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INCENTIVE MEASURES*Proposals for the design and implementation of incentive measures**Note by the Executive Secretary**Executive summary*

The present note was prepared in response to decision V/15 of the Conference of the Parties *inter alia* calling on the Executive Secretary to collaborate with other organizations to gather information on instruments in support of positive incentives and on perverse measures, and to elaborate proposals for the design and implementation of incentive measures for the seventh meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). It takes into account work submitted to the Secretariat by a range of relevant organizations, as well as the views of members of a liaison group on incentive measures, brought together by the Secretariat, particularly those calling for the development of a programme of action for future cooperation on incentive measures among relevant international organizations, with a view to developing a practical approach for their design and implementation. The framework put forward in the present note will be discussed by experts and other stakeholders at a workshop in September 2001, before a final paper is presented to the seventh meeting of SBSTTA.

Incentive measures are divided generally into four categories: positive incentives; disincentives; removal of perverse incentives; and indirect incentives. The role of incentive measures with respect to conservation and sustainable use of biodiversity is to improve decision-making in this area, safeguarding both the public and private aspects of biodiversity and its components. In order to promote the development of incentives, the present note suggests that there are four cross-cutting issues associated with the design and implementation of incentive measures that might usefully be the subject of international cooperation: the collection and dissemination of information; the involvement of stakeholders, including local and indigenous communities; expanding techniques associated with valuation; and capacity-building

* UNEP/CBD/SBSTTA/7/1.

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on a number of levels, including scientific and technical capacity, legal and administrative capacity and financial capacity.

Drawing on a framework proposed by the Organisation for Economic Co-operation and Development (OECD), and taking into account lessons drawn from a number of case-studies, the paper suggests that a number of elements should be taken into account in the design and implementation of incentive measures, including:

- (a) Identification of the problem (underlying threats, goals, identification of stakeholders, process for participation);
- (b) Design (ecosystem approach, precautionary approach, efficiency principle, cost internalization, value creation for local communities, mix of measures);
- (c) Facilitating implementation by building support and providing capacity (human capacity, institutional arrangements, stakeholder involvement, funding); and
- (d) Management, monitoring and enforcement (administrative and legal capacity, funding).

The information will be presented for discussion at the workshop, with a view to elaborating proposals for the design and implementation of incentive measures that command the support of a wide range of countries. A key consideration is the recognition that a single measure will not suffice to address the complexities involved in decisions on biodiversity conservation and sustainable use. Thus, any decision-making process should consider a combination of measures to achieve the desired goal, taking into account the specific circumstances of the country involved. It is thus crucial to examine the ways in which complementary incentive measures interact to address different facets of a complex ecosystem, including its economic, environmental and social components.

Finally, recommendations are made for future cooperation on incentive measures. These are structured according to the four cross-cutting themes presented at the start of the paper. These recommendations are intended to serve as a basis for discussion at the workshop. Taken together, they might eventually form a programme of action to support Parties and organizations in developing practical policies and projects, and guidance to financial mechanisms for effective support and prioritization in the area of incentive measures for the conservation and sustainable use of biodiversity.

Suggested recommendations

The Subsidiary Body on Scientific, Technical and Technological Advice is invited to consider the recommendations emanating from the Workshop on Incentive Measures for the Conservation and Sustainable Use of the Components of Biological Diversity, to be held in Montreal from 10 to 12 October 2001, which will consider the present note as its main working document.

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I. INTRODUCTION

1. In decision V/5 on incentive measures, the Conference of the Parties called on the Executive Secretary to:

"3. ... collaborate with relevant organizations, such as the Food and Agriculture Organization of the United Nations, the Organisation for Economic Co-operation and Development, the United Nations Conference on Trade and Development, the United Nations Development Programme, the United Nations Environment Programme, and IUCN-The World Conservation Union, in order to engage in a coordinated effort, and undertake through such an effort, as a first phase:

"(a) To gather and disseminate additional information on instruments in support of positive incentives and their performance, and to develop a matrix identifying the range of instruments available, their purpose, interaction with other policy measures and effectiveness, with a view to identifying and designing relevant instruments, where appropriate, in support of positive measures;

"(b) To continue gathering information on perverse incentive measures, and on ways and means to remove or mitigate their negative impacts on biological diversity, through case-studies and lessons learned, and consider how these ways and means may be applied;

"(c) To elaborate proposals for the design and implementation of incentive measures, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at its sixth or seventh meeting and by the Conference of the Parties at its sixth meeting ..."

2. The present note was prepared in response to the above request. It builds on previous work undertaken by the Secretariat of the Convention on Biological Diversity further to Article 11 of the Convention, which highlights the use of incentive measures as an important tool to promote the conservation and sustainable use of the components of biological diversity. The Secretariat has defined incentive measures as "a specific inducement designed and implemented to influence government bodies, business, non-governmental organisations, or local people to conserve biological diversity or to use its components in a sustainable manner."^{1/} To further the work programme in this area, the Executive Secretary, in conjunction with other organizations, has developed a number of papers on the application of incentive measures. The most recent work provided a taxonomy of measures, reviewed case-studies ^{2/} and developed proposals for further work. ^{3/} Taking into account work of other relevant organizations, the present note presents some basic conditions necessary for the design and implementation of incentive measures and a matrix suggesting key considerations associated with such a task.

3. Part II of the present note highlights the cooperative efforts undertaken by the Secretariat to respond to the request in decision V/15 that this work be undertaken in cooperation with other relevant international organizations. Part III suggests four basic conditions for the effective application of incentive measures: information; stakeholder involvement; valuation; and capacity-building. These four areas form the foundation of a draft action plan for future cooperation on incentive measures. Part IV presents a number of elements associated with the design and implementation of incentive measures. Part V considers the interaction between and among incentive measures, emphasizing the need for a

^{1/} UNEP/CBD/COP/3/24

^{2/} UNEP/CBD/COP/5/INF/14.

^{3/} UNEP/CBD/COP/5/15.

complementary mix of measures. Part VI sets forth draft recommendations to serve as a basis for the discussion in the development of an action plan for future cooperation on incentive measures.

II. COOPERATION

4. In September 2000, the Executive Secretary sent a letter to a number of organizations inviting them to submit information outlining their activities related to incentives. The responses received to this request are the basis of the research for the present note.^{4/} In particular, the note draws on lessons learned from existing case-studies. Among other sources, the note relies on the OECD *Handbook of Incentive Measures for Biodiversity: Design and Implementation* (1999), which was developed in part as a contribution to the ongoing work of the Convention on Biological Diversity, along with contributions from the IUCN “Examples of Various Kinds of Incentives and Disincentives”, which examines examples of law-related incentives and disincentives used in the context of environmental protection, conservation and sustainable use, and “Towards a Programme of Work on Incentive Measures under the CBD: A working paper.”

^{4/} See the annex, on specific contributions, for a summary of responses received to the letter of the Executive Secretary.

5. In addition to soliciting information from a number of organizations, the Secretariat brought together a liaison group on incentives comprising representatives of relevant international organizations or national governments. ^{5/} The first meeting of the liaison group was held at the headquarters of the Secretariat on 13 March 2001, on the margins of the sixth meeting of SBSTTA. The purpose of the meeting was to discuss coordination of work on incentive measures in response to decision V/15.

6. The liaison group noted that a substantial amount of work had been carried out by a number of organizations on incentive measures, including analytical work, case-studies and the development of guidelines. It was also recognized that, in keeping with the letter and spirit of the Conference of the Parties decision, there was a need to move to a more action oriented phase and to identify means to put in practice lessons learned from this work. In this context, it was suggested that the Secretariat act as a facilitator in the coordination of the next action-oriented phase, in order to enhance collaboration and cooperation among relevant organizations working on incentive measures.

