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### DESIGN AND IMPLEMENTATION OF INCENTIVE MEASURES

#### Note by the Executive Secretary

#### I. INTRODUCTION

1. In accordance with the medium-term programme of work of the Conference of the Parties contained in decision II/18, the status of information on incentive measures was discussed at the third meeting of the Conference of the Parties. A background document (UNEP/CBD/COP/3/24), which contains information on case studies and analysis on institutional aspects of the issue, was presented at the meeting. Some Governments submitted their experiences and views on the subject, which were contained in a separate document (UNEP/CBD/COP/3/Inf.36).

2. Subsequently, decision III/18 regarding incentive measures was adopted. The decision reaffirms the central importance of implementing incentive measures in realizing the three objectives of the Convention. In order to foster understanding of incentive measures and facilitate their implementation, the decision invited Parties to share their experiences and exchange information through the secretariat of the Convention. The current paper is prepared in accordance with paragraph 8 of the same decision, in which the secretariat is requested to prepare a background document, providing guidance to the Parties on the design and implementation of incentive measures, for consideration at the fourth meeting of the Conference of the Parties.

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## II. EXAMPLES OF INCENTIVE MEASURES

3. In accordance with decision III/18, the secretariat has invited the Parties to provide information and case studies on incentive measures. In order to facilitate the process and assist the Parties in preparing case studies, the secretariat prepared an indicative outline for case studies and posted it on the home-page of the secretariat on the Internet (<http://www.biodiv.org>) in early September 1997. The outline was also made available to all the national focal points as it was attached to the reminder which was sent out in mid-October 1997.

4. The Organisation for Economic Cooperation and Development (OECD) Expert Group on Economic Aspects of Biodiversity is pursuing its work on incentive measures by formulating case studies in each member country with a view to compiling them into a handbook for the implementation of incentive measures for the conservation and the sustainable use of biological diversity. The Group has provided its framework for case studies on incentive measures as an information document in time for the third meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) (UNEP/CBD/SBSTTA/3/Inf.17).

5. To date, the secretariat has received case studies on incentive measures from five Parties: Australia, Pakistan, Republic of Korea, South Africa and Turkey. In addition, the Government of Morocco has provided information on their project for the conservation and sustainable utilization of plant genetic resources diversity in the Maghreb region, financed by the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), which responds to decision III/18 as well as decisions III/9, III/11, III/12 and III/14.

6. The submission from the Government of Australia included five case studies, on: land for wildlife; wet tropics; the Dhimurru Land Management Aboriginal Corporation; individual transferable quotas in the South East Fishery; and control of fishing effort in the Northern Prawn Fishery. The submission from the Government of Pakistan included three case studies, on: maintaining biological diversity with rural community development; sustainable resource use in the Bar Valley; and the Malakand/Dir social forestry project. The Government of the Republic of Korea submitted a case study on incentive measures to promote the conservation of biodiversity in Mt. Chiri, with special attention to the poaching of bears. The Government of South Africa provided a case study on the South African Natural Heritage Programme. A case study was provided by the Government of Turkey on the indigenous propagation project of threatened Turkish bulbs.

7. In the following pages, four case studies are summarized, using the outline provided by the secretariat, after which an attempt is made to synthesize the experiences and lessons learned. All the case studies submitted by the Parties, as well as those from other sources, are summarized in annex I.

A. Case study 1: Indigenous propagation project of threatened Turkish bulbs (Turkey)

1. Status of the target biological diversity and identification of the causes of the pressure

8. For over one hundred years, Turkey has been a source of flower bulbs to the international market. During the 1970s and 1980s, exports of bulbs based mainly on wild collection escalated. By 1986, over 70 million bulbs were exported annually, while many millions were simply thrown away because they were damaged or undersized. The rate of collection became unsustainable. Currently, about fifteen species are traded annually, including the snowdrops Glanthus elwesii and G. ikariae, the cyclamen Cyclamen hederifolium, C. coum and C. cilicium, the winter aconite Eranthis hyemalis, and the grecian windflower Anemone blanda.

2. Incentive measures introduced

9. Through a type of technical assistance programme, the indigenous propagation project, which was initiated by Dogal Hayati Koruma Demegi (DHKD - the Society for the Protection of Nature) and Fauna and Flora International (FFI), Cambridge, United Kingdom, distributes plant materials free of charge to village families on the condition that they will grow them for a full three-year period, which will allow the small parent stocks to increase in size and number. After three years, the participants can sell the bulbs to exporters and continue to grow the plants. The measure is aimed at halting unsustainable collection of threatened wild flower bulbs and at developing a long-term economic alternative for those villagers who had been involved in wild collection.

10. A campaign was held in some of the consumer countries to raise public awareness about the threat posed by the wild collection of the bulbs and to discourage people from purchasing such bulbs.

3. Requirements for implementation of the incentive measure

11. The original plant material is provided free. Therefore, sufficient funds are necessary to cover the cost of the provision and distribution of original plant materials. From 1991 to 1997, the project was funded by World Wide Fund for Nature (WWF) International. Since June 1997, it has been receiving funding from the United Kingdom Lottery.

12. Adequate institutional arrangements were necessary to facilitate communication among stakeholders. A joint steering committee has been established between DHKD, the promoter of the project, and the Turkish export traders. The traders themselves have been responsible for the formation of the Natural Flower Bulb Association, which aims to regulate their activities, to promote their products, and to encourage research on the improvement of cultivation, propagation and post-harvest storage techniques.

13. Some measures were required to regulate wild flower trade. Trade in wild flower bulbs is regulated by the Ministry of Agriculture and Rural Affairs, which establishes annual quotas for the export of both cultivated

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and wild collected bulbs, amends harvesting and export regulations as necessary and monitors the activities of individual traders. Wild collection is monitored by the Ministry of Forestry.

