the Government will decide on further measures to benefit forest biodiversity in Southern Finland.

43. The METSO Programme (2003-2007) and the MOSSE biodiversity research programme (2003-2006) have produced plenty of wide-ranging data that can be used to assess alternative conservation policies and their likely impacts on the natural environment. The key results of the research data so far published can be summarised as follows:

- The desired positive environmental impacts in the context of conserving forest biodiversity in Southern Finland can only be achieved by coordinating the management of protected areas and commercially managed forests.
- In terms of the social impacts of conservation, it is vital that voluntary means form a basis for the preparation of conservation work, and that favourable attitudes are maintained and further encouraged among forest owners and other stakeholders in the forestry sector.
- In terms of the national economy, increasing the areas of forest under protection and controls over the use of commercially managed forests will not have significant negative impacts, although this issue is linked to some uncertain factors, including the future availability of imported timber. Other economic impacts vary for different stakeholders in the forestry sector. Research results indicate that repercussions will mainly affect the forest industries, while forest owners will not be significantly affected.
- In terms of the Government budget, increasing the protection of forests means that public funds must be available for the implementation of conservation measures also after 2009 when the current conservation programme implementation period comes to an end. Costs will mainly be related to land acquisition and compensation payments. Voluntary conservation means are evidently the most cost-effective option, at least in the short-term future.

44. The aim is that appreciation of the economic aspects of biodiversity is increased. Motivating and expedient economic instruments will be applied to promote the conservation and management of biodiversity.

Slovenia

45. Slovenia is providing the following information on ***lessons learned*** in implementing the existing programme of work (PoW), based on practical examples and case studies from national implementation:

1. From May 2004 Slovenia implements several common EU policies on a national level that include, in accordance with the EU regulations, the use of incentive measures (an economic, legal or institutional measure designed to encourage beneficial activities e.g. incentive payments, public or grant-aided land purchases, conservation easements,…) to maintain or improve the conservation and sustainable use of components of biodiversity. General lessons learned by main policies:
    - Common Agricultural Policy - there was a substantial increase of the incentive measures connected to rural development, increasing as well the amount of incentive payments for positive incentive measures as the number of available measures. By 2006 positive results, changing the trends of biodiversity loss, have been noted at several sites outstanding for the conservation of biodiversity. In relation to the PoW there has been an assessment of representative existing incentives, review of case-studies, and identification of new opportunities for incentives in preparation of the new Rural

Development Programme, running from 2007 on. In this programme positive measures have been even more diversified and cross compliance implemented, both leading to even better mainstreaming of biodiversity in the Common Agricultural Policy. Together with the increase of the incentive measures in 2004 a system for targeted dissemination of information has been put in place.

- Regional Development Policy - there was also a substantial increase of positive incentive measures, enabling conservation of biodiversity at a number of threatened sites. In the new Regional Development Programme, running from 2007 on, funds available for positive incentives have been more than doubled.
- In financing Nature Conservation Measures additionally to the above mentioned incentives the LIFE funds provided incentives for removing threats to biodiversity, resulting in reversing the decreasing trends on several sites of outstanding importance for biodiversity conservation.

2. Slovenia has specific national incentives (legal, institutional and financial measures) in form of mandatory forest management plans, a public advisory institution for their implementation and financial incentives in place for sustainable use of biodiversity components and conservation of biodiversity in relation to forestry. In relation to the PoW the legal measures are based on financial assessment of public functions of forests compared to economic functions of forests. The assessment of public functions of forests includes the assessment of the values of biodiversity. A comparison of important sites for conservation of biodiversity (Natura 2000 sites) in forests has shown an outstanding state of biodiversity in Slovenian forests, as a result of all these measures.

46. Slovenia is providing the following information on ***key challenges*** in implementing the existing programme of work, based on practical examples and case studies from national implementation:

- National key challenges are related to all priorities of the current programme of work on incentive measures as adopted by Decision V/15. In relation to the Common Agricultural Policy responses to key challenges on a global level such as increased demand for food, bioenergy, biomass, biofuels, will substantially affect also assessment of representative existing incentives, the assessment of the values of biodiversity, and the development of methods to promote information on biodiversity in consumer decisions.

Sweden

47. Sector integration and sector responsibility are important measures for mitigating perverse incentives. This also involves biodiversity becoming an issue for ‘none-conservation’ professionals. Possible cases Sweden could present are forestry (an area where monetary positive incentive measures have been used to a limited extent) and agriculture (where, through the EU, monetary positive incentives are more prominent) (Sweden has already contributed information concerning these sectors at earlier stages in the process).

48. In December 2007, The Swedish National Institute of Economic Research will complete its report concerning the valuation of biodiversity, which may provide some more examples for the review of the PoW.

49. The Swedish government currently works on the simplification of regulations in general with the purpose to decrease the administrative burden for business. The consequences for perverse incentives with regard to biodiversity remain to be evaluated, but simplification may potentially contribute to a more transparent system which makes it easier to identify and mitigate or remove perverse incentives.

3. India

INDIA'S EXPERIENCES IN THE IMPLEMENTATION OF INCENTIVE MEASURES (ARTICLE 11 OF THE CONVENITON ON BIOLOGICAL DIVERSITY): LESSONS LEARNED, CHALLENGES, AND PRIORITIES FOR FUTURE PROGRAMME OF WORK

1. Introduction

2. Executive Secretary's Synthesis on Incentive Measures in the Third National Reports and India's views

3. India's experiences in the implementation of incentive measures, lessons learned and key challenges

4. Options to address the identified challenges

5. Priorities for future programme of work

6. Interface with other international initiatives and instruments in this area

1. Introduction

50. The objectives of the CBD are 'the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding'. (Article 1).

51. The Preamble acknowledges 'that substantial investments are required to conserve biological diversity and that there is the expectation of a broad range of environmental, economic, and social benefits from those investments'. It recognizes that 'economic and social development and poverty eradication are the first and overriding priorities of developing countries'.

52. Article 11 states that 'Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for conservation and sustainable use of components of biological diversity'.

53. The documentation prepared by the Secretariat to assist in preparation of submission gives an overview of decisions of the Conference of Parties relating to sharing of experiences on incentive measures, participatory approaches to the design of new measures, application of tools for valuation of biodiversity, application of positive incentive measures, and removal or mitigation of perverse incentives.

2. Views on the Executive Secretary's Synthesis Based on the Third National Reports

54. The synthesis report of information provided by 102 Parties in the third national reports, gives Parties' responses relating to (a) priority setting and the role of incentive measures, (b) establishment of the incentive programmes, (c) incorporation of biodiversity values into plans, policies and programmes, removal of perverse incentives, and challenges and obstacles in implementation.

55. Only 11 Parties accorded high priority to the implementation of Article 11; 37 assigned medium priority and 29 assigned low priority. Out of the 27 potential challenges for implementation of the Convention, 'the lack of economic incentives is identified as the highest challenge in implementing Article 10 (sustainable use), closely followed by the lack of financial, human and technical resources'. In this context, it is felt that a disaggregated table giving the response by stage of development of a country i.e. developed, developing and least developing countries would be useful.

56. The incentive measures reported by 101 Parties (other than EC), are classified in Table 1 according to the World Bank classification of countries based on gross national income per capita. The purpose of the exercise is to detect any empirical pattern in the choices of incentive measures/sectors based on level of economic development.

57. Monetary positive incentive measures are in agri-environmental programmes implemented by HI countries in Europe and in a few LMI and UMI countries in Latin America. These programmes are justified because of the 'multifunctionality of agriculture', relative low share of agricultural population in the total population and hence the relatively low share of the subsidies/cost sharing in the total budgets of the governments. Here, the emphasis is on the first objective of the CBD, namely conservation. Protected area and forest programmes are found in all the four country groups.

58. Among the payment vehicles, tax reform, tax credit and tax exemptions are the most important. Payments for ecosystem services are reported in Latin American middle incomes countries. Access guarantees, benefit / revenue schemes are reported in LI and LMI countries in Africa and Asia, where livelihood concerns of the people dependent on forests are important. These schemes aim at both conservation and benefit sharing.

Table 1. INCENTIVE MEASURES REPORTED BY PARTIES3/

		COUNTRY CLASSIFICATION[2]				
	Incentive Measures	Low income (LI)	Low middle income (LMI)	Upper middle income (UMI)	High income (HI)	All countries[4]
1.	**Monetary positive measures**					
	By sector Agri-environmental	-	4	6	18	28
	Protected areas/forests	4	6	6	9	25
	Payment vehicles Tax reform, exemption, and credits tariff reductions etc	3	3	4	5	15
	Payment for ecosystems services	-	3	1	-	4
	Access guarantees, benefit/revenue sharing	5	3	-	-	8
2.	**Non-monetary positive measures**					
	Social recognition/awards others	23	7-	-2	-1	96
3	Negative measures	4	2	2	5	13
4	Green markets/biotrade	6	8	4	-	18
5	Participatory approach	6	4	1	-	11

3/ Based on the synthesis report prepared by the Executive Secretary, CBD.

4/ Country classification by World Bank based on gross national income per capita in 2006: LI, $905 or less, LMI, $906-3,595, UMI, $3,596-11, 115 and HI, 11,116 or more. See http://siteresources.worldbank.org/DATASTATISTICS/Resources/CLASS.YLS

Excluding the EC

Among other mechanisms, green markets/bio- trade are found except in the HI group. Participatory approach is more popular in LI and LMI groups.

6	Removal/mitigation of perverse incentives	4	5	4	11	24
	No of countries	**29**	**29**	**17**	**26**	**101**

59. The Survey also reports a few innovations in the design of incentive payments. These include use of auction or tender systems in allocating biodiversity stewardship payments in Australia to achieve cost minimization; green VAT in Brazil; payment system for hydrological environmental services and fees for non-extractive use of ecosystem services in mexico; handing over 20 percent of forest land to community forestry user groups and leasehold groups in Nepal; and use of fiscal instruments for conservation in Netherlands.

60. This survey as well as other studies highlights the limited information available for design of incentive measures based on criteria such as economic efficiency and biological effectiveness. Most of the instruments are based on proxies e.g. payment for downstream farmers to upstream forest owners on per hectare basis rather than the farmer's contribution to biodiversity, or simple tax differentiation between organic and inorganic fertilizers, or wild life viewing fee based largely on revenue consideration than on wildlife protection. HI and UMI countries programmes stress conservation while LI and LMI countries programmes stress conservation and benefit sharing. What is needed is integration of all the three objectives of the CBD in the programmes of LI and LMI countries.

3. India's Experiments in the Implementation of Incentive Measures

61. As mentioned in India's Third National Report to CBD, the major initiatives taken are joint farm management, eco-development committees in protected areas, creation of biodiversity authority for implementation of the access and benefit sharing regime, and social recognition by giving awards. 5/

(a) Joint Forest Management

62. According to State of Forest Report 2003, the recorded forest area in India is 77.47 mha, which is 23.57 per cent of the country's geographic area. It comprises 39.99 mha of reserved forests (51.6 percent of recorded forests) having full degree of protection where all activities are prohibited unless permitted; 23.84 mha of protected forests (30.8 per cent of recorded forests) having limited degree of protection where all activities are permitted unless prohibited; and the rest un-classed forests (17.6 per cent of recorded forests). Ownership status of such forests varies from state to state. 6/

63. About 100 million people including 50 million tribal people depend largely on forests for their livelihood. The Indian Forest Policy 1988 made a shift in forest management from near exclusion of people from use of forest resources to protect forest through the people. It recognizes the customary rights and privileges of the forest dwelling communities. The Ministry of Environment and Forests issued policy guidelines for the involvement of village communities and voluntary agencies in the regeneration of degraded forest lands on 1.6.1990, 21.2.2000 at 24.12.2002 for strengthening the JFM. These guidelines laid emphasis on involvement of local communities in protection, afforestation, development of degraded areas and sharing of benefits with the communities.

64. As on January 31, there were 1,06,479 Joint Forest Management Committees (JFMCs) managing 22.02 mha of forest area involving 21.99 million people. There are state specific variations with respect to constitution of committees, participation of women and other weaker sections of society, and sharing of benefits. In almost all the states JFMCs have full rights over all the non-timber forest products (NTFPs) except the nationalized Minor Forest Produce i.e. tendu leaves, sal seeds, cashew etc. In Andhra Pradesh, 50 per cent of the net proceeds from sale of tendu leaves are shared with JFMCs. In

5/ Government of India (Ministry of Environment and Forests), India's Third National Report to Convention on Biological Diversity, 2006, New Delhi.

6/ Government of India (Ministry of Environment and Forests), India's Forests, 2007, New Delhi.

Madhya Pradesh and Chhatisgargh, 100 percent of net profit goes to the collectors of NTFPs. Majority of the states allow about 50 per cent of net benefits obtained from final felling of tress to JFMCs 7/

65. National Forest Commission Report 2006 provides a critical review of the JFM. 7/ It notes poor participation of women in JFM, weak legal and organizational framework of JFM, ambiguous legal status of JFM committees, perception of JFM as a forest department programme, lack of synergy between panchayats, JFM and other programmes, and lack of adequate resources for conservation and regeneration. It states that the Government should subordinate the objectives of forestry management to accommodate the needs of the local people'.

66. The National Environment Policy (NEP), 2006 says that legal recognition of the traditional entitlements of forest dependent communities taking into consideration the provision of Panchayats Act, 1996 would 'remedy a serious historical injustice, secure their livelihoods, reduce possibilities of conflict with the Forest Department and provide long-term incentives to these communities, to conserve the forests'.8/ NEP recommends the implementation of multistakeholder partnerships involving the Forest Department, land owning agencies, local communities, and investors, with clearly defined obligations and entitlements for each partner, following good governance principles, to derive environmental, livelihood, and financial benefits.

67. Regarding sustainability of JFM, the Ministry's latest publication India's Forests, 2007, notes that very few JFMs have reached this stage. It says: 'The programme is still largely viewed as a government programme with expectations for continuous flow of funds. Sustainability of JFMCs would essentially involve developing mechanisms to ensure economic activities and alternate livelihood opportunities, value addition to NTFPs and developing adequate market linkages. The JFMCs need to build corpus in the form of 'Village Development Fund' for their sustenance'. (p.51)

(b) Protected Areas

68. Protected areas (PAs) are established under the Wildlife Protection Act, 1972. India has 96 national parks and 510 wildlife sanctuaries covering an area of 15.59 mha, making up about 4.8 percent of the country's geographic area. There are also numerous sacred groves and some biosphere reserves. Eco-Development Committees function in and around PAs. There are two extreme positions on PA management – preservation and sustainable use. Preservationists want PAs protected from human intervention while those who favour sustainable use consider the local communities as part of the ecosystem, value their knowledge about conservation and sustainable use, and recognize their rights.

69. The Wild Life Protection Act envisages participation of the locals in protection of the PAs but provide limited rights for them. In several cases, delineation and restructuring access to PAs as well as disturbance by human on these areas has led to man-animal conflicts. The lack of full involvement of relevant stakeholders in identification and delineation of PAs as well as the loss of traditional entitlements of local people result in failure to use their traditional knowledge and social, religious and cultural self-imposed habits and also "illegal" use of forest products.

70. The National Forest Commission recommends group insurance for all forest protection staff against death, disease and disability by the state. It also recommends mitigation measures for man-animal conflicts like barriers, and crop insurance against damage by wild animals.

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7 India's Forests Government of India (Ministry of Environment and Forests), India's Forests, 2007, New Delhi. P.49

7/ Government of India (Ministry of Environment and Forests), National Forest Report, 2006, New Delhi.

8/ Government of India (Ministry of Environment and Forests), National Environmental Policy, 2006, New Delhi.

71. In PAs with incommensurable values, preservation is important but the locals must be provided with income earning opportunities. There are a few instances where forest department officials play proactive role in enlisting the support of the locals in conservation efforts. In the India Eco Development Project, a World Bank funded participatory biodiversity conservation programme at Periyar Wildlife Sanctuary in Thekkady, Kerala, the local communities living off the forest were organized into eco-development committees. The objectives were to reduce the negative impact of local people on the Sanctuary and involve encroachers in conservation instead of exploitation. This was done by addressing the economic needs of those living in and around the park by funding viable innovative livelihood alternatives to them. The people who were involved in the illegal debarking of cinnamon trees as well as sandalwood smuggling and poaching formed an eco-development committee. They pledged to protect the forests in return for withdrawal of all cases against them. Now they provide services like day trecks through the forest, arranging nature camps ,horse riding, and special programmes for the tourists.9/ At Kumbakarnan Falls in Theni District of Tamil Nadu, over 100 tribal residents, all members of Village Forest Council, have been trained as eco-tourism guides. They regulate tourists and keep the surroundings clean. They take up eco-conservation measures. Fees are collected from visitors to provide amenities and to cover part of the expenses of the tribals as eco-guards.

72. An amendment to the Wild Life Protection Act in 2004 provides for the creation of Community Reserves in which the management and ownership will vest with the local people.

(c) Access to Genetic Resources and Traditional Knowledge and Benefit Sharing

73. The Biological Diversity Act, 2002 and the Biological Diversity Rules 2004 provide a legal framework for ABS. The implementation is being done by the National Biodiversity Authority, the State Biodiversity Boards, and the Biodiversity Management Committees. The Act stipulates norms for access to biological resources and traditional knowledge based on three ways: (i) access to foreign citizens, companies and NRIs based on "prior approval of NBA", (ii) access permits to Indian citizens, companies, associations and other organizations registered in India on the basis of prior intimation to the State Biodiversity Boards, and (iii) exemption of prior approval or intimation for local people and communities. The Act imposes certain restrictions on access for 'reasons of preservation, likely adverse effects of the livelihood of the local people, adverse environmental impact on ecosystem function, and purpose contrary to national interests and other related international agreements to which India is Party'.

74. At present the formula for benefit sharing shall be determined on a case by case basis. This introduces arbitrariness and uncertainty which result in longer time and higher transaction costs for negotiations. According to National Biological Authority, the applications approved as on 31.07.07 were 11 for research and commercial purpose, 54 for IPR, 15 for collaborative research, 4 for transfer of research results, and 6 for third party transfer. A transparent benefit sharing guidelines with illustrations based on purpose (agricultural, medicinal, environmental), type of resource and traditional knowledge, degree of uncertainty in commercialization, and channel of transfer will reduce information asymmetry between suppliers and users of biological resources and traditional knowledge, lower the transaction costs and hence and increase the access rates.

(d) Plant Breeders and Farmers Rights

75. The Plant Varieties Protection and Farmers Rights Act, 2001 and the rules issued in 2003 deal with the protection of plant breeders' rights over the new varieties developed by them and the entitlement of farmers to register new varieties and also to save, breed, use, exchange or sell the plant varieties, which the latter have developed, inherited and maintained over generations.

(e) Other initiatives

9/ Santhosh P.Thampi, Ecotourism in Kerala: Lessons from Eco-Development Project in Periyar Tiger Reserve, http://ecoclub.com.library/epapers/13pdf.

76. The Government has instituted a number of awards for social recognition of environmental stewardships. Some corporate firms and NGOs are involved in conservation and related activities. India has undertaken capacity building activities in taxonomy, built Traditional Knowledge Digital Library, and helped in establishing Honey Bee Network to protect and encourage customary use of biological resources.