7. A number of steps were proposed as a way forward in the context of a global framework in support of social, economic and legal incentives for the conservation and sustainable use of biological diversity, coordinated by the Secretariat. Capacity-building was identified as a key element of any future work. Other suggestions included the packaging of existing guidelines on incentive measures into a user-friendly format, harmonizing approaches to country studies, and promoting multi-stakeholder approaches. The involvement of national experts and training, where necessary, to promote the implementation of incentive measures was deemed to be important in the context of future country studies. Participants suggested that draft elements of an action plan on incentive measures should be discussed further at a workshop prior to the seventh meeting of the SBSTTA. Thanks to the support of the Governments of the Netherlands and Belgium, the Executive Secretary was able to convene such a workshop to be held from 10 to 12 October 2001 at the headquarters of the Secretariat in Montreal.

III. BASIC CONDITIONS FOR THE EFFECTIVE APPLICATION OF INCENTIVE MEASURES

8. Biological diversity describes the number and variety of living organisms on the planet, defined in terms of genes, species and ecosystems. Biodiversity is also the source of many of the world's products. Biological resources include genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity. ^{6/} These include such resources as wood and non-wood products from trees and forests, for example.

9. Biodiversity has characteristics of public and private goods attached to it. While many of the benefits of biological diversity accrue to the public as a whole in the form of cultural, social and economic benefits, a number of the components of biodiversity have privately appropriable values. The role of incentives is to improve decision-making related to both the public and private aspects of biodiversity. In some cases this might involve pure conservation, while in others incentive measures that promote

^{5/} Members of the liaison group on incentive measures include representatives from the UNEP Economics and Trade Unit; Economics Unit, IUCN-World Conservation Union; IUCN Environmental Law Centre; Environment Directorate, OECD; Ministry of Housing, Spatial Planning and the Environment, Netherlands; Environment and Sustainable Development, Food and Agriculture Organization of the United Nations (FAO); and, Division on International Trade and Commodities, United Nations Conference on Trade and Development (UNCTAD).

^{6/} Convention on Biological Diversity, Article 2.

sustainable use of biological diversity and its components will be a viable alternative. ^{7/} Incentives that promote sustainable use can bridge the profitability gap between sustainable activities and unsustainable alternatives and are the most likely to gain support from local communities and the private sector. ^{8/}

10. A range of incentive and disincentive measures is available to encourage the conservation or sustainable use of biological diversity. ^{9/} Decision V/15 highlights positive incentives and the removal of perverse incentives as priority areas for investigation under the Convention. A positive incentive is an economic, legal or institutional measure designed to encourage beneficial activities. Positive incentives include, *inter alia*, incentive payments for organic farming, taxation and fiscal measures, agricultural land set-aside schemes, public or grant-aided land purchases or conservation easements.

11. Disincentives are mechanisms that internalize the costs of use and/or damage to biological diversity in order to discourage activities that deplete it. Disincentives might include, *inter alia*, user fees, non-compliance fees, fines for damages, environmental liability, performance bonds, habitat mitigation schemes or marine pollution liability.

12. Indirect incentives affect potential changes through variables other than changing the levels of potential damage directly. They include trading mechanisms and other institutional arrangements that create or improve upon markets and price signals for biological resources, encouraging the conservation and sustainable use of biological diversity. They include, *inter alia*, individual transferable fishing quotas, property right mechanisms, species commercialization, biodiversity prospecting, emission trading schemes or certifications and eco-labelling initiatives, which can have applications with indirect benefit to biodiversity by, for example, providing important incentives for producers to engage in sustainable forest management. ^{10/}

13. Perverse incentives induce unsustainable behaviour that reduces biodiversity. They are often unanticipated side effects of policies designed to attain other objectives. They can include government subsidies or other measures which fail to take into account the existence of environmental externalities, as well as laws or customary practice governing resource use. The abandonment of perverse incentives can have a positive impact on the conservation and sustainable use of biodiversity.

14. The following box, taken from OECD (1996), presents a range of incentive measures available for the conservation and sustainable use of biodiversity.

^{7/} Sustainable use is defined by the Convention on Biological Diversity as “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations”. (Article 2).

^{8/} OECD. 1999. *Handbook of Incentive Measures for Biological Diversity: Design and Implementation*.

^{9/} See OECD. 1996. *Saving Biological Diversity*; Jennifer Rietbergen-McCracken and Hussein Abaza (eds). 2000. *Economic Instruments for Environmental Management: A Worldwide Compendium of Case Studies*. London: Earthscan Publications Ltd.; IUCN, Environmental Law Centre. 2001. “Examples of Various Kinds of Incentives and Disincentives”; UNEP/CBD/COP/5/INF/14; IUCN.

^{10/} Timber product labelling and certification are a relatively established practice under the Forest Stewardship Council and other organizations. It is designed to improve consumer information on forest management practices embodied in timber products through the development of internationally agreed guidelines, criteria, and standards for sustainably produced timber. The schemes are based on the premise that trade in timbers can provide powerful incentives for the achievement of sustainable forest management. By increasing the price, producers can recoup the additional costs associated with sustainable production.

Positive incentives	Disincentives	Indirect incentives	Removal of perverse incentives
<ul style="list-style-type: none"> • Agricultural land set-aside schemes • Public or grant-aided land purchase • Wetland reserves • Covenants/conservation easements • Cost-sharing/management agreements • Species enhancement schemes • Customary cultivation of biodiversity • International biodiversity transfers • Incentive payments for organic farming • Taxation and fiscal measures 	<ul style="list-style-type: none"> • User fees • Non-compliance fees • Fines for damage • Environmental liability • Performance bonds • Habitat migration schemes • Marine pollution liability 	<ul style="list-style-type: none"> • Individual transferable fishing quotas • Tradable development rights • Property-right mechanisms • Species commercialization • Biodiversity prospecting deals • Forestry offsets • Air emission trading • Effluent discharge trading • Tradable water entitlements • Wetlands mitigation banking • Joint implementation • Debt-for-nature swaps • International franchise agreements • Eco-labelling 	<ul style="list-style-type: none"> • Reduction and restructuring of agricultural support harmful to biodiversity • Introduction of agricultural conservation compliance measures • Reform of public forestry concession pricing, licence fees, reforestation fees, and royalties • Full appraisal of forest benefits • Discontinuation of below-cost timber sales • Reform of tax structures • Full-cost pricing for water services • Appraisal of biodiversity impacts in the transport sector • Road pricing • Costing of biodiversity loss in energy investment appraisal

15. The following four basic conditions are of cross-cutting relevance for the design and implementation of incentives such as those listed in the box above. They form the core components of a draft action plan for future cooperation on incentive measures presented in part VI of the present report.

A. Information

16. The collection of information is key for the design of incentive measures of all types. The lack of adequate information about biological diversity is one of the main barriers to the implementation of appropriate incentive measures. Case-studies confirm, for example, that the lack of information on land

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and resource use and management is a primary constraint to exploring policy alternatives for conservation. Without adequate information it is difficult to accurately determine threats to biological diversity, the pressures driving a threat and the benefits that might accrue as a result of conservation or sustainable use. ^{11/} The Convention encourages development of information about the components of biological diversity, their interactions and the pressures to which they are exposed, as well as the possible incentives that are available for positive action for their conservation.

17. In addition to the collection of relevant information it is important that it be disseminated widely. Because biodiversity is generally not well understood, there is an ongoing need to raise awareness among policy makers and the general public about the importance of conservation and opportunities for the sustainable use of the components of biodiversity.