#### 4. Process of implementation

14. The project is run by DHKD and FFI. Village families are the target participants. By 1997, 160 village families had joined the scheme in Dumlugoze and two more villages have since joined. Traders of the flower bulbs and the Natural Flower Bulb Association, established by the traders themselves, are also active stakeholders. From the public sector, the Ministry of Agriculture and Rural Affairs and the Ministry of Forestry are the stakeholders.

#### 5. Effects of the measure

15. The market reacted favourably to the objectives of the project. Accordingly, the villagers have obtained enhanced income with not much extra work. The exporters and the wholesalers in the Netherlands, the world's center of the flowerbulb trade, are able to sell propagated bulbs to markets that are increasingly demanding non-wild collected material. Finally, the numbers of bulbs being collected from the wild is declining.

#### 6. Lessons learned

16. Three factors that have contributed to the success of the project are identified. First, there is strong pressure from the consumers. They have campaigned for a decline in quotas permitting export of the wild-collected bulbs and threatened to ban all imports of Turkish bulbs in their countries. Second, there is a strong and well-established market demand for Turkish flower bulbs. With increased awareness, the consumers are willing to pay a higher price for properly cultivated bulbs. Lastly, all the stakeholders have benefited from the project.

#### B. Case study 2: South African Natural Heritage Programme (South Africa)

##### 1. Status of the target biological diversity and identification of the causes of the pressure

17. South Africa's landscapes and seascapes have changed dramatically over the past few centuries, largely through human settlement and associated activities. Often these activities have resulted in the degradation or loss of ecosystems, and in some instances in the extinction of species. Previous policies also encouraged unsustainable land-use practices by providing subsidies to farmers occupying marginal lands.

18. The transformation of South Africa's terrestrial areas is perhaps the most visibly dramatic evidence of the loss of biological diversity in the country. At least 25 per cent of the land has been transformed for the purposes of cultivation or afforestation, for urban or industrial development, or for the construction of roads, railways and dams. South African Natural Heritage Programme (SANHP)-registered sites represent all biomes and most vegetation types, and registration with SANHP often

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constitutes the only form of protection received by a specific vegetation type. The grassland biome and much of the Renosterveld, a part of the fynbos biome, for example, are poorly represented in protected areas.

19. As for wetlands, although there is a lack of information, the existing evidence suggests that the loss of wetlands has been high, with loss appearing to be greatest in the coastal and inland margin zones of the country. In Mfolozi catchment in Kwazulu-Natal, for example, some 58 per cent of the original wetland area is estimated to have been lost. Estuarine areas, as the interface between rivers and the sea, include some of the most productive and threatened ecosystems in South Africa. The ecological functioning of estuarine ecosystems is critically dependent upon the complex and dynamic interplay between rivers and the sea. This is a factor which increases the vulnerability of such environments to changes both within catchments and in the sea.

## 2. Incentive measures introduced

20. SANHP, introduced in 1984, combines an institutional incentive measure (maintenance of full property rights), social incentive measures (public awareness and technical assistance) and economic incentive measures (financial assistance, certification and promotion of alternative use).

21. The programme aims to encourage the protection of important natural sites, large or small, both in private and public ownership. Only the most significant natural areas of the country qualify for registration with the programme and one or more pre-set criteria must be met: plant communities of special conservation significance; good examples of aquatic habitats; sensitive catchment areas; habitats of threatened or endangered species; as well as outstanding natural landscape features.

22. Extensive coverage by the public media has been an important aspect of creating public awareness. The press, national and regional radio and television, as well as various popular journals and a wide spectrum of educational and environmental periodicals, have all contributed to creating public awareness of the programme. Several economically viable alternative land-use options are promoted as part of the SANHP programme. The benefits and management aspects are highlighted in pamphlets and information booklets, which are made available to site owners at no cost. Site owners also have free access to management advice.

23. Many of the activities and land-use options recommended to site owners as income generating activities require development funds. A further incentive is provided in the form of a grant-in-aid that is made available to site owners on an annual basis. One of the services the programme provides is a brochure listing sites open to the public, which is distributed free of charge to site owners and travel agencies. Sites with accommodation or other facilities are listed in this brochure, which is updated and reprinted on a regular basis.

### 3. Requirements for implementation of the incentive measure

24. It is important that the correct procedure must be followed at all times and this requires an adequate administrative institution and capacity. An adequate capacity must also exist in the provincial nature conservation authorities, since they make recommendation for registration upon on-site inspection and evaluation. The link between the central Government and the provincial nature conservation authorities must be strong, as well as linkages among the central government ministries.

25. The importance of increasing public awareness has already been explained. Funds are required for the promotion of alternative activities on site and, to that end, a grant-in-aid provided assistance. It is essential to secure commitments from the landowners, who are required to enter into an agreement not to degrade, or allow others to degrade, the site before the land can be registered.

### 4. Process of implementation

26. SANHP was launched in 1984 as a cooperative tripartite venture between the government sector, private sector, including landowners, and sponsorship by industry and environmental non-governmental organizations. The national Department of Environmental Affairs and Tourism fulfills the role of administrative lead agency, while the regional nature conservation authorities act as implementing agencies, and sponsorship is provided by Schneider Electric and WWF South Africa.

27. Since the inception of SANHP, sponsorship and stakeholder participation has been crucial. It is a voluntary programme and participation is at the discretion of the landowner. In return for registering a site and undertaking to protect the area, the owner of a site receives a certificate of appreciation signed by the President of South Africa. Intra-government coordination is also essential. The Department of Environmental Affairs and Tourism will contact, upon receipt of the recommendation by the provincial nature conservation authority, other central government departments, such as the Department of Water Affairs and Forestry and the Department of Transport, to ensure that the registration is not in conflict with existing long-term planning activities.

### 5. Effects of the measures

28. To date, SANHP has a total of 290 registered sites, comprising a total surface area of 365,000 ha. After an initial surge, registration has taken place at a more or less constant rate of approximately 20 sites per annum. The initial objective of 500 registered sites still seems attainable.