(f) Lessons learned and key challenges.

77. India's experiments with JFM and management of PAs provide valuable lessons. JFM is an attempt to correct historical injustice to the locals and tribals. It has a nation-wide coverage. The lessons learned and key challenges are:

- Choice of an appropriate unit and scale are necessary for successful implementation of JFM and Eco Development Committee functions. The boundaries of ecosystem need not coincide with the boundaries of administrative divisions. Further the optimum scale may vary with the type of ecosystem service and its management. We must apply the Subsidiary Principle that the chosen unit can discharge its functions in a most efficient manner in a decentralized system of governance. When overlapping boundaries are inevitable, a coordination mechanism is needed for planning, implementation and resolution of disputes.
- Clear, secure and enforceable rights are necessary to motivate the locals to undertake conservation and sustainable use decisions. When the rights cannot be provided at individual/household level because of indivisibility, or high transaction cost of enforcement of the rights , the rights may be given to communities. This would require an incentive based cost sharing and benefit mechanism, and also provisions to exclude others from uses of the local resources.
- At present the locals play a minor role at the planning stage. This results not only in failure to utilize their traditional knowledge about the functioning of the ecosystem but also creates problems at the implementation stage. The Forest Department must become a facilitator.
- The potentials for poverty alleviation are not fully addressed. Income generation opportunities via new investments in ecogeneration and establishment of processing industries, greater access to forest products, employment generation as wardens/eco-guards, and via construction and maintenance of basic amenities must be explored.
- There is need for synergy between panchayats and these committees. There is an opportunity for employment under National Rural Employment Guarantee Schemes.
- In PAs, access to resources is restricted for the locals. This restriction can be justified in areas with incommensurable values or where the ecosystem is under threat and consumptive uses are not desirable. Even in these areas the locals can be employed as eco-guides, wardens and custodians of the resources. Alternative sources of livelihood and income generation opportunities must be explored.

78. The greatest challenge is how to integrate, as far as possible, all the three objectives of the CBD and in India's case livelihood concerns of the stakeholders in natural resource management. In order to meet the challenge, we need more resources for investment in conservation and sustainable use of the natural resources, and create incentive based institutional structures for ecosystem management.

4. Options to Address the Identified Challenges

79. India possesses the scientific and technical capability to address the challenges. Our knowledge about the ecosystem resource endowments, indigenous and traditional knowledge, and causes of degradation is improving due to the Work of Botanical Survey of India, Zoological Survey of India, capacity building in taxonomy and many reports and research studies. India has been successful in using space-based observations and geographical information systems in constructing baseline scenarios of different ecosystems. The proposed Natural Resource Census will improve our capacity to monitor the resource use, detect the extent of degradations and help in improving our resource accounting. What is needed is political will and administrative reorientation to utilize this information for preparation of

zonal plans for land use , natural resource and inventories management at local levels. This "last mile problem" must be solved so that our capacity building efforts are translated into beneficial economic, environmental and social outcomes.

The ecosystems may be classified under:

(i) areas with incomparable values where preservation is important,
(ii) ecosystems under threat/beyond their carrying capacities,
(iii) ecosystems degraded in regions
  (a) with dense local/tribal population
  (b) with sparse population
  (c) in remote/inaccessible areas
(iv) ecosystems where ample scope for regeneration exists at affordable costs, requiring investments, technologies and management plans

80. The management plans for (i) and (ii) involve careful planning, restrictions on access/use, and constant monitoring. Even though preservation is important, the feasibility of generating revenues via ecotourism, wild life viewing fees, carbon sequestration or any other non-consumptive use must be explored. These revenues can be used for preservation of the ecosystem and employing the locals as eco-guards, and creation of basic amenities, insurance for wild life attack etc.

81. As far as degraded ecosystems are concerned, we must distinguish between ecosystem with dense population and remote areas/areas with low population density. In the former case JFM or any community based organization is appropriate and livelihood concerns are important at the planning and implementation stages. As for (iii)(c), the corporate sector and NGOs may be entrusted with the task of regeneration. To attract new investments and environment friendly technologies, these areas may be given on long-term lease along with mutually agreed upon management plans for regeneration and sustainable use. Some highly degraded areas with well defined boundaries could be put to collaborative development and management under the multi-stakeholder partnership framework that fully respects local people's rights and preserves the local ecology.

82. The strategy for achieving all the three objectives of the CBD simultaneously (and poverty alleviation in the Indian case) requires resources. The possible revenue augmentation sources are considered in sections 5 and 6.

5. Priorities for Future Programmes of Work

83. Top priority must be given to the design and implementation of incentive measures. An incentive measure may be defined as any measure which internalizes environmental externalities in decision making and makes best use of the private information available with the decision maker or/ and to search for information to undertake conservation and sustainable use of the resources in a cost-effective manner.

84. Considerable work is required to develop legal, scientific/technical, and institutional framework to successfully implement the incentive measures. As the legal system-formal and informal – defines/ limits the rights and obligations, it can alter human behaviour. Laws , rules and institutions for their effective enforcement are prerequisites for the successful application of incentive measures. NEP 2006 has articulated the need for a shift from heavy reliance on criminal law to civil law, because the later offers flexibility and its sanction can be more effectively tailored to particular situations .Civil law penalties for non-compliance can be made proportional to the extent of violations.

85. Assignment of property rights to environmental resources is a big challenge. In between the extreme cases of private property and state property, other options such as community property, rights only for certain uses, user rights without ownership rights must be explored in different social contexts, and the rights must be clear, well defined, secure, and enforceable. In situations where communities have

the rights, they should be permitted to evolve their rules/norms based on customary practice, or/and codes of conduct /behaviour by adaptive participatory approaches.

86. India has the scientific and technical expertise about the ecological processes, their physical linkages, taxonomy and so on, but the expertise is in infancy in the design of incentive based institutional mechanisms to achieve the three goals of the CBD. A number of studies on valuation of ecosystem services particularly forests and biodiversity has been undertaken by researchers, but no serious attempt has yet been made to develop incentive measures for fruitful policy applications, taking into consideration trade offs between efficiency and equity, and economic, social and, environmental goals.10/

87. Ecosystem functions of forests, wetlands and coasts are classified under provisioning regulating, insurance, information and aesthetic. For application of incentive measures, the services may be classified under private marketd goods, private nonmarketed goods ,social goods, local public goods, and global public goods. Choices among institutional arrangements i.e. government regulation, private ownership, market, community management or contractual/partnership agreements for conservation and sustainable use of biological resources depend on, among others things, the social context, assignment of property rights, and the transaction costs.

88. Market-based instruments are appropriate when the goods and services are traded or tradable. Instruments such as taxes, cesses, subsidies would serve the purpose. When a market exists but it is imperfect because it is thin or information asymmetry between buyers and sellers, government intervention in the form of providing access to market information, lowering transaction costs, or fixation of fair prices may be helpful. For some environmental goods, markets do not exist. Market creation and operation will involve costs to society. Therefore the choice between market creation, community-based management; and government regulation should be based on which institutional arrangement lowers the social cost of achieving the given goals or/and results in the highest social welfare.

89. In the case of local public goods such as hydrological services, regulating local climate, and soil conservation a non-market institutional arrangement is needed to negotiate payments by the users/beneficiaries to the provides/suppliers of the services. For global public goods like carbon sequestration, genetic information, existence values , and incommensurable values, a global institutional mechanism is needed in sharing the costs of conservation.

90. Before the introduction of incentive measures, it is necessary to undertake a public awareness campaign on the social scarcity values of certain critical environmental goods. The attitude that an environmental resource is a free good, and every individual should be provided free of such goods by government must be changed. When an environmental good/service becomes scarce, there is no option but to rely on regulation or market or a self-imposed restricted use by individuals or groups.

- *Eliminate or reduce perverse incentives*

91. Some environmental resources like drinking water, irrigation water, electricity for pump sets, and access fees to environmental amenities are heavily subsidized, resulting in shortages, over use, and under provision, especially for the poor. The prices may be revised upward gradually overtime to correspond to their long-run marginal social costs, with concessional tariffs targeted to the poor only.

- *Tax differentiation*

10/ See for example Chapter 19 on Forest in National Resource Accounting of the Report of the National Commission, 2006, research completed under the World Bank-MoEF Capacity-building programme in environmental Economies, and recent initiatives by the CSO in environmental accounting.

92. Prices of chemical fertilizers, particularly urea are subsidized. At present, there is no rebate in excise tax for organic fertilizers or organic pesticides. In fact environmental considerations should figure in the framing of tax and subsidy policies. 11/ As there is a move in Doha Round on tariff reductions for environmental goods and lower tax/tax exemptions for organically produced products, such incentives may be given to certified organic products.

- *NTFPs Value addition*

93. Indian forests are rich in NTFPs such as honey, bamboo, cane, gums and resins, leaves, seeds, flowers, dye plants, and medicinal plants. NTFP gathers are highly unorganized and have little market access. Due to lack of market access and resultant non -remunerative prices, they often resort to unsustainable and destructive harvesting to maximize their collection. There is a need to strengthen the link between NTFP management and JFM so that the benefits accruing from NTFPs can be profitably channelised for the well being of forest dependent communities ensuring sustainable forest management. 12/

94. Medicinal plants cater to the needs of about 80 per cent of Ayurvedic, 49 percent of Unani and 33 percent of Allopathic medicines. The collection and trade in medicinal plants constitute a major share of the livelihood means of forest dwellers. India also has a huge export potential in herbal and medicinal products. Problems such as inefficiency in the supply chain, removable of information asymmetry, and access to quality seeds must be tackled to realize the export potential and to ensure sustainable livelihood opportunities for the growers, collectors and traders of medicinal plants.

- Positive Incentives

95. Positive incentive measures such as training of local/tribal population on environmental management, acces to environment friendly processing and recycling technologies on concessional terms, assured share in produce for longer term when investments (in the form of money/ labour) are made by the locals, will help in sustainable use of the ecosystem. Positive incentive measures are desirable when the supply of products/services is elastic.

- Ecotourism

96. There is a huge potential for ecotourism in forests, protected areas, and wet lands. In order to make ecosystem sustainable, the number of tourists must be limited to the carrying capacities of the areas. Apart from entrance fees, the tourists may be charged fees for viewing wild life in specified areas, sacred groves and other aesthetic amenities. The tourists must be provided with basic sanitation and other facilities. The locals may be trained as tourist guides. Seasonal/time of day pricing may be introduced to regulate tourist traffic.

- When mining or other industrial activities are undertaken in forests, the access and lease charges be collected and used for forest conservation. In addition, the investors must create biodiversity offsets in approved areas.
- Negative incentive measures are needed to prevent harm to the environment. Examples of such measures are poaching of wild animals, use of mangroves as fuels, damage to coralreefs, soil mining, and felling trees. The penalties should be such that the penalties are higher than the gains from these illegal activities.

97. The corporate sector and socially oriented NGOs may be involved in regeneration / development of large tracts of forests in remote/ sparsely populated areas. Long term leases, income tax exemptions and tax rebates on excise/sales tax may be given in return for successful execution of sustainable

11/ See the research done by Madras School of Economics under the MoEF Programme of Centre of Excellence in Environmental Economics. R.J.Chelliah, P.P.Appasamy, U.Sankar and R.Pandey, Eco Taxes for Polluting Inputs and Osutputs, Academic Foundation, 2007.

12/ Government of India (Ministry of Environment and Forests), National Biodiversity Action Plan, 2007.

management plans. When a forest/wetland regeneration plan is ready, contractual arrangement may be made with a corporate agency or NGO. In order to introduce transparency and cost-effectiveness bids may be invited from the interested parties and the least cost agency may be chosen. As there are many uncertainties about the ecological processes, such contracts must have contingency clauses to permit adaptive management.

6. Interface with other International Initiatives and Instruments in this Area

98. Conservation and sustainable use of biodiversity yields certain benefits which accrue to all countries. Afforestation (carbon sequestration) is a global public good. Incommensurable values in forests and PAs are also global public goods. Conservation of flora and fauna and increase in biodiversity enrich genetic information which is an inter-generational global public good. National efforts alone are not adequate to obtain globally optimal levels of conservation, because while the full costs are borne by the nationals only part of the benefits (local and national) accrue to them. As biodiversity is a common concern of mankind, an international financial mechanism is necessary to pay part of the conservation costs in mega biodiversity countries.

99. As for climate change and biodiversity, there is a two way linkage. Global warming is likely to have an adverse effect on biodiversity. Biodiversity loss exacerbates mitigation and adaptation efforts to deal with climate change. Aforestation, and conservation and regeneration of mangroves , coral reefs and wetlands, need partial financial support from GEF or other global financial mechanisms. Apart from ecotourism, global support based on the principle of common but differentiated responsibilities according to the respective capabilities of states is needed to support wildlife conservation in tropical countries. The rationale is that wildlife is an interdependent ecological entity (the web of life).

100. As for rights and terms of access to resources, there is an asymmetry between inventions based on scientific knowledge and research on the one hand , and biological resources and traditional knowledge on the other hand. IPRs are private rights. Most biological resources and traditional knowledge are under common property regimes with weak ABS regimes. India and other Like-minded Mega Biodiversity Countries have been advocating (a) mandatory inclusion of country of origin/source, prior informed consent of competent national authority, and ABS provisions in applications for patents based on biological resources and traditional knowledge, and (b) an international certificate of origin/source regime to trace movement of the resource. If the suggestions are accepted, there will be significant reductions in biopiracy, lowering transaction costs of implementing the ABS regime and increase in flow of income to the providers of the resources and the knowledge.

101. Access to environment friendly biotechnologies on favourable terms and assistance in capacity building to mega biodiverse countries will promote collaborative research and development of biotechnology based industries in these countries under multistakeholder partnership arrangement.

4. Oman

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بسم الله الرحمن الرحيم

Sultanate of Oman
Ministry of Regional Municipalities,
Environment & Water Resources
Minister's Office
Muscat

سلطنة عمان
وزارة البلديات الإقليمية والبيئة وموارد المياه
مكتب الوزير
مسقط

Ref. : MRMEWR/ MO/FIR/4-2/ 79 /2007
Date : 4 /06 / 2007

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JUN 04 2007
ACTION MD
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INFO GD, OD

Dr Ahmed Djoghlaf
Executive Secretary
Convention on Biology Diversity
World Trade Center
Montreal, Quebec
Canada

After Compliments,

Subject: VIII/26 on incentive measures preparation for the in-depth review of the work on incentive measure.

Please refer to your letter ref: SCBD/SEL/ML/GD/56662 dated 13/3/2007.

Kindly, I would like to inform you that this Ministry applies some limited incentive measures which are related to the biological diversity field. The Sultan Qaboos Prize for Environmental preservation, which is granted to the most excellent environmental research is considered one of the most important motivated awards. Moreover, there are some simple awards that this ministry confers for individuals or those who give any information about numbered turtles if any got lost. other reimbursements are given for those whose their cattle were devoured by some of the wild animals.

I seize this opportunity to express the Ministry's appreciation for your cooperation.

Ahmed bin Saeed Al-Kharoosi
Director of Follow- up and International Relations.

SULTANATE OF OMAN
MINISTER'S OFFICE
FOLLOW UP
INTERNATIONAL RELATIONS

ص.ب : ٣٢٣ مسقط - الرمز البريدي : ١١٣ - سلطنة عمان - تليفون : ٢٤٦٩٢٥٥٢ / ٢٤٦٩٢٥٧٥ - فاكس : ٢٤٦٩٢٥٥٣
P.O. Box : 323 Muscat - Postal Code : 113 - Sultanate of Oman - Tel. : 24692552 / 24692575 - Fax : 24692553

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III. COMPILATION OF EXPERIENCES, VIEWS, AND OPTINOS PROVIDED BY INTERNATIONAL ORGANIZATIONS AND STAKEHOLDERS

1. The Commonwealth Scientific and Industrial Research Organisation (CSIRO)

CSIRO RESEARCH ON INCENTIVES FOR BIOLOGICAL DIVERSITY

Summary

102. The Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Australia has been instrumental in leading research in the area of incentive measures for biological diversity. The work has concentrated on Market Based Instruments (MBIs) which use market signals (auctions, prices and trading mechanisms) to influence the way people manage natural resources and the environment. The extensive work in this area covers both the theoretical and practical aspects of different incentives as well as experimental economics case studies and on-ground trials. The measures covered include cap and trade schemes, auctions, incentive payments, offsets and business trusts. The projects have been related to varying purposes and have included revegetation on agricultural land, salinity recharge programs, ecosystem services enhancement, forestry expansion, marine biodiversity improvements, urban water quality enhancement and internationally based biodiversity improvement schemes.

103. Although it is difficult to draw conclusions from such a wide ranging body of research, it was generally found that for most of these studies, targeting the particular incentive or framework of incentives to the contextual situation and including the relevant stakeholders in the design of the incentive scheme was crucial to the success of the scheme.

The following lists and summarises the areas of research based on the relevant research funding programs.

Handbook on Biodiversity Incentives

104. This practical guide to biodiversity incentive measures was funded by the Australian Government Department of the Environment and Water Resources to encourage catchment managers to assess environmental problems confronting their regions and to consider if revegetation is the appropriate remedy. If so the handbook provides a range of incentive schemes that support revegetation and other conservation management actions on private and public land that have been developed in recent years. The handbook provides a thorough overview of the various incentives, including stewardship payments, auctions and suasive instruments and is presented in an easy to read style for non-economists.

Report

Proctor W., Comerford E., Hattfield Dodds S., Stauffacher M., Wilkinson S. 2007. Motivating Change in the Catchment: A Guide to Revegetation Design and Incentives for Catchment Management Bodies. CSIRO Report.

Best Practice Framework on Incentives for Biodiversity Conservation

105. Achieving effective conservation of biodiversity and ecosystem services is a major challenge for all Australian jurisdictions. This challenge is increased by continuing adverse trends in the condition and extent of biodiversity across a wide variety of bioregions, and land and marine tenures. These trends are of concern because of the importance of biodiversity for its own sake, and for its significance in underpinning human welfare; directly through the use and enjoyment of natural resources and indirectly through ecosystem services. This guide to incentives for biodiversity conservation was funded by the Australian Government Department of the Environment and Heritage.

Report

Coggan, A., Whitten, S. and Yunus, F. 2006. Conservation Incentive Design: Key elements of biodiversity incentive design and implementation—Illustrative case studies for biodiversity conservation. CSIRO Sustainable Ecosystems, prepared for the Department of the Environment and Heritage.

National Action Plan for Salinity and Water Quality – National MBI Pilot Program, Round 1

106. The National MBI Pilots Program was set up by the Australian government to improve Australia's capacity to use Market Based Instruments in natural resource management and in particular to address the problems of salinity and water quality. More information on the program (including many of the listed publications) can be found at www.napswq.gov.au/mbi/.

The Onkaparinga Catchment Care Scheme

107. This project implemented a payment based instrument approach to encourage land management practices on private land that will contribute to regional revegetation and conservation targets.

Reports

Bryan, B, Connor, J., Gatti, S., Garrod, M and Scriver, L. (2005a) Catchment care- developing an auction process for biodiversity and water quality gains. Report for the Onkaparinga Catchment Water Management Board. ISBN 0 643092064; CSIRO Land and Water (Policy and Economic Research Unit), Adelaide.