18. It is also important to ensure collection and dissemination of information to those directly responsible for conservation, sustainable use, as well as degradation of biodiversity, including the private sector and local communities. Information about the threats to, and services offered by, biodiversity can also help mobilize public opinion and political will contributing to the formulation of appropriate incentive measures. ^{12/} Indeed, the availability of information to stakeholders and the general public can be pivotal for the success of some specific incentive measures. For example, for the implementation of certification and eco-labelling schemes, awareness of biodiversity issues is necessary to allow consumers to make choices that support sustainable activities. ^{13/} Certification and eco-labelling have been most successful in regions where consumers are environmentally aware, have relatively high incomes, and are sensitive to non-governmental organizations, consumer groups and the media. ^{14/} They can also have significant impacts on those individuals living in areas rich in biodiversity. For example, indirect measures such as the creation of markets and the promotion of development opportunities based on the sustainable use of the components of biodiversity, may have positive effects in areas where local and indigenous communities living in fragile ecosystems are searching for ways and means to increase their family income. ^{15/}

19. Nevertheless, lack of information should not necessarily prevent work from being carried out to encourage the use of appropriate incentive measures. There is valuable experience to be gained from an

^{11/} OECD has identified a number of proximate causes including habitat destruction or alteration, exploitation of wild species, homogenization, pollution and global environmental change, from which underlying causes of biodiversity loss can be identified. For example, the conversion of land from high diversity uses (such as natural forests) to low diversity uses (such as intensive agriculture) is one proximate cause of biodiversity loss, which includes the extinction of animal, plant and bird species. Market failures and the lack of well-defined property rights are among the underlying causes of biodiversity loss brought about by land conversion. A second proximate cause, the over-exploitation of wild species, occurs as a result of unsustainable harvesting and hunting. Underlying causes of over-exploitation include market failure (particularly on communal open lands, or seas), lack of information, ill-defined property rights, or weak institutional arrangements. Homogenization implies a trend away from diversified agriculture to monoculture or systems based on a few species. The reduction in the number of crop species also results in an even larger reduction in the number of supporting species. An underlying cause of homogenisation is specialisation in order to achieve higher productivity. An additional cause of biodiversity loss is through the deliberate or inadvertent introduction of alien species, which can prey on endemic species, compete with them for available sustenance or crossbreed to produce hybrids. The loss of biodiversity in these cases may be the result of poor information, limited understanding of ecological interactions, or even deliberate attempts to eliminate species (OECD, 1996).

^{12/} OECD, 1999.

^{13/} Certification schemes (as in the case of certified timber and certified organic products) are also important ways in which the environment can be harnessed as a commercial opportunity by informing consumers about environmentally friendly products and can sometimes allow those products to be sold at a premium.

^{14/} OECD. "Creating Markets for Biodiversity Resources and Services." Draft. 27 June 2000.

^{15/} Biotrade initiative of UNCTAD. comments on the draft document.

approach that includes “learning by doing”. In addition to building capacity and expertise on incentive measures, such an approach can help identify where critical gaps in information exist.

B. The involvement of stakeholders including indigenous and local communities

20. The development of a coherent approach to policy making within government that extends out to support participatory approaches, including stakeholders, is key to the successful development and implementation of incentive measures. Issues related to the conservation and sustainable use of biological diversity are relevant to individuals and groups ranging from ecologists and conservationists to researchers, policy-makers, entrepreneurs, hunters and biodiversity prospectors. Another critical group of stakeholders is indigenous and local communities. Indeed, an approach that includes the views of indigenous and local communities is mandated in the Convention by Article 8(j), which calls on the Parties to “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and the involvement of the holders of such knowledge”.

21. For an incentive measure to effectively promote conservation or sustainable use of a specific component of biodiversity, it should include provisions in its design that take into account the varied interests (monetary and other) associated with it. Measures should be based on an approach, or be part of a package of complementary measures, which address stakeholder concerns and respect the cultural context in which they operate. The importance of meaningful collaboration with non-governmental organizations and indigenous and local communities is confirmed in a number of case-studies. ^{16/} Indeed, a UNEP study in the Galapagos Islands concluded that dialogue and participation were perhaps the most important prerequisites for improved conservation and sustainable use of biodiversity.

22. Collaboration with stakeholders should begin at the earliest possible stage in the development of incentive measures. In particular, indigenous and local communities often have special knowledge of the state of biodiversity, the threats to it, and underlying causes of its degradation. They often also have the most to gain from its continued existence. While they may be responsible for exerting significant pressures on the resources provided by biodiversity, they may also be in the best position to implement and monitor any necessary measures to relieve the pressures. This is most likely to occur if measures respect the ethnic, customary and legal rights of the stakeholders involved, which can be assured by their direct involvement in the process. Moreover, the involvement of stakeholders in the process of designing and implementing incentive measures can help ensure that key stakeholders buy into the incentive and thus increase its likelihood of success.

23. In general, a meaningful participatory process as a vehicle for local participation has the following impacts on the development and implementation of incentive measures:

- (a) Increases buy-in and commitment;
- (b) Increases transparency;
- (c) Promotes a sense of collective accountability;

^{16/} See for example, UNEP. *Incentive Measures for Conservation of Biodiversity and Sustainability: A Case Study of the Galapagos Islands*; *Incentive Measures for Conservation of Biodiversity and Sustainability: Case Study of the Brazilian Pantanal*.

- (d) Increases knowledge about the resource and places a value on the knowledge that indigenous and local communities possess;
- (e) Increases the development and implementation of innovative policy solutions;
- (f) Promotes the development of institutional frameworks for public participation, including the private sector;
- (g) Builds trust;
- (h) Identifies who will/should be impacted. ^{17/}

C. Valuation

24. A third basic condition relevant for the practical design and application of incentive measures is valuation of biological diversity and its components to allow for more precise internalization of the costs associated with its degradation or the services it can provide. Poor information on the economic value of biodiversity underlies the importance of continued theoretical and primary empirical research in the measurement of the benefits with a focus on application to policy.

25. Biological diversity has a value to human beings that is often ill understood in terms of a defined market and has tended to be ignored by policy makers and decision makers. The valuation of biodiversity and its components implies developing a monetary value for those resources where market values do not exist. Valuation is a useful tool where values for non-market environmental goods and services exist and where decisions might otherwise be taken with a zero value for environmental effects. ^{18/} Values for biodiversity and its components tend to be referred to in the following categories: direct use; indirect use; option; existence; and bequest. ^{19/}

26. *Direct use* values include those of output that is consumed directly, such as fish, fuelwood, recreation, transport, meat, fibres, forest products, pharmaceuticals as well as opportunities for education and research. *Indirect use* values include those for ecological services provided by biological resources that support and protect economic activity and sustain livelihoods elsewhere, such as flood control, water purification, climate control, or regulation of air quality. *Option* values refer to the discounted present values of the potential of biological diversity to lead to the development of new goods, subject to uncertainty over future demand or availability.

27. Biological diversity also has value that is categorized as *non-use* value. These include such areas as *existence* value or *bequest* value. That is, the value of the resource that is the result of its continued existence in aesthetic, intrinsic, ethical, or spiritual terms. Bequest value is the value implied by the knowledge that others will enjoy the benefits, capturing the desire to leave a natural legacy for future generations.

28. There exists a range of implicit and explicit, quantitative and qualitative evaluation methods for biodiversity policy decision-making. These can include economic (monetary) evaluation methods for cost-benefit analysis, as well as other evaluation methods based either on qualitative criteria (such as voting) or on informational or institutional performance criteria of economic activities (including disclosure, labelling, stakeholder involvement, benefit-sharing). In some cases, direct values can be assigned to biodiversity.

^{17/} For example, in the Colombian case study (WWF) it is important to note that the beneficiaries of incentive measures are not only those with well-established legal titles, but also those who traditionally use the land. See also Bolsa Amazonia, Belém-Brazil, www.bolsaamazonia.com.br.

This is most feasible where markets exist for products such as food, timber or medicines. Direct valuation can also be used to measure the value of recreational and tourist use of habitats. Indirect valuation methods, such as surrogate markets, may be used to measure ecosystem services, such as flood control and water purification.

29. Economic valuation has traditionally been under-utilized for biological diversity, its components and the services it provides because they are difficult to quantify or compare qualitatively, and providing monetary estimates of their benefits and costs can be contentious. Nevertheless, it can provide important information for decision-making. While it may not be a necessary condition for the application of incentive measures, it can help target specific measures by identifying and quantifying the value of specific components of biological diversity, thereby assisting policy makers to prioritize conservation objectives and define the economic incentives to secure those objectives. Valuation can also help to improve the functioning of markets and the creation of new ones which, if developed sustainably, hold out considerable promise for providing long-term tangible benefits. ^{20/}

30. Valuation exercises are useful not just for the numbers they provide. They also provide important information on who the key stakeholders are, whether those stakeholders stand to win or lose from a pattern of using and managing biodiversity and, therefore, whether they are motivated to support or undermine efforts to conserve and sustainably use biodiversity. ^{21/} Economic valuation can also be used as an important tool to complement decision-making processes that include other non-monetary values associated with biodiversity such as cultural, social, spiritual and intrinsic values.