29. The most significant effect of the programme is perhaps the greater awareness of the importance and value of the natural biological diversity raised among several other sectors. Thanks to the extensive registration process and the wide consultation it entails, many other government sectors are now aware of environmentally sensitive areas. Some major development projects have already been replanned or even indefinitely postponed as a

result of their potential threats to registered natural heritage sites. These measures have contributed significantly to raising awareness among developers.

30. One of the most unexpected consequences of SANHP was the healthy competition that developed among some commercial concerns to register the greatest number of sites. Many site owners request permission to use the SANHP logo on their letterheads, which benefits not only the site owner but also the programme through creating further awareness.

## 6. Lessons learned

31. SANHP has contributed greatly to the conservation of biological diversity and awareness of the importance of conservation values. It should also be noted that, after a decade, the programme is still in a growing phase, and has continued through different political and governmental administrations.

32. The success of the programme is based on three factors: benefit to landowners; political support at all levels; and broad participation by all stakeholders. First, landowners are accorded full ownership of, and responsibility for, the biological diversity occurring on their land and are encouraged to benefit from the sustainable use of that biological diversity. Second, the programme has political support at all levels of government, with the President of South Africa as patron. Third, the programme requires active participation and is actively promoted by all stakeholders in the private, public and business sectors.

### C. Case study 3: Maintaining biological diversity with rural community development (Pakistan)

#### 1. Status of the target biological diversity and identification of the causes of the pressure

33. Pakistan is characterized by great geographical and biological diversity. The country's rich species and genetic diversity is demonstrated by the presence of 5,700 species of plants, of which 372 are endemic, and 188 species of mammals representing ten orders, against a global total of 4,100 species and 18 orders. The total number of bird species in the world is 8,600 and 666 of these are found in Pakistan. The number of reptiles, mostly snakes and lizards, attested in the country is 176, against a total of 6,500 for the world. A total of 525 species of amphibians and fish found in rivers, lakes and sea are indigenous to Pakistan (400 marine and 125 freshwater), while the number of insect and invertebrate species is about 20,000.

34. The problems in the sustained management of natural resources and biological diversity in Pakistan all derive from human activity. About 72 per cent of the total population live in rural areas, in or around the natural resources, and their dependence on the natural vegetational resources and biological diversity is therefore very high. The country's natural forest resources and biological diversity are under very heavy use, which, it is feared, may result in the degradation of the forests over the next few decades.

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## 2. Incentive measures introduced

35. The project was launched in 1995 and was designed to comply with several of Pakistan's obligations under the Convention on Biological Diversity, principally under Article 8 (in situ conservation).

36. The project's approach is to facilitate the protection and sustainable use of biological resources by the rural communities themselves, involving the imparting of technical skills as well as the provision of information, technical assistance and seed funding. One example is trophy hunting. A quota of five ibex trophies has been approved by the Prime Minister for the areas where biological diversity conservation initiatives have been taken by the community. A fee of US\$ 3,000 for foreigners and PRs. 20,000 for Pakistani hunters has been fixed, from which 75 per cent will go to the communities and 25 per cent to the Government. A quota of six markhor trophies has also been approved by CITES for Pakistan. Permits for trophy hunting will be given to those communities which manage their biological diversity under a management plan and where an accurate census of wild animals has determined an available surplus for trophy hunting. The income from trophy hunting will be deposited in the common village conservation fund, which will be used, on the basis of consensus, for further conservation activities.

37. Another output of the project is plant material screening. Several plant species are presently being used in rural communities as medicines, spices and dyes. The project will screen plant material that has potential international economic value and ensure that rights to use those resources are retained in Pakistan. The commercial benefits of these indigenous materials and processes will be demonstrated to villagers, as well.

## 3. Requirements for implementation of the incentive measure

38. The project has been developed with an institutional framework that draws together Government authorities, non-governmental organizations and local communities. Regulatory measures on environmental management are required as a starting point, such as for example, quotas for trophy hunting. Project funding came from GEF, but village conservation funds and biological diversity trust fund have also been established.

## 4. Process of implementation

39. The Ministry of Environment, Local Government and Rural Development is the executing agency and IUCN-Pakistan is the implementing agency. At the field level, implementation is carried out by IUCN-Pakistan in the northern areas of Pakistan, while in the North West Frontier Province, the Forest and Wildlife Department of the provincial government is responsible for implementation. The project relies on incentives for its effective implementation both through its activities and also - and more importantly - through helping the communities structure their own village management plans as self-motivation.

40. The project is funded by GEF. Village conservation funds have also been established in the project areas to provide a sustainable source of income that can be used for the cost of conservation activities. The initial

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investment consists of equal amounts deposited by village organizations and project funds. Further inputs will come from the limited use of wild species, for example, from trophy hunting, and at least 50 per cent of the annual interest will be directed towards conservation activities. In addition, during the first phase of the project a biodiversity trust fund will be established. The intent of the trust fund will be to provide a sustainable basis for financing a more traditional conservation of species and/or habitats, especially where high-profile species are severely depleted and/or the species do not have a potential value for rural villages.

## 5. Lessons learned

41. The provision of technical assistance to the local communities to enhance their income from their own sources would be a very useful incentive, helping to secure their cooperation and help for the conservation and sustainable use of biological diversity. It is recognized that different incentive measures designed for the communities living in and around biological resources areas are specific to the cultural and socio-economic conditions of Pakistan and these are in conformity with the legal provisions, political will and economic conditions of the general public.

42. Local communities need to be involved in the design, implementation and review of conservation plans. Coordination between different agencies must be strengthened and priorities set for action at the national level.

43. It is not appropriate to impose a total ban on trophy hunting or the trapping of wildlife for sport and trade. A healthy population of wildlife produces a harvestable surplus. Furthermore, the number of animals taken legally are a small fraction of those taken illegally and the presence of legal hunting can deter illegal hunting. Accordingly, the sustainable utilization of wildlife may be allowed by regularizing trophy hunting. In this way, considerable funds can be generated.

