other countries through the Honey Bee newsletter which is published in eight different languages (Hindi, English, Gujarati, Tamil, Kannada, Pahari, Telugu, and Spanish). Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI), a NGO based in Ahmedabad, India, set up in 1993 to essentially sustain Honey Bee Newsletter and associated research and action activities, supports Honey Bee Network by linking the six "Es" – ethics, equity, excellence, environment, education and efficiency in enterprise. The Honey Bee Network has created new standards of accountability and ethics in dealing with grassroots innovations by strengthening people-to-people learning. The formal sector cannot use the traditional knowledge in the newsletter without acknowledgement, citation and PIC of the knowledge holder. The Honey Bee Network supported the concept of PIC much before the CBD came into existence. The Honey Bee Network approach promotes innovations in one part of the world, investments are made in the other. The Honey Bee database with thousands of innovations is being upgraded to multimedia capabilities. This will ensure that barriers of languages, literacy and localism can be overcome to connect innovators, potential entrepreneurs and investors across regions. The idea is that through using electronic, textual and oral media, a multilevel network can be put in place to support the documentation, experimentation and reward, both in material and non-material form of individual and collective grassroots innovations.

73. On Article 10(d), has your country put in place measures that help local populations develop and implement remedial action in degraded areas where biological diversity has been reduced?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures that help local populations develop and implement remedial action in degraded areas where biodiversity has been reduced.

NAEB in the MoEF gives special attention to regeneration of degraded forest areas and lands adjoining forest areas, national parks, sanctuaries and other PAs as well as ecologically fragile areas like the Western Himalayas, Aravallis, Eastern Ghats, etc. The functions of NAEB involve evolving mechanisms for ecological restoration of degraded forest areas and adjoining lands through systematic planning and implementation in a cost effective manner. It also sponsors extension of research findings to disseminate new and proper technologies for the above. It creates awareness to help foster a people's movement for promoting afforestation and eco-development with the assistance of voluntry agencies, NGOs, Panchayati Raj institutions and others for promoting participatory and sustainable management of degraded forest areas and adjoining lands.

MoEF has recognized the CEMDE, School of Environmental Studies, University of Delhi as a Centre of Excellence for research in this area.

74. Has your country identified indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity? (decision V/24)	
a) No	
b) No, but assessment of potential indicators and incentive measures is under way	
c) Yes, indicators and incentive measures identified (please describe below)	X

Further comments on the identification of indicators and incentive measures for sectors relevant to the conservation and sustainable use of biodiversity.

Some work has been undertaken on these indicators and incentive measures as described below:

Indicators:

a) Number of PAs in the country

b) Number of JFM Committees. There are more than 80,000 JFM committees all over India spread over more than 17 million hectares, which is more than the area under PA system in the country.

c) Continued existence of large number of community conservation practices such as sacred groves, lakes, etc. There are more than 19,000 sacred groves documented, and it is estimated that the number of sacred groves in the country could be between 100,000 to 150,000.

d) Exhaustive set of criteria and indicators has been developed for sustainability through the Bhopal-India process over the period.

e) Existing system of conservation management has been strengthened by legislative measures such as enactment of the Biological Diversity Act.

Incentive Measures:

a) A mechanism of national, state and local biodiversity funds has been initiated through the Biological Diversity Act. This will allow separate budget allocation for biodiversity conservation at the respective level.

b) Provision of a national gene fund has been made through Protection of Plant Varieties and Farmers' Rights Act.

c) Biological Diversity Act has made provision for levying cess on the biological material going out of the jurisdiction of local bodies (e.g., Panchayats) for commercial purposes.

d) Fellowships and awards have been instituted at national level. These include Indira Gandhi Paryavaran Puraskar, B.P. Pal National Environment Fellowship Award for Biodiversity, Pitambar Pant National Environment Fellowship Award, national awards for prevention of pollution, Rajiv Gandhi Environment Award for Clean Technology, Indira Priyadarshini Vrikshmitra Award, Dr. Salim Ali National Wildlife Fellowship Award and Shri Kailash Sankhla National Wildlife Fellowship Award.

e) Eco-development programmes have been undertaken to reduce anthropic pressure on PAs.

f) Establishment of JFM committees has created a mechanism of dialogue between users and managers of biodiversity. This has resulted in creating a stake in the management of the biodiversity for local communities.

75. Has your country implemented sustainable use practices, programmes and policies for the sustainable use of biological diversity, especially in pursuit of poverty alleviation? (decision V/24)	
a) No	
b) No, but potential practices, programmes and policies are under review	
c) Yes, some policies and programmes are in place (please provide details below)	X
d) Yes, comprehensive policies and programmes are in place (please provide details below)	

Further information on sustainable use programmes and policies.

Various programmes initiated by the MoEF, including National Afforestation Programme Scheme, setting up of JFM Committees, Hill Area Development Programme, etc., focus on greater participation of the community with an objective to improve their livelihoods. These programmes also help in poverty alleviation in the respective areas.

76. Has your country developed or explored mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity? (decision V/24)	
a) No	
b) No, but mechanisms are under development	
c) Yes, mechanisms are in place (please describe below)	X

Further comments on the development of mechanisms to involve the private sector in initiatives on the sustainable use of biodiversity.

The involvement of private sector is encouraged in initiatives on the sustainable use of biodiversity. For example, both public and private sectors – comprising individuals, companies, cooperatives, and industry – are playing key roles in the management of forests. Indian coal companies, like Coal India Ltd (CIL), undertake plantation in coalfields and reclamation and afforestation of mined-out areas with native species, thereby helping in carbon sequestration. In case forestland is used for a mine, the CIL provides non-forestland of an equivalent area with funds for re-afforestation or regen-erates twice as much degraded forestland. The private sector has also demonstrated its ability to enhance the productivity of wastelands and is dominant in the areas of wood harvesting and processing.

The National Environment Policy, 2006 envisages the development of feasible models of public-private partnerships to leverage financial technical and management resources of the private sector for monitoring environmental compliance.

77. Has your country initiated a process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)	
a) No	
b) No, but the principles and guidelines are under review	
c) Yes, a process is being planned	X
d) Yes, a process has been initiated (please provide detailed information)	
Further information on the process to apply the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.	
May refer to replies in response to Questions 70-76	

78. Has your country taken any initiative or action to develop and transfer technologies and provide financial resources to assist in the application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity? (decision VII/12)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some technologies developed and transferred and limited financial resources provided	X
d) Yes, many technologies developed and transferred and significant financial resources provided	

Biodiversity and tourism

79. Has your country established mechanisms to assess, monitor and measure the impact of tourism on biodiversity?	
a) No	
b) No, but mechanisms are under development	X
c) Yes, mechanisms are in place	
d) Yes, existing mechanisms are under review	

80. Has your country provided educational and training programmes to the tourism operators so as to increase their awareness of the impacts of tourism on biodiversity and upgrade the technical capacity at the local level to minimize the impacts? (decision V/25)	
a) No	
b) No, but programmes are under development	X
c) Yes, programmes are in place	

81. Does your country provide indigenous and local communities with capacity-building and financial resources to support their participation in tourism policy-making, development planning, product development and management? (decision VII/14)	
a) No	
b) No, but relevant programmes are being considered	
c) Yes, some programmes are in place (please provide details below)	X
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments in the capacity-building and financial resources provided to indigenous and local communities to support their participation in tourism policy-making, development planning, product development and management.