D. Capacity-building

31. Ongoing capacity-building is a fourth essential component related to the design and implementation of incentive measures. For example, capacity is needed to gather, analyse and disseminate information. This includes scientific and technical capacity, as well as capacity related to administrative, educational, and training and communications-related issues. In many cases, in the implementation phase of incentive measures there will be an ongoing need for training of trainers, managers and other workers, public education programmes and other forms of human capacity-building. In other cases there may be a need for physical capacity-building including the installation of monitoring equipment or other infrastructure needs. Technical capacity is also a necessary requirement for undertaking exercises to value biological diversity. In all cases, the building of scientific and technical capacity within a country or a community

^{18/} OECD, 1999.

^{19/} See Jennifer Reitbergen-McCraclken and Hussein Abaza (eds.). 2000. *Environmental Valuation: A Worldwide Compendium of Case Studies*. London: Earthscan Publications Ltd.; Dana Clark and David Downes. 1995. *What Price Biodiversity? Economic Incentives and Biodiversity Conservation in the United States*. Centre for International Environmental Law.

^{20/} For example, in the Amazon region local communities created market value for biological resources. The projects, conducted in cooperation with the Non-Governmental Organization, Poverty and Environment in Amazonia (POEME) and Daimler Benz of Brazil, involves over 5,000 families in 57 communities in the Amazon who process coconut fibre (previously burned as waste) and latex for automotive headrests. The experience has resulted in a revaluation of the forest as a way to increase family incomes, thus fostering the preservation of the surrounding forest, mainly rubber trees, and the rehabilitation of degraded areas by re-incorporating the organic material produced as a by-product. Mitschein, T.A. and Mireanda, P.S. , Poverty and Environment in Amazonia (POEMA): A Proposal for Sustainable Development in Amazonia, in Leihner, D.E. and Mitschein, T.A (eds), *A Third Millennium for Humanity? The search for paths of sustainable development*. Peter Land GMBH, Germany, 1998, pp. 329-365. For further information please visit: www.biotrade.org.

^{21/} IUCN-World Conservation Union. *Economic Values of Protected Areas*.
<http://biodiversityeconomics.org/valuation/topics-34-00.htm>.

might require the assistance of external experts to carry out educational programmes and training programmes.

32. Capacity is necessary to ensure that incentive measures are developed in a manner that is participatory and promotes effective policy integration and stakeholder participation. This implies institutional capacity to ensure that avenues exist for effective intergovernmental dialogue, as well as dialogue with relevant stakeholder groups and communities. Despite the complexities that it implies, an integrated approach will strengthen the effectiveness of any chosen measure. For example, case-studies show that a combination of direct monetary benefits with an integrated conservation and development project targeted for off-site activities is an effective incentive measure for reducing human pressures on protected areas. ^{22/} The implementation of such a package of incentives could require co-operation among a number of government agencies responsible for fiscal, environmental and development policies. In both cases, within government and without, the implementation of incentive measures can benefit from education and communication strategies.

33. There are requirements for administrative and legal capacity associated with the development, implementation and monitoring of certain incentive measures, as well as financial capacity. Both will vary, depending upon the measure. For example, much of the threat to biodiversity rests in the fact that it is a public good and it can be difficult to induce people to pay for the benefits it provides. Therefore, financing the conservation of biodiversity is a challenge, in particular given the ill-defined mechanisms for internalizing its value into the market system and the existence of perverse incentives. From a financial perspective, some measures can be cost-neutral, such as the direct removal by Governments of perverse subsidies that encourage unsustainable behaviour ^{23/} or the removal of indirect subsidies through reform of the tax system. Other measures might be self-financing. For example, measures that can generate revenues for biodiversity conservation include environmental fines, tradable permits, and deposit refund schemes and user/access fees. In some cases additional funding or government support is necessary to encourage or enable activities that conserve biodiversity. Where additional funding is needed and national resources might not exist, mechanisms such as the Global Environment Facility (GEF) can facilitate the implementation of incentive measures, provide sufficient and stable initial funding to establish the measures, and build capacity to avoid the creation of dependency. GEF, along with multilateral development banks, international non-governmental organizations, national environmental funds, and private philanthropy, provides promising avenues for this type of funding. ^{24/}

34. Some lessons that can be derived from existing case studies with respect to funding include the following:

^{22/} WWF. 1995. *From Theory to Practice: Incentive Measures in Developing Countries*. WWF Discussion Paper;

^{23/} DeMoror (1997) and Panayotou (1997) have estimated that there are anywhere from \$0.5 to \$1 trillion worth of subsidies world-wide that damage the environment and distort economic activity. Of these, half are in developing countries and half in the developed world. The difference lies in the sectors that are subsidized. In the OECD, most subsidies (c. \$330 billion) go to agriculture and road transport (between \$85 billion and \$200 billion). In developing countries, the most highly subsidized sectors are energy (\$150-200 billion) and water (\$42-47 billion).

^{24/} The multilateral development banks (World Bank, Inter-American Development Bank, Asian Development Bank, etc.) can provide loans and/or technical assistance grants or loans for biodiversity conservation, mostly to government. Many have concessionary resources - either loans provided at below-market rates or in local currency, or grants such as the Technical Assistance Grant.

(a) Where direct monetary benefits are used (through funds or revenue-sharing), the size of such funds should be sufficient so as not to undermine the credibility of the measures ^{25/}

(b) The more financially attractive the incentive mix, the greater the likelihood that it will induce resource users and communities to actively contribute to the maintenance of biodiversity values;

(c) Financial incentives can act as important bridges to facilitate transition to a new administrative regime;

(d) The most successful environmental funds tend to be those that involve both Governments and non-governmental organizations in their operations;

(e) Revenues generated by environmental fines should be used to finance projects that promote conservation;

(f) Case-studies confirm that, to be effective, disincentive measures such as fines must be set at levels high enough so as to act as a deterrent to undesirable behaviour and be integrated into the legal framework of a country so as to be enforceable. ^{26/}

IV. ELABORATION OF PROPOSALS FOR THE DESIGN AND IMPLEMENTATION OF INCENTIVE MEASURES

35. There are a number of elements to consider when deciding on appropriate incentive measures to address issues related to the conservation of biodiversity or its sustainable use. The following table puts forward some examples in order to begin a discussion to elaborate proposals for the implementation of incentive measures. It is divided, generally, into four categories, consistent with the OECD approach to implementing incentive measures as described in OECD (1999): *Identify the Problem, Design, Build Support and Provide Capacity, and Manage, Monitor and Enforce.*

<p>SOME ELEMENTS ASSOCIATED WITH THE DESIGN AND IMPLEMENTATION OF INCENTIVE MEASURES</p>

^{25/} Yakobo Moyini and Erie Tamale. 1998. *Incentive Measures for the Conservation and Sustainable Use of Biodiversity by Communities Living around Bwindi Impenetrable National Park (Uganda)*. A case-study conducted for the WWF Eastern Africa Regional Programme Office.

^{26/} Asenath Omwega, Dr. Joy Obando and Erie Tamale. 1998. *Incentives for the Conservation and Sustainable Use of Biodiversity in the Kaya Forests of the Coastal Region in Kenya*. A Case Study Report, World Wide Fund for Nature (WWF), Eastern Africa Regional Programme Office. February. By providing in law a higher conservation status to environmentally and socially important zones, it is possible to fine those who damage the ecosystem and the social and traditional fabric.