### D. Case study 4: Dhimurru Land Management Aboriginal Corporation (Australia)

#### 1. Status of the target biological diversity and identification of the causes of the pressure

44. The mining town of Nhulunbuy was established in the late 1960s against the wishes of traditional owners, who are part of the Yolngu cultural bloc, occupying about 8,500 sq km of North East Arnhem Land in Australia's Northern Territory. There are now about 3,500 non-Aboriginal people in the Gove Peninsula area and about 1,500 Yolngu at Nhulunbuy, Yirrkala, Gunyangara and associated outstations.

45. Threats to biological diversity have developed with the increased use and occupation of the area under Yolngu management. These include:

(a) Increasing overuse and unauthorized use of areas of traditional estates made available for recreational activities;

(b) Disturbance to sacred sites;

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(c) Severe localized damage in some areas, including soil erosion, loss of vegetation, wildlife habitat interference, feral animal damage and pollution;

(d) Increasing perception that a minority of non-Aboriginal residents regard unrestricted access as a right and that all areas are available for recreational use; and

(e) Illegal fishing in estuarine and inshore waters.

## 2. Incentive measures introduced

46. The Dhimurru Land Management Aboriginal Corporation was formed by Yolngu landowners in 1992 in recognition of an urgent need for planned and sustainable management of Yolngu land as the township of Nhulunbuy developed and visitor numbers increased.

47. A formal ranger training programme for Yolngu rangers started in 1993 and has utilized Batchelor College's community-based Associate Diploma of Applied Science (Natural and Cultural Resource Management) and on-site training from a Northern Territory Government Parks and Wildlife Commission ranger.

48. In addition to training assistance, collaboration with the Northern Territory Parks and Wildlife Commission has provided Dhimurru with access to equipment and training facilities of the Territory Parks and Wildlife Commission, technical and scientific advice and assistance, including ethnobotanical, botanical, wildlife research, soil conservation and landcare assistance. Dhimurru has received valuable assistance through the former Australian National Parks and Wildlife service, including advice on ranger training, staff interchange arrangements and technical advice and assistance, as well as support for research initiatives. Dhimurru considers funding from the Contract Employment Programme for Aboriginals in Natural and Cultural Resource Management as pivotal in ensuring its success, in particular, in facilitating consultation with Yolngu community elders during the organization's establishment phase as well as specific on-ground projects. In recent years, traditional owners have provided critically needed funds from royalty payments to support Dhimurru.

## 3. Requirements for implementation of the incentive measure

49. Cooperative working arrangements had to be established with the Northern Territory Government and other agencies. To that end, it was necessary that the partners accept Yolngu interpretations of the environment. On the part of Dhimurru, commitment was made to the importance of traditional ecological knowledge and its foundation role in contemporary, Aboriginal controlled, cultural and natural resource management. The need was also recognized for the effective integration of traditional and scientific natural and cultural resource management strategies into a workable management regime.

50. The funds provided to the project are considered to have been a major importance to its success.

#### 4. Process of implementation

51. Discussion of the threats to the biological diversity in the area under Yolngu management, facilitated by the Northern Land Council, led to the formation of Dhimurru. About 20 clans are now involved to varying degrees with Dhimurru, which has broadened the scope of its operations considerably beyond its original focus on the management of recreational areas. Dhimurru operates on principles of Yolngu control and a community-based approach to planning, embracing a range of land and sea management considerations, including:

- (a) Traditional Yolngu approach to resource use and cultural landscape perceptions;
- (b) Sustainable and appropriate development of commercial operations;
- (c) Control of access to Yolngu estates;
- (d) Education and interpretation initiatives;
- (e) Environmental evaluation and monitoring;
- (f) Demands and provision for recreational use;
- (g) Endangered species and habitat protection;
- (h) Land rehabilitation and protection; and
- (i) Feral animal and noxious weed control.

52. Dhimurru has now established a close working relationship with the Northern Territory University's Centre for Indigenous Natural and Cultural Resource Management, established in 1997. Dhimurru also collaborates with the Northern Territory Parks and Wildlife Commission. Other supporting government agencies have included the Commonwealth Bureau of Rural Resources, the Commonwealth Department of Industry, Science and Tourism, the Australian Heritage Commission, the Northern Territory Department of Primary Industries and Fisheries, and the Northern Territory Department of Lands, Planning and Environment. Dhimurru is strongly supported by the Miwatj Aboriginal and Torres Strait Islander Commission (ATSIC) Regional Council and has strong working relationships with major Aboriginal organizations in the region, as well as a continuing close working relationship with the Northern Land Council at the regional office level.

#### 5. Effects of the measure

53. Among its achievements, Dhimurru has developed a project on turtles to monitor, research and formulate appropriate management. The coastline managed by Dhimurru represents a significant breeding area for four species of marine turtle (Green, Flatback, Olive Ridley and Hawksbill) and is within the range of Loggerhead and Leatherback turtles. Working with a postdoctoral fellow at Northern Territory University, Dr. Rod Kennett, Dhimurru has been engaged over the past 18 months in a project with the following aims:

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- (a) To develop culturally appropriate methodologies for recording traditional and contemporary Yolngu knowledge of sea turtle distribution, biology, utilization and cultural significance;
- (b) To develop culturally appropriate strategies for facilitating Yolngu participation in contemporary research and management;
- (c) To quantify turtle harvesting by Yolngu;
- (d) To determine other threatening factors for turtles;
- (e) To enhance the available information on distribution and abundance of turtles in the region; and
- (f) To foster an appreciation among mainstream resource researchers of the value of traditional ecological knowledge and the cultural contexts within which this knowledge is embedded.