Bryan, B., Crossman, N., Schultz, T., Connor, J. and Ward J. (2005b) Systematic regional planning for multiple objective natural resource management. A report for the River Murray Dryland Corridor Project; CSIRO Land and Water Adelaide, folio no. s/05/225.

Salinity Credit Scheme in the Bet Bet Catchment in Victoria

108. Three-year trials of an incentive-based "recharge-credit trade" were held to reduce the levels of salt accession in the Loddon River Catchment.

Reports

Connor, J.D., Clifton, C., Ward, J., Cornow, P., 2006. Commonwealth MBI Pilot Project: Dryland Salinity Credit Trade. Milestone 11 Final Trial Report, CSIRO Land and Water Client Report S/04/903. Available online: http://www.napswq.gov.au/publications/books/mbi/pubs/round1-project57.pdf

Proctor, W., Connor, J.D., Ward, J., Hatton Macdonald, D., 2007. Encouraging revegetation in Australia with a groundwater recharge credit scheme. Socio-economics and the Environment in Discussion Paper Series, 2007-06. Available online: http://ideas.repec.org/p/cse/wpaper/2007-06.html

Connor, J.D., Butters, S., Clifton, C., Ward, J. 2004. Trailing incentive-based policy to control salinity in the Bet Bet Catchment, north central Victoria. In: "Salinity Solutions". Proceddings of the Salinity Solutions Conference "Working with Science and Society" 2-5 August 2004, Bendigo, Victoria.

Coleambally Recharge Credit Trading

109. This project explored the development of tradeable recharge rights as a tool to manage irrigation induced salinity in the Coleambally Irrigation Area (CIA) in south western New South Wales (NSW). Tradeable recharge rights are a 'cap-and-trade' scheme. Under this type of policy instrument a limit or 'cap' is placed on the total allowable net recharge. Shares in the 'cap' are allocated to individual farmers who then must manage their enterprises within this cap or trade with others to enlarge their share.

Reports

Whitten, S., Collins, D. and Khan, S. 2003. Tradeable recharge credits in Coleambally Irrigation Area: Report 1 What are the issues? CSIRO & BDA Group. ISBN: 0975178318

Robinson, D., Whitten, S., Khan, S., Collins, D., Ward, J. 2005 Tradeable recharge credits in Coleambally Irrigation Area: Report 2 Economic impact of tradeable recharge credits and other net recharge abatement policies for the Coleambally Irrigation Area CSIRO & BDA Group. ISBN: 0975178326

Ward, J. 2004. Tradeable recharge credits in Coleambally Irrigation Area: Report 3 Designing experiments to test tradeable recharge credits in the Coleambally Irrigation Area CSIRO & BDA Group. ISBN: 0975178334

Ward, J. 2005. Tradeable recharge credits in Coleambally Irrigation Area: Report 4 Laboratory tests of alternative institutional frameworks. CSIRO & BDA Group. ISBN: 0975178342

Whitten, S., Robinson, D., Ward, J. and Ridley, M. 2005.Tradeable recharge credits in Coleambally Irrigation Area: Report 5 Field trial and farm case studies CSIRO & BDA Group ISBN: 0975178350

Khan, S. and Rana, T. 2005. Tradeable recharge credits in Coleambally Irrigation Area: Report 6 Biophysical modelling for linking farms with regional net recharge targets. ISBN: 0975178369

Whitten, S., Khan, S., Collins, D., Robinson, D. Ward, J. and Rana, T. 2005. Tradeable recharge credits in Coleambally Irrigation Area: Report 7 Experiences, lessons and findings CSIRO & BDA Group. ISBN: 0975178377.

Whitten, S., Khan, S., Collins, D. 2004. Tradable recharge rights in Coleambally Irrigation Area. AARES 48th Annual Conference 11-13 Febraury 2004 Melbourne, Victoria.

Robinson, D., Whitten, S., Khan, S., Collins, D. and Ward, J. 2005. Modelling the Economic Benefit of Cap and Trade for Irrigation Salinity Management Paper presented to the 49th Annual Conference of the Australian Agricultural and Resource Economics Society Coffs Harbour 9-11 February 2005.

Designing Auctions for Vegetation Corridors

110. This Queensland project was undertaken to design how a Market Based Instrument in the form of a tender system can be applied to establish vegetation linkage zones across a biogeographic region. Broadscale tree clearing has contributed to the fragmentation of wooded areas in the Desert Uplands region of central-western Queensland. There is potential for one or more east-west vegetation linkage zones to be established in the southern Desert Uplands. This would require the voluntary involvement of landholders to manage relevant parts of their properties for both beef cattle and biodiversity outputs in return for financial payments. About 12 properties might be involved in a single linkage zone proposal. Under the tender process, landholders could submit proposals for their property in return for specified payment levels. CSIRO collaborated with Prof. John Rolfe from Central Queensland University, which lead the project. The following are all the reports on this project.

Reports

Rolfe, J., McCosker, J. 2003. Overview of the Issues in Planning a Corridor Tender Process. Research Report No. 1 Establishing East-West Landscape Linkage in the Southern Desert Uplands.

Rolfe, J., McCosker, J., Windle, J. and Whitten, S. 2004. Designing Experiments to Test Auction Procedures. Research Report No. 2 Establishing East-West Landscape Linkage in the Southern Desert Uplands.

Rolfe, J., McCosker, J. 2004. Designing a Biodiversity Index to Assess East-West Landscape Linkage. Research Report No. 3 Establishing East-West Landscape Linkage in the Southern Desert Uplands.

Windle, J., Rolfe, J., McCosker, J. and Whitten, S. 2004. Designing auctions with Landholder Cooperation: Results from Experimental Workshops. Research Report No. 4 Establishing East-West Landscape Linkage in the Southern Desert Uplands.

Establishing the Potential for Offset Trading in the Lower Fitzroy River

111. A major project was undertaken in Queensland to design how a Market Based Instrument in the form of an offset mechanism can be used to achieve improvements in water quality in the lower Fitzroy River. Like other river systems draining into the Great Barrier Reef lagoon, the Fitzroy River has deteriorating water quality levels with high sediment and nutrient loads. This may cause damage to estuaries, the coastal zone and the Great Barrier Reef, although the level of scientific knowledge about the linkages between poor water quality and potential environmental damage is incomplete. There is substantial public interest in improving water quality outflows to the Great Barrier Reef lagoon.

Reports

Rolfe, J., Alam., K. and Windle, J. 2004. Overview of the Fitzroy Basin and Opportunities for Offset Trading. Research Report No. 1 Establishing the Potential for Offset Trading in the Lower Fitzroy River.

Rolfe, J., Alam., K. and Windle, J. 2004. The Importance of Riparian Vegetation in Improving Water Quality. Research Report No. 2 Establishing the Potential for Offset Trading in the Lower Fitzroy River.

Rolfe, J., Alam., K., Windle, J. and Whitten, S. 2004. Designing the Choice Modelling Survey Instrument for Establishing Riparian Buffers in the Fitzroy Basin. Research Report No. 3 Establishing the Potential for Offset Trading in the Lower Fitzroy River.

The Auction for Landscape Recovery

112. The Auction for Landscape Recovery (ALR) is one of 11 market-based instrument (MBI) pilot projects conducted across Australia from 2003-2005. The joint funding of these projects by the Australian and State Governments within a first round pilot program signals the interest of the National Action Plan on Salinity and Water Quality in seeking new approaches to address natural resource management and environmental problems. The ALR is a multipartner, multi-disciplinary research project which operationalised an auction-based field trial in the Intensive Land-use Zone of the NEWROC, a highly biodiverse landscape in the northeast wheatbelt of Western Australia that is threatened by salinity and the effects of largescale clearing for agriculture. It is the first biodiversity/conservation auction trial to have been conducted in Western Australia.

Report

Gole, C., Burton, M., Williams, K.J., Clayton, H., Faith, D.P., White, B., Huggett, A. and Margules, C. 2005. Auctions for Landscape recovery. Final Report. WWF-Australia.

Farming Finance: Natural resource management investment leverage fund

113. This project involved a pilot business incubator and investment fund focused on supporting innovative new enterprises expected to provide near commercial financial returns and significant environmental benefits. The pilot found that this approach has the potential to secure environmental benefits that would not be achieved through existing policy mechanisms, including grant processes or competitive tenders to supply ecosystem services. The main relative advantages of the approach are in facilitating landscape level change (rather than changed management practices within existing farm

enterprises), and supporting the exploration and assessment of innovative resource management options with potential for wider adoption.

Reports

Hatfield-Dodds, S., Binning, C. and Yvanovich, B. 2006, *Farming Finance: Final Evaluation Volume 1 – Policy Findings*, Market Based Instrument Pilot ID46, Greening Australia / CSIRO, Canberra.

Available online: http://www.napswq.gov.au/publications/books/mbi/round1-project46.html

Hatfield-Dodds, S., Binning, C., Yvanovich, B. and Brandis, P. 2006, *Farming Finance: Final Evaluation Volume 2 – Project methods and narrative*, Market Based Instrument Pilot ID46, Greening Australia / CSIRO, Canberra.

National Action Plan for Salinity and Water Quality – National MBI Pilot Program – Round 2

Round 2 started in early 2007 and is set to finish in June 2008. As such, no official reports have been published as yet. The program has the following objectives:

- Design and test new policy mechanisms relevant to a broad range of NRM and environmental issues
- Evaluate these options (effectiveness, efficiency and appropriateness of MBIs)
- Communicate with both Government and the broader community the future potential for MBIs

CSIRO is involved with 3 projects under this scheme:

- Auctions and Beyond: Enhancing the cost-effectiveness of the Catchment Care Programme
- Targeting Environmental Flow Sourcing for Salinity Benefits
- Design Auctions with Outcome Bonuses: An Application to Ground Nesting Birds in the Murray Catchment

Contact:
Dr. Jeff Connor
Project Leader
CSIRO Land and Water
Water for a Healthy Country Flagship
Phone: 61 8 8303 8784
Email: jeff.connor@csiro.au

Marine and Tropical Sciences Research Facility

114. The objective of the "implementing ecosystem goods and services" component of the 'strategic natural resource management and landuse planning' MTSRF project was "to refine, tailor and apply the concept of Market Based Instruments for implementing ecosystem goods and services". The project objective highlights offsets as an MBI to explore management of environmental conservation in developing areas. Offsets are explored in detail, however other MBI options are also considered as a part of this research. Due to the important ecosystem services and urban development pressures involved as well as threats to an endangered species of tropical rainforest bird, the Cassowary, Mission Beach in Queensland was chosen as a case study area.

Reports

Coggan, A., and Whitten, S. 2007 Market Based Instruments, Ecosystem Services and Development in Mission Beach, Far North Queensland. Background Report 1: Ecosystem Service Impacts of Development**.** Marine and Tropical Sciences Research Facility, Cairns.

Coggan, A., and Whitten, S. 2007 Market Based Instruments, Ecosystem Services and Development in Mission Beach, Far North Queensland. Background Report 2: Urbanisation and the Cassowary: Impacts and Economics**.** Marine and Tropical Sciences Research Facility, Cairns.

Coggan, A., Hill, R., Whitten, S.M., Harman, B. 2007 Market Based Instruments, Ecosystem Services and Development in Mission Beach, Far North Queensland. Background Report 3: Institutions and structures currently in place for the management of development and the Cassowary – what do they do, what are the gaps and what does this mean? Marine and Tropical Sciences Research Facility, Cairns.

Ecosystem Services Project

115. The Ecosystem Services Project was instigated in 1999 by CSIRO with funding from The Myer Foundation. The goal was to 'change Australia's thinking about natural resource management'. The goal is being achieved through: increasing awareness and understanding of ecosystem services amongst decision makers and society in general; exploring the economic and other values of ecosystem services in natural resource management; and, investigating possible mechanisms and new institutional arrangements that better recognise, use and protect ecosystem services.

The 'Markets for Ecosystem Services' project was undertaken in three case study regions:

- The Goulburn-Broken Catchment in Victoria;
- The Murrumbidgee Catchment in New South Wales; and,
- The Blackwood Basin in Western Australia.

Report

Whitten S., Salzman J., Shelton D. and Proctor W. 2003. Markets for ecosystem services: applying the concepts. In: 47th AARES Conference, Fremantle, Western Australia.

Joint Venture Agroforestry Program

116. Comprehensive reports have been produced in the Market Based Instruments for Ecosystem Services series for the RIRDC/Land and Water Australia/FWPRDC Joint Venture Agroforestry Program. The aim of this project is to address practical application of market based instruments by building the capacity of regional communities in Australia to initiate markets for ecosystem services. In recent times, use of MBIs to facilitate enhanced protection or production of ecosystem services has achieved a high public profile through the development of water markets and the initiation of the National Market Based Instruments Pilots Program among others. However, much work remains to apply these tools in practice. The six main case studies are listed below.

- A development offset quantity based MBI in the Goulburn Broken Catchment of Victoria;
- A negotiated payment price based MBI in the Blackwood Basin of WA;
- A cap and trade quantity based MBI in the Coleambally Irrigation Area of NSW;
- A price based auction MBI in the Upper Wimmera Catchment in Victoria;

- A price based auction in the Desert Uplands of Qld; and
- A market friction based certification brokerage MBI for the native seed industry across Australia.

Reports

Whitten S., Shelton D. 2005. Markets for Ecosystem Services: Practical design and case studies. In: Invited paper to Payments for Environmental Services in Developed and Developing Countries, Organised by the Centre for Development Research, University of Bonn (ZEF) and the Centre for International Forestry Research (CIFOR). Titisee, Germany. 15-18 June 2005.

Whitten S., Shelton D, Coggan A, Hodgson G. 2005. Markets for Ecosystem Services – Implications for Agroforestry. In: Invited paper to International Union of Forestry Congress, Brisbane, Australia.

Whitten SM, Van Bueren M, Collins D. 2004. An overview of market-based instruments and environmental policy in Australia. In: Market-based Tools for Environmental Management. Proceedings of 6th Annual AARES Symposium. RIRDC, Canberra, Australia.

Whitten SM, Young M. 2004. Market-based tools for environmental management: Where do they fit and where to next? In: Market-based Tools for Environmental Management: Proceedings of 6th Annual AARES Symposium. RIRDC, Canberra, Australia.

Whitten S, Reeson A, Windle J, Rolfe J. 2007. Barriers to and Opportunities for Increasing Participation in Conservation Auctions. A research report from the CSIRO-CQU-LWA project: "Achieving Coordinated Landscape Scale Outcomes with Auction Mechanisms".

Whitten SM, Shelton D. 2005. MBI Implementation - An implementation for establishing an MBI in the Steep Hill Region of the Wimmera Catchment. Report to Wimmera CMA.

Whitten SM, Shelton D, 2005. Identifying Opportunities - A review of markets for ecosystem services and opportunities for application in the Wimmera Region of Victoria. Report to Wimmera CMA.

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Markets for Biodiversity Outcomes in the Rangelands

117. The purpose of this project is to introduce MBIs; to point out the potential benefits of using MBIs to achieve biodiversity outcomes in the rangelands; and to discuss some of the key MBI design issues. Funding for the research is provided by the Australian Government Department of Environment and Heritage and through the Desert Knowledge CRC.

Report

Gorddard, R.J., Whitten, S. and Smyth, A. 2006. Markets for Biodiversity Outcomes in the Rangelands, Conference Papers, Australian Rangelands Society 14th Biennial Conference, Renmark, South Australia, September 2006 p183-186.

Improving the Freshwater Beach Catchment through MBIs

118. The Freshwater Beach Catchment in the Sydney Metropolitan area was selected as a case study for an initiative undertaken by the CSIRO Urban Water Program to look at improving the water cycle in an urban setting.

Report

Hatton Macdonald D, 2002. Improving the Catchment through Market Based Instruments. Freshwater Beach Catchment, NSW. DRAFT REPORT for the Urban Water Program, Folio No: S/02/1447.

Environmental Water Bank Options for the Murray River in South Australia

119. This report examines opportunities to use one or more bank-like structures to source, hold and manage water for the environment in the River Murray in South Australia.

Report

Connor JD, Young M, 2003. Environmental Water Bank Options for the South Australian River Murray. Final Report to South Australian Department of Water, Land and Biodiversity Conservation, Folio No: 03/745.

Revegetation in South Australia

120. The primary focus of this report is to evaluate the potential of market based incentives to motivate private revegetation efforts.

Report

Ward J, Bryan B, Gale G, Hobbs TJ, 2005. Market-Based Instrument approaches to implementing priority revegetation in the South Australian Murray-Darling Basin. CSIRO Land and Water Client Report December 2005, ISBN 0 643 09293 5.

MBIs for Managing Water Quality in New Zealand

121. CSIRO was contracted to report on MBI incentives in New Zealand. The report was commissioned by the NZ government to summarise the current state of knowledge concerning the use of MBIs for managing diffuse source contamination of water quality. The evaluative framework developed in this paper is based in part on earlier work completed by Melissa Bright, Doug Young, Amanda Hamilton, Jeff Connor and Mike Young.

Report

Hatton Macdonald D, Connor JD, Morrison M, 2004. Market based instruments for managing water quality in New Zealand. Final report for the NZ Ministry for the Environment Folio No: S/03/1393.

Marine Biodiversity Offsets

122. This proposed work is to look at incentives to discourage bycatch in Australia's eastern tuna and billfish fishery. Instead of shutting down fleets that catch more seabirds and turtles than they should, these fisheries would instead fund efforts to remove predators from the seabirds and turtles breeding islands.

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International Payments for Ecosystem Services

CSIRO is contributing to a collaborative project funded by UNEP, IUCN and the CBD Secretariat on scaling up payments for ecosystem services to the international level. Some of the most salient technical and policy challenges facing this emerging mechanism will be addressed through expert and policymaker workshops, joint publications and capacity building activities.

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Theoretical Overview, Background and Experimental Economics Papers on MBIs

Coggan A, Whitten SM. 2005. Market Based Instruments (MBIs) in Australia: What are they, important issues to consider and some applications to date. Background paper presented at the Desert Knowledge CRC Workshop. Alice Springs, Australia. 8-10 June 2005.

Coggan A, Whitten SM, Langston A. 2005. Nesting MBIs in current institutions and structures - can it be done and what are the implications? Paper presented at the 49th Annual Conference of the Australian Agricultural and Resource Economics Society. Coffs Harbour, NSW, Australia. 8-11 February 2005.