SOME ELEMENTS ASSOCIATED WITH THE DESIGN AND IMPLEMENTATION OF INCENTIVE MEASURES	
1. IDENTIFY THE PROBLEM: PURPOSE AND ISSUE IDENTIFICATION	<p>Goals of the incentive measures. An incentive measure should have a defined purpose. Consistent with decision V/15, the purpose of incentive measures is to achieve one of two goals: the conservation of biodiversity, as well as the sustainable use of the components of biodiversity.</p> <p>Underlying threats to biodiversity. The identification of the proximate and underlying causes of threats to biodiversity and its components is necessary to select the appropriate measure to stop or reverse degradation. Policies that create incentives without removing the underlying causes of biodiversity loss (including perverse incentives) are unlikely to succeed. Therefore, prior to embarking on an exercise to develop incentive measures for conservation or sustainable use, it is important to undertake a thorough study to identify and evaluate the respective and mutually reinforced impacts of any underlying pressures. These include threats generated by social or economic forces. In some cases social and economic issues are at the root of unsustainable practices and, while addressing market and policy failures with incentive measures may help to correct this behaviour, this may not address core problems such as lack of resources or poverty. This might also include the identification of existing incentive measures or perverse incentives that might threaten biodiversity.</p>
	<p>Identification of relevant experts and stakeholders. As well as including experts, scientists and policy-makers, the range of stakeholders should extend to members of the indigenous and local communities impacted by a measure who might have practical knowledge associated with the issue and could be key players in its successful implementation</p> <p>Establish processes for participation. In order to ensure that incentive measures are developed in a manner that is participatory and promotes effective policy integration and stakeholder participation, processes should be established to facilitate intergovernmental dialogue as well as dialogue with relevant stakeholders including indigenous and local communities.</p> <p>Set clear targets. An incentive measure should have a target that is, where possible, measurable. Indeed, the ultimate success of any incentive measure is contingent upon the successful monitoring and evaluation of its impact. Without indicators of success or failure, it is unclear how to adapt so as to address failings and reinforce success through corrective action.</p>
2. DESIGN	<p>Ecosystem approach. The design of incentive measures should be based on an ecosystem approach as defined in the framework of the Convention, notably in decision V/6 of the Conference of the Parties, e.g., a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.</p> <p>Precautionary approach. Combined with the ecosystem approach, a precautionary approach requires that programmes on incentive measures err on</p>

SOME ELEMENTS ASSOCIATED WITH THE DESIGN AND IMPLEMENTATION OF INCENTIVE MEASURES	
	<p>the side of caution when scientific knowledge is uncertain or where ecological consequences might be irreversible. <u>27/</u></p> <p><i>The efficiency principle.</i> Programmes on incentive measures should be designed to ensure that expected social benefits are greater than or equal to the cost of implementation, administration, and enforcement. The social and institutional context of a country can impact these costs considerably. <u>28/</u></p> <p><i>Internalization.</i> In light of the fact that in some cases the underlying cause of biodiversity loss is market failure, internalization should be considered a guiding principle for selecting appropriate incentive measures to arrest or reverse the loss. Internalization refers to incorporating external costs and benefits into the decisions of producers and consumers. External costs and benefits are essentially environmental "side effects" of economic activities and incentive measures should strive to internalize a greater proportion of these effects in the calculation of decision makers and consumers. <u>29/</u></p>

SOME ELEMENTS ASSOCIATED WITH THE DESIGN AND IMPLEMENTATION OF INCENTIVE MEASURES	
	<p><i>Comprehensibility.</i> While recognizing the interaction of many factors, incentive measures should remain as simple and focused as possible, allowing for faster implementation and clearer assessment of their effect. They should be easily understood by all stakeholders.</p> <p><i>Equity: distributional impacts.</i> In designing incentive measures, it is important to ensure that the definition of beneficiary communities is inclusive and equitable. A participatory approach to the development and implementation of incentive measures can help ensure that these issues are considered.</p> <p><i>Creation of value for indigenous and local communities.</i> Stakeholders should see the value in biological diversity for subsistence, cultural or commercial purposes. Incentive measures should be designed to meet the social and economic development needs of indigenous and local communities.</p> <p><i>Mix of measures.</i> No single measure is likely to be flexible and rigorous enough to address all aspects of a specific concern and a combination of incentive measures may be necessary in order to realise both the public benefits of protecting biodiversity and the private benefits brought about by the sustainable use of its components.</p>

27/ UNEP/CBD/COP/5/15.

28/ UNEP/CBD/COP/5/15.

29/ UNEP/CBD/COP/5/15.

<p>3. BUILD SUPPORT AND PROVIDE CAPACITY: FACILITATING IMPLEMENTATION</p>	<p><i>Physical and human capacity.</i> This includes scientific and technical capacity, as well as capacity related to administrative, educational, and training and communications-related issues. In many cases, in the implementation phase of incentive measure, there will be an ongoing need for training of trainers, managers and other workers, public education programmes and other forms of human capacity-building. In other cases there may be a need for physical capacity-building, including installing monitoring equipment or other infrastructure needs. Training will often be a necessary component for the effective implementation of incentive measures.</p> <p><i>Institutional arrangements.</i> Institutional arrangements are required to encourage dialogue and communication between policy makers within government and stakeholders outside of government at the national and local levels. Ensuring that avenues exist for intra-governmental dialogue between relevant ministries and agencies with an interest in biodiversity is important as government agencies will often share responsibilities in the implementation of incentive measures where attention to the enabling of macro-economic and biodiversity policy and of legal environments is required. For local and indigenous communities to be equal partners in the implementation of incentive measures, considerable time may have to be devoted to the development of community institutional structures.</p>
<p>SOME ELEMENTS ASSOCIATED WITH THE DESIGN AND IMPLEMENTATION OF INCENTIVE MEASURES</p>	
	<p><i>Stakeholder involvement.</i> Even after the design of a measure, stakeholders can be key to ensuring that it is implemented effectively on the ground. Therefore, ongoing access to information and communication such as meetings at the local level to explain the incentive, organizing training workshops or establishing control and follow up systems with appropriate government agencies might all be important elements to consider in the successful application of incentive measures. ^{30/} This includes the involvement of all stakeholders including non-governmental organizations who, by virtue of their mode of operations and their close proximity to rural communities, can gain the trust of grassroots populations, putting them in a strategic position to encourage the effective implementation of incentive measures. In the long run, such an approach can reduce costs associated with implementing and monitoring incentive measures, where relevant groups feel as though they have a stake in a successful outcome and accountability has been established through shared responsibility for the successful implementation of a measure. Relevant stakeholders can play an important role in building the capacities of local institutions in order to enable them to better negotiate the terms and conditions of the incentive measures.</p> <p><i>Funding.</i> Capacity is needed in varying degrees to finance incentive measures including capacity for implementation.</p>

<p>4. MANAGE, MONITOR AND ENFORCE</p>	<p><i>Administrative and legal capacity.</i> The ultimate success of any incentive measure is contingent upon successful monitoring, enforcement and evaluation of its impact. Adequate capacity to manage, monitor and enforce incentive measures rests in part on adequate stakeholder involvement and the existence of sound institutions. It also depends on available administrative and legal capacity. There are specific requirements for administrative and legal capacity associated with the monitoring and enforcement of certain incentive measures. The levels and type of capacity will vary depending upon the measure. Legal and regulatory measures, for example, tend to require considerable administrative capacity for effective monitoring and enforcement. On the other hand, community-based measures and other economic incentives require less. Incentives for biodiversity conservation are unlikely to achieve their objective, unless the capacity exists to monitor, enforce and assess these policies at local, national and international levels.</p> <p><i>Funding.</i> Adequate funding should be available to ensure the effective monitoring and enforcement of incentive measures.</p>
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V. DECISION-MAKING: SELECTING THE APPROPRIATE MEASURES AND COMPLEMENTARY MEASURES

36. It is important to consider the context in which the incentive measure is being introduced to assist in the final decision-making on a particular measure or measures. For example, where human and administrative constraints exist, the opportunity costs, or resources necessary to implement, monitor and enforce command and control regulations are relatively high. This is also true where legal structures are weak or not well developed. Under these circumstances, a choice of instrument that uses existing administrative structures with limited administrative and enforcement capability might be preferable. Incentive-based private and voluntary programmes are attractive options in an environment lacking adequate institutions and traditions for the monitoring and enforcement of disincentive-based policies.