#### 6. Lessons learned

54. Reasons for Dhimurru's success appear to include:

- (a) Commitment to establishing collaborative working relationships with a wide variety of Government, non-government, indigenous and non-indigenous bodies;
- (b) Commitment to an "incremental" approach to the development of institutional capacity within the organization and to linkages with other organizations;
- (c) Commitment to equity in wages and conditions for Yolngu staff;
- (d) Commitment to linking the pace of institutional growth with the extent and degree of community participation and recognition of useful tools to encourage community "ownership" (for example, locally produced, local language videos and printed material);
- (e) Commitment to a balance between indigenous and non-indigenous concepts of wildlife management, which recognizes the essential importance of both traditional ecological knowledge and traditional spiritual relationships to species and habitats; and
- (f) Commitment to recognition of the traditional and statutory rights of landowners to be in charge of their country and of their right voluntarily to participate, or not to participate, in Dhimurru programmes and to rejection of "lease back" or rental arrangements for biological diversity conservation on Yolngu land.

#### III. DESIGN AND IMPLEMENTATION OF INCENTIVE MEASURES

55. From these case studies, together with the others submitted by the Government of Australia, the Government of Pakistan and others as summarized in annex I, some common key elements can be pointed out. Although the number

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of case studies that have been made available to the secretariat at this time is limited, these illustrations make a good starting point in considering the design and implementation of incentive measures. They are discussed according to three major aspects involved in the implementation of incentive measures: assessment of the status of biological diversity; design of incentive measures; and process of implementation.

A. Assessment of the status of the biological diversity in the target ecosystem and identification of the threats

56. Many case studies point to the importance of assessing the status of biological diversity and identifying the threats. The target area can be defined on a case-by-case basis. It can be targeted at one area and one sectoral activity, as in the Turkish case study. Alternatively, the South African case study illustrates that one measure can address a wide range of natural areas, as long as they satisfy pre-set criteria.

57. In general, in accordance with the ecosystem approach employed by the Convention on Biological Diversity and the Conference of the Parties, it is encouraged that an incentive measure address a certain ecosystem as a whole. In addition, identification of the threats to the biological diversity concerned is a key to the design and formulation of incentive measures. It is crucial to identify human activities that are harmful to the integrity of the ecosystem. These threats can be caused by certain sectoral activities, such as wild bulb collection in the case of Turkey or fishing activities in two studies submitted by Australia. The underlying causes impacting on biological diversity in the ecosystem concerned may include poverty, population pressure, inappropriate property rights, inadequate institutional arrangements and capacity, inadequate regulations and other measures and lack of information.

B. Design of incentive measures

1. Consideration of a set of incentive measures

58. Once the status of biological diversity is assessed and the threats are identified, the objective of the incentive measures can be clearly identified. The objective of a measure can be broader than conservation of the concerned biological diversity. For example, in the case of Pakistan, the objective is conservation of biological diversity through community development. Typically, a set of incentive measures is introduced. They can be formulated into a project towards an identified objective. In general, incentive measures are introduced from all three aspects, economic, social and institutional. In all cases, economic incentives are found to contribute strongly towards successful implementation. Without strong social incentive measures, however, the effectiveness of overall measures is considered to be limited. Such service-oriented incentive measures as training and capacity-building, public awareness raising, technical assistance and information dissemination are found to play a key role in the achievement of overall objectives in many case studies.

59. All case studies point out, under the section on lessons learned, that one reason for success is the economic benefit. The importance of public awareness raising is also highlighted. This was highlighted as a key element

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in the case of the Republic of Korea, since one of the causes of the threat was overestimation of the value of the gallbladder of Bandalgom, the Asiatic Black bear, which is classified as an extremely endangered species. If the public had not been made aware of the importance of protecting Bandlagom, poaching would have continued. Combined with increased public awareness, economic benefit can address at least some of the externalities. As the Turkish case study illustrates, increased awareness of the threat of wild collection among consumers in the importing countries will make those consumers willing to accept higher prices for the cultivated bulbs.

## 2. Assessment of the requirement

60. In designing incentive measures, many case studies point towards the importance of assessing the requirement for implementation of a given incentive measure. Some incentive measures may not be suitable if they require high levels of administrative capacity, strong legislation or funds, which are lacking. Several case studies point out the need for funds (for example, Turkey; SANHP - South Africa; Rural Community Development - Pakistan; Nature Based and Ecotourism - Australia; Republic of Korea). Others identify the needs for strong legislative measures (for example, Turkey; Bwindi National Park - Uganda; ITQ - Australia). Others still demonstrate the need for adequate administrative structures (for example, SANHP - South Africa, Land for Wildlife - Australia). Furthermore, it is important to assess local practices. Incentive measures can be more effective if they can be tailored to local needs and practices (Rural Community Development - Pakistan). In the case of Dhimurru Land Management Aboriginal Corporation, respect for indigenous knowledge system is strongly pursued.

## 3. Institutional arrangements

61. Institutional coordination is also considered important in many case studies. Incentive measures can be designed to facilitate coordination in the implementation process. This point is best illustrated in the South African case study. It has been demonstrated that, thanks to the extensive registration process and the wide consultation it entails, many government sectors outside the Department of Environmental Affairs and Tourism and other environment-related agencies are now aware of environmentally sensitive areas. Since human activities that pose threats to biological diversity cover a wide range of sectoral activities, falling under the jurisdiction of many different government sectors, this type of coordination and consultation should be widely encouraged. In the case of the Republic of Korea, this point is included as a policy recommendation for future implementation.

## C. Process of implementation

62. The participatory approach to implementation is found essential in most of the case studies. If necessary, a joint steering committee can be established, as in the case of Turkey and the Bar Valley case study of Pakistan. Public awareness campaigns to raise interest in the measures or the programmes are also considered effective. The effectiveness of involving local non-governmental organizations is also highlighted in several case studies, for example those of Turkey, Pakistan and the Republic of Korea. A contact agency or institution located on-site can contribute to facilitate

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the programme. In the case of South Africa, although the administrative lead agency is the Department of Environmental Affairs and Tourism of the central Government, initial requests for registration and on-site inspection are handled by the provincial nature conservation authorities. As mentioned in the section on institutional arrangements, intra-government coordination is also essential, as many sectoral activities pose threats to biological diversity.