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Commonwealth Scientific and Industrial Research Organisation

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2. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

From: Marceil YEATER [Marceil.Yeater@cites.org]
Sent: November-14-07 10:10 AM
To: gordana dosen
Cc: Juan Carlos VASQUEZ; Willem WIJNSTEKERS

Subject: Re: Decision VIII/26 on incentive measures: preparation for the in-depth review of the work on incentive measures

Dear Ms Dosen,
Thank you for your reminder and this opportunity to contribute to CBD's activities. When preparing documents for CBD CoP9 on incentive measures, the CBD Secretariat may wish to take into account document CoP14 Doc. 32 on Incentives for implementation of the Convention, document CoP14 Inf. 35 (Report on the collaboration between the UNCTAD Biotrade Initiative and the CITES Secretariat), summary records of related discussions contained in CoP14 Com. II. Rep. 8 (Rev. 1) and CoP14 Plen. 4 (Rev. 1) and Decisions 14.42-14.47 adopted by the CITES Conference of the Parties.
Specific examples of national experience with incentive measures should be identified in the ongoing wildlife trade policy review project (see documents CoP14 Doc. 15 and CoP14 Inf. 17 as well as Decisions 14.21-14.24). Good luck with your document and other preparations for CoP9.
Best regards.
Marceil Yeater
Chief, Legal Affairs and Trade Policy
CITES Secretariat

3. DIVERSITAS

ecoSERVICES Core Project, DIVERSITAS

Submission to the CBD on incentives for biodiversity conservation

C. Perrings14/

ecoSERVICES Group, Arizona State University

1. Introduction

The Millennium Ecosystem Assessment (MA 2005) points out that a major reason for concern over the loss of biodiversity is the resulting loss of ecosystem services – many of which are public goods. Unlike the public good associated with species extinction, however, these are usually local or regional in extent (Perrings and Gadgil, 2003). They include, for example, the regulation of specific biogeochemical cycles in different climatic conditions, or the protection of crop yields in the face of an array of pests and pathogens. The public good nature of many ecosystem services and the lack of markets for many of the biodiversity effects of human activities mean that people are not confronted with the true cost of their decisions. Open access to High Seas fisheries, for example, has led to the collapse of 65% of all species fished (Worm et al, 2006). Both the public good nature of biodiversity conservation and the existence of biodiversity externalities mean that private decision-makers largely ignore the effect of their own behavior on biodiversity, on ecosystem functioning, and by and large on the provision of ecosystem services.

Because of this, there is increasing interest in the potential for economic instruments to provide people with incentives to use biological resources in ways that are at once efficient, equitable and sustainable. These instruments include the establishment of property rights where feasible, along with traditional market-based instruments (MBIs) – user charges, access fees, taxes, and the like – and, more recently, systems of payments for ecosystem services (PES). The earliest examples of PES have been in agricultural systems where there has been an obligation under the General Agreements on Tariffs and Trade (GATT) to reduce direct subsidies to farmers, giving rise to the natural suspicion that PES are

14/ This note draws on collaborative work with the following people: S. Baumgärtner, W.A. Brock, K. Chopra, M. Conte, C. Costello, A. Duraiappah, A.P. Kinzig, U. Pascual, S. Polasky, J. Tschirhart, A. Xepapadeas.

subsidies in another guise. This suspicion has been reinforced by the tendency for the intergovernmental organizations to link PES with poverty alleviation. While the use of PES to replace traditional agricultural subsidies and particular forms of international development assistance are both part of the story, there is sound underlying rationale for PES just as there is for the more traditional MBIs. This submission reviews the rationale for MBIs in general, and PES in particular, and the evidence for their effectiveness in the conservation of biodiversity.

2. Market mechanisms and incentives for biodiversity conservation

An important factor in the design of incentives for biodiversity conservation is that not all of the benefits of conservation accrue to those who make decisions that impact biodiversity. Those who convert forest to agriculture benefit from the crops produced. The costs of their actions, however, are frequently born by a wider community. Land conversion that adversely affects the quantity and quality of water yielded by watersheds, soil erosion, habitat provision and carbon sequestration typically harms people others: some locally, some regionally, some globally. Where the social costs of actions that reduce biodiversity through land use change exceed the private benefits, there is at least the potential for policy interventions that provide net welfare gains – improve human well-being.

In some cases the first best solution is to set up markets that allow conservation to pay for itself (e.g., by establishing property rights in the effects of biodiversity change). In other cases, it may be necessary for government intervention to overcome market failure and foster conservation (e.g., by regulating access to common pool resources or environmental public goods). Such intervention may make use of market mechanisms (e.g., payments for ecosystem services, tradable development rights), or it may employ more traditional regulatory approaches (e.g., portions of the Endangered Species Act in the US and the Convention on International Trade in Endangered Species).

Market formation is attractive wherever conservation goals may be readily aligned with the pursuit of private gain (Daily and Ellison 2002, Pagiola 2002, OECD, 2004). The best example of this is the rapidly growing ecotourism sector, where habitat protection has proved to be more profitable than agricultural or livestock production. If such markets address both '*forward'* (or '*downstream'*) and '*backward'* (or '*upstream'*) biodiversity linkages they have at least the potential to ensure that all relevant effects are taken into account by decision-makers. Moreover, even where ecotourism markets leave important off-site effects unaccounted for, they may still provide a greater incentive to conserve the biodiversity than alternative activities (Pascual and Perrings, 2007)

Other examples include the development of markets for bioprospecting (the process of testing natural organisms for biochemically-active compounds or genetic material) which has yielded, for example, vincristine and vinblastine found within the Rosy Periwinkle. It has been estimated that 25% of the drugs sold in developed countries and 75% of those sold in developing countries were developed using natural compounds (Pearce and Puroshothamon 1995). The evidence on the effectiveness of such markets in conserving biodiversity is, however, mixed (Simpson, Sedjo, and Reid, 1996; Costello and Ward 2006). The exploitation of vincristine, for example, had resulted in depletion of nearly the entire native periwinkle habitat in Madagascar by the turn of the century (Koo and Wright 1999).

Another approach to the use of market creation to promote conservation parallels the cap-and-trade schemes to limit pollution emissions. It involves the development of markets to enhance the efficiency of conservation activity across the landscape. Given some conservation target, systems of tradable development rights (TDR) system have been designed that, in principle, encourage conservation in the most appropriate areas. In a TDR system the conservation planner determines how much land can be developed in a given area. Development rights are then allocated and trades for the right to develop are allowed. Developers can increase density in a growth zone ('receiving area') only by purchasing a development rights from the preservation area ('sending area'). The approach was developed and implemented extensively in the 1970's to direct development within urban areas (Mill, 1980). Its

potential application in biodiversity conservation was recognized in the 1990s (Panayotou, 1994). The basic idea is to direct development to areas of high productivity potential and to encourage conservation in ecologically significant and sensitive areas in an efficient way.

Two main types of TDR programs currently exist at the landscape level: the single and dual zoning program. The former is similar to permit systems such as those used in transferable fishing quotas or pollution control. After the initial allocation of quotas, anyone within the program area may buy or sell the permits. The dual zone system instead explicitly designates both (permit) sending and receiving areas. In Brazil, for example, land owners not complying with the National Forest Code are in principle able to buy forest reserves in other areas, normally in close proximity to his/her property – although the system has not in practice been implemented (Pascual and Perrings, 2007).

Alternative instruments for meeting biodiversity conservation targets at least cost include the use of competitive conservation auctions. The advantage of auctions is that they encourage landowners to reveal the true private cost of conservation, which other PES or DCP systems do not. Landholders submit bids to win conservation contracts from the government. Stoneham *et al*. (2007) provide a recent small scale pilot case-study of an auctioning system for biodiversity conservation contracts in Victoria, Australia, known as *BushTender*. They estimate that the mechanism has provided 75% more biodiversity conservation compared to a fixed-price payment scheme (or DCP).

Where landowners have well-defined rights, conservation organizations have been able to pursue their goals directly through such methods or through outright land purchases and easements – agreements with landowners to reserve land for conservation. Where property rights are not well defined, however, the scope for engaging local populations through formal contracts is less obvious. Local communities exploiting common pool resources have little incentive to restrict their use of those resources for the benefit of others, and unless they can develop mechanisms to regulate use in non-traditional ways have no means of enforcing local compliance with community-contracts. In the 1980s, there were various attempts to engage local communities through community-based conservation (Western and Wright 1994) and integrated conservation-development projects (ICDPs) such as Zimbabwe's Communal Areas Management Program for Indigenous Resources (CAMPFIRE) project (Wells and Brandon 1992). These efforts have, however, had mixed success, partly because of the difficulties of ensuring community compliance with agreements.

More recently conservation agencies, NGOs and the intergovernmental organizations have all been experimenting with PES systems, exploiting the experience of schemes in Europe to compensate landowners for taking private land out of production and putting it into conservation (Swart 2003). Examples of ecosystem services that have been addressed through PES of one form or another include habitat provision, frequently associated with other services such as nutrient/pollution buffering along watercourses, water supply and water quality protection, soil conservation and carbon sequestration in forest and agroforest systems. In each case the payment is intended to internalize the positive externalities generated by land-holders.

Payments for ecosystem services have, in one form or another, been an important element in the reform of the Common Agricultural Policy in Europe since 1992 (OECD 2001). But they are increasingly being applied elsewhere. In Costa Rica, for example, the 1996 Forestry Law instituted direct payments for four ecosystem services: mitigation of greenhouse gas emissions, watershed protection, biodiversity conservation, and scenic beauty. The National Forestry Financial Fund enters into contracts with landowners that agree to undertake forest preservation, reforestation or sustainable timber management, the funds deriving from taxes on fuel use, sale of carbon credits, payments from industry and from the Global Environment Facility (GEF). In this case, however, only farmers with property rights to land can be paid for the environmental conservation they provide (Pagiola 2002).

Other PES systems attempt to address the problems posed by the lack of formal property rights. The Rewarding Upland Poor for Environmental Services (RUPES) scheme, a partnership of the International Fund for Agricultural Development (IFAD), the World Agroforestry Centre (ICRAF) and a partnership of local, national and international partners. RUPES aims to conserve resources offering global benefits (carbon sequestration and habitat protection) through payments for water supply and water quality in Nepal, Philippines and Indonesia.

All of these mechanisms have implications for the distribution of both assets and income, and in many cases this is ultimately what motivates their use. Assigning property rights to environmental resources adds to the wealth of those who acquire the rights, and detracts from the wealth of those who lose rights. Taxes and charges reduce the disposable income of those affected, and PES, DCPs (along with more conventional subsidies) have the opposite effect. The distributional effects of the CAP reforms have undoubtedly been an important consideration in Europe. Similarly, the potential implications of PES systems for poverty alleviation in low income countries are important considerations for UNEP, UNDP and the World Bank. Pricing access to ecosystem services can cause the socially disadvantaged and vulnerable to be excluded from those services, and this discourages use of instruments such as taxes, user fees and access charges. PES that involve direct payments have at least the potential to alleviate poverty whilst encouraging the provision of socially beneficial land uses. However, any mechanism that delivers net social benefits creates potential gains from trade that may be distributed to the poor (Duraiappah 2006).

3. International markets

All of the mechanisms mentioned to this point address the problems posed by market failures at the national level. However, the same problems exist at the international level. There are biodiversity externalities associated with international trade for which there exist corresponding mechanisms. The persistence of international biodiversity externalities, like the persistence of other environmental externalities, has much to do with the way that international markets and the rules of international trade are structured. Unlike many other environmental resources, however, there does exist a treaty on the trade of biological species. The Convention on International Trade in Endangered Species (CITES) deals specifically with international markets for biological resources (as distinct from markets for the international benefits of local conservation effort). Its role is to reduce the impact of trade on the survival probability of rare and endangered species. It does this by imposing prohibitions. Although CITES may have had the greatest impact on conservation outcomes (WCMC 1992), there are other potential approaches to the internalization of biodiversity externalities.

Costello and McAusland (2003), for example, explore the use of tariffs on imports to reduce the damage costs from accidental introductions, while McAusland and Costello (2004) consider the efficiency of port inspections combined with tariffs on imported goods. The optimal level of tariffs in each case depends on the risk of biological invasions and the expected level of damage they cause. While the existing legal and institutional framework makes it difficult to use incentives of this sort, they remain part of the arsenal of instruments available to deal with an important class of biodiversity externalities.

4. Summary

- The incentive problem in the conservation and sustainable use of biodiversity has two elements. One is the generation of mechanisms that deliver the correct incentives for biodiversity conservation and sustainable use. The other is the discouragement of mechanisms that deliver perverse incentives – that work against conservation and sustainable use.

- Most problems are likely to require a mix of measures: direct incentives (taxes, user fees and charges, compensation payments and payments for ecosystem services), indirect incentives (via

fiscal, social and environmental policies) and disincentives (prosecution leading to fines and other penalties).

- The development of markets for ecosystem services is increasing rapidly, and offers a number of significant benefits. Up to now the newer market-like mechanisms have emerged in areas where the capturable benefits are largest. The most direct attempts to do this involve the widening and deepening of markets for individual biological resources.

- A second set of markets offer biodiversity conservation benefits as a side-effect (an externality) of markets for unrelated effects.

- The development of PES involves a third approach: payment systems that encourage individuals to protect common pool resources that are the source of wider benefits. A number of working examples of this approach already exist and demonstrate its potential to improve the state of biodiversity and ecosystem services. While payments for ecosystem services are a promising instrument that potentially address both the incentive question and poverty, they need to be applied with the same caution as existing subsidies in agriculture, forestry and fisheries.

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4. Food and Agriculture Organization of the United Nations (FAO)

Incentive measure for biodiversity conservation
Consolidated Submission from FAO

Introduction

FAO works on a broad range of issues relevant to incentive measures for biodiversity conservation. FAO's work on providing policy and technical assistance to support sustainable agricultural and rural development gives important insights on how the management of agro-ecosystems can be improved to better utilize and conserve agricultural and other forms of biodiversity. Identification of the policy and technical barriers that need to be addressed in making desired changes provides important information for the design of appropriate measures.

This submission focuses on a selected set of FAO initiatives directly related to incentive measures for biodiversity conservation. One area of work is on incentives to promote the sustainable use of plant genetic diversity. FAO is conducting two projects in this area: an assessment of agricultural seed and product markets and their relationship to farm level decisions on utilizing crop genetic resources with sites in Mali, Kenya, Bolivia, India and Mexico, and the LinKS (Gender, biodiversity and local knowledge systems for food security) project which carried out activities in four countries of southern Africa (Mozambique, Swaziland, Tanzania and Zimbabwe. Another major area of work is on payments to agricultural producers for the provision of environmental services such as biodiversity conservation. Much of the results from this program were highlighted in the 2007 State of Food and Agriculture report which focussed on "Paying Farmers for the Environment". The rest of this document reports findings from these work programs.

a. Lessons learned and key challenges

Incentive measures for the sustainable use of plant genetic diversity

1) There is a significant on farm demand for plant genetic diversity in the form of seeds and varieties. Farmers are interested in maintaining a diverse range of crops and varieties for several reasons, including adaptation to heterogenous production conditions, to manage risk, to experiment and to generate a variety of consumption characteristics such as taste, cooking or storage quality that farmers demand.

2) Local markets are an important source of seed for farmers – even the poorest – and they play an important role in times of crisis when farmers own supplies are wiped out. Seeds obtained in local markets are often not certified seeds, but rather landraces or varieties that consist of crosses between landraces and improved varieties or recycled improved varieties.

3) Gender is a key issue in the access to and use and management of plant genetic resources. Women play a central role in managing agro-biodiversity and the knowledge of seed selection, production and supply. As women are mainly responsible for seed selection and management of traditional food crops, they also hold a higher level of knowledge about these crops than men. In many cases women are the primary vendors of seeds in local markets, and they are the ones with the knowledge about the source and content of the germplasm being exchanged. As the formal sector becomes increasingly important however, women's importance in the seed sector often declines.

4) Accessing seeds of both traditional and improved varieties can be a problem for farmers, and this affects their incentives for sustainable use of plant genetic resources. Customary systems of saving and exchanging seeds are breaking down due to changes in the agricultural sector, or because of disruptions from war, mass migration and natural disasters. Supplying traditional varieties through markets is not generally given any policy importance, and in fact is often

blocked by regulations favoring the commercialization of seeds of improved varieties. The classic model of improving seed supply through the development and commercialization of seed supply does not provide a complete picture of what is needed for a sustainable seed supply system in the current context of many agricultural-based developing economies.

Payments for environmental services as an incentive measure for biodiversity conservation

5) Payments for biodiversity conservation services is a relatively new policy instrument whose use is growing in both developing and developed countries, but it is still very limited.

6) Payments for biodiversity conservation are just one type of incentive measure and its effectiveness varies by situation. Other measures such as regulations, removal of perverse incentives may be more effective depending on the specific threat to biodiversity conservation.

7) Payments for biodiversity conservation take various forms and they involve both private and public sector purchasers. Examples include direct payments to landowners for changing land use patterns (e.g. refraining from deforestation or retiring agricultural lands- examples can be found in Costa Rica, US, South Africa) or payment of a premium for a product produced under a biodiversity friendly production system (e.g. shade-grown coffee in Central America) or payments to landowners to maintain an aesthetically pleasing landscape for ecotourism (numerous cases in Africa and Latin America) In addition, payments for offsetting biodiversity losses have also been made in a limited number of cases – primarily in the US.

8) Several challenges face payments for biodiversity conservation programs. Since biodiversity values are largely non-marketed, it is difficult to establish prices for the service. Secondly, since biodiversity conservation generally requires the collective efforts of a large group of people, cooperation amongst providers is necessary and often difficult to establish. Thirdly, the demand and payment flows for biodiversity conservation is limited, and payments for long term biodiversity conservation services are difficult to secure. Fourth, biodiversity conservation may come into conflict with agricultural and economic development processes and payments for conservation need to be carefully structured to support overall economic development and poverty reduction.

b. Options to address the challenges identified:

There are several options available to addressing the challenges identified above. Their appropriateness will vary by the specific context of the agricultural sector and in the case of plant genetic diversity – the crop.

1. A need to revisit seed sector policies in agricultural-based developing economies to support the supply of plant genetic diversity that farmers demand. This is a critical area for improving incentives to farmers to sustainably manage their plant genetic resources. Some specific examples include:

1) Improve Seed sector management

Flexible standards to facilitate the exchange of seeds in the informal sector which would include landraces and recycled improved varieties can be important to promote access to diversity for some crops. Seed pricing policies is another important area - subsidization of improved seeds, such as hybrid maize, can create artificially high returns to farmers from adoption, and abandonment of traditional varieties. Such subsidies, may work as perverse incentives for desirable on farm conservation. Improving information flows in the informal sector is another option. Farmers often lack information about landraces or traditional varieties that may be beneficial to them. One way of improving information and use of

traditional varieties has been through "diversity fairs" where varieties are showcased for farmers by other farmers or seed producers. Local sourcing for emergency seed relief supplies is another potentially important option. Greater consideration of the use of local sources for seeds for emergency relief supplies could result in better farm access to plant genetic diversity and sustainable use.

2) Develop markets for diversity. One of the effects of farmers producing for highly standardized agricultural output markets is a decrease in on farm diversity. Developing markets for a diverse range of products is a potentially important means of providing farmers with incentives for sustainable use of plant genetic resources. Markets for niche products from specific landraces or for a range of varieties of any one product are potential options here.

3) Improve biodiversity valuation – particularly for indirect use values. At present, in many cases payments for biodiversity conservation are being set based on the opportunity costs of conservation, but this may represent a significant undervaluation.

4) Stimulating the demand for biodiversity conservation services is needed through more work on valuation, particularly in linking biodiversity to other valuable outcomes, such as reducing the incidence of natural disasters, or the spread of contagious diseases which have known, and large costs. Long term funding for biodiversity conservation will require continued and increased public sector intervention since much of the values are public goods.