The Policy and Guidelines for Ecotourism in India, 1998 identifies four cardinal principles which should be met in the developmental process itself. These are:

1. It should involve local community and lead to the over-all economic development of the area.
2. It should identify the likely conflicts between the resource use for tourism and livelihood of local inhabitants, and attempt to minimize such conflicts.
3. The type and scale of tourism development should be compatible with the environment and socio-cultural characteristics of the local community.
4. It should be planned as a part of the overall area development strategy, guided by an integrated land-use plan and associated commensurate expansion of public services.

The Ministry of Tourism, Government of India and the UNDP have partnered an innovative Endogenous Tourism Project, Incredible India, which focusses on the rural tourism experience, based on rural art and craft skills, cultural and natural heritage. The Project complements the Ministry's Rural Tourism Scheme that supports rural infrastructure. A key objective of the Incredible India partnership with UNDP is access to target markets within India and abroad together with the travel trade and the media.

This Project is being implemented at 31 rural locations in 20 states with community participation through NGO or Panchayat partners, with district collectors as focal points and specialized stakeholders, all of whom were consulted while preparing the project work plans. The locations are linked to known tourism circuits, enabling the visitor to combine the rural tourism experience with nearby attractions in cultural and heritage sites, wildlife, indigenous healing systems or fairs and festivals. The Project focuses on capacity building and training in visitor handling, including home stays, guiding and cuisine which will benefit low-income rural communities, women and unemployed youth. The focus includes traditional gurukul learning of art and craft to broaden the visitor's experience in Incredible India with sustainable community interaction.

Some of the 31 project locations are as follows:

1. ***Pochampalli*** (Nalgonda district, Andhra Pradesh), Hyderabad 50 km: renowned for *Ikat* tie-and-dye weaving of silk saris and fabrics.
2. ***Raghurajpur*** (Puri district, Orissa), Bhuvaneshwar 35 km and Puri 15 km: showcasing Orissa's live mural painting tradition using only mineral and earth colours, *patachitra*, stone carving, woodwork and *gotipua dance*.
3. ***Hodka*** (Kachchh district, Gujarat), *Bhuj* 60 km; Khavda (last village in Banni region alongside Rann of Kachchh) 31 km: vibrant fabric embroidery, leatherware, mud-work, appliqué.
4. ***Pranpur*** (Ashok Nagar district, Madhya Pradesh), Chanderi 3 km; Jhansi (road, 3 hours) and Lalitpur (road, 1 hour) both on Delhi-Chennai trunk train route: reputed for gossamer fine saris and brocades, stone and wood carving, and Malwa plateau monuments.
5. ***Aranmula*** (Pathanamthitta district, Kerala), Kochi (Nedumbassery airport) 140 km and Thiruvananthapuram 125 km: on the banks of the Pampa river; unique metal mirror; Vasthu Vidya Gurukulam; mural art gallery; ceremonial Onam snake boat procession; Vijnana Kala Vedi; Parthsarathy temple.
6. ***Lachen*** (North district, Sikkim), Gangtok 110 km, all-weather road; altitude 3,000 metres, bordering Kanchenjunga National Park, 90 km from Tibet crest, upper Teesta valley: migrant Bhutia yak-herding community; altitude safaris; treks; wool weaving; Nyingmapa Mahayana Buddhist monastery.
7. ***Nagarnar*** (Bastar district, Chhattisgarh), Jagdalpur 18 km; Raipur 30 km via NH 43: diverse tribal craft in terracotta, bell metal, wrought iron.
8. ***Karaikudi*** (Sivaganga district, Tamil Nadu), Madurai 82 km: Chettinad architectural tradition (mansions); cuisine; wood carving; saris; palm leaf baskets; gold jewellery.
9. ***Mana*** (Chamoli district, Uttaranchal), Delhi 525 km (NH 58); Badrinath 3 km; altitude 3,420 metres, in Garhwal: last Indian village on Mana Pass route to Tibet; migrant Bhutia community; wool weaving; woodwork; close to Badrinath shrine; Valley of Flowers and Hemkund Sahib circuit; Himalayan heritage.

Some of the state governments too have undertaken specific measures for promoting involvement of local communities in tourism policy making. For example, the Draft Tourism Vision 2025 of Department of Tourism, Kerala is a landmark move in this direction. The Vision Document chalks out the objectives, vision, strategies and action plan. The action plan includes short term, mid term and long term action points for the development of tourism in Kerala State. The Vision Document emphasizes three forms of tourism: Backwater, Ayurveda and Ecotourism. Currently this is only in the realm of policies and vision documents, the practicality and implementation is yet to happen by working together with Panchayati Raj institutions at the local level.

82. Has your country integrated the Guidelines on Biodiversity and Tourism Development in the development or review of national strategies and plans for tourism development, national biodiversity strategies and actions plans, and other related sectoral strategies? (decision VII/14)	
a) No, but the guidelines are under review	
b) No, but a plan is under consideration to integrate some principles of the guidelines into relevant strategies	
c) Yes, a few principles of the guidelines are integrated into some sectoral plans and NBSAPs (please specify which principle and sector)	
d) Yes, many principles of the guidelines are integrated into some sectoral plans and NBSAPs (please specify which principle and sector)	X

Further information on the sectors where the principles of the Guidelines on Biodiversity and Tourism Development are integrated.

In pursuance of the Government of India's policy to achieve sustainability in tourism development and to ensure regulated growth of ecotourism with its positive impacts of environmental protection and community development, the government has come out with the Policy and Guidelines for Ecotourism in India, 1998.

The Policy and Guidelines for Ecotourism in India is in line with the Guidelines on Biodiversity and Tourism Development annexed to decision VII/14.

The National Environment Policy, 2006 envisages to parallel multi-stakeholder partnerships for enhancement of wildlife habitat in Conservation Resources and Community Reserves to derive both environmental and ecotourism benefits; promote sustainable tourism through adoption of best practice norms; and take measures to regulate tourist inflows into mountain regions to ensure that these remain within the carrying capacity of the mountain ecology.

Article 11 - Incentive measures

83. Has your country established programmes to identify and adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity?	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place (please provide details below)	X
d) Yes, comprehensive programmes are in place (please provide details below)	

Further comments on the programmes to identify and adopt incentives for the conservation and sustainable use of biodiversity.

Some of the programmes in place that include incentives for the conservation and sustainable use of components of biological diversity are the following:

- JFM Programme involves participation of local people to jointly (with the government) protect and manage the forest resources in return for a share in the yields from it.
- Biological Diversity Act, 2002 has provision for securing equitable share in benefits arising out of the use of biological resources.
- Corporate sector initiatives on voluntary basis, under Corporate Responsibility for Environment Protection, especially green accounting, auditing, eco-labelling and, in some cases, green lending practices.
- Initiatives by NGOs, academic institutions and civil society have been exemplary. Lots of research and action oriented policies have demonstrated the feasibility of payment for biodiversity and ecosystem services.
- Preparation of PBR.
- To encourage people, institutions, communities, men and women to contribute to rehabilitation and conservation of elements of biological diversity, and reward excellence and achievement in these, several incentives and awards have been instituted by the government. Some of these are Indira Priyadarshini Vrikshamitra Awards, B.P. Pal National Environment Fellowship Award for Biodiversity, Rajiv Gandhi Wildlife Conservation Award, Dr. Salim Ali Fellowship for Avian Biology, Kailash Sankhla Award for Mammal Study and Indira Gandhi Paryavaran Puraskar.