63. When the incentive measures are targeted at certain local communities, as in the Pakistan, Republic of Korea and Dhimurru case of Australia - case studies, local communities need to be involved from the stage of designing of the incentive measures.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

64. From the examination of these case studies several important conclusions can be drawn, regarding the design and implementation of incentive measures. First, these case studies demonstrate the importance of assessment of the status of biological diversity and the causes of the threats that it is facing, before the formulation of incentive measures. Second, the incentive measures introduced tend to be a combination of several incentive measures, usually combining all three major categories of incentives that have been identified in the indicative outline prepared by the secretariat, namely economic, social and institutional. Third, all case studies reveal that one of the reasons for success is economic benefit. Fourth, the requirements for implementation of the incentive measures vary from case to case. It is, however, important to assess the requirements during the designing of the incentive measures. Fifth, institutional coordination is also important and this can be designed into incentive measures. Sixth, participatory process of implementation is found essential.

65. In order to enhance understanding of the effectiveness of incentive measures, exchange of information among the Parties should be encouraged to continue. Useful information can also be provided by other Governments and relevant organizations. The indicative outline for case studies prepared by the secretariat has been found a useful tool for the collection of necessary information and for its organization for the purpose of analysis. In the future, a certain focus may be given at each meeting of the Conference of the Parties. Given that the Convention and the Conference of the Parties have taken an ecosystem approach to implementing the objectives of the Convention, the consideration of incentive measures can be best organized according to ecosystems of the thematic focus of each meeting of the Conference of the Parties. Further focus may be given to category of incentive measures or certain aspects of implementation process. The related work in the other focal areas of the Convention on Biological Diversity should also be coordinated, including conservation and sustainable use of agricultural diversity (as contained in decision III/11 of the Conference of the Parties; a review of the activities is contained in UNEP/CBD/COP/4/6); the implementation of Article 8 (j) (UNEP/CBD/COP/4/10); additional financial resources (UNEP/CBD/COP/4/17); the fair and equitable sharing of the benefits arising out of the utilization of genetic resources (UNEP/CBD/COP/4/21 and 22); and access to genetic resources (UNEP/CBD/COP/4/23).

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66. The Conference of the Parties is invited to consider the following recommendations regarding the design and implementation of incentive measures:

The Conference of the Parties,

1. Decides to consider incentive measures in accordance with the thematic focus of the meetings of the Conference of the Parties;
2. Decides to include incentive measures as an important item in the national report;
3. Encourages Parties and Governments:
  - (a) To promote implementation of incentive measures, taking into account the ecosystem approach, in order to facilitate implementation of the objectives of the Convention;
  - (b) To carry out a biological diversity assessment of concerned ecosystems as a first step towards formulating incentive measures, in order to identify the threats and underlying causes;
  - (c) To formulate case studies on incentive measures in the thematic focus of the next meeting of the Conference of the Parties, utilizing the indicative outline prepared by the secretariat as far as possible, and to make them available to the secretariat;
4. Requests the financial mechanism to provide adequate and timely support to eligible Parties for the formulation and the implementation of incentive measures, including prior assessment of the biological diversity of the concerned ecosystems and capacity-building necessary for the implementation of incentive measures;
5. Invites all relevant organizations to:
  - (a) To support efforts by Parties to implement incentive measures;
  - (b) To formulate case studies on incentive measures in the thematic focus of the next meeting of the Conference of the Parties, utilizing the indicative outline prepared by the secretariat as far as possible, and to make them available to the secretariat.;
6. Requests the Executive Secretary:
  - (c) To compile the information received by Parties, Governments and relevant organizations and to facilitate the exchange of information through appropriate means, such as the clearing-house mechanism;
  - (d) To prepare a background document containing further analysis on the design and implementation of incentive measures based on the experiences submitted by the Parties, Governments and relevant organizations, in accordance with the thematic focus of the next meeting of the Conference of the Parties.

Annex I

Essential elements of incentive measures

BIOLOGICAL DIVERSITY AND THREATS	INCENTIVE MEASURES			REQUIREMENTS	IMPLEMENTATION
	ECONOMIC	SOCIAL	INSTITUTIONAL		
<b>1. Indigenous propagation project of threatened Turkish bulbs (Turkey)</b>					
With the increased export, wild collection of flower bulbs became unsustainable	<ul style="list-style-type: none"> <li>• free provision of flower bulbs in exchange for three-year commitment</li> <li>• increased willingness to pay for the cultivated bulbs</li> </ul>	<ul style="list-style-type: none"> <li>• public awareness campaign abroad</li> <li>• technical assistance</li> </ul>	<ul style="list-style-type: none"> <li>• regulation on wild flower bulb trade</li> <li>• monitoring on wild collection</li> </ul>	<ul style="list-style-type: none"> <li>• funds for the free provision of original plant material</li> <li>• establishment of necessary institutions</li> <li>• regulations and monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• strong interaction between implementing agencies and village families, traders, government sector, and consumers abroad</li> </ul>
<b>2. The South African Natural Heritage Programme (SANHP, South Africa)</b>					
Degradation or loss of ecosystems due to human settlement and associated activities	<ul style="list-style-type: none"> <li>• certification (registration of land)</li> <li>• financial assistance</li> <li>• promotion of alternative use</li> </ul>	<ul style="list-style-type: none"> <li>• public awareness programme</li> <li>• technical assistance</li> <li>• provision of information</li> </ul>	<ul style="list-style-type: none"> <li>• maintenance of full property rights</li> </ul>	<ul style="list-style-type: none"> <li>• strict procedural requirements</li> <li>• adequate administrative institution and capacity</li> <li>• strong linkages among government entities</li> <li>• funds</li> </ul>	<ul style="list-style-type: none"> <li>• cooperative tripartite venture between government sector, private sector, sponsorship by industry and environmental NGOs and private landowners</li> </ul>