5) Identification of locations and production systems where payments for biodiversity conservation has the highest return to spending is important in successfully integrating payments for conservation into overall development strategies. Maps indicating relative biodiversity and agricultural production values across locations are increasingly being developed, and in some cases these also include information on location of the poor. These are important in identifying locations likely to be most effective for payments.

c. Priorities for a future programme of work

1) Development of guidance on managing seed systems to promote sustainable use of plant genetic resources.

2) Identification of locations and production systems where payments for biodiversity conservation are likely to be most effective.

3) Capacity building and market development for agricultural products produced under biodiversity friendly production systems

4) Establishment of public sector funds to support long term biodiversity conservation.

5) Valuation of indirect use values of biodiversity conservation.

d. Key gaps

1) Better understanding, recognition and validation of the importance of diversity in an agricultural development strategy are needed. Increasing involvement of the private sector in plant breeding and seed sector development on the private sector may inhibit the development of a desired supply of diversity in the seed system, since many of the benefits are in the form of public goods.

2) Information on biodiversity values; and conservation that can be obtained within various types of agricultural production systems

3) International and national agricultural marketing chains that support biodiversity friendly production, particularly in developing countries

e. Interface with other international initiatives and instruments

For work on incentive measures for sustainable use of plant genetic diversity a key interface is with agricultural development initiatives which affect the supply and demand of crop genetic resources at the farm level. These include programs such as the New Economic Program for African Development (NEPAD) New Partnership for Africa's Development (NEPAD) Comprehensive Africa Agriculture Development Programme (CAADP) and the Alliance for a Green Revolution in Africa (AGRA) Program for Africda's Seeds Systems (PASS). Interface with CGIAR centers is also critical, as they are at the forefront of much of the plant genetic resource and seed sector development work in developing countries. The International Treaty on Plant Genetic Resources for Food and Agriculture is the central international instrument dealing with these issues and interface is clearly necessary.

For work on payments for environmental services, several international agencies, including GEF, IFAD, UNEP, the World Bank and CGIAR centers are working on various aspects of the issue. The flexible mechanisms of the Kyoto Protocol, particularly the CDM are important instruments for payments. The Global Mechanism of the UNCCD is another actor in this areas as are international NGOs such as Conservation International, WWF, The Nature Conservancy, as well as a host of local NGOs.

f. Linkages to other programs of work of the CBD

Closely linked to the program of work on agricultural biodiversity

5. Organization for Economic Cooperation and Development (OECD)

ENV/D/2008.08 Paris, 18 January 2008

OECD input to the SCBD for the preparation of the in-depth review

of the work on incentive measures

Dear Dr. Djoghlaf,

In response to the invitation to international organisations and stakeholders to contribute to the preparatory process for the in-depth review of the work on incentive measures, this letter highlights some of the relevant reports and conclusions arising from the work of the OECD Working Group on Economic Aspects of Biodiversity (WGEAB).

The main focus of the work of the WGEAB for over the last ten years has been on incentive measures, valuation and market creation for the sustainable use and conservation of biological diversity. The main outputs of the Group include a series of handbooks, reports and case studies:

- OECD (2004), *Handbook of Market Creation for Biodiversity: Issues in Implementation*
- OECD (2003), *Harnessing Markets for Biodiversity: Towards Conservation and Sustainable Use*
- OECD (2003), "Perverse incentives in biodiversity loss", [ENV/EPOC/GSP/BIO(20032/FINAL], www.oecd.org/env/biodiversity
- OECD (2002), *Handbook of Biodiversity Valuation: A Guide for Policy-Makers*

- OECD (2001), *Valuation of Biodiversity Benefits: Selected Studies*
- OECD (1999), *Handbook of Incentive Measures for Biodiversity: Design and Implementation*
- OECD (1996), *Saving Biological Diversity: Economic Incentives*

An OECD Policy Brief summarising some of the main policy messages of the OECD analysis of incentive measures, titled "Preserving Biodiversity and Promoting Biosafety" (2005), is available at www.oecd.org/publications/Policybriefs.

Reflecting the depth of material contained in this work, OECD countries agreed in 2004 an "OECD Council Recommendation on the Use of Economic Instruments in Promoting the Conservation and Sustainable Use of Biodiversity" [C(2004)81]. All 30 OECD member countries agreed this Recommendation. In 2007-2008, the WGEAB is undertaking a review of the implementation by OECD's 30 member countries of the Council Recommendation on the use of economic instruments since its adoption in 2004. While this review is still in process, some of the initial findings may be relevant to the work of the SCBD in its review of the work on incentive measures. Our review finds that most of the countries responding to the OECD questionnaire have in place a national biodiversity strategy or framework, a number of which provide a comprehensive and over-arching framework across policy areas. All responding countries noted improvements to or strengthening of their biodiversity strategy or framework in recent years. Nearly all noted further progress in the last few years in the application of economic instruments within their biodiversity strategy of framework, although the use of market-based instruments is still limited in biodiversity management compared with more traditional measures (e.g. regulations and creation of protected areas).

The most commonly noted economic instruments used in the OECD review is positive subsidies for biodiversity friendly behaviour, with the application of fees, charges and taxes fairly widely used as well. Less progress has been made however in reforming perverse incentives, with the exception of recent reforms of agricultural subsidies – for example, the reform of the Common Agricultural Policy in the European Community – and some progress in reforming perverse subsidies in the fishing industry. Instruments that create markets for sustainable use of biodiversity resources are also relatively less developed in biodiversity management in OECD countries, for example tradable permits schemes, although there are some examples such as with fishing quotas and hunting permits.

In terms of application of biodiversity related incentive measures to specific sectors and ecosystems, the OECD review indicates that the areas covered most comprehensively by such measures in OECD countries are inland waters, agriculture, forests and marine biodiversity, while the use of such instruments is more partial or limited in all mountain areas and species management. The other finding is that a specific type of economic instruments dominates a certain area. In both agriculture and forests, the most commonly used type of instrument is positive subsidies, or payments for activities which encourage sustainable use or conservation of biodiversity. Taxes, fees and charges are most commonly used to preserve inland water ecosystems, with the majority of their imposition targeted to three areas: water use, wastewater charges, and the abstraction of materials. Some progress in the introduction of new economic instruments to support management of marine and coastal areas has been noted in the last few years

The OECD Environment Ministers also agreed in 2001 to an "OECD Environmental Strategy for the First Decade of the 21st Century" [www.oecd.org/env/outlook], including on biodiversity. One of the national actions to be implemented by 2010 according to this Strategy is to "Enhance the use of economic instruments to provide incentives for the sustainable use and conservation of biodiversity, including through the development of carefully designed markets for biodiversity services." In 2004 OECD Environment Ministers reviewed a report on implementation of the Strategy by member countries to that date, and they will meet again in April 2008 to review a report on further progress. The results of

the 2004 review on implementating the national action on incentive measures for biodiversity is attached as an Annex to this letter.

Please rest assured of the support of the OECD in your efforts to review implementation of the CBD decisions on the use of incentive measures. If you have any questions about the OECD material referred to here, please feel free to contact: Helen Mountford, Head, Climate Change, Natural Resources, and Environmental Outlooks Division (Helen.mountford@oecd.org).

Best regards

Lorents G. Lorentsen

Dr. Ahmed Djoghlaf

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Enclosure: ANNEX: OECD (2004), *OECD Environmental Strategy: 2004 Review of Progress*, OECD, Paris.

Excerpt: Implementation of National Action 2, Objective 1, Biodiversity (pp.50-52)

ANNEX: OECD (2004), *OECD Environmental Strategy: 2004 Review of Progress*, OECD, Paris.

Excerpt: Implementation of National Action 2, Objective 1, Biodiversity (pp.50-52)

123. **National Action 2**. Enhance the use of economic instruments to provide incentives for the sustainable use and conservation of biodiversity, including through the development of carefully designed markets for biodiversity services.

The use of economic instruments by OECD countries to provide incentives for the sustainable use and conservation of biodiversity allows biodiversity-related objectives to be met with minimum disruption to economic development. Market creation holds the potential to bring biodiversity-friendly goods and services into the market in a manner that enhances, rather than harms, biodiversity. The wide array of tools that OECD countries have begun to use include economic instruments (Box 1.3.1), standards setting, assignment of well-defined property rights, conservation easements and land set asides, payments for endangered species, and biodiversity or environmental funds.

124. The use of eco-labelling or certification schemes has become widespread. Organisations such as the Forest Stewardship Council, Marine Stewardship Council, various organic agriculture labels, among others, provide information that enables consumers to choose to purchase products or services – often at a premium – that are produced in a manner that is less damaging to the environment. Many OECD

countries now have a range of eco-labelling schemes in use in their countries, including ones that are international in scope. Independent verification of eco-labelling claims by government agencies or a reputable third-party is increasingly important to consumers.

Box 1.3.1

Economic instruments are part of the fiscal measures that that OECD governments have been using, to encourage biodiversity friendly activities. Some examples are:

- Charges or non-compliance fees to forestry activities to ensure harvesting is undertaken at sustainable levels.
- Liability fees for the rehabilitation or maintenance of ecologically-sensitive lands.
- The application of fishing and hunting license fees.
- The use of levies for the abstraction of groundwater.
- Charges for:
  - the use of sensitive lands
  - the hunting or fishing of threatened species
  - tourism in natural parks.

Pressure on natural resources that contribute to biodiversity is often caused by a lack of property rights – making it in each individual's self-interest to, for example, over-fish. To solve such problems countries such as the Unites States, New Zealand, Iceland, and others, have introduced instruments such as individual transferable quotas (ITQs) for fishing. Instruments that create and assign property rights in other biodiversity contexts include transferable development rights which have been used, for example, for wetlands by creating credits that allow development to occur in one area, compensated by the re-establishment of wetlands in another area (Gardner, 2003). Examples of schemes that create markets through the clear assignment of some key property rights are illustrated in Table 1.3.1, which indicates their characteristics such as tradability and the provision for offsets (the ability to take offsetting activity implies that the loss of biodiversity in one area is compensated by gains in another).

Table 1.3.1 Examples of market-creation schemes for biodiversity

	No offsets	**Offsets**
Non-tradable	BushTender (Australia) Conservation Reserve Program (United States)	South Creek Bubble Licensing Scheme (Australia)
Tradable	Hunter River Salinity Trading Scheme (Australia) Regional Clean Air Incentives Market (United States)	Wetland banking (United States) Native vegetation offsets proposal (Australia) Carbon sequestration credits

Source: Murtough *et al.* (2002)

125. The use of real estate markets to purchase resource or other rights for land – but with explicit agreement not to exercise those rights – has become a popular tool. In many OECD countries there are groups that purchase (or are given) partial rights to lands that are then removed from development considerations. In other cases, private groups are participating in public auctions of logging rights and successfully acquiring those rights. The forest is then left uncut. Internationally this is also happening in many countries, from South America to Africa and Asia (Hardner and Rice, 2002).

126. The payment of "bounties" for rare or endangered species involves payments to individuals or firms to provide and maintain mating pairs of the species. Such programmes have been used in the United States, for example, for wolves where landowners are paid for the mating pairs of wolves on their property, as well as for red-cockaded woodpeckers.

127. Dedicated funds for the conservation and sustainable use of biodiversity tap into a growing pool of global savings. Funds such as the Zurich-based Sustainable Asset Management (SAM) Group of Sustainability Funds have considerable investments in biodiversity-related businesses. Others such as the EcoEnterprises Fund of the US-based Nature Conservancy leverage public money and NGOs to fund biodiversity-related investments that have a good probability of success.

6. The Global Forest Coalition

The impacts of market-based biodiversity conservation on Indigenous Peoples, local communities and women

A paper presented 15/ at the fifth Trondheim Conference on Biodiversity, 1 November 2007

Introduction: "It's the economy, stupid"

128. Since the Brundtland Commission in 1987 clearly linked environment and development objectives, it has become increasingly fashionable to approach biodiversity conservation from an economic perspective. In the early nineteen nineties, it was still considered to be very forward looking if a conservation organization decided to include economists in its staff. Analyzing the impacts of economic, trade, finance and subsidy policies on biodiversity was a relatively new thing at that time. "It's the economy, stupid", was a popular slogan that was used by more progressive conservation scientists and NGOs alike. By looking at biodiversity conservation through economists' eyes, the biodiversity conservation community hoped it would gather the capacity to influence economic policies and incentive schemes and adapt them to the needs of biodiversity conservation.

129. Alas, we probably underestimated how influential economists could be. Instead of adapting economics to the imperative of conserving our planet's biodiversity, there has been an increasing tendency to adapt biodiversity conservation policies to mainstream economics (CENSAT, 2005). The economic rationale is very straightforward: if it is possible to give biodiversity and other environmental 'services' marketable asset prices, market forces will then lead to the conservation of biodiversity.

130. The now popular use of the term 'environmental services' was clearly inspired by the idea of integrating biodiversity policies into classic development policies. The authors of the UN Millennium Ecosystem Assessment popularized the term in a not very subtle attempt to integrate the findings of the assessment into the multitude of programs and policies that are being put in place to implement the UN Millennium Development Goals. It was undoubtedly felt that a utilitarian approach would be more successful in convincing development policy makers of the importance of biodiversity conservation. It should be noted, though, that many Indigenous Peoples and other social movements have expressed concern about this term as they consider it an expression of a utilitarian attitude towards biodiversity that does not take into account its intrinsic value and holistic nature (Acción Ecológica, 2003 and CENSAT, 2005).

131. The main policy mechanisms that have been classified as 'environmental services' markets until now are:

- carbon trade
- biodiversity offsets

15/ For more information, please contact Simone Lovera, managing coordinator, Global Forest Coalition, simonelovera@yahoo.com, or visit www.globalforestcoalition.org or www.sobrevivencia.org.py.

- certification
- trade in genetic resources and related knowledge
- ecotourism and
- watershed services

132. This paper will mainly focus on carbon trade and biodiversity offsets. It will elaborate upon the overall dilemmas of using market-based approaches to address social challenges and the specific dilemmas caused by the three steps that have to be taken to set up a market for 'environmental services'. It will subsequently highlight a specific example that demonstrates these dilemmas - the proposal to introduce a biodiversity offset scheme through the new Paraguayan 'Payments for Environmental Services' scheme - and consider the impacts this scheme will have on Indigenous Peoples and other money-poor groups in Paraguay, such as women.

A neoliberal environmental approach: trading in rights to pollute

133. There are two main problems with establishing markets for 'environmental services' as part of a market-based approach to biodiversity conservation. Firstly, there are the overall problems associated with using market-based approaches to resolve public challenges. It would be naive to ignore the political dimension of this debate: the concept of carbon trading, for example, has very obvious roots in neoliberal circles in the USA (Lohmann, 2006). It was Ronald Coase of the University of Chicago who started to actively promote trading in 'rights to pollute' in the 1960's. In his view, a perfect market would 'optimize' pollution, balancing its costs and benefits. This idea found fertile ground in conservative environmental circles in the US and emissions trading was included in the 1990 Clean Air Act. This development is often quoted as a major success, but if it is compared to command and control approaches to air pollution it is actually quite meager. A US trading scheme to eliminate leaded gasoline, for example, took 23 years to implement fully, while control and command measures to ban leaded gasoline had the same impact in China in 3 years and in Japan in 10 years. (Lohmann, 2006)

134. Nevertheless, as a result of being sold as a success story, the emissions trading system soon gained popularity in US NGO and governmental circles. It was the US administration, under the leadership of then Vice President Al Gore, which introduced this concept into the negotiations for the Kyoto Protocol of the Framework Convention on Climate Change, making its inclusion a condition for the US joining the Protocol. The fact that other countries accepted this condition and were subsequently left with a Kyoto Protocol that was essentially a US construct (although not yet signed by the US) can still be seen as one of the most remarkable tales of environmental political intrigue. As Larry Lohmann says of the Kyoto Protocol: *"Its environmentalist backers....were left in the odd position of having to champion an agreement largely written by the US for US purposes based on the US experience and US economic thinking, but which no longer had US support.....a little tested idea spearheaded by a small US-elite was now perceived as a global consensus and the 'only show in town'."* (Lohmann, 2006)

135. Social-democratic governments initially expressed skepticism towards this market-based mechanism. For example, the Clean Development Mechanism that was eventually established as a carbon offset facility under the Kyoto Protocol was originally based on a Brazilian proposal for a Clean Development Fund to be financed through penalties paid by industrialized countries that had exceeded their emissions targets, and was supposed to be used to finance 'no regrets' clean energy initiatives in the South. It was essentially a compliance mechanism, but the links with compliance were ruthlessly cut by the US, in the hectic negotiations sessions that took place before the Kyoto Protocol was finally agreed.

136. Considering these political dimensions, it is not surprising that it is the large social movements, especially in the global south, that have been most vocal in expressing their concerns about the

commercialization of life through market-based approaches to conservation.16/ Their skepticism concerning the assumption that markets can solve social or environmental challenges, such as the need to conserve biodiversity, is deeply rooted in their experience of free markets having done a very bad job in terms of solving other social challenges in developing countries. There are striking similarities, for example, between the assumptions that were made, almost ten years ago, about the benefits that the privatization of water services would bring, and the assumptions that are currently being made about the benefits biodiversity privatization will have for biodiversity conservation. (FoEI, 2005) However, the lesson that has been learned in relation to water privatization – that it can have extremely negative impacts on the poor - has not yet been appreciated by the biodiversity conservation community.

137. Nevertheless, there does still seem to be a rapidly growing consensus in the conservation community that markets for 'environmental services' will require strong regulation to be effective and equitable. However, few seem to realize the inherent contradiction in this approach: if those regulations are so essential, perhaps it is in fact more appropriate to focus on promoting the regulations themselves, rather than market-oriented processes?

Commodifying the commons

138. The second major set of problems is inherent to the challenge of trying to squeeze something as holistic as global biodiversity into the structured and relatively rigid framework of the market. For anything to become marketable, a number of steps have to be undertaken:

- it needs to be commodified and transformed into a clearly defined legal object or entity that can be traded

- that object or service then needs to be privatized in terms of becoming the clear property of a specific owner who has the legal right to sell it

- there then needs to be a buyer willing to pay to become the new owner of this property

139. In relation to biodiversity, these three steps raise numerous moral and technical dilemmas - and it should be emphasized that these dilemmas are not just theoretical. For example, the Republic of Paraguay has just adopted a law on payments for 'environmental services'17/ and is now faced with the highly complicated question of developing an adequate regulatory system to implement the general principles of this law. As a first step, the Secretariat of the Environment in Paraguay has been charged with the quite daunting task of putting an appropriate market value on all the 'environmental services' provided by Paraguayan ecosystems.

140. In most existing market-based conservation approaches, the complexity of separating and commodifying the various elements of ecosystems has proven to be overwhelming. Ecosystems are complex, highly interactive systems, and most values are integral to the system itself. Yet there have been attempts to commodify and allocate separate values to genetic resources and related traditional knowledge, carbon storage capacity, watershed services and landscape values. The carbon sequestration capacity of organic material seems relatively straightforward quantity to commodify, compared with some of these other 'services', yet even so the influence of ecosystems on climate change is extremely complex: there is much more to it that simply providing a carbon sink and methodologies for calculating the carbon value of natural ecosystems are severely disputed. Some scientific studies even classify

16/ See for example the Declaration of Puyo, by the Confederation of Ecuadorian Indigenous Peoples, May 2006, and the declaration "Chake Nuha, the trap of agrofuels and environmental services" by a large coalition of Paraguayan social movements, April 2007.