The National Environment Policy, 2006 seeks to prepare and implement an action plan on the use of economic instruments for environmental regulation in specified contexts, including those relating to unsustainable production and consumption. It also envisages creation of a National Environment Restoration Fund from the next proceeds of economic instruments, user fees for access to specified natural resources, and voluntary contributions. The Fund may be used for restoration of environmental resources, including clean-up of toxic and hazardous waste legacies.

84. Has your country developed the mechanisms or approaches to ensure adequate incorporation of both market and non-market values of biological diversity into relevant plans, policies and programmes and other relevant areas? (decisions III/18 and IV/10)	
a) No	
b) No, but relevant mechanisms are under development	X
c) Yes, mechanisms are in place (please provide details below)	
d) Yes, review of impact of mechanisms available (please provide details below)	

Further comments on the mechanism or approaches to incorporate market and non-market values of biodiversity into relevant plans, policies and programmes.

Some mechanisms are under development and discussion for incorporation of market and non-market value of biodiversity into relevant plans, policies and programmes. For example, empowering local communities to receive the market prices and to work out the market prices based on sustainable rates of extraction, land use and water resource availability, and the impacts on other critical ecosystem as a consequence to this extraction. Other possible incentives being discussed are listed below.

Positive Incentives	**Disincentives**	**Indirect Incentives**	**Removal of Perverse Incentives**
• agricultural land set-aside schemes • public or grant-aided land purchase • wetland reserves • oven-ants/ conservation easements • cost-sharing/ management agreements • species enhancement schemes • customary cultivation of biodiversity • international	• user fees • non-compliance fees • fines for damages • environmental liability • performance bonds • habitat mitigation schemes • marine pollution liability	• 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	• 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

Positive Incentives	Disincentives	Indirect Incentives	Removal of Perverse Incentives
biodiversity transfers • incentive payments for organic farming • taxation and fiscal measures		mitigation banking • joint implementation • debt-for-nature swaps • international franchise agreements • eco-labeling	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

The National Environment Policy, 2006 envisages setting up of mechanisms and processes to identify entities of 'Incomparable Value' in different regions. Sacred groves, biodiversity hot spots, forests with high indigenous genetic diversity and environmentally sensitive areas are to be treated as possessing 'Incomparable Values'.

85. Has your country developed training and capacity-building programmes to implement incentive measures and promote private-sector initiatives? (decision III/18)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, some programmes are in place	X
d) Yes, many programmes are in place	

86. Does your country take into consideration the proposals for the design and implementation of incentive measures as contained in Annex I to decision VI/15 when designing and implementing incentive measures for the conservation and sustainable use of biodiversity? (decision VI/15)	
a) No	X
b) Yes (please provide details below)	
Further information on the proposals considered when designing and implementing the incentive measures for the conservation and sustainable use of biodiversity.	

Some suggestions in this respect made in the past are: (1) Stakeholder participation, with their contribution properly accounted; (2) To start putting values to biodiversity resources such as forests (based not only on timber and NTFPs but their watershed functions, carbon values, ecotourism and recreation values, etc.)

The National Environment Policy, 2006 seeks to formulate an appropriate methodology for reckoning and restoring environmental values of forests, which are unavoidably diverted to other uses.

87. Has your country made any progress in removing or mitigating policies or practices that generate perverse incentives for the conservation and sustainable use of biological diversity? (decision VII/18)	
a) No	
b) No, but identification of such policies and practices is under way	
c) Yes, relevant policies and practices identified but not entirely removed or mitigated (please provide details below)	X
d) Yes, relevant policies and practices identified and removed or mitigated (please provide details below)	
Further information on perverse incentives identified and/or removed or mitigated.	
Reply to Question 84 may be seen. Further, NBA and SBBs have been established as per the provision of the Biological Diversity Act, 2002, which would be responsible for developing and overseeing the incentives for the conservation and sustainable use of biological diversity.	

Article 12 - Research and training

88. On Article 12(a), has your country established programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components?	
a) No	
b) No, but programmes are under development	
c) Yes, programmes are in place (please provide details below)	X
Further information on the programmes for scientific and technical education and training in the measures for identification, conservation and sustainable use of biodiversity.	

India has established a large number of research and training institutions in the field of biodiversity which have comprehensive programmes and activities relating to conservation of biodiversity. These institutions include the following:

Government organizations:

ZSI, BSI, FSI, IIFM, FRI, ICFRE, WII, GBPIHED, Centre for Ecological Sciences, Indian Institute of Science, ICAR, CSIR, NBRI, NIO, CIMAP, NEERI, ISRO, National Remote Sensing Agency (NRSA), Indian Council for Social Science Research (ICSSR) etc.

Non Government Organizations

BNHS, WWF, Wildlife Trust of India (WTI), Wildlife Protection Society of India (WPSI), Centre for Wildlife Studies, (CWS), Ashoka Trust for Research in Ecology and Environment (ATREE), International Society of Naturalists (INSONA), The Energy Research Institute (TERI), Centre for Science and Environment (CSE), MSSRF, Environment Protection Training and Research Institute (EPTRI), etc.

In addition, the MoEF has set up nine Centres of Excellences with a view to strengthening awareness, research and training in priority areas of environmental science and management. These are: CEE, Ahmedabad; CPREEC, Chennai; CES, Bangalore; CME, Dhanbad; SACON, Coimbatore; CEMDE, Delhi; TBGRI, Thiruvananthapuram; MSE, Chennai; FRLHT, Bangalore.

Some of the national programmes and contributions of institutes towards conservation and sustainable use of biological diversity are as follows: -

i) Establishment of NBA, SBBs and BMCs under the Biological Diversity Act, with the elaborative framework and provisions for research, planning and management for biodiversity conservation in the respective states.

ii) PBRs are being developed for identification, conservation and sustainable use of biodiversity.

iii) Establishment of National Medicinal Plant Board is but one attempt that encapsulates the advances in biodiversity research in the country.

iv) Short term training on biodiversity conservation (by IIFM) to develop management development skills of the stakeholders.

v) Capacity building including implementation of community-based biodiversity conservation programmes.

vi) Community-based eco-tourism capacity building for the local authorities.

vii) In order to impart scientific and technical education in the area of biodiversity conservation, courses like PG diploma in biodiversity conservation at FRI, certificate course at wildlife management in WII, etc. have been started.

viii) EPTRI is currently conducting a bioresources training programme for school children sponsored by DBT.

ix) CPREEC has been researching ecological heritage and has surveyed several hundred sacred groves, trees and tanks in Tamil Nadu, Andhra Pradesh, Karnataka and Kerala. Information about these is available on the ENVIS website www.ecoheritage.cpreec.org

x) FRLHT has developed several training and education modules related to conservation and sustainable use of medicinal plants and related traditional knowledge. More than140 training programmes have been organized for forest officials, representatives of community based organizations (JFM societies) and different NGO partners.

xi) CIMAP and IHBT have organized a number of biodiversity awareness programmes to apprise young children about biodiversity conservation and its sustainable use, and popular lectures are arranged for general public from time to time. Regular trainings are also organized on cultivation and processing of MAPs and conservation of endangered species, agro technology of ornamentals and raising of quality planting materials, and raising nurseries of aromatic plants for farmers, entrepreneurs, etc. IHBT also imparts trainings to foresters, farmers, etc., on micro and macro propagation of bamboos. Trainings are also organized on IPR issues. CIMAP maintains a herbarium of important MAPs.

xii) CSIR has an inter-laboratory network programme on bioprospecting for bioactive compounds. New Millennium India Technology Leadership Initiative (NMITLI) runs programmes for bio-prospecting and developing novel herbals, pharmaceuticals and other economically important value added products from the plant genetic resources of the country.

xiii) NBFGR is assessing status of threatened fish species as per IUCN guidelines as well as through organizing CAMP workshops. 327 species have already been assessed. Networking programme on conservation has been initiated in northeast region with NGOs. The concept of People's Aqua Sanctuary Management is being tried.