BIOLOGICAL DIVERSITY AND THREATS	INCENTIVE MEASURES			REQUIREMENTS	IMPLEMENTATION
	ECONOMIC	SOCIAL	INSTITUTIONAL		
<b>3. Land for Wildlife (Australia)</b>					
Victorian Government programme for conserving flora and fauna on private land to recognize the valuable contribution made by landholders to nature conservation on private land.	<ul style="list-style-type: none"> <li>• provision of certification and sign</li> </ul>	<ul style="list-style-type: none"> <li>• information dissemination</li> <li>• technical assistance</li> <li>• advice on the property</li> </ul>	<ul style="list-style-type: none"> <li>• Land for Wildlife property registration</li> <li>• unchanged status of property rights</li> <li>• networks of land managers at state, inter-state and local levels</li> <li>• network of private landholders</li> <li>• monitoring</li> </ul>	<ul style="list-style-type: none"> <li>• skilled extension officers</li> <li>• administrative and institutional capacity to support networks</li> </ul>	<ul style="list-style-type: none"> <li>• creation of networks of land managers at state, inter-state and local levels and of private landholders</li> <li>• in some cases, creation of co-operative, involving another programme, Landcare</li> <li>• coordination at the local level</li> </ul>
<b>4. Dhimurru Land Management Aboriginal Corporation (Australia)</b>					
Due to the establishment of a mining town against the wishes of traditional owners and its development, biological diversity became threatened	<ul style="list-style-type: none"> <li>• financial provision</li> </ul>	<ul style="list-style-type: none"> <li>• training programme</li> <li>• access to equipment</li> <li>• technical and scientific advice and assistance</li> <li>• research initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• formation of the Dhimurru Land Management Aboriginal Corporation</li> <li>• respect for indigenous knowledge systems</li> </ul>	<ul style="list-style-type: none"> <li>• partners acceptance of Yolngo interpretation of the environment.</li> <li>• effective integration of traditional and scientific natural and cultural resource management</li> </ul>	<ul style="list-style-type: none"> <li>• participatory implementation, involving about 20 clans and many government agencies</li> </ul>

BIOLOGICAL DIVERSITY AND THREATS	INCENTIVE MEASURES			REQUIREMENTS	IMPLEMENTATION
	ECONOMIC	SOCIAL	INSTITUTIONAL		
<b>5. Rural Community Development (Pakistan)</b>					
Conservation of biological diversity through community development by rural communities themselves through promoting sustainable economic activities.	<ul style="list-style-type: none"> <li>• provision of seed funds</li> <li>• promotion of sustainable economic activities: quota-based trophy hunting; screening of plant material</li> <li>• establishment of Village Conservation Funds</li> </ul>	<ul style="list-style-type: none"> <li>• technical assistance</li> <li>• provision of information</li> <li>• sanction against a poacher</li> </ul>	<ul style="list-style-type: none"> <li>• self-management</li> </ul>	<ul style="list-style-type: none"> <li>• establishment of Biodiversity Trust Fund</li> </ul>	<ul style="list-style-type: none"> <li>• community-based</li> <li>• Government, local government, NGOs and villagers</li> </ul>
<b>6. Sustainable Resource use in Bar Valley (Pakistan)</b>					
Bar Valley consists of a high altitude, low rainfall and arid mountain ecosystem. Wildlife includes Himalayan ibex and snow leopard. Threats are growth in population and economic activities.	<ul style="list-style-type: none"> <li>• eco-tourism</li> <li>• trophy hunting</li> </ul>	<ul style="list-style-type: none"> <li>• capacity-building for community mobilization and management issue</li> <li>• capacity-building to support sustainable economic activities.</li> <li>• public awareness</li> </ul>	<ul style="list-style-type: none"> <li>• establishment of a Village Committee, for monitoring and planning</li> </ul>	<ul style="list-style-type: none"> <li>• establishment of a Village Committee</li> </ul>	<ul style="list-style-type: none"> <li>• NGOs and local communities</li> </ul>

BIOLOGICAL DIVERSITY AND THREATS	INCENTIVE MEASURES			REQUIREMENTS	IMPLEMENTATION
	ECONOMIC	SOCIAL	INSTITUTIONAL		
<b>7. Malakand/Dir social Forestry Project (MSFP, Pakistan)</b>					
Forest land is being lost due to human activities, especially for subsistence activities.	<ul style="list-style-type: none"> <li>• promotion of sustainable economic activities and ecological management</li> </ul>	<ul style="list-style-type: none"> <li>• technical assistance</li> <li>• women activities and training</li> <li>• vocational and on-site training</li> </ul>	<ul style="list-style-type: none"> <li>• Village Land Use Planning</li> </ul>	<ul style="list-style-type: none"> <li>• stable social conditions, thereby permitting conclusive discussions and tangible agreements on ownership, rights and land use</li> </ul>	<ul style="list-style-type: none"> <li>• social forestry approach to involve public participation</li> <li>• through the use of Village Land Use Planning, a step-by-step guide for resource management plan, Village Action Plan is formulated</li> </ul>
<b>8. Conservation of biodiversity in Mt. Chiri, with special attention to poaching bears (Republic of Korea)</b>					
Mt. Chiri was designated the first national park in 1967. The Asiatic Black Bear, known as Bandalgom, currently survive only around the DML and at Mr. Chiri, and included in the category of extremely endangered species. The major threats come from poaching.	<ul style="list-style-type: none"> <li>• public land purchase</li> <li>• support for environmentally sound farming</li> <li>• financial support for conservation</li> <li>• covenants</li> <li>• user fees</li> <li>• non-compliance fees</li> <li>• environmental liability</li> </ul>	<ul style="list-style-type: none"> <li>• support for the ecosystem protection groups</li> <li>• public education</li> </ul>	<ul style="list-style-type: none"> <li>• enforcement of laws and a sharp increase in fines and heavier punishment</li> <li>• formation of ecosystem protection group</li> <li>• construction of eco-corridor</li> <li>• strengthening EIA</li> <li>• redirection of afforestation policy</li> </ul>		