17/ Ley 3.001/2006 on the Valuation and Retribution of Environmental Services.

important ecosystems like boreal forests in contradictory ways: some as sources of carbon, some as carbon sinks. The fact that carbon stocks in natural ecosystems are by definition non-permanent has also undermined their price in the world market.

141. Other possible market values are even more difficult to commodify. It is assumed that ecotourism, for example, could be used as a mechanism to commodify landscape values. Yet ecotourism has often destroyed the very landscapes people come to visit (and most ecotour companies prefer to see as few other ecotourists as possible). Payments for watershed protection services have also been criticized as they are seldom based on a profound scientific analysis of the relationship between the ecosystem that is being protected and the watershed. There are no linear relationships between forest protection and water quantity, for example, and certainly not between tree planting and water quantity - planting species like Eucalypt can actually have a profound *negative* impact on water tables.

142. Furthermore, certified timber, including Forest Stewardship Council-certified timber, still includes timber derived from large-scale monoculture tree plantations, meaning that there is no positive linear relationship between certification and biodiversity values either. Studies that include the entire global market value of certified timber in the overall value of 'environmental services' markets show a remarkable lack of understanding of the relationship between certification and biodiversity values. As monoculture tree plantations normally replace more biologically diverse ecosystems like natural grasslands, the biodiversity value of certified timber can be highly negative (Lang, 2003). Assumptions that plantations would decrease timber exploitation from natural forests have also proven to be false until now (Lang, 2003).

Business as usual

143. For proper valuation of ecosystem services, it would also be important to establish an appropriate baseline in order to ascertain exactly what proportion of the service delivered is the result the 'provider's' efforts. In general, establishing proper baselines and verification of the added value of the activities of providers of 'environmental services' has proven to be a tremendous challenge. This makes it hard to define what would have happened with a specific environmental value in a business-as-usual situation.

144. This lack of 'additionality' is actually at the heart of the criticism of most current Clean Development Mechanism projects. Both the carbon market and certification systems like the Forest Stewardship Council rely on independent consultants to verify whether a project provides additional benefits to the environment and complies with environmental standards. Unfortunately, there is an incentive for 'independent' consultancy firms to manipulate base-lines and/or be overly lenient, as many of them generate income from market-based schemes related to carbon trade and certification. There are other conflicts of interests too. Consultancy firm Det Norske Veritas, for example, was asked to verify the additionality of the World Bank Prototype Carbon Facility-financed project run by Plantar in Brazil: however, Plantar is also a regular client of this same consultancy firm (Lohmann, 2006, Counsell, 2002).

145. Another major problem is that of 'leakage', which is inherent to forest-related carbon projects and many other PES schemes. Leakage means that the environmental benefits of a project are undermined or even completely negated, because the destructive activities are simply moved to another area. Protecting a forest area from logging, for example, makes little sense for the climate and provides few environmental benefits if the logging shifts to a nearby area, or another country.

Who owns biodiversity?

146. A second condition for setting up an 'environmental services' market is that the service has to be handed over to an entity that can sell it. This has lead to profound equity-related questions. Who does own biodiversity? The government? The owner of the land where the biodiversity is found? The

community that manages that land? The men within that community who make decisions or the women who actually manage the land in practice? Or the Indigenous community that managed the land in sustainably until Western landowners took over their land in colonial or post-colonial times?

147. Whether national governments, local communities, Indigenous Peoples or legal land owners own genetic resources is one of the most difficult questions arising in the Access and Benefit Sharing discussions under the UN's Convention on Biological Diversity. Very similar issues are now being raised within the UN Framework Convention on Climate Change (UNFCCC) negotiations, regarding proposals for 'Reduced Emissions from Deforestation and Degradation' (REDD). These involve compensation schemes, and again, the question is: who should that compensation be paid to? Individual land owners, local communities and Indigenous Peoples or governments? To take the logic of the market-oriented approach to its logical conclusion, the sellers and buyers should really be private, non-subsidized entities. In reality however, the supply-side of markets for 'environmental services' has been dominated by governmental and not-for profit actors who are allowed to use public funding to set up their markets. In this respect, concerns expressed by the Argentine government and others about hidden subsidies are quite legitimate.

Hidden and non-hidden subsidies

148. A last indispensable step in setting up a market in 'environmental services' is that a buyer needs to be found. As far as commercial buyers are concerned, this has proven to be more or less impossible without strong environmental regulation. Commercial buyers are only interested in paying for assets like genetic resources and carbon if regulations (limits on the emissions of CO_2 for example) require them to do so. Here too, the actual 'market' has been overwhelmingly dominated by public and/or philanthropic institutions that have 'bought' environmental assets for public benefit purposes. In fact, of the 264 examples of 'environmental services markets' that the International Institute for Environment and Development analyzed in 2002 (Landell, 2002), hardly any could be considered to be purely commercial (the exception being a few ecotourism projects with dubious impacts on biodiversity). Most are rather conventional schemes that support community-based biodiversity conservation initiatives, which have suddenly been re-baptized as 'payments for environmental services' schemes in order to make them more acceptable given current trend towards market-based approaches to conservation.

149. The World Bank in particular, has championed the use of public funds to support projects which have subsequently been reclassified as 'payments for environmental services' schemes and which it can therefore showcase as examples of market-based approaches to conservation. This might look innocent, but in a polarized and highly political debate - as in the current negotiations on REDD - it is far from so, as these projects have subsequently been used as arguments in favor of commercial carbon financing for reduced deforestation projects.

150. Furthermore, the World Bank has a commercial interest in including reduced deforestation projects in carbon trade, as it already acts as the major public (and well-paid) carbon finance broker in the international carbon market, through its Prototype Carbon Fund, which was set up in the early 1990's. Consequently, the Bank is expected to launch the successor to the Prototype Carbon Fund, the Forest Carbon Partnership Facility, at the 13th Conference of the Parties to the Climate Change Convention in December 2007 (ignoring the fact that governments have not yet actually made a decision about whether or not to include forests in carbon trade in the post-2012 climate change agreement).

151. A classical case of using PES to showcase how environmental projects might be included in carbon markets was the very generous grant the World Bank gave to the Kenyan Green Belt Movement, to enable it to market the carbon it sequestered through its tree planting projects on the international carbon market. The fact that the founder of the Green Belt Movement, Wangari Maathai, had just received a Nobel Peace Prize, and that the twelfth Conference of the Parties of the Framework Convention on Climate Change was held in her home town Nairobi, made it very attractive for the World

Bank to showcase this particular project during that meeting, holding it up as an ideal example of how carbon finance could contribute to community-based projects. However, the fact that some 90% of the funding came from a World Bank grant, rather than commercial sources, was not highlighted during these events.

The myth of effective and equitable markets in 'environmental services'

152. Whether or not socially beneficial projects like the tree-planting activities of the Green Belt Movement would actually benefit from purely market-based approaches has proven to be a very controversial question. In most theoretical literature it is assumed that market-based conservation mechanisms could be effective and equitable but *only*:

- If all values are properly accounted for
- If returns are equitably distributed to the proper 'owners'
- If the market is properly regulated
- If those regulations are effectively enforced, and
- If there is an equal level playing field so that all biodiversity consumers and producers can participate equitably

153. In reality, however, it is difficult to assess whether it is ever possible to meet all these conditions or to find evidence of environmental services markets having a positive impact on poverty alleviation, since the overwhelming majority of existing payments for 'environmental services' projects are funded through public or philanthropic financing. Moreover, most existing PES schemes are accompanied by strict regulations, sometimes even prohibiting the very activity that is being paid for, and most 'success stories' are only really successful because of effective public governance, rather than their links to the market.

154. A famous example in this respect is the Costa Rican Payments for Environmental Services scheme, which is arguably one of the oldest PES schemes for biodiversity conservation, and perhaps the most well known. In its understandable attempts to sell this scheme on the international carbon market, the Costa Rican government tenda not to mention the fact that the scheme was actually accompanied by a nation-wide deforestation ban when it was introduced. (FoEI, 2005, CENSAT, 2005) So while there is general consensus about the fact that the *overall* policy was successful in terms of halting deforestation in Costa Rica, it is hard to tell whether this success was due to the deforestation ban or the far more expensive PES system.

155. In this light, it might be interesting to compare these results with the results of the Paraguayan deforestation moratorium that was put in place in 2004, without a compensation system for the landowners. Notably, this moratorium succeeded in reducing deforestation by an estimated 86%, in a country plagued by bad governance.

156. Economically speaking, however, the Costa Rican PES system has been anything but a success. When Costa Rica tried to sell its subsidy scheme to compensate farmers for the 'environmental services' they provide (by not deforesting their lands) on the carbon market, they found that protecting a ton of carbon cost them around US$ 27, while market prices varied between US$4-16 per ton. The only reason the entire system stayed afloat was because most of the resources came from a national petrol tax, matched on a regular basis by official development aid. In itself, the system is widely supported in Costa Rica, but to call this combination of taxes and subsidies a market-based approach is rather inaccurate. Furthermore, implementing the same system in a larger country could be extremely expensive: at one

REDD negotiating session, for example, Joao Capobianco, Brazilian Vice-Minister for the Environment calculated that it would cost Brazil roughly US$ 5 billion a year to apply the same system to the most threatened 30% of the Amazon forests. (Lovera, 2006).

The practical and legal dilemmas of a wild idea: PES in Paraguay

157. The full story of the Costa Rican PES system was obviously not taken on board when the Government of Paraguay decided to adopt a similar PES law. That it was inspired by Costa Rica is quite well-known: several joint workshops with Costa Rican advisors preceded the introduction of the law, which was chased through the Paraguayan Parliament and Senate in September 2006. When *The Law on the Valuation and Retribution of Environmental Services* was adopted, it did not include any specific regulations or financial backup. Instead, the law simply stipulates that all owners of land and its natural components that generate 'environmental services' will have a right to corresponding compensation for those services. There has been no calculation of the total budget this would require.

158. In fact, the most noteworthy difference between the Costa Rican and Paraguayan PES systems is that the former has a clearly defined financial back up in terms of a petrol tax, while the Paraguayan PES system is supposed to be financed mainly through biodiversity offsets. There is an undeniable offset dimension to the Costa Rican gasoline tax too, but the broad scope of environmental violations that can be offset through the Paraguayan PES law actually legitimizes environmental crimes. For example, biodiversity offsets of up to 10% of the project's budget are required whenever a major infrastructural project is expected to cause substantial environmental impacts (according to its Environmental Impact Assessment) meaning that they pay to offset these 'legitimate' impacts by paying to protect biodiversity somewhere else. The law also allows landowners who have violated the pre-2004 forest law (that stipulated that landowners should maintain at least 25% natural forest cover on their land) to simply compensate for this by buying biodiversity offset certificates. Meanwhile, those landowners who do still have more than 25% forest cover and are willing to comply with the current legally binding deforestation ban are now suddenly compensated for their obedience to the law and may receive a payment for these 'environmental services'. A relatively cheap, successful forest conservation policy has thus suddenly become a very expensive forest policy, through which every hectare saved may in fact be negatively compensated by an environmental violation elsewhere in the country.

159. That this system is a major step forward for large landowners is indisputable, as is the fact that the overwhelming majority of Paraguayan legislators are themselves large landowners. In fact, in December 2006 many legislators insisted that they would only support the continuation of the deforestation ban if the regulatory framework for the PES law was swiftly implemented. It is important to analyze seemingly innocent theoretical proposals like PES in the light of the impact they may have on public governance, especially in countries where corruption is a widely recognized problem, as is the case in Paraguay.

160. While Geographical Information Systems (GIS) have had a major positive impact on forest governance in general, as they allow for relatively easy verification of tree cover, the road between observing an environmental crime and getting the violator to pay up can be an exceptionally long and bumpy one in a country like Paraguay. Actually receiving payment for your environmental services is likely to be an even bigger challenge, especially for those thousands of small land-holders that do not have close family and friends administering the system. There are numerous cases of other public subsidies that have not reached their destination in Paraguay (and ones that have even reached totally illegitimate destinations). Any country that faces major challenges in terms of forest governance should really question whether a complicated money-channeling system like PES is appropriate in comparison to more straightforward regulations.

Biodiversity offsets for soy expansion

161. A major source of income for the PES system in Paraguay is expected to come from soy growers and other landholders who have conserved less than the legally required 25% of forest cover. These landholders can now compensate for their past omissions very easily by buying 'environmental services' certificates. Hence there is no requirement or responsibility to restore qualitatively and quantitatively ideal forest cover anymore. This new 'non-requirement' also matches the Roundtable for Responsible Soy's Basel criteria for 'responsible soy', which allows soy producers to convert forest, provided compensation is paid to nature conservation projects or organizations. However, the fact that one of the same large nature conservation organizations that promoted the concept of responsible soy is also playing a key role in the promotion of PES in Paraguay, including through radio commercials alerting Paraguayan landholders to the possibility of biodiversity offsets and PES, makes the entire proposal rather suspect.

162. To analyze the environmental impacts of biodiversity offsets fully, for a crop like soy for example, it is important to take into account all the environmental impacts of the crop itself, as well as losses incurred and impacts due to associated deforestation. Soy expansion is considered by many to be one of the most important environmental and social problems in Paraguay. The National Federation of Farmers in Paraguay, the national association of NGO networks, and many other movements and NGOs have expressed very clear opposition to soy production, including with respect to proposals to produce supposedly 'responsible soy'. Large marches and other demonstrations were also organized to oppose the 'Roundtable on Responsible Soy' when it met in Asunción in September 2006. Even President Duarte Frutos has referred to soy production as an *"egoistic and excluding development model*" (ABC, 2006).

163. In Paraguay, 2.8 million hectares of soy have been planned for cultivation this year and soy planters expect to reach 4 million hectares within the next two years. No less than 35 million liters of herbicides and insecticides were utilized for soy production in 2006, resulting in numerous cases of intoxication and water contamination. The soy farms are overwhelmingly foreign-owned and provide very little employment per hectare of land. The resulting rural unemployment contributes to the expansion of the agricultural frontier and thus even more deforestation – while many small farmers and Indigenous Peoples move to the cities, some move to the agricultural frontier, burning forests to start a new farm. Cattle ranching has so far been the main direct cause of deforestation in Paraguay, but the current rapid expansion of soy on former cattle land is pushing cattle ranching into the forests

Will the poor benefit?

164. It has often been assumed that PES systems will benefit the poor, as many of the most precious ecosystems on the planet are inhabited by Indigenous Peoples or other money-poor local communities. Here again, the economic rationale sounds convincing, but the reality of the matter is quite different. Even in situations where there are no problems with corruption (and we should not underestimate how many countries do have such problems), the bureaucratic know-how required to sell an environmental service is a significant hurdle for people who do not possess legal skills and who might not be able to properly read and write the official language of the country. The relationship between rural poverty and education is linear and most Indigenous Peoples speak a native, non-official language, putting them at a severe disadvantage in this respect. Having a handful of representatives or community representatives with higher education and/or legal skills can definitely put Indigenous communities in a better position to negotiate PES contracts, should they wish to, but it would still be naive to overlook their disadvantageous overall position.

165. In practice, conservation NGOs have so far tended to play the role of broker in most individual PES contracts. Their intentions may often be laudable, but it would be really dangerous to turn these private, often foreign organizations into formal tools for implementation of a national public policy as important as equitable forest conservation. Aside from simply not having the scope and capacity to help

every local community and Indigenous People in the entire country in an equitable fashion, these organizations seldom have Indigenous rights and national social development as their primary mission.

166. On top of these practical obstacles, which will probably be overwhelming for the majority of communities, there is the often almost insurmountable legal obstacle that many of the poorest groups in society do not have formal title over their land. The gender dimension is also very important in this respect: in most families it is the men who have legal title over the land (if the family has any legal title at all).

167. Women constitute the overwhelming majority of the world's poor. As they dedicate a substantial amount of their labor to activities that are not financially compensated, like childcare and household activities, and as they are still discriminated against in labor markets all over the world, they tend to have much lower formal incomes than men. Consequently, they are much less likely to be in a position to be able to buy land. Levels of education and reading and writing skills are also a lot lower amongst women in most developing countries, and many cultural traditions frown on women playing a competitive role in formal market-based labor systems. Once again, these hurdles can be overcome by NGO brokers, but it is neither practical nor morally or socially appropriate to formalize the role of these private brokers in a country-wide system.

168. While some PES systems, including the Paraguayan one, do formally recognize Indigenous Peoples' rights to land ownership, and thus to PES compensation, one should not underestimate the gap between formally recognized territorial rights and the original land rights of most of the Native Peoples in the Americas. Indeed, there are vehement ongoing disputes all over the world regarding Indigenous Peoples' land rights, since most Indigenous Peoples have only been granted rights over a very limited amount of (economically unattractive) land, instead of over their original territories. What should definitely be taken into account in this respect is the additional negative impact PES policies have on land reform campaigns and campaigns to obtain recognition of land titles. Both Indigenous Peoples and landless rural workers' movements have expressed concern that PES systems might lead to (and indeed are already leading to) increased land pressure and a subsequent inflationary impact on land prices. This in turn might make political campaigns for Indigenous land rights and land reform a lot more complicated, as large landholders have an increased incentive to hold on to their land.

169. Even more serious social impacts become visible in relation to economically marginalised groups in society requiring the use of those 'environmental services'. Clearly people with less money will loose out in a system in which they suddenly have to pay for 'services' that they used to receive for free. Women and Indigenous Peoples have less money than other groups in society, and are a lot more dependent, especially in developing countries, upon free access to resources like freshwater, fuelwood, medicinal plants and bushmeat for their families' survival. The experience with water privatization shows very clearly that it is the poorest groups in society that suffer most from privatization policies, often with fatal outcomes. (FoEI, 2005)

170. Here too, the practical outcomes of PES projects have been influenced by the fact that conservation organizations and public institutions like municipalities have played a major role in financing and implementing those 'PES' projects. So far many of them do seem to have built in safeguards to avoid major negative impacts on social groups on the demand side of social services, but the logic of the market could lead to very different outcomes if they were not checked by these social safeguards. One can envisage, for example, that Indigenous Peoples in the South American Chaco who suffer from droughts triggered by Amazon deforestation might be asked to 'compensate' soy farmers who are good enough not to have burnt down the entire Amazon forest. Or women from downhill villages, who see their streams being polluted by the logging and plantation companies that devastate uphill forests, being expected to similarly 'compensate' these companies in order to obtain some unpolluted water.

San Rafael: biodiversity offsets for the expanding soy frontier

171. The above-mentioned impacts on Indigenous Peoples are clearly illustrated in a specific case concerning the impacts of biodiversity offsets on the Mbya Guarani communities in the San Rafael hills in the South of Paraguay. The San Rafael hills have been proposed for demarcation as a national nature reserve, a proposal that is strongly opposed by the Mbya Guaraní, who consider it to be their traditional homeland (tekoha) and fear that their territorial claims will be undermined if the area is formally declared a nature reserve. Most land in the San Rafael hills is also under private ownership as well, and the entire area is under severe pressure as the large soy monocultures that stretch out East and South of the hills are rapidly encroaching into the area. It is expected that soy producers in the area will benefit greatly from the proposal to offset the damage caused by soy expansion by buying 'environmental services' certificates from those land owners who still own a substantial amount of the forest land within the proposed reserve.