37. The following box illustrates a range of instruments, their general advantages, disadvantages and applicability. There are a number of other non-economic incentives that could be considered in a similar fashion. These include, for example, incentives such as threat of incarceration, social motivations, cultural taboos and self-esteem.

Instrument	Advantages	Disadvantages	Applicability
Environmental taxes	Maximize economic efficiency Easily understandable	Rely on measurability of single components and on agreement about external cost values. Can require extensive monitoring.	Applicable in situations where impacts are easily measurable (e.g., hunting) and sources of impacts can be easily mounted.
Market creation	Result in the most efficient allocation of resources between competing users, and generates appropriate	May be imperfect where there are (large) external effects and/or monopolies.	Applicable where clearly defined property rights can be established and upheld for easily identifiable goods and services, and

Instrument	Advantages	Disadvantages	Applicability
	prices for them Low monitoring requirements		transaction costs are low enough and interested parties numerous enough to allow regular trade.
Removal of perverse subsidies	Reforming or removing these incentives can lead to an easing of pressures on the environment, improved economic efficiency and reduced fiscal expenditures.	Perverse subsidies can often be difficult to identify (lack of transparency) They may be politically difficult to reform because of the strong opposition from recipients.	Applicable where clear benefits in terms of budgetary, economic efficiency and /or environmental goals can be identified and potential compensatory measures exist to facilitate the support removal process.
Regulations	Easily understandable. Legally binding. Can target directly particular activities or processes.	Can be economically inefficient or costly method of achieving environmental goals. Especially if proscribing certain technologies. Strict enforcement is necessary. Inflexible. May be complex and detailed.	Most applicable where there is a limited range of easily identifiable environmental impacts that need circumscription and/or where the number of actors is limited.
Environmental funds	Transparent and high visibility. Positive public relations.	May not maximize economic efficiency. May be inflexible because funds are earmarked to some extent.	Applicable where governments have difficulties raising general funds, where fiscal infrastructure is weak and where clearly identifiable and highly popular causes exist.
Public financing	Popular with recipients. Promotes desirable activities rather than prohibiting undesirable ones.	Requires funding. May lead to economic inefficiencies; May encourage rent-seeking behaviour.	Applicable in situations where desirable activities would not be undertaken without support or to create a differential in favour of such activities where it is not feasible to discourage the undesirable alternatives.

38. A key consideration in the design of an incentive measure is the recognition that a single measure will often not suffice to address the complexities involved in decisions on biodiversity conservation or sustainable use. Thus, any decision-making process should take into account other measures that might work together to achieve a desired goal, taking into account the specific circumstances of the country involved.

39. For example, positive incentives can influence decision-making by recognizing and rewarding activities that are carried out for conservation purposes. Alternatively, they can make it less attractive to pursue activities that are socially or environmentally harmful. Nevertheless, in some cases financial incentives, for example, might not alter the incentive structure enough to make cooperation optimal. For example, fiscal measures might be insufficient on their own to address irreversibilities associated with biodiversity, such as species extinction. There might, therefore, be a need for additional regulatory oversight or other measures, such as the removal of perverse incentives that might counteract the impact of the positive incentives.

40. Most of the OECD case-studies examining incentives for the sustainable use or conservation of biodiversity included some elements related to regulatory or access restriction - that is some form of disincentive. Given the fact that many of the benefits of biodiversity are not privately appropriable and often represent significant public goods, regulations continue to be an important tool for ensuring the conservation and sustainable use of biological diversity. They are often used as complementary measures to other incentives to conserve particularly sensitive ecosystems or endangered species. ^{31/} Regulations as a disincentive have the disadvantage that they are cumbersome to monitor and enforce, in some cases affected communities are not involved, they can be inefficient and costly, particularly if they prescribe certain technology and they might ignore surrounding ecosystems when targeted towards a specific aspect of biodiversity. Moreover, strict enforcement is necessary and they are subject to regulatory failures. ^{32/} However, they are legally binding and can directly target particular activities or processes, such as problems surrounding irreversibilities in biodiversity (such as species extinction). They can most usefully be applied where there is a limited range of easily identifiable impacts and/or where the number of actors is limited.

41. Indirect incentives work on the assumption that rational holders of well-defined property rights will maximize the value of their resources over time. This is particularly effective for resources that contain private market value. Indirect incentives have been employed extensively in connection with the management of commercial fish stocks in the form of individual transferable quotas, private ownership of forested lands, and tradable permits for the management of commercially viable species. However, an OECD case-study detailing the use of individual transferable quotas (ITQs) for the conservation and sustainable use of marine biodiversity found that the allocation of ITQs is most effective when

^{31/} For example, regulation might take the form of the creation of protected areas, access restriction to natural areas, including restrictions and regulations governing their use such as restricted use of some areas, traffic restrictions, or restrictions on the size and capacity of lodges. In the Ugandan case-study on the Bwindi National Park, access fees to parks combined with positive incentives or sharing of resources were used under a revenue sharing programme. Despite this, tourism can have a devastating impact on biological resources and cultural diversity and may require regulatory guidelines such as limits on the number of visitors.

^{32/} One OECD case-study found that hunting bans should be combined with more innovative and effective regulations and methods of enforcing them, such as increasing poaching fines and punishments, restricting access to hiking routes during winter when bear footprints are easier to track, and hiring ex-poachers, who have the experience and know-how to help enforce the regulations and monitor bear populations, along with other incentives such as establishing property rights to ensure that the conservation becomes more profitable for the local communities who are most able to protect them successfully. (OECD, 1999).

accompanied by other enforcement and regulatory measures to ensure their social and environmental compatibility, and that creating property rights using ITQs can be difficult to enforce. ^{33/} Other studies examining indirect incentives suggest that the incentives provided by some activities such as bio-prospecting, eco-tourism and non-timber forest products, typically do not provide sufficient incentives for conservation on their own, and might be best advanced in conjunction with direct positive incentives or payments. ^{34/}

42. Finally, the removal or reform of support for activities that exert pressure on biodiversity is one of the most promising incentive measures for the conservation and the sustainable use of biodiversity. Biodiversity and forest resources are affected by land conversion subsidies that artificially inflate the private return to deforestation and habitat destruction. Sustainable agriculture is penalized by pesticide and chemical fertilizer subsidies. Fragile ecosystems are disturbed by price support policies for soil erosive crops and subsidies for land-clearance and livestock grazing. Energy and capital subsidies are detrimental to all sectors because they can encourage the use of heavy and often destructive machinery on fragile environments. Reforming these measures can ease pressure on the environment, improve economic efficiency and reduce fiscal expenditures. However, those who gain from perverse incentives through rent-seeking behaviour are likely to be opposed to its removal and their grievances may have to be addressed through the application, for example, of positive incentives to induce desired behaviour.

VI. RECOMMENDATIONS FOR FUTURE COOPERATION ON INCENTIVE MEASURES

43. A plan of action for future cooperation could assist Governments to carry out participatory consultative processes and define and implement clear and target-oriented incentive measures which address the underlying causes of biodiversity loss. Such an action plan could be built on four pillars: information; stakeholder involvement; valuation; and capacity-building. It is expected that the workshop on incentive measures, to be held from 10 to 12 October 2001, will make specific proposals with respect to a plan of action based on the framework provided below.

A. *Information*

44. The Parties have recognized that the effective design and implementation of incentive measures requires a sound body of knowledge and information. They have requested that the Executive Secretary work with relevant organizations to collect and disseminate information on incentive measures; that the Parties themselves submit information on incentives both through case-studies and through the regular reporting processes, and that the SBSTTA analyse this information and develop guidance for the Conference of the Parties.

45. Organizations and Governments should continue to gather and disseminate information on local and regional experiences involving instruments in support of positive incentives and their performances, as well as the impacts of perverse incentives. Particular emphasis could be placed on the following elements:

^{33/} OECD, 1999. Additional lessons included:

- ITQs work best in small fisheries where there is social cohesion and where education and retraining programmes are offered.
- It is essential to gain the cooperation and active participation of all those involved in the fisheries.
- Equity problems can arise with initial allocation of permits, treatment of new entrants, costs of monitoring and speculation with permits, and the possibility that the use of ITQs may lead to the elimination of small-scale fishers and to reduced employment and crew income.