89. On Article 12(b), does your country promote and encourage research which contributes to the conservation and sustainable use of biological diversity?	
a) No	
b) Yes (please provide details below)	X

Further information on the research which contributes to the conservation and sustainable use of biodiversity.

The country has a well defined agenda to promote and encourage research in conservation and management of biodiversity. Some of the important areas are:

- Provision of research in all PAs pertaining to biodiversity conservation including national parks and sanctuaries, biosphere reserves, etc.

- Research on plant and animal biodiversity by BSI and ZSI.
- Survey and research on marine biodiversity, agricultural biodiversity, fish diversity, etc.
- Conservation and management plan of NTFPs.
- Eco-tourism and livelihoods.
- Research specifically in the area of medicinal plants.

Contribution of various institutes to promote and encourage research on the conservation and sustainable use of biological diversity includes the following:

- As indicated in response to Question 88, CSIR laboratories have various in-house as well as sponsored programmes, which contribute to the conservation and sustainable use of biological diversity.
- NBRI has a conservation biology division, which undertakes investigations on the scientific reason for species getting rare and endangered. It also has a programme for *ex situ* conservation, which includes *in vitro* gene bank, field gene bank, seed bank and reintroduction of rare, endangered species by tissue culture multiplication. CIMAP, Lucknow; RRL, Jammu; and IHBT, Palampur have got similar programmes on MAPs.
- IHBT, Palampur conducts surveys and has prepared a database on the plant resources of western Himalayas. Documentation of traditional knowledge on sustainable use of bioresources is underway. The laboratory is conducting R&D on chemo and molecular characterization of high altitude MAPs; domestication of economic species by understanding reproductive biology, seed biology and nursery establishment of endangered species for introduction of new crops, e.g., *Podophyllum hexandrum, Aconitum, Piccrorhiza kurroa, Rehum, Valeriana, viola,* etc; and developing micro propagation protocols for large scale production of elite MAPs. It has developed a database for tea germplasm with respect to morphological, physiological, molecular and bio-chemical characters for 150 clones. New and improved varieties of aromatics and ornamentals were developed and released including two varieties of scented rose 'Jwala and Himroz'; HIMGOLD, a variety of *Tagetes minuta*; and ten varieties of gladiolus with attractive colour and foliage. Several processes have been developed for sustainable use of bioresources like production of an antiviral compound beta aescin from Indian horse chestnut and from other natural sources, production of new favouring molecule, and production of red and yellow dyes. IHBT is involved in bioprospection of genes and enzymes from cold desert areas. The research resulted in cloning of SOD, PPO and other stress related genes. To develop value added products from bioresources, IHBT has developed technology at lab scale for converting 90% of tea catechin into theaflavin. It has also developed diversified tea products like ready-to-drink tea from green and black tea and tea-based wines.
- RRL, Jammu is involved in the establishment of national genebanks of medicinal and aromatic plants. Four gene banks have been set up. The laboratory is also involved in *in vitro* and *ex vitro* multiplication of endangered species.

- CIMAP is involved in R&D activities on conservation and utilization of genetic resources of MAPs, bioprospection and development of technology for therapeutic, nutraceutical and health products, bio-village approach for technology passage to end users: The herbarium and crude drug repository of the gene bank help in identification and validation of MAPs and their crude drug formulations used in Indian system of medicines.
- NIO conducts the following marine conservation and sustainable use programmes with the support of different governmental agencies:
  - Conservation and sustainable use of Lakshadweep coral ecosystem;
  - Afforestation programme for protecting the mangrove ecosystem in various coastal states of India; and
  - Marine Research Living Resources (MR-LR) programme for assessing the living resources potential and their sustainable exploitation.
- CCMB is involved in setting up of a National Facility for Conservation of Endangered Species of animals in association with DBT and CZA. As part of this, LaCONES is being established.
- Biodiversity/Ecology divisions of the institutes/research centres under ICFRE undertake research programmes that contribute to the conservation and sustainable use of biodiversity in respect of bamboo, medicinal plants and lac host species, JFM, non-destructive harvesting of NTFPs, as well as assist with botanical gardens, *ex situ* and *in situ* conservation of biodiversity, GIS, germplasm conservation, etc.
- FRI is maintaining a national type culture collection of about 1,000 forest pathogens and a project on *Fusarium*, a wilt pathogen of shisam, is being undertaken.
- Integrated insect pest management programme, ecorestoration of wastelands being carried out by particular divisions – entomology, ecology and biodiversity conservation divisions – in respective institutes of ICFRE. Publications are underway on these aspects in national journals.
- Arid Forest Research Institute (AFRI), Jodhpur, an ICFRE institute, has prepared a status report on "Ecological and environmental assessment in the onshore area of RJ-ON-90/1 Block, Rajasthan" covering Barmer and Jalore district of Rajasthan for conservation and development work to be implemented in this area.
- In the field of conservation and sustainable use of biodiversity, two projects entitled "Dynamics of insect population in cotton based agroforestry systems of Andhra Pradesh" and "Assessment of the impact of forest fire on the regeneration of forests in Andhra Pradesh" are ongoing at Forest Research Centre, Hyderabad.

Manoj Dholakia

Tourists enjoying the scenic beauty of forests in Madhya Pradesh. The National Environment Policy, 2006 envisages multi-stakeholder partnerships to derive environmental and ecotourism benefits, and promote sustainable tourism through adoption of best practice norms.

CEE Photo Library

A model displayed at the Kanha Interpretation Centre

CEE Photo Library

Interpretation centres at natural heritage sites, such as this one on the Bhoj Wetland in Bhopal, help to convert the visits of people to natural and cultural heritage sites into an educational opportunity it in a way that is entertaining and interesting to these people.

Anala

Nature camps are a wonderful way of introducing children and adults to the beauty and harmony of nature and, in the process, sensitize them to the need for conservation.