172. The Mbya Guarani people, in communities like Arroyo Morotí and Arroyo Claro, on the other hand, might have to pay a high price, even if it is not a financial one. First and foremost they already suffer from the continued expansion of soy monocultures. Their freshwater resources are dangerously contaminated due to runoff from the agrochemicals used on the surrounding soy plantations. The Arroyo Morotí community in particular has expressed strong concern about the declining quality of the drinking water in the brook that they depend on, which has been severely contaminated by the agrochemicals used by a neighboring soy farmer. Moreover, due to the increased land pressure there are regular incursions into the forest. The forest of the Arroyo Claro community, for example, was devastated by invading farmers ten years ago. After eight years spent pursuing legal remedies they were successful in having the invaders removed from their land two years ago. Sadly, they returned in September 2007 and again threaten to continue deforesting the area. As a result of these environmental problems many Mbya Guaraní have already become environmental refugees and have ended up on the streets of Asunción, the capital of Paraguay, where they live an extremely marginal life.

173. But the Mbya Guaraní communities may also be impacted negatively by the expansion of the private nature reserves that are supposed to compensate for the soy expansion. Some of their hunting areas have already been severely restricted, leading to overexploitation of the remaining areas and malnutrition due to lack of protein. Furthermore, their current land rights claims are being frustrated by the prospect of the private reserve owners being compensated through a PES scheme. These landowners' rights, both within and outside the designated nature reserve area, are disputed by the Mbya, who consider the entire area their 'tekoha', an area which they have always managed sustainably. The communities are angered by the fact that landowners who acquired large amounts of land under illegal or at least dubious circumstances during a dictatorship are now hoping to be able to claim compensation for the 'environmental services' provided by the forests the Mbya Guarani have conserved for centuries.

Could Mbya communities benefit from PES?

174. Of course, to evaluate the impacts of PES on Indigenous Peoples it is crucial to look at possible positive impacts too. From a legal point of view, communities like those of the Mbya Guarani People of San Rafael in southern Paraguay, might be able to claim PES themselves for the areas that are legally theirs. To do this, however, there are a number of obstacles that have to be overcome. First and foremost, there is the language barrier that was pointed out above. While Guaraní is formally the second official language of Paraguay, all commercial and legal transactions are documented in Spanish, a language that few Mbya Guarani speak well enough to enable them to engage in contractual negotiations and arrangements.

175. The overwhelming majority of these forest-dwelling people also lack the marketing skills needed to sell 'environmental services' like carbon in an increasingly convoluted market. The requirement to obtain an Environmental Impact Assessment prior to offering 'environmental services' will also inhibit

the participation of poor landholders in the system, as this is a very costly process. Large tracts of land with one clearly defined individual owner will have a competitive advantage over territorial lands controlled by (not always well-defined) communities.

176. Selling 'environmental services' might also lead to serious governance problems as it might not always be clear whether the leader of a village has the right or the mandate to undertake such a legal transaction. In general, it should be cautioned that changing the currently predominantly non-monetary economy of communities into a monetary one will also have profound impact on many cultural and environmental values and traditions. Women are likely to suffer most, as their interests are more likely to be overlooked in commercial transactions normally closed by men. Women also have a disadvantageous position in monetary economies in general, as they spend a significant part of their time on activities like childcare and household management that are not rewarded in monetary terms. Moreover, they are generally underpaid in the formal labor market, as well as being responsible for providing clean water and other non-monetary goods for the family.

177. Furthermore, with respect to water, it does not matter how much money might be earned by selling 'environmental services', clean and healthy drinking water cannot be otherwise obtained: there are no formal public water services anywhere near the communities and even buying water would be impossible because the distances that would need to be traveled are too great (especially since the communities themselves do not have any form of transportation).

178. In summary, the Paraguayan PES law is likely to have a number of negative impacts on Indigenous Peoples and other poor sectors of society, like landless farmers:

- Paraguay has extremely inequitable land distribution and the overwhelming majority of any funds will undoubtedly go to large landholders.

- The law is likely to frustrate land reform programs and ongoing land rights claims by Indigenous Peoples as it will increase the value of unused land.

- The system will probably be subject to serious governance problems. In particular, it is likely that politically influential groups will have far better access to the funds than politically marginalized groups like Indigenous Peoples and small farmers. Bad governance and market-based conservation mechanisms are a risky combination.

Conclusions

179. There are some fundamental questions that tend to be overlooked when market-based conservation mechanisms are proposed. Markets cannot work without privatization. Does that mean that we need to privatize and put a price on all elements of biodiversity in order to make environmental services markets work? Is this feasible? Is it equitable? Is it ethical? And who has the right to own that biodiversity? Is biodiversity a so-called *"BioNullius",* something to be colonized, as Indian activist Vandana Shiva once questioned?

180. An important consideration when proposing PES schemes is that the most efficient PES schemes are not equitable: paying large destructive landholders is economically-speaking more 'efficient' than channeling funds to community-based schemes and/or paying Indigenous Peoples who were not planning to destroy their forest anyway. In fact, this equity aspect is at the heart of some very politicized debates around the proposal to compensate countries for reducing deforestation as part of a future climate regime. Those countries that have already done a successful job conserving their forests risk losing out from some of these proposals, as they are obviously not able or less able to 'reduce' their deforestation rates.

181. In the end, a remarkable degree of the enthusiasm generated by PES seems to be based on the Costa Rican PES experience. However, its supporters often overlook the fact that the Costa Rican carbon and genetic resources 'markets' were only developed as a result of a combination of government intervention, generous Official Development Aid and other donor support. As soon as these markets were left unsupported, they proved economically unviable. Moreover, the success of the Costa Rican PES scheme might have been the result of the fact that deforestation was also illegal. An important moral and legal question in this respect is whether it is right to pay people to comply with the law of their land. This would imply that land ownership confers a right to destroy biodiversity regardless of national legislation. Do poor communities have to compensate soy farmers for not contaminating their water resources with agrochemicals? How do we avoid payments for 'environmental services' and compensation to reduce deforestation being turned into 'the Polluted Pays Principle'?

182. As stated above, these negative impacts *can* be avoided in strictly regulated initiatives. In fact, there seems to be a growing consensus amongst biodiversity policy makers that we do need to control market forces through strict regulation and effective enforcement. Experience so far shows that the best 'PES' schemes are actually conventional subsidy or integrated poverty and development projects. Re-baptizing them as PES was supposed to mobilize political will amongst economically powerful sectors for biodiversity conservation. But the negotiations on reducing deforestation under the Climate Change Convention demonstrate that the main interest in these schemes still comes from the conservation sector: commercial carbon traders have hardly shown any interest in the rather risky and uncertain business of forestry offsets.

183. In itself, reclassifying sustainable forest management subsidies as Payments for Environment Services schemes does not have to be harmful. However, there is a major risk involved if these schemes are subsequently included in multilateral and bilateral trade agreements. There has been a tendency by certain governments to not only reclassify conventional subsidy schemes and other forms of public support for biodiversity conservation as 'Markets for Environmental Services', but also to subsequently include them in bilateral and multilateral agreements on 'Trade in Environmental Services'. The assumption is that this will stimulate trade in 'environmental services' and bring social and environmental benefits. However, trade agreements are also likely to undermine or even prohibit the social safeguards needed to make 'environmental services' function, as described above. The proposed liberalization of trade in 'ecosystem services' under the World Trade Organization's General Agreement on Trade in Services (GATS) and similar clauses in bilateral and regional trade agreements imply that special safeguards for Indigenous Peoples' and/or local communities could be challenged as being 'discriminatory' by governments and/or large corporations and foreign conservation organizations (depending on the dispute settlement processes attached to the various agreements). So the use of the term 'markets in environmental services' might also have severe negative legal consequences.

184. The great advantage of public governance systems is that they can be shaped in a manner that directly benefits the most marginal groups in society, including women and Indigenous Peoples. Already in 1992, international public governance adopted the principle of rewarding the so-called incremental costs of providing global environmental benefits. Both the Convention on Biodiversity and the Framework Convention on Climate Change that were signed that year oblige all governments to conserve forests, and require developed countries to contribute new and additional financial resources to reward developing countries for the incremental costs of providing global environmental benefits through reducing deforestation. The Global Environment Facility was established to manage these funds. The fact that the overwhelming majority of developed countries have not complied with these legally binding agreements does not imply that they do not exist anymore.

185. New and additional financial resources are still required to support sustainable, democratic and well-enforced public governance of biodiversity, including through redirecting perverse incentives, banning deforestation and safeguarding Indigenous rights. As Adriana Ramos of the Instituto Socio-Ambiental in Brazil pointed out at the fifth Trondheim Conference on Biodiversity: *"The majority of*

areas where we stopped deforestation in Brazil are Indigenous lands". Respecting Indigenous land rights has arguably been one of the most equitable, effective and efficient policy incentives for sustainable forest management.

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7. United Nations Environment Programme (UNEP)

Decision VIII/26 on incentive measures: preparation for the in-depth review of the work on incentive measures

Submission from UNEP

(Division of Technology, Industry and Economics (DTIE): Economics and Trade Branch, and UNEP's Division on Policy Implementation (DEPI))

Introduction

186. The Convention on Biological Diversity's (CBD) Conference of the Parties (COP) has invited "*Parties, other Governments, international organizations and stakeholders to communicate to the Executive Secretary their experiences in the implementation of the programme of work on incentive measures contained in decisions V/15, VI/15 and VII/18 and provide views on elements such as*:

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

187. Since 1990s UNEP has promoted the use of economic incentives to enable improved sound environmental management which also includes biodiversity. In 2001, UNEP's Economics and Trade Branch (ETB) established a Working Group on Economic Instruments to help identify ways to enhance policy coordination related to the design and use of economic instruments at the national and international level and to provide practical tools and tailored solutions to policy makers to help them design economic instruments that fit prevailing local economic, political, social, institutional and environmental conditions. UNEP ETB has also supported country projects that examine the use of economic instruments in specific sectors in developing countries. A recent series has focused on the agricultural sector. These projects are entirely country-driven and involve a national stakeholder process.

188. Based on project experiences and research of the Working Group, UNEP ETB has published in 2004 a guide on The Use of Economic Instruments in Environmental Policy: Opportunities and Challenges and a training resource manual on the use of economic instruments. It has also published a study on Economic Instruments in Biodiversity-related Multilateral Environmental Agreements that explores the use of economic instruments in the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Ramsar Convention on Wetlands.

189. Relevant ongoing work programmes include Sustainable Fisheries, International Payments for Ecosystem Services (IPES), Integrated Trade Assessment and Organic Agriculture. The below report from UNEP's Economics and Trade Branch (ETB) includes a description of relevant ongoing work programmes; lessons learned and challenges identified; suggested actions for addressing these challenges; gaps in work-to-date and priorities for future work programmes; and linkages to other instruments and work programmes. For more information, please see the following website: www.unep.ch/etb.

190. ETB is part of the Division on Technology, Industry and Economics (DTIE). DTIE works closely with other UNEP Divisions in charge of biodiversity or incentive measures (especially Division on Policy Implementation and Division on Environmental Conventions and Law).

Fisheries Subsidies Reform

191. As part of the Norway-funded project on "Promoting Sustainable Consumption and Production for Poverty Alleviation through Emergency Planning, Trade, Chemicals and Waste Management", UNEP is implementing a sub-component on "Promoting Sustainable Trade, Consumption and Production Patterns in the Fisheries Sector". At the core of this initiative is a set of national and international capacity-building activities aimed at improving the sustainable production and consumption of fish and fish products. A key focus is the promotion of sustainable fisheries subsidies reform at national and international. Inappropriate subsidies to the fishing industry are a key factor driving the depletion, overcapitalization, and ecosystem degradation associated with fisheries worldwide. Since 1997, UNEP's Economics and Trade Branch has helped galvanize international attention to this problem through publications, expert workshops and international symposiums.

Lessons Learned and Evaluation of Key Challenges

i. *Negative Impact of Fisheries Subsidies:* As UNEP country studies confirm (see annex), under conditions of less than perfect management and full exploitation, many categories of fisheries subsides have been found to have negative impacts on fish stock health, environmental conditions, and social and economic situations.

ii. *Positive Subsidisation:* Some subsidies are very important for poverty alleviation, social purposes and environmental protection. As long as they do not contribute to overcapacity and overfishing, especially developing countries should maintain the right to keep them.

iii. *WTO as an International Platform for Fisheries Subsidies Reform:* There is a need for international fora to achieve reform of fisheries subsidies. The WTO has been shown to be the most appropriate existing forum for fisheries subsidies disciplines and for achieving alignment of trade and environment goals. However, challenges lie ahead in the areas of implementation of any new rules, as well as in developing means to assuring transparency (UNEP, 2007).

iv. *Fisheries Subsidies Discipline Design:* UNEP-ETBs work so far shows that 3 factors must be taken into consideration when developing indicators for the sustainability of fisheries subsidies measures: (i) biological conditions in the fishery, (ii) fleet capacities and (iii) effectiveness of management. The challenge lies in finding the formula for each of these that is simultaneously effective in terms of biodiversity and fish stock protection and compatible with the WTO rules framework.

v. *Continued Support of Developing Countries:* It is essential that the international community continues supporting developing countries by ensuring that any new disciplines are positive both for environmental sustainability, as well as long run development.

Addressing the Challenges

General Actions

- Continued international support of developing countries on fisheries subsidies reform
- Increase in funding for research to achieve a better understanding of impacts of subsidies and ways of reforming them
- Transparency must be improved in the areas reporting on subsidy payments

Recommended Actions for CBD

- Increased cooperation with other organizations, such as the OECD, FAO and WTO, to bring its knowledge and expertise into the international discussions on fisheries subsidies.
- Encouragement of CBD member to consider fisheries subsidies reforms as a means for conserving biodiversity, achieving sustainable development and developing better trade opportunities.
- Enhanced engagement with private sector on the issues of certification and labelling

Priorities for Future Fisheries and Economic Incentives Work at UNEP

Fisheries Subsidies Reform

- UNEP-ETB will continue to provide capacity-building and supportive analytic services in the development and implementation of new rules on fisheries subsidies, particularly in response to member countries' requests. UNEP will also continue to facilitate international discussions on this issue.
- *Demonstration Projects:* Three demonstration projects will explore the potential to combine public policy reforms related to fisheries management, subsidies and trade, with private sector voluntary actions, and supply chain interventions to promote sustainable fisheries management. In close collaboration with government ministries in the countries in question, the institutions will recommend a package of response measures. The partners for the first project are the Permanent Commission for the South Pacific (CPPS) and the Government of Ecuador. With UNEP's help, they will analyze the "Impacts of Subsidies on the Ecuadorian Tuna's Sustainability and Trade" and develop recommendations on the reform of fisheries subsidies. It will be an important tool for Ecuador and other CPPS member countries to design and implement national and regional subsidies reform and advise the ongoing international fisheries subsidies negotiations. The two other project partners still have to be identified.

Access Agreements

- *Access Agreements:* Access Agreements that offer foreign fleets access to developing countries waters are, in effect, subsidies since in most cases, the fleets do not fully pay back the access fee to their governments. Such agreements often constitute significant sources of income in

developing countries, but also deplete local stocks. Many developing countries now seek to reduce fishing pressure by foreign fleets in their waters. With national and international expert involvement, UNEP-ETB is looking at two main elements: (i) Improving Sustainability and Transparency. This element explores the broader political economy framework and the sustainability concerns related to access agreements. It provides recommendations on how to use trade-based measures to enforce responsible fishing under access agreements. (ii) Access Agreements & the WTO. This element examines the link between access agreements and the WTO Agreement on Subsidies and Countervailing Measures (ASCM) and provides options for disciplining subsidies associated with access arrangements in the WTO.

Fisheries Certification and Ecolabelling

- *Review of Certification and Ecolabelling Schemes:* UNEP-ETB aims to play a lead role in promoting new approaches and incentives to improve sustainability of especially small scale fisheries, such as the implementation of market-oriented certification schemes for fisheries. A first step will be a review and assessment of the costs and benefits of eco-labelling schemes in developing countries. The outcome could provide a good basis for the planning of pilot programme for fisheries eco-labelling in developing countries. A set of basic resource materials will be developed to provide the basis for further actions and initiatives with the private sector, including pilot projects.

Other Instruments

- *Fisheries Individual Transferable Quotas (ITQs):* UNEP-ETB has recently completed a study on Individual Transferable Quotas (ITQs) in Argentina. This study illustrates many challenges with implementing ITQ schemes – but also highlights the usefulness of this economic incentive measure for improved fisheries management. Further work is merited on this topic.

Interface with Other Instruments and Work Programmes

International Initiatives

- WTO negotiations
- Commonwealth Secretariat work on access agreements
- OECD's Committee on Fisheries
- FAO's Committee on Fisheries
- NGOs work on sustainable fisheries (e.g. Oceana, WWF, ICSF, CIEL, ENDA)

International payments for ecosystem services (IPES)

192. Payments for ecosystem services (PES) have recently been gaining increasing intention as a promising new environmental policy instrument. With various programmes and pilot projects underway around the world, the need for institutional support for PES at the global level is becoming increasingly significant. However, in such a new and fast-growing field, there still remain important challenges to overcome before PES are widely applied at the international level. UNEP and the IUCN, in close collaboration with the CBD Secretariat, have been working on scaling-up payments for ecosystem services (PES) to the international level (IPES) since September 2006. This work program aims to address the most salient technical and policy challenges facing this emerging mechanism through co-organized meetings for experts and policymakers, joint publications and capacity-building activities. To date, work foci have included developing IPES policy mechanisms and payments for Avoided Deforestation (see below).

IPES Mechanism Development

193. The goal of UNEP-ETB's IPES work programme is to take a first step towards an international payments system, comparable or linked to carbon trading, but with a clear focus on the conservation of terrestrial and marine ecosystems that host significant biodiversity and related services. As such,

developing the IPES concept for greater applicability as a policy tool contributes to UNEP-wide efforts to achieve sustainable ecosystem management.

Avoided Deforestation

194. One sub-component of the IPES work stream discusses payments for Avoided Deforestation (AD). Not only does deforestation account for 20-25% of greenhouse gas emissions, but it is also a major and immediate cause of global biodiversity loss. Within the realm of emissions trading, if payments for AD are accepted as a means of offsetting emissions within carbon markets, there is a general belief that carbon sequestration could generate funds for investment in increased and possibly improved biodiversity conservation. In relation to developing such a mechanism, during 2007, UNEP-ETB produced a research paper on payments for avoided deforestation which was presented at a joint UNEP-IUCN side event on AD at the Ad Hoc Open-Ended Working Group on Review of Implementation of the Convention (Second Meeting), 9-13 July 2007, Paris. A revised version was also presented at the 9th Annual BioEcon Conference on "Economics and Institutions for Biodiversity Conservation", September 2007, King's College, Cambridge, UK. UNEP-ETB is also involved with the Poverty and Environment Partnership (PEP) on 'The social implications of reducing emissions from deforestation and land degradation (REDD)' for the Center for International Forestry Research (CIFOR) Forest Day event, December 2007, Bali.