^{34/} Resources for the Future. "The Price of Biodiversity" R. David Simpson.

- (a) Preparing cases-studies to assess, design and implement incentive measures using an ecosystem approach with an emphasis on areas of thematic focus of the Conference of the Parties;
- (b) Identifying threats to biodiversity and underlying causes of loss;
- (c) Identifying gaps in national capacity for policy research and analysis;
- (d) Addressing impediments and constraints to the implementation of incentive measures and providing ways to address them;
- (e) Sharing lessons through cooperation with other biodiversity-related conventions and decision makers or policy makers in Governments.

46. A project which outlines the information needs and develops a strategy for education and awareness-raising to promote the development and successful application of indirect incentives could be a core element of an action plan. This could be undertaken in conjunction with the existing initiatives on market creation for biodiversity products and services, and in collaboration with other relevant organizations.

B. The involvement of stakeholders including indigenous and local communities

47. States should develop and apply participatory and coherent approaches to policy-making for biodiversity conservation and sustainable use that fully engage all stakeholders including relevant government departments, non-governmental organizations and indigenous and local communities in a meaningful dialogue in a timely fashion and promote a consistent approach to the use of incentive measures for conservation and sustainable use of biodiversity.

48. Particular emphasis could be placed on the following elements:

- (a) Advising policy makers directly on the design and implementation of incentive measures;
- (b) Mobilizing key stakeholder groups in policy dialogues relating to the design and implementation of incentive measures;
- (c) Building a network of experts of biodiversity incentives who can provide guidance and information related to specific requests from Governments, civil society and the private sector.

49. As a second core element of an action plan, in order to encourage a participatory approach, the development of a strategy for policy coordination and stakeholder involvement might be considered. This could include an educational component, a communications component, and a component that highlights successful processes that have been used to generate effective public participation. The Parties would be encouraged to adapt successful processes or components of such a strategy to correspond to their own priorities and situations. Such a coherent and participatory approach to policy making might also encourage the integration of biodiversity concerns into other sectors and policy areas.

C. Valuation

50. Despite the challenges associated with non-market valuation, it is nonetheless important to pursue ways of creating market signals for the social as well as economic values of biodiversity. The Conference

of the Parties has recognized the importance of valuation as a tool for designing appropriate incentives. ^{35/}

51. Continued work on valuation can be costly, requires considerable expertise and the ultimate results may be difficult to communicate and the derived monetary values open to challenge. Nevertheless, the methodologies for undertaking valuations should be developed further, as they play a strategic role in the development of incentives for biodiversity conservation and sustainable use. Further cooperative work might include:

- (a) Continued exploration of methodologies for valuation of biodiversity and biodiversity resources;
- (b) Developing and refining of non-market methods of valuation;
- (c) Disseminating information on existing techniques for valuation.

52. Work on valuation could be undertaken as a third core component of an action plan in partnership with relevant international organizations.

D. Capacity-building

53. Another key to the effective development and implementation of incentive measures is the existence of appropriate legal and policy frameworks. The Conference of the Parties has encouraged Governments to develop supportive legal and policy frameworks for the design and implementation of incentive measures.

54. The following elements might be addressed:

- (a) Implementing training programmes on basic scientific and economic issues related to the conservation and sustainable use of biodiversity;
- (b) Implementing training programmes on incentive measures;
- (c) Developing capacity to conduct research and analysis on incentive measures;
- (d) Developing supportive legal and policy frameworks;
- (e) Undertaking legislative reviews and providing advice on incentive measures;
- (f) Developing avenues for financing where necessary.

55. To contribute to this effort, a fourth area of the action plan might include a process for the continued development of a “checklist” of considerations for the design and implementation of incentive measures. This could include efforts to harmonize existing guidelines, taking into account further lessons learned in case-studies and ongoing theoretical work on incentive measures. This “checklist” approach could be undertaken with a view to developing, over the medium term, more comprehensive and detailed guidelines on the practical application of incentive measures for use by Parties and governments. The

^{35/} Decision IV/10 of the Conference of the Parties to the Convention on Biological Diversity: "...economic valuation of biodiversity and biological resources is an important tool for well-targeted and calibrated economic incentive measures".

development of such guidelines should be undertaken in cooperation with relevant international organizations, along with other relevant experts and stakeholders.

56. In conjunction with the development of such guidelines, the Convention on Biological Diversity could encourage capacity-building at the national level by encouraging the application of incentive measures and building capacity through “learning by doing”. Further country studies could be conducted by national experts under the auspices of the Convention on Biological Diversity. Where gaps exist at the national level, additional information, education seminars or training workshops might be supported through cooperation among international organizations and non-governmental organizations working on issues of incentives.

Annex

SPECIFIC CONTRIBUTIONS

The following organizations submitted documents in response to the September 2000 letter sent by the Executive Secretary requesting information on activities surrounding incentive measures.

Africa Resources Trust (ART)

ART submitted a copy of a the following case-study: Incentive Measures for the Conservation and Sustainable Use of Biological Diversity – Lessons from Zimbabwe’s Communal Areas Management Program for Indigenous Resources (CAMPFIRE) (November 2000).

CAMPFIRE is a community-based natural resources management programme that gives back rights to rural communities to manage and benefit from their biological (wildlife) resources. The programme is based on the premise that biodiversity must directly contribute to meeting human needs, the overriding priority in Africa. Resource degradation (land, soil, water, habitats, biodiversity) in communal areas is Zimbabwe’s greatest challenge to conserve the environment and promote sustainable utilisation of natural resources. CAMPFIRE was a vehicle to put into practice a 1982 law authorizing the Minister of the Environment to designate communal-area inhabitants as the “appropriate authority” over their wildlife resources. A number of different groups have come together under CAMPFIRE. The programme is considered a success in terms of poverty alleviation and development through income earned, and in terms of species and biodiversity conservation through income invested in conservation practices and helping rural communities by giving them secure tenure or property rights over the natural resources in their locality. Through CAMPFIRE and the communities’ entitlement to economic benefits from natural resources, such as income receipts from controlled safari hunting or ecotourism, the cost/benefit equation was not only balanced, but benefits invariably exceeded costs. This provided additional incentives to invest time and resources into managing “their” wildlife. Also, recognition and incorporation of indigenous cultural facts and cultural specificity were also a powerful incentive for local communities to adopt CAMPFIRE, which was seen as user-friendly, flexible and respectful of traditional practices. Wildlife habitat has increased by threefold since 1975 and about 30 per cent of Zimbabwe is now under some form of wildlife management.

African Development Bank

The African Development Bank indicated that, through its agricultural and forestry policies and guidelines, it encourages regional member countries to:

- (a) Develop a relationship between biodiversity and development;
- (b) Enforce the legal, social and institutional requirements for the preservation and management of natural resources;
- (c) Promote the participation of the private sector, labor unions, rural cooperatives, local communities, indigenous people, youth, women and non-governmental organizations in natural resources activities and access to information and training programmes with a national context;
- (d) Develop and sustain an effective system of forest extension, public education and management of forests with regards to the multiple roles and value of trees, forests and forest lands;

(e) Develop and maintain a comprehensive system for national parks and reserves where representative examples of flora, fauna, and natural landscapes will be protected as part of the natural heritage;

(f) Promote the appropriate use of national parks and reserves for scientific, educational and recreational purposes and for the development of sound and safe tourism.

It indicated further that the incentive measures which have been incorporated into the related policies and guidelines of the Bank for consideration by its regional member countries include:

- (a) Charging tourists special fees to visit protected areas or natural reserves;
- (b) Taxation on natural reserves where tourism is encouraged;
- (c) Allocating a portion of the taxes from the exploitation of biological resources to the local community;
- (d) Compensation to the local population for not encroaching on protected areas;
- (e) Encouraging preferential access to timber from sustainable managed forests to international markets through “green labelling”;
- (f) Encouraging private companies to involve the local populations in the management and conservation of the natural resources.