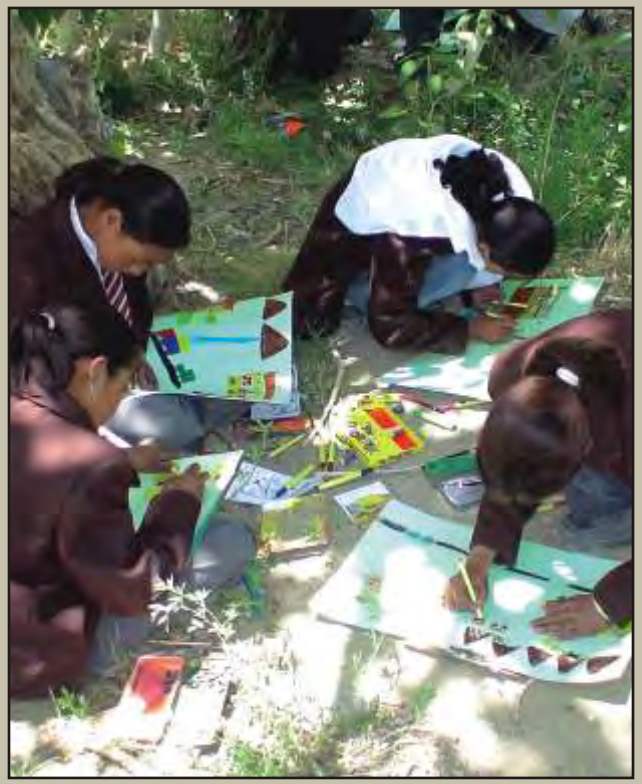
Manoj Dholakia

India has established a large number of research and training institutions in the field of biodiversity which have comprehensive programmes and activities relating to conservation of biodiversity.

Ashok Captain

The Indian Cobra occurs throughout the Indian sub-continent. It is identified by its hood, which it raises when disturbed. It feeds on rats, small birds, frogs and bird eggs. There is a common myth that snakes drink milk, but this is not true.

Abdhesh Gangwar



Abdhesh Gangwar

Abdhesh Gangwar

To generate awareness in students about environment, Environment Education (EE) has been introduced as a mandatory subject in school and undergraduate colleges. The National Green Corps (NGC) Programme provides financial assistance to about 72,000 schools for their eco-clubs that aim to encourage and mobilize participation of school children in environmental conservation activities in localities.

90. On Article 12(c), does your country promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources?	
a) No	
b) Yes (please provide details below)	X

Further information on the use of scientific advances in biodiversity research in developing methods for conservation and sustainable use of biodiversity.

The scientific research and survey organizations have elaborate programmes and activities for collaborative research for conservation of biodiversity. Some of these programmes are listed below:

- CSIR laboratories in association with several R&D institutions and NGOs have various Science and Technology (S&T) programmes for conservation of biological diversity and developing conservation methods.
- NBRI, Lucknow has organized various training programmes for botanic garden managers, researchers and botany departments of various universities for establishing botanical gardens and undertaking conservation of local biodiversity. NBRI is also operating an international botanic garden-based conservation programme for the country under IIN, an international programme launched by BGCI, which was supported by Hongkong and Shanghai Banking Corporation (HSBC). Under this programme, NBRI is networking 140 botanical gardens and has so far offered training to about 80 persons from 40 botanic gardens in conservation biology, tissue culture propagation, *in vitro* conservation of rare and endangered species, and their reintroduction in natural habitat, establishment of seed bank, field gene bank, *in vitro* gene bank, etc.
- RRL, Jammu is working towards development of *in situ* and *ex situ* conservation protocols of critically endangered species and bio-prospecting for bioactive molecules.
- In CIMAP, strategic methods of short/mid/long-term conservation, including field, seed, tissue and DNA banks, are being followed on a need-based mode. Gene bank activities at CIMAP are presently focused on biodiversity available in the entire northern and northwestern parts of the country. About 1,700 accessions of MAPs, 200 accessions in tissue banks, 1,300 accessions in seed banks and 560 accessions in DNA banks are being maintained. In addition, 5,000 herbarium accessions and 400 crude drugs are also available in the CIMAP repository.
- CCMB is setting up LaCONES as a first step to save and preserve the endangered species of wild animals from annihilation through establishment of gene banks and

monitoring genetic variation by DNA fingerprinting, *in vitro* fertilization, embryo transfer and cloning.

- At ICFRE, species association patterns, impact of climate change on biodiversity, species dominance in a particular habitat, frequency distribution and species index are some of the techniques used to evaluate biodiversity. These scientific advancements in biodiversity research can help in the study of insect diversity, species dominance in a particular habitat, frequency distribution and species index, and ecological restoration of derelict, mined lands for conservation of biodiversity. A status report has been prepared covering Barmer and Jalore districts of Rajasthan for conservation and development. Under the Eastern and Western Ghats Research Programme, the institute has taken up studies relating to biodiversity, land use and impact of developmental activities. Projects on various issues related to biodiversity conservation through people's participation by establishing Gene Pool Conservation Areas (GPCA), species recovery research programmes on rare, endangered and threatened species, reproductive biology of endemic species, impact of mining on environment, impact of anthropogenic activities and industrialization on local ecosystems, sacred groves, rehabilitation of degraded areas, grasslands, studies on the flora of Eastern and Western Ghats, and ecosystem analysis of forests are ongoing.
- IIFM undertook a project on controlling the premature harvesting of the aonla (*Emblica officinalis),* as a result of which the Madhya Pradesh Forest Department issued a circular that the fruits of aonla should not be harvested before the month of December.
- In the field of medicinal plants conservation and sustainable use, FRLHT has been collaborating and cooperating with the forest departments of five states, more than 18 NGOs and over five research organizations. It is involved in the development of PBRs, with a major thrust on medicinal plant resources and related traditional knowledge among the rural communities in five states. The institute has established a full-fledged pharmacognosy laboratory with the financial assistance from MoEF, under its Centres of Excellence programme.

Box LI.

Please elaborate below on the implementation of this article specifically focusing on:

a) outcomes and impacts of actions taken;

b) contribution to the achievement of the goals of the Strategic Plan of the Convention;

c) contribution to progress towards the 2010 target;

d) progress in implementing national biodiversity strategies and action plans;

e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

Given the size and diversity of the country, the outcomes and impacts of research and training activities is mixed. Biodiversity inventorization and characterization in the forested landscape is gradually being done within the constraints of manpower and financial resources.

Article 13 - Public education and awareness

91. Is your country implementing a communication, education and public awareness strategy and promoting public participation in support of the Convention? (Goal 4.1 of the Strategic Plan)	
a) No	
b) No, but a CEPA strategy is under development	
c) Yes, a CEPA strategy developed and public participation promoted to a limited extent (please provide details below)	
d) Yes, a CEPA strategy developed and public participation promoted to a significant extent (please provide details below)	X

Further comments on the implementation of a CEPA strategy and the promotion of public participation in support of the Convention.

Conservation and sustainable use of biodiversity is one of the thrust areas of the government for public education and awareness. MoEF interacts actively with the UGC, NCERT and the MHRD, All India Council for Technical Education (AICTE) and State Education Departments, for integration of environmental concepts and issues in the curricula of schools and colleges. Environment education (EE) has been introduced as a mandatory subject in schools. In the area of formal education, the National Policy on Education, 1986 stresses on creating consciousness about the environment including biological diversity. NCERT has been assigned the responsibility of developing prototype syllabi and instructional material in ten core curricular areas of which protection of environment is one. MHRD has launched the Environment Orientation to School Education scheme, wherein special cells are created in the state Departments of Education for EE. Support is also extended through this cell to NGOs to facilitate the development of locale-specific programmes and materials. In order to generate awareness regarding the need to conserve and sustainably utilize biological resources, mass media such as TV, radio and the press are being utilized extensively.