BIOLOGICAL DIVERSITY AND THREATS	INCENTIVE MEASURES			REQUIREMENTS	IMPLEMENTATION
	ECONOMIC	SOCIAL	INSTITUTIONAL		
<b>9. Development Through Conservation, Bwindi National Park, Uganda (E. S. Tamale, WWF-E. Africa Regional Office, presented at GBF, 1996)</b>					
Bwindi Impenetrable Forest National Park (BIFNP) was originally a gazetted forest reserve. It supports a great diversity of plant and animal species, including the only few remaining species of mountain Gorilla in the world. With the designation as a National Park, local communities lost access to forest resources.	<ul style="list-style-type: none"> <li>• revenue sharing</li> <li>• Conservation Trust Fund</li> </ul>	<ul style="list-style-type: none"> <li>• Development Through Conservation Project: out-of-forest extension services combined with in-forest-conservation</li> <li>• conservation awareness in community</li> </ul>	<ul style="list-style-type: none"> <li>• Several pieces of legislation which provide framework for conservation and use of incentive measures for natural resource management</li> <li>• introduction of District Wildlife Committees and local Wildlife Committees</li> </ul>	<ul style="list-style-type: none"> <li>• legislative framework</li> <li>• consultation among different actors</li> </ul>	<ul style="list-style-type: none"> <li>• consultation with different actors: Government departments, district authorities, local councils, NGOs and donors</li> <li>• involvement of local people</li> <li>• catchment approach</li> </ul>
<b>10. Nature Based and Ecotourism in Wet Tropics (Australia)</b>					
The Wet Tropics World Heritage Area (WHA) covers approx. 9000 sq. km. Most of the remaining tropical rainforest of the region is included and it is of outstanding biological diversity status, including over 500 species of plants and 30 species of animals. The main threats comes from land clearing in the surroundings.	<ul style="list-style-type: none"> <li>• Daintree Rescue Package (DRP): land buy-back scheme</li> <li>• zoning</li> <li>• tradable permits for tour operators</li> <li>• comprehensive visitor fees</li> </ul>	<ul style="list-style-type: none"> <li>• dissemination of information through extension services (DRP)</li> <li>• tourism infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• strong regulatory and legislative measures against harmful activities</li> <li>• permit requirement for commercial tour operators</li> <li>• permit requirement for camping for individuals</li> </ul>	<ul style="list-style-type: none"> <li>• targeted public funding</li> <li>• strong regulatory safety-net</li> </ul>	<ul style="list-style-type: none"> <li>• public authorities provide regulatory and administrative frameworks</li> <li>• emphasis on community support with the delivery of information through an extension programme</li> </ul>

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<b>11. Alternative tourism in Jamaica (Unlocking the trade opportunity, IIED and UN/DPCSD, 1997)</b>					
<p>Tourism is Jamaica's largest foreign exchange earner. With the growth of the sector, it exhibits the environmental and social impacts associated with mass tourism.</p>	<ul style="list-style-type: none"> <li>• infrastructure programme targeted at tourism</li> <li>• incentives for FDI</li> <li>• endowment fund</li> </ul>	<ul style="list-style-type: none"> <li>• environmental guide for hotel management</li> </ul>	<ul style="list-style-type: none"> <li>• authority to oversee licensing, EIA and guidelines</li> <li>• environmental review body</li> <li>• private sector tourism action plan</li> <li>• community association to represent local people to develop a tourism masterplan</li> <li>• integration with protected area management</li> </ul>	<ul style="list-style-type: none"> <li>• funds for investment</li> <li>• environmental training for the hotel employees.</li> </ul>	<ul style="list-style-type: none"> <li>• actions from three fronts: the Government, the private sector and NGOs.</li> </ul>
<b>12. Licensing in the Northern Prawn Fishery (Australia)</b>					
<p>The main species caught include banana prawn, tiger prawn and endeavour prawn. The management of the stock has not been considered as a problem owing to a range of management controls. The focus has been on fishing effort.</p>	<ul style="list-style-type: none"> <li>• license based on the number and the size of vessels</li> <li>• buy-back scheme</li> </ul>		<ul style="list-style-type: none"> <li>• regulatory and legislative measures</li> </ul>	<ul style="list-style-type: none"> <li>• initial grant for buy-back scheme</li> </ul>	<ul style="list-style-type: none"> <li>• public authorities provide regulatory and administrative frameworks</li> </ul>

BIOLOGICAL DIVERSITY AND THREATS	INCENTIVE MEASURES			REQUIREMENTS	IMPLEMENTATION
	ECONOMIC	SOCIAL	INSTITUTIONAL		
<b>13. Individual transferable quotas in the South East Fishery (Australia)</b>					
Threat on the fish stocks caused by overfishing and inappropriate fishing methods	<ul style="list-style-type: none"> <li>• individual transferable quotas and permits, with fees and levies</li> </ul>		<ul style="list-style-type: none"> <li>• legislative measures</li> <li>• monitoring and assessment</li> </ul>	<ul style="list-style-type: none"> <li>• legislative measure</li> <li>• sufficient administrative and institutional capacity</li> </ul>	<ul style="list-style-type: none"> <li>• determination of quota units according to a clear formula</li> </ul>
<b>14. The Tagua Initiative, Ecuador (Unlocking the trade opportunity, IIED and UN/DPCSD, 1997)</b>					
Tagua trees have been used for button making for over 100 years. After having faced competition from plastic substitutes, with the rise in interest in natural product, the demand has resumed. With higher expected returns, interest in conservation is increased.	<ul style="list-style-type: none"> <li>• promotion of income generating activities</li> <li>• market assistance</li> <li>• access to finance</li> <li>• licensing of distributors, with 5 % premium</li> <li>• enterprise development</li> </ul>	<ul style="list-style-type: none"> <li>• technical assistance and training</li> </ul>	<ul style="list-style-type: none"> <li>• institutional development support</li> </ul>	<ul style="list-style-type: none"> <li>• establishment of the relationship with business sector</li> </ul>	<ul style="list-style-type: none"> <li>• joint venture between local communities, an international NGO and a local NGO, with very different characteristics</li> </ul>

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