3. Pro-Poor payments for Ecosystem Services

195. There are approximately 354 Payment for Ecosystem Services (PES) schemes around the world. Many of them are developed at the community level and in most cases on an ad-hock manner. Although acknowledged by the Millennium Ecosystem Assessment (MA) as having the potential to address declines in ecosystem and biodiversity, there was also a cautionary note which warned of the potential for causing social disruptions if not properly designed to accommodate distributive issues.

196. The main focus of this initiative is to develop principles of fairness and equity for PES schemes. The initiative intends to develop evaluative criteria for monitoring changes in welfare of affected stakeholders when PES are introduced and to judge if the PES has had pro-poor impacts. An initial set of principles were developed for the UNECE guide on the design of water related PES.

Lessons Learned and Evaluation of Key Challenges

IPES Mechanism Development

Policy makers, practitioners and researchers alike all face a considerable task when addressing the future development of international PES (IPES).

i. *Developing Strong Frameworks for IPES:* Before IPES can be established as an effective approach to ecosystem management, the thinking behind the mechanism framework must be further developed through case studies and pilot projects that can illustrate concretely the challenges facing 'on the ground' implementation.
ii. *Gaining Stakeholder Support:* While pursing the many conceptual and technical uncertainties surrounding this mechanism, institutional capacity and gaining support from various stakeholders must also be priorities for the development of IPES.

Avoided Deforestation

Based on work to date, UNEP-ETB has identified a number of challenges that must be addressed if Avoided Deforestation is to progress:

Providing International Platforms for Exchange:

i. *Improving and facilitating MEA Cooperation: Increasing cooperation between CBD and UNFCCC is* essential if the climate-conservation dividend is to be achieved.

ii. *International Exchange Platform:* An international forum, either virtual (regular teleconferencing or a web-based platform) or physical (events or working groups) is essential for convening stakeholders from the diverse fields AD spans (climate change, biodiversity, desertification, etc.).

Supporting Decision-Makers:

iii. *Measurement:* Estimating biodiversity value and the value of its associated ecosystem services (within and external to the AD issue) is a key challenge. Many techniques for quantifying and predicting these values have been proposed, yet there is little consensus on methodology.

iv. *Best Practices:* While a number of proposals for the inclusion of AD post 2012 have been developed and AD pilot projects have been launched, 18/ objectives, design and implementation of these projects and proposals have been largely fragmented. There remains no comprehensive document collating best practices to be used as a universal reference for the design of procedures and principles for prospective AD programs, including equity for local stakeholders. Best practices guidelines are required – including on the question of livelihoods in developing countries where the majority of AD activities will take place.

Engaging the Private Sector:

v. *Identifying Beneficiaries:* The specific private sector players that receive biodiversity benefits from AD must be identified and consulted with if the private sector is to be convinced to invest in AD.

Addressing the Challenges

General Actions

- Increased funding for research into incentive measures, including pilot projects
- Enhanced engagement of private sector in policy formulation

Recommended Actions for CBD

- Mandatory targets set for biodiversity conservation
- Continued support of international incentive measures development
- If avoided deforestation (AD) is to serve as a tool for both biodiversity conservation and climate mitigation, increased cooperation between the CBD and UNFCCC MEAs is required. One possibility is to establish a separate international legal framework for AD, shouldered by both CBD and UNFCCC.

Priorities for Future IPES Work

IPES Mechanism Development

197. The challenges that stand in the way of an international development of PES are present both on the supply and demand sides. Also, the institutional support necessary for joining those two main parties together is still not in place at the international level. An expert workshop co-hosted by UNEP and IUCN, in close collaboration with the CBD Secretariat, on scaling up PES to the international level in September 2006 determined that before IPES can be established as an effective approach to ecosystem management, a general understanding of the current state of IPES and the obstacles that prevent it from developing further needs to be reached. The following planned activities respond to these identified gaps:

- *Publication on IPES*: The objective of this publication is to explore this emerging instrument for financing environmental management. It discusses the demand for and supply of critical ecosystem services, particularly those underpinned by biodiversity and how to match these. (mid 2008). UNEP-ETB is also hosting a review meeting for this publication, and half-day workshop on IPES generally, in January 2008;

18/ The World Bank's Global Forest Alliance (GFA 2015) and Conservation International's Makira Forest Project in Madagascar are two notable examples.

- *Survey on Demand for Biodiversity*: The results from a demand-side survey conducted by the Haute Ecole de Gestion (HEG) focusing on consumers in western societies will be disseminated in early 2008;
- *ISEE Side Event on IPES:* UNEP-ETB and ETHZ will jointly host a side event at the International Society for Ecological Economics (ISEE) Annual Conference on International Payments for Ecosystem Services, 7-11 August 2008 in Nairobi, Kenya.

'Biodiversity Balancing'

198. CBD's '2010 biodiversity target' has been agreed upon by representatives of 190 nations. While it would seem that the policy choice to preserve the world's existing stocks of biodiversity has already been made, the pertinent question at this juncture is not what needs to be done, but how it is now going to be achieved. The development of a new incentive-based, global strategy for financing biodiversity conservation through private actors in the global 'North' – where the vast majority of the world's wealth resides – is essential to meeting the 2010 target. The Netherlands' Ministry of Housing, Spatial Planning and the Environment has approached UNEP-ETB to collaborate on work concerning economic incentive measures for biodiversity conservation in advance of the Convention on Biological Diversity (CBD) COP-9, May 2008, Bonn, Germany.

- *'Biodiversity Balancing' Discussion Paper:* Compensating for internationally-driven biodiversity loss by protecting an amount of biodiversity equal to what is destroyed – or 'balancing biodiversity'19/ – may provide an effective global mechanism for achieving the 2010 target. This instrument requires that international actors contributing to biodiversity loss through land-use change compensate for their impact by protecting a commensurate amount of biodiversity elsewhere, an act which is sometimes referred to as 'biodiversity offsetting'.
- *COP-9 Side Event:* It is planned to disseminate the findings at a joint UNEP-Netherlands Environment Ministry side event at CBD COP-9 (May 2008).

3. Pro-Poor payments for Ecosystem Services

199. A primer on the design of PES to be published by UNEP-DEPI in 2008 will provide a step by step guide to develop and implement PES schemes. This primer offers a starting point from which to assess the potential for PES in specific communities around the world, while also providing pointers for designing and planning PES transactions. Specifically, it describes:

- the opportunities and risks of PES schemes for rural community residents in order to enable accurate feasibility assessments for applying these new market-based mechanisms,
- steps to developing PES projects, and
- resources for additional reference and reading.

200. By issuing this primer, UNEP seeks to increase the number of organizations and communities exploring PES and, where appropriate, applying PES to further their goals for conservation, restoration, and sustainable resource management.

Interface with Other Instruments and Work Programmes

International Initiatives

- *UNCTAD's Biodiversity-Related MEA Working Group*
- *CBD-UNFCCC Overlap:* Avoided Deforestation will potentially provide an interface point between CBD biodiversity conservation and carbon emission reduction targets.

19/ Term coined by the Dutch Environment Ministry.

Trade and Biodiversity Initiative

201. The importance of understanding the complex relationships that link agriculture, biological diversity and trade liberalization is becoming increasingly clear. UNEP-ETB is undertaking a four-year initiative (2005-2009) on Integrated Assessment of Trade-Related Policies and Biological Diversity in the Agriculture Sector (UNEP Trade and Biodiversity Initiative). Funding for this initiative is provided by the European Union and by the Swedish International Development Cooperation Agency (SIDA). The initiative aims to enhance capacity in developing countries to develop and implement policy recommendations – including economic incentives – that safeguard biological diversity while maximizing sustainable development gains from trade liberalization in the agriculture sector. The outcomes will help clarify the relationships between biodiversity and trade-related policies and also contribute to a more comprehensive understanding of biodiversity assessment and valuation.

Lessons Learned and Evaluation of Key Challenges

202. The six country projects that are involved in this initiative started the research work in 2007, which first focuses on undertaking an integrated assessment of a trade-related policy in a selected sector. The sequence of activities will be as follows: 2007-2008 (integrated assessment study and development of national action plan), 2009 implementation of national action plan. It will only be in the stage of development and implementation of the national action plans that incentive measures will become relevant. At this point, the Trade and Biodiversity Initiative will be able to discuss lessons learned and make recommendations for addressing key challenges identified as part of the project.

Interface with Other Instruments and Work Programmes

International Initiatives

- UNCTAD's Biodiversity-Related MEA Working Group

Linkages to Other CBD Work Programmes

- The UNEP Trade and Biodiversity Initiative is mandated by the CBD Conference of Parties (COP) call for the impact of trade liberalization on agricultural biodiversity to be studied in cooperation with international organizations, including UNEP (Decision VI/5).

UNCTAD-UNEP Capacity Building Task Force (CBTF) - Organic Agriculture Initiative

203. Organic Agriculture (OA) production has been shown to have a positive effect on the local environment, biodiversity and soil fertility, and has the potential to increase the yields and incomes of subsistence farmers in developing countries who are not currently using agrochemicals, thus contributing to poverty reduction and sustainable rural development. As such, OA offers a range of environmental, social and economic benefits for developing countries. On the economic side, growing world markets for OA products offers interesting export opportunities for developing countries that may possess a comparative advantage in OA due to relatively abundant labour and lower use of agrochemicals. UNCTAD-UNEP's CBTF supports interested countries through country projects and thematic research studies aimed at developing win-win policy options through promoting OA and easing access of organic products into overseas markets.

Lessons Learned and Evaluation of Key Challenges

a. *Compliance and certification costs:* The cost of compliance and certification with organic standards is a significant market access challenge, especially for smallholder farmers. Mandatory government standards and requirements have become increasingly numerous and stringent. Producers are also pressured to comply with additional private voluntary standards in order to gain entry into certain markets where consumer recognition of a particular organic mark is high. Many developing

countries lack the institutions and capacity to grant organic certification in an efficient and cost-effective way, thereby placing high costs upon the producers.

b. *Lack of policy coherence and institutional support:* There exists limited institutional support and policy coherence between relevant ministries for organic agriculture initiatives, which is exacerbated by insufficient research and limited data availability on the sector. Currently, organic agricultural products face the same market-access conditions as conventional agricultural products in terms of tariffs and quotas. Additionally, farmers in developing countries often lack information, knowledge and understanding of organic agriculture requirements.

c. *Limited participation of developing countries:* The lack of dialogue between developing and developed countries has caused inadequate and insufficient participation of developing countries in international decision-making processes. There are inadequate international consultative mechanisms and regional dialogue platforms where developing country representatives can voice their concerns and needs. The weak negotiating position of developing countries has impeded their participation in standards-setting processes, and has prevented them from having their concerns addressed.

Addressing the Challenges

General Actions

- Encouragement of inter-sectoral, inter-ministerial, and inter-governmental cooperation with regards to organic agriculture policy
- Development of mechanisms to facilitate participation of developing countries in decision-making

Recommended Actions for CBD

- *Encouragement of consistent national, regional and international organic agriculture policies and standards*
- *Pursuance of favourable policies for organic agriculture in international trade*

Priorities for Future Organic Agriculture Work

National Level Assessments

The project has commissioned thematic capacity-building studies on key issues identified in the course of previous consultations and activities focused on OA in three East African countries (Kenya, Tanzania, Uganda). The studies provide essential information and analysis on the promotion of OA production and trading opportunities for relevant stakeholders. At present, the following three studies have been finalized, however two remain to be officially published and disseminated:

- Overview of the current state of organic agriculture in East Africa and opportunities for regional harmonization – published 2007
- What developing country Governments can do to promote production and trade in organic agriculture
- Organic agriculture and food security in Africa

Integrated Assessment of OA

- National integrated assessments of organic agriculture undertaken in Kenya, Uganda, and the United Republic of Tanzania are now nearing completion. These assessments cover the current state of the sector, identification of major stakeholders, reviews of relevant current policies, development of policy options, assessments of potential environmental, economic and social impacts of proposed policy options, and assessments of future capacity-building requirements. A synthesis report will be created on the basis of these three assessments. It will capture key features of the project, its implementation, lessons learned, and recommendations for replication

of the project in other countries. Final national stakeholders workshops will also be held to discuss and validate the findings of the country projects.

Regional Cooperation

- Activities under the regional cooperation component will build upon past work in the region, in particular through the Export Promotion of Organic Products from Africa (EPOPA) project, funded by the Swedish International Development Cooperation Agency (SIDA). The aim of the regional component is to facilitate exchange of national experiences, ensure overall project coherency,and identify areas for regional cooperation.

Interface with Other Instruments and Work Programmes

International Initiatives

- *UNCTAD's Biodiversity-Related MEA Working Group*
- *UNCTAD's Consultative Task Force on Environmental Requirements and Market Access for Developing Countries (CTF)*
- *CITES*
- *IUED (International Graduate Institute for Development Studies, University of Geneva)*
- *FAO (Food and Agriculture Organization)*
- IFOAM (International Federation of Organic Agriculture Movements)

UNCTAD-UNEP Capacity Building Task Force (CBTF) – CITES Secretariat – IUED initiative: Enhancing national capacities to assess wildlife trade policies in support of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

204. Thanks to the expertise of the joint UNEP- UNCTAD Capacity Building Task Force on Trade, Environment and Development (UNEP-UNCTAD CBTF), the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Graduate Institute of Development Studies (IUED) of the University of Geneva, this initiative provides the foundation and impetus for assessing, designing and implementing national wildlife trade policies in the developing countries that further CITES implementation and support national sustainable development and poverty reduction goals.

205. The core of the initiative is the **implementation of pilot country studies in four developing countries** with balanced representation from all regions that is to say, Vietnam, Madagascar, Nicaragua and Uganda.

The main specific objectives of this initiative are the following:

• **Enhancing** the capacity of developing countries and countries with economies in transition to review national wildlife trade policy(ies) and to assess the environmental, social and economic impacts of those policies.

• **Assisting** developing countries and countries with economies in transition to develop national action plans that incorporate environmental, social and economic considerations into national wildlife trade policies.

• **Exchanging** national experiences among participating countries on best practices for the development and implementation of national wildlife trade policies.

• **Refining** a general framework on assessment methodologies that can be used by pilot countries and other interested countries to assess their national wildlife trade policies.

Lessons Learned and Evaluation of Key Challenges

206. The four country projects for the wildlife trade policy review started in early 2007. The country teams, using the Wildlife Trade Policy Review Framework, prepared under this initiative, are undertaking national assessments of environmental, social and economic impacts of wildlife trade policies. The country teams are expected to finish the review process by early 2008 and provide

recommendations for policy and incentive measure to improve development and implementation of wildlife trade policies which can help conserve biodiversity and achieve sustainable development. An international workshop will be organised to share best practices and lessons learnt.

Interface with Other Instruments and Work Programmes

207. International Initiatives

- The UN Millennium Development Goals
- Plan of Implementation agreed at the World Summit on Sustainable Development
- WTO Doha Declaration (importance of capacity building)
- CITES Conference of Parties (COP) Decisions calling for the review of "national (wildlife trade) policies regarding the use and trade in specimens of CITES-listed species" and assessing their social, economic and environmental impacts (especially Decision 12.22 – Decision 13.74).

Annex

Existing UNEP Economics and Trade Branch (UNEP-ETB) Publications

Economic Instruments

- UNEP (2005) Economic Instruments in Biodiversity-Related Multilateral Environmental Agreements

Fisheries Subsidies

- UNEP (2003) Fisheries Subsidies and Overfishing: Towards a Structured Discussion, United Nations Publication: Geneva, Switzerland.
- UNEP (2004) Analyzing the Resource Impact of Fisheries Subsidies: A Matrix Approach, United Nations Publication: Geneva, Switzerland.
- UNEP (2005) Artisanal Fisheries, United Nations Publication: Geneva, Switzerland.
- UNEP (2006) Special and Differential Treatment, United Nations Publication: Geneva, Switzerland.
- UNEP (forthcoming) Access Agreements, United Nations Publication: Geneva, Switzerland.
- UNEP-WWF (2007) Sustainability Criteria at the WTO, United Nations Publication: Geneva, Switzerland.

Country Studies

- UNEP (1999) Environmental Impacts of Trade Liberalization and Policies for the Sustainable Management of Natural Resources: A Case Study on Uganda's Fisheries Sector, United Nations Publication: Geneva, Switzerland.
- UNEP (1999) Environmental Impacts of Trade Liberalization and Policies for the Sustainable Management of Natural Resources: A Case Study on Bangladesh's Shrimp Farming Industry, United Nations Publication: Geneva, Switzerland.
- UNEP (2002) Integrated Assessment of Trade Liberalization and Trade-Related Policies A Country Study on the Fisheries Sector in Senegal, United Nations Publication: Geneva, Switzerland.
- UNEP (2002) Integrated Assessment of Trade Liberalization and Trade-Related Policies A Country Study on the Argentina Fisheries Sector, United Nations Publication: Geneva, Switzerland.
- UNEP (2002) Evaluation de l'impact de la libéralisation du commerce Une étude de cas sur le secteur des pêches de la République Islamique de Mauritanie, United Nations Publication: Geneva, Switzerland.

- UNEP (2003) Fisheries Subsidies and Marine Resource Management: Lessons learned from Studies in Argentina and Senegal, United Nations Publication: Geneva, Switzerland.
- UNEP (2004) Fisheries Subsidies and Marine Resource Management : Lessons from Bangladesh, United Nations Publication: Geneva, Switzerland.
- UNEP (2004) Policy Implementation and Fisheries Resource Management: Lessons from Senegal, United Nations Publication: Geneva, Switzerland.
- UNEP (2006) Indonesia: Integrated Assessment of the Poverty Reduction Strategy Paper With a Case Study on Sustainable Fisheries Initiatives, United Nations Publication: Geneva, Switzerland.
- UNEP (2006) Uganda: Integrated Assessment of Uganda's National Trade and Fisheries Policies, United Nations Publication: Geneva, Switzerland.
- CBTF (2006) Best Practices for Organic Policy: What developing country governments can do to promote the organic sector
- CBTF (2007) Overview of the Current State of Organic Agriculture in Kenya, Uganda and the Republic of Tanzania and the Opportunities for Regional Harmonization
- CBTF (2007) Organic and Sustainable Agriculture and Food Security in East Africa

Forthcoming Publications

Fisheries

- "EEZ Fisheries Access Arrangements and the WTO Subsidies Agreement - Legal Analysis and Options for Improved Disciplines". This paper has been written by Marcos Orellana under commission from UNEP. (End 2007)

- Demonstration project outputs on ecolabelling (End 2008)

- Publication fisheries subsidies reform as a topic for international debate (2008)

IPES

- Publication on IPES mechanism design (Mid 2008)

- Biodiversity Offset policy paper with Dutch Ministry of Environment (Mid 2008)

3. Organic Agriculture

- Publication on IPES mechanism design (Mid 2008)

- Country report on integrated assessment of the organic agriculture sector in Kenya

- Country report on integrated assessment of the organic agriculture sector in Republic of Tanzania

- Country report on integrated assessment of the organic agriculture sector in Uganda

4. Wildlife Trade Policy Review:

- Reference Manual on Wildlife Trade Policy Review