Some of the initiatives taken by MoEF in promoting environment education EE and awareness through non-formal media and methods are:

- National Environmental Awareness Campaign (NEAC).
- Establishment of Centres of Excellence in EE.
- Establishment of national and regional museums of natural history.
- Setting up of eco-clubs in schools.

- Production and dissemination of films, audio-visual and popular publications on environment.
- Supporting the organization of seminars, symposia and conferences on environmental issues.
- Institution of awards and fellowships.
- Establishment of ENVIS centres.

An update on activities in the recent past are briefly described below:

- Various activities like development and printing of educational material including text books, training of master trainers, training of teachers, and the introduction of green text books under the pilot project "Environment Education in School System" in several states identified under the project have been completed.
- 7588 organizations including NGOs and voluntary bodies throughout the country were provided financial assistance for organizing environmental awareness activities through diverse means among the various target groups under the NEAC during 2004-05.
- To impart EE, and to encourage and mobilize participation of school children in several environmental conservation activities in localities, financial assistance to about 72,000 schools for their eco-clubs was provided under National Green Corps (NGC) Programme. It is proposed to establish eco-clubs in at least 150 schools in each district in the country.
- With the objective of spreading environmental awareness though various media, the Ministry has sponsored several programmes including telecast of films, organizing environmental quiz programmes, etc. A half-hour-weekly environmental magazine programme called 'Bhomi' (Earth) has also been sponsored by the Ministry for telecast on Doordarshan, on Sundays.
- The NMNH opened its third RMNH at Bhubaneswar, Orissa in August 2004 with diverse facilities to impart non-formal environmental education and conservation to students, teachers and the general public.
- The NMNH participated in the Vigyan Rail project with the development of a full coach on 'environment' depicting several digital panels, miniature models, diverse forest types with synchronized calls of animals and birds in order to make people aware about the natural heritage and environment of the country.
- ENVIS, developed by the MoEF, serves as a comprehensive network in environmental information collections, collation, storage, retrieval and dissemination to users, which include decision makers, researchers, academicians, policy planners, research scientists, etc. ENVIS has been conceived as a distributed information network with subject specific centres to provide relevant and timely information to all concerned. ENVIS network has at present 72 centres. ENVIS has also been designated as India's Clearing House Mechanism (CHM) for CBD.
- In addition to part of ENVIS, FRLHT operates websites such as Greenhealers.net (http://www.greenhealers.net), an online store providing access to "information products" relating to Indian medical heritage, Encyclopaedia on Indian Medicinal Plants (http://encyclopaedia.frlht.org.in) designed to provide access to FRLHT's multi-disciplinary database through structured queries, and Green Healer website (http://

cinomp.frlht.org.in) incorporating simple primary healthcare of commonly available medicinal plants based on traditional knowledge. It has established MAPNET, a network of around 100 organizations dealing in MAPs.

- NBRI, a CSIR laboratory, established an eco-education division in 2001, which imparts knowledge on biodiversity, its value and need for conservation to a cross section of the society. It has a number of theme gardens such as: home gardens for house wives for raising rare and important local, lesser known vegetables and medicinal plants to ensure their conservation as well as to promote nutritional and primary healthcare security of rural poor. The division also established the first ever garden for physically challenged and visually impaired people in India. The division also has an outreach programme to spread knowledge about biodiversity and its uses, mode of conservation and sustainable use by both rural and urban people. The division is operating an eco-brigade jointly with National Cadet Corps (NCC) cadets in creating environmental cleaning and planting of trees in and around Lucknow. NBRI also works with various other NGOs engaged in conservation, village greening, sustainable utilization and eradiction of poverty programmes.
- CIMAP, another CSIR laboratory, organized, under CEPA strategy, various workshops, training programmes and interactive meets for different sections of the society. This is being facilitated through inviting school/college students and the general public on specially organized open days. Scientists of CIMAP are regular speakers on radio and television programmes on scientific awareness and conservation issues. Besides, CIMAP is fostering public participation in conservation missions by launching the Bio Village concept in cultivation of those MAPs which enjoy the same status as that of cash crops in traditional agriculture. CIMAP also regularly generates and publishes information on MAPs in the form of books, farm bulletins, training manuals and an in-house quarterly scientific journal (JMAPS).
- CPREEC conducts awareness programmes for several target groups such as teachers, students, women, youth, NGOs and women. Its publications are on the website (www.cpreec.org) and are downloaded by South Asian countries. During 1989-2004, over 30,000 teachers have been trained at CPREEC in environmental studies. Over 1,00,000 students are involved in environmental monitoring projects for biodiversity conservation. Over 12,000 women are involved in tree protection through afforestation and promotion of smokeless *chulhas,* and over 8,000 lawyers, law students and judiciary officials are trained in environmental (including biodiversity) laws.
- DBT is involved in various programmes such as vacation training for school children, training of tribal, rural and out-of-school children, training of fisheries scientists, etc. DBT has also made media resource packages for various end users and has established a garden of bioresources and museum for the visually challenged.
- Under DST, the National Science and Technology Management Information System (NSTMIS) has been entrusted with the task of collection, collation, analysis and dissemination of vital S&T information at the national level. With a view to build a

reasonable database, and carry out analyses, on S&T investment, S&T manpower availability/deployment/gap and S&T indicators, a number of studies were sponsored during 2003-04.

- The UGC has issued guidelines to make environment/biodiversity a mandatory part of the curriculum at graduate and post graduate levels. Further, M.Sc. (Biodiversity Conservation) courses have been initiated in some universities, such as Mizoram.
- Initiatives by state governments include setting up of websites, preparation of Status of Environment (SoE) Reports, public hearings, etc.
- At NBPGR, 72 grass root level trainings on plant genetic resource awareness under NATP programme have been carried out.

The Government has taken many initiatives for communication, education and public awareness regarding biodiversity conservation in the country. These initiatives can be summarized as below:

i) CEE, a national institution of excellence supported by the MoEF, is engaged in developing programmes and materials to increase awareness about the environment.

ii) CPREEC, a Centre of Excellence of the MoEF, is engaged in imparting biodiversity conservation education to tribals, school teachers and students, and organizes field visits to reserve forests, sanctuaries and national parks, to gain hands-on experience.

iii) Centre for Media Studies (CMS) is involved in activities related to environment in general and biodiversity in particular.

iv) CSE and TERI are some of the organizations involved in the research and documentation of the biodiversity conservation in India.

To summarize, the Indian Government has pursued a proactive role in enhancing public participation in the conservation of biodiversity in India.

92. Is your country undertaking any activities to facilitate the implementation of the programme of work on Communication, Education and Public Awareness as contained in the annex to decision VI/19? (decision VI/19)	
a) No	
b) No, but some programmes are under development	
c) Yes, some activities are being undertaken (please provide details below)	
d) Yes, many activities are being undertaken (please provide details below)	X
Further comments on the activities to facilitate the implementation of the programme of work on CEPA.	
Refer to reply in response to Question 91 above.	