Asian Development Bank

The Asian Development Bank submitted the following documents: *Asian Environmental Outlook*, (second discussion draft, Asian Development Bank, August 2000) and *Mobilizing Broader Support for Asia’s Biodiversity: How Civil Society can Contribute to Protected Area Management* (Asian Development Bank, The World Conservation Union). Jeffrey McNeely, August 1999.

Inter-American Development Bank (IDB)

IDB submitted to the Convention on Biological Diversity a copy of a June 2000 report, *Financing Biodiversity Conservation*. The report notes that much of the threat to biodiversity rests in the fact that it is a public good and it is therefore difficult to get people to pay for the goods and services it provides. Too often the benefits supplied by those goods and services are considered externalities, for which there is no market and which are not taken into account in market calculations. The report suggests that financing or paying for the conservation of biodiversity remains a challenge. At the heart of the matter is the lack of recognition of the importance and, in some cases, the economic value of biodiversity, as well as mechanisms for internalizing these values into the market place. This report covers in great detail and breadth the various tools available to finance the conservation and sustainable use of biological diversity.

International Tropical Timber Organization (ITTO)

The ITTO indicated that its work in this area is premised on the management, conservation and sustainable development of tropical forests as a whole, with the conservation and sustainable use of biological diversity being an integral part of it. The following two reports were forwarded to the Secretariat of the Convention on Biological Diversity:

- (a) Pre-project report on incentives in producer and consumer countries to promote sustainable development of tropical forests (February 1991);
- (b) The economic linkages between the international trade in tropical timber and the sustainable management of tropical forests (1993).

IUCN – World Conservation Union

IUCN submitted a copy of a CD-ROM developed for its meeting in Amman, Jordan in 2000 that contains a wide range of past and current information relevant to the design and implementation of incentive measures. IUCN also submitted a paper “Towards a programme of work on incentive measures under the Convention on Biological Diversity: working paper outlining actions that could be undertaken by the Convention on Biological Diversity and other international organisations to promote work on incentive measures. The IUCN Environmental Law Centre submitted a paper entitled “Examples of various kinds of incentives and disincentives”, detailing examples of various law-related and/or legislatively created incentives and disincentives used in the context of environmental protection, conservation and sustainable use.

Organisation for Economic Co-operation and Development (OECD)

Saving Biological Diversity: Economic Incentives (1996). This report embodies the main findings of a two-year OECD project on economic incentive measures for the conservation and sustainable use of biodiversity carried out by the OECD Expert Group on Economic Aspects of Biodiversity. The report shares information regarding OECD member country experiences and thereby contributes to an understanding of the role of economic incentive measures in supporting implementation of the Convention on Biological Diversity.

Handbook of Incentive Measures for Biodiversity: Design and Implementation (1999). This handbook was produced under the guidance of the OECD Working Group on Economic Aspects of Biodiversity. It is designed to assist policy makers in the design and implementation of appropriate incentive measures for the effective management of biodiversity. It builds on previous OECD work in this field, notably synthesizing results from the 22 OECD case-studies on incentive measures.

Resources for the Future

Resources for the Future submitted a number of reports to the Convention on Biological Diversity including the following:

- (a) “*The Cost-Effectiveness of Conservation Payments*” (Paul J. Ferraro and R. David Simpson). This report suggests that in some cases conservation performance payments can be more cost-effective than indirect approaches to conservation;
- (b) “*The Price of Biodiversity*” (R. David Simpson). This paper argues that activities such as bioprospecting, eco-tourism and non-timber forest products typically do not provide sufficient incentives for conservation and in the short term, individuals in developing countries must be paid to conserve;
- (c) “*Carving out Some Space – A Guide to Land Preservation Strategies.*” (James Boyd, Kathryn Caballero, R. David Simpson). This article discusses land use policies and conservation easements in particular. It suggests that continuing experimentation with innovative instruments will facilitate the goal of achieving more conservation at less cost;

(d) *“Biodiversity Prospecting.”* (R. David Simpson). This report argues that the vast number of species involved means that biodiversity prospecting generates little appreciable economic value—as the greater the number of species the less their marginal value. RRF research on biodiversity prospecting indicates that biodiversity may be important for any number of commercial, ecological, esthetic, ethical or even spiritual reasons. However, when it comes to commercial prospecting among natural sources for new products, the value of biodiversity is not as high as some conservationists might suppose. It is therefore necessary to develop more workable incentives for conservation;

(e) *“Rights-Based Fishing”*. This report notes that command and control regulatory approaches have, typically, not worked to stem over fishing, which stems from a tradition of free and open access to fishery resources. It notes that through rights-based fishing, fishers, if allowed exclusive use rights and if included more directly in fisheries management decision, will see the benefits of managing for the long-term health and productivity of their fisheries;

(f) *“Eco-Labeling Consequences in General Equilibrium: A Graphical Assessment”* (Stephen K. Swallow and Roger A. Sedjo). This paper notes, that in order to promote standards for sustainable forest management, there have been calls for programs that certify producers who meet criteria to enhance biodiversity or sustainability. One concerns eco labels, which inform consumers of whether the final wood products derive from forests that are managed according to certifiable standards promoting sustainability or biodiversity protection. Given the practical obstacles and economic challenges associated with eco labelling, this article questions whether ecosystem quality, on a broad regional or global scale, will necessarily improve after the economy adjusts sources of supply to the demands generated by the implementation of eco labelling;

(g) *“Marine Reserves: Is there a Free Lunch?”* (James N. Sanchirico, James E. Wilen). The concept of marine reserves is to set aside significant areas of the marine environmental for limited or controlled use. Some proponents see marine reserves as unique natural laboratories to be utilized as benchmarks and objects of study in order to understand relatively undisturbed natural system. Others see marine reserves as potential policy tools with which to enhance the benefits of coastal ecosystems generally. Most vocal objections to marine reserves come from fishers presently exploiting areas under consideration as set-asides.

Economics and Trade Unit of the United Nations Environment Programme (UNEP-ETU)

UNEP-ETU submitted two publications based on several years of collaborative work by researchers in a wide range of developing countries and countries in transition. The work, initiated by UNEP sought to determine how best to support the use of economic instruments and valuation methods in these countries:

(a) *Economic Instruments for Environmental Management* (Abaza and Rietbergen-McCracken eds, 2000), is a compendium of case-studies of experiences with economic instruments in developing countries.

(b) *Environmental Valuation* (Rietbergen-McCracken eds, 2000). UNEP-ETU also submitted this publication which it commissioned.

(c) *Instruments of Change: Motivating and Financing Sustainable Development*, (Theodore Panayotou) (1998). The author argues that economic instrument, properly designed to address the special circumstances of developing and transitional economies, can be powerful instruments of change. They can motivate movement away from unsustainable activities as well as generate the financial

means to pay for more sustainable forms of behaviour. This book examines available economic and related instruments, analyses the experience in developed and developing countries and discusses ways in which economic instruments can be best designed to act as agents of change to encourage movement towards sustainable development.

World Wide Fund for Nature (WWF)

The WWF publication *From Theory to Practice: Incentive Measures in Developing Countries* explores the lessons from a number of case-studies including the following:

(a) Incentives for the Conservation and Sustainable Use of Biodiversity in the Kaya Forests of the Coastal Region in Kenya

(b) An Analysis of Ecotourism, Economic Contribution and Development: Identification of Potential Economic Incentives to Maximize Ecotourism Benefits—A Case Study on Taman Rimba Kenong (Kenong Forest Park, Malaysia)

(c) Incentive Measures for the Conservation and Sustainable Use of Biodiversity by Communities Living around Bwindi Impenetrable National Park (WWF EARPO, 1998)

The publication, along with the case-studies suggest a number of lessons as to how people in those countries have been motivated to conserve biodiversity and use it sustainably. In all the examples there is direct relevance to achieving the three central objectives of the Convention on Biological Diversity - conservation, sustainable use, and access and benefit sharing – and guidance is given as to the role that governments and funding agencies could play in promoting incentives as a dynamic tool for the Convention's implementation.