93. Is your country strongly and effectively promoting biodiversity-related issues through the press, the various media and public relations and communications networks at national level? (decision VI/19)	
a) No	
b) No, but some programmes are under development	
c) Yes, to a limited extent (please provide details below)	X
d) Yes, to a significant extent (please provide details below)	

Further comments on the promotion of biodiversity-related issues through the press, the various media and public relations and communications networks at national level.

Various institutes are involved in promotion of biodiversity-related issues using different communication networks including ENVIS. These include the following:

- CEE is actively involved in the promotion of biodiversity issues through the press, various media and public relations and communication networks. Some of the activities are as follows:
  - A fortnightly CEE News and Features Service reaches news, articles and features on various environment and development issues, including biodiversity-related articles to over 500 newspapers and magazines regularly.
  - Through a special project under the UNDP/GEF Small Grants Programme (SGP) a series of films titled 'Bhoomi' are being developed for national telecast on prime time. Several projects chosen for showcasing relate to biodiversity conservation by communities.
  - CEE hosts an Internship on Environmental Journalism and is a member of the Forum of Environmental Journalists of India.
  - CEE is a Video Resource Centre of the Television Trust for the Environment (TVE). Films, including those on biodiversity, from TVE as well as other sources have been collected at various CEE offices and resource centres facilitated by CEE. Local language versions of a few films on biodiversity have also been developed and disseminated. Traveling film festivals have been organized in biodiversity rich areas using films on biodiversity and linking up with local biodiversity issues.
  - As National Host Institution of the UNDP/GEF SGP in India, CEE has facilitated over 150 projects related to biodiversity. A variety of CEPA work has been done and appropriate material produced. These include audio visual material, newsletters, newspaper articles, etc.
- FRLHT has been publishing an in-house magazine called 'Amruth' to disseminate the issues related to medicinal plant diversity and related traditional knowledge. It also publishes feature articles in local and national newspapers, on medicinal plant diversity and the need for their conservation and sustainable use, from time to time.
- CSIR activities in this area are as under:
  - NBRI organizes popular lectures, seminars and exhibitions on its own or jointly with many NGOs engaged in popularizing/sensitizing biodiversity and related issues at national and international levels. At the national level, NBRI is recognized as a lead institute of the country on matters related to biodiversity conservation,

inventorization, sustainable utilization and traditional knowledge benefit sharing. NBRI is also recognized as an International Referral Centre on bioprospecting and benefit sharing by CBD/WTO-TRIPs, etc., and represents the country at various national and international forums.

- RRL, Jammu has put BIONET (Biodiversity Information Network) in place. Such issues are also highlighted in the newsletters of research and educational institutes.
- CIMAP has been sensitizing all components of the MAPs value chain, from farmers to end users, through regular press releases of its findings and R&D outputs. National Interactive Meets (popularly known in the country as NIM) have been organized as biannual events. Press and electronic media are specially invited and provided in-depth information on scientific developments for their subsequent dissemination in the society.

- CPREEC is involved in promoting biodiversity-related issues through various communication media, such as Econews – a quarterly newsletter and Eco Heritage – an ENVIS newsletter. CPREEC also brings out the Indian Journal of Environmental Education. CPREEC has published a book on biodiversity and booklets on medicinal plants, conservation of wetlands and biosphere reserves of India. CPREEC had organized an environmental journalism seminar and workshop in partnership with the International Center for Journalists, Washington D.C., and the Indian Institute of Journalism and New Media, Bangalore at Chennai in 2002.
- BNHS is also involved in various activities in this area such as: organizing press meets on biodiversity issues, publishing regular columns in national and regional newspapers, conducting workshops for journalists, developing short films and providing technical advise for TV programmes. BNHS also comes out with publications: Hornbill, Mistnet, JBNHS, ENVIS Bulletin, and Green Governance, which are sent to network members.
- Centre for Media Studies is responsible for dissemination of information on environment and media.

94. Does your country promote the communication, education and public awareness of biodiversity at the local level? (decision VI/19)	
a) No	
b) Yes (please provide details below)	X

Further information on the efforts to promote the communication, education and public awareness of biodiversity at the local level.

MoEF promotes communication, education and public awareness about local biodiversity through its Centres of Excellence and other institutional network. Some of the examples are cited below:

- Biodiversity awareness at the local level is promoted through several activities and projects of CEE, such as:
  - Discussions on agro-biodiversity being directly facilitated at 24 villages in Gujarat as part of the Samvardhan project.

- Agro-biodiversity discussions in over 100 villages with the Akhil Gujarat Sajeev Kheti Sabha, an organic farmers' network in Gujarat state.
- Developing a simple manual for school students, especially in tribal and rural areas, to understand the PBR activity mandated under the Biological Diversity Act, 2002.
- Interpretation programmes at natural heritage sites such as Bhoj Wetland in Bhopal city, several protected areas and at various zoos.
- Capacity building for boatmen and other local stakeholders, as part of a larger CEPA initiative at Chilika Lagoon, a Ramsar site, which also include interpretation at a vistor centre.
- School programmes and multi-stakeholder discussions for conservation of Olive Ridley Turtles in Goa, on the west coast of India.
- Community mobilization and formation of local level committees for documentation and conservation of sacred groves in Kodagu district, within the Nilgiri Biosphere Reserve, as well as a fully functioning waste management programme.
- Developed a teachers' manual in Gujarati, titled 'Jeev Sristhi ne Tana Bana' which aims to facilitate interactive teaching-learning of key ecology concepts, including themes like alien invasive species, species and habitat loss, etc.
- Mowgli Utsav, a state level event, was organized by the Government of Madhya Pradesh in collaboration with CEE in 2004 to generate awareness in school students about biodiversity. Around 33,000 schools and more than 100,000 students participated in the state-wide selection process. 200 selected students participated in a three day camp at Pench National Park. The Chief Minister of Madhya Pradesh visited the camp and announced that this festival will be held annually.
- Over 20 innovative school-based projects were supported under the Scheme for Environmental Orientation to School Education that addresses different aspects of biodiversity. These include development of a manual for school teachers on agrobiodiversity conservation (taken up by the NGO Anthra), development of a manual for conserving Olive Ridley Turtles (taken up by CEE), development of special learning and identification material for blind students to identify different grains, flowers, leaves, trees etc. (taken by Arushi, Bhopal, MP), working with tribal children whose families have been relocated outside the Kuno Wildlife Sanctuary, for developing situation specific material for understanding and sustainably using biodiversity and other natural resources (taken up by Samrakshan).
- To facilitate the process of stakeholder participation, 'Samvaad – A Dialogue for Sustainable Rural Development' was organized by CEE in partnership with its sister organizations VIKSAT, CHETNA and Vikram A Sarabhai Community Science Centre (VASCSC) in December 2005. As part of Samvaad, a 'Beej Mela' (seed festival) was organized that showcased the enormous biodiversity of seed crops in Gujarat. Samvaad was an event that promoted communication, education and pubic awareness of biodiversity at the local level.

- FRLHT, while working with the village level institutions such as JFM societies and other women SHGs, emphasizes on building awareness among people about the importance of wild medicinal plants and related traditional knowledge.

- CSIR activities in this area are as under:
  - RRL, Jammu has BIONET in place.
  - CIMAP is involved in participatory conservation and creating general awareness and a value-added "Maanav Udyan" has been established. Small "Gyanika" parks of common herbal plants have also been established in many municipal parks of Lucknow and Varanasi and 10 schools of Lucknow.
- CPREEC's activities in this area are as follows:
  - CPREEC has organized exhibitions on biodiversity, Nilgiri Biosphere Reserve, medicinal plants, conservation of wetlands and biosphere reserves of India at several venues in the country. A video cassette on Vanadevadai (Goddess of Forest) highlighting the importance of sacred groves was also produced.
  - CPREEC, under the Scheme for Environmental Orientation to School Education, coordinates with smaller NGOs in the states of Andhra Pradesh, Karnataka, Kerala, Orissa and Tamil Nadu for carrying out environmental education activities for school teachers and students. Several innovative programmes like biodiversity conservation, maintaining herbal gardens, indigenous knowledge systems, etc., were undertaken.
  - CPREEC has also conducted training programmes for teachers and students on eco restoration of coastal areas.
  - CPREEC maintains a gene pool of medicinal plants at Thambatti village in Nilgiris which has more than 180 indigenous species. CPREEC has provided training to tribals on bee keeping and bamboo craft to support their livelihood.
  - CPREEC has developed a model eco village at Nenmeli village, Kancheepuram district involving local people in protecting 82 indigenous medicinal plants. This site is the training centre for biodiversity conservation, watershed management, for teachers, students, government officials and NGOs.
  - Programmes are conducted for women SHGs and village meetings are also conducted. They are involved in biodiversity conservation and tree plantation.
  - CPREEC is involved in conducting workshops at grass root level and bringing out publications in various fields.
  - BNHS is involved in developing support of local communities through conservation education, facilitating interactions among various stakeholders through conservation education centres, awareness campaigns to save endangered species of wildlife, etc.

95. Is your country supporting national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness? (decision VI/19)	
a) No	
b) No, but some programmes are under development	

c) Yes, some activities supported (please provide details below)	X
d) Yes, many activities supported (please provide details below)	

Further comments on the support of national, regional and international activities prioritized by the Global Initiative on Education and Public Awareness.

Some of the activities carried out by the different Centres of Excellence of the MoEF and other institutes in this context are given below:

Activities undertaken by CEE include disseminating information on various websites, i.e., www.envirodebate.net and www.greenteacher.org. The South and Southeast Asia Network for Environmental Education (SASEANEE) website hosted by CEE links to the IUCN Commission on Education and Communication (CEC) website. Staff from CEE are members of IUCN CEC, that anchors the Global Initiative on Education and Public Awareness (GIEPA). CEE has published directories of organizations involved in EE, in print and electronic form. There are several forums for interaction on biodiversity education anchored by CEE. These include school education networks such as the National Environmental Education Programme for Schools, networks of community organizations, NGOs and government agencies that are partners under the UNDP/GEF SGP, local networks such as of CBOs involved in improved natural resource management in 250 villages in Gujarat, Western India Biodiversity Network. Activities under GIEPA include the communication, education and public awareness global network for networking, lists of networks and contact addresses available on the internet and on CD-ROMs, and enhanced communication and knowledge exchange nationally and regionally.

CSIR has organized various national and international training programmes and global initiatives like networking in the species-inventorying programme. NBRI has organized various national and international training programmes in capacity building and awareness correction in enhancing taxonomic expertise, conservation and sustainable utilization of medicinal plants and other wild plant genetic resources. These programmes are sponsored by Government of India agencies like Department of S&T, DBT, Central Council for Research in Ayurveda and Siddha (CCRAS) and international agencies like Non Aligned Movement (NAM) S&T, UNESCO, UNIDO, World Bank, etc. Apart from imparting training to Indian students and entrepreneurs, CIMAP is also accepting scholars from other gene-rich countries, particularly from third world countries, for training in frontline R&D areas in MAPs.

CPREEC has trained 33,471 teachers, 2,317 students, 5,682 schools, 27,172 NGOs and rural workers, 8,894 advocates, academicians, lawyers and law students, and 4,170 industrial workers in the last 15 years. Its Video Van has reached out to 64,481 people. Special programmes for women have benefited 13,763 women in rural areas.

Punjab State Council of Science & Technology (PSCST) has taken up environment education projects in several countries in Asia, such as project on 'Integrating EE in Technical and Vocational Education' in India, China, Indonesia, Malaysia and Philippines; and 'Greening Science Education' – a workshop to discuss the issues related to India, Bangladesh, Sri Lanka, Nepal and Bhutan. These recommend biodiversity education as one of the important components of EE.

96. Has your country developed adequate capacity to deliver initiatives on communication, education and public awareness?	
a) No	
b) No, but some programmes are under development	
c) Yes, some programmes are being implemented (please provide details below)	X
d) Yes, comprehensive programmes are being implemented (please provide details below)	

Further comments on the development of adequate capacity to deliver initiatives on communication, education and public awareness.

Some of the activities carried out by different institutes in this area are given below:

- CEE:
  - Training and orientation components are already part of the NGC (that aims to reach 150 schools and colleges in every district of India) and the NEAC of the MoEF. Some materials for biodiversity education already exist, though more are required.
  - A compulsory undergraduate course on environmental studies has been introduced in colleges in India. CEE has developed a textbook for this, as well as organized orientation programmes for faculty.
  - CEE regularly conducts a week-long orientation programme for officers of the Indian Forest Service, on environment education, communication and participation.
  - Locale-specific CEPA strategies for communities and other stakeholders have been developed, and these are integrated into natural resource management programmes. However, further work is required to develop effective and wide reaching CEPA strategies and material for urban areas.
  - Similarly, though some programmes exist for policy makers and decision makers in business and industry, more effective tools and capacity to address these sectors need to be developed.
- CSIR:
  - CSIR/NBRI is a partner of an international network programme for in-country conservation of rare, endangered and threatened plant species through garden based conservation, namely IIN funded by HSBC through BGCI, an international botanical garden association. NBRI network has over 140 botanical gardens of India and provides training to the botanical garden persons for *ex situ* conservation of Rare, Endangered and Threatened (RET) species in the botanical garden through field gene banks, *in vitro* bank, seed bank, etc.
- CPREEC:
  - CPREEC has written text books on environmental studies for standards 1 to 10 for the Central Board of Secondary Education (CBSE) and matriculation school

boards, and for undergraduates of the University of Madras. The same is being translated into Tamil for the University.

- CPREEC has also organized workshops for animal keepers of various zoos in Andhra Pradesh and Tamil Nadu.

- BNHS is involved in capacity building programmes for educators, teachers and teacher trainers, workshops on bird conservation and project management through the Indian Bird Conservation Network (IBCN), distance learning programmes for amateurs and professionals, training programmes for forest guards, etc.

97. Does your country promote cooperation and exchange programmes for biodiversity education and awareness at the national, regional and international levels? (decisions IV/10 and VI/19)	
a) No	
b) Yes (please provide details below)	X

Further comments on the promotion of cooperation and exchange programmes for biodiversity education and awareness, at the national, regional and international levels.

Some of the activities carried out are given below:

- CEE has facilitated exchanges between SGP partners in different countires in South and Southeast Asia, and with the International Bureau of Plant Genetic Resource (IBPGR).
- Through SASEANEE, a 10 week Certificate Course on Environmental Education is organized every year, which has participation from the region as well as Africa. A module on biodiversity conservation has been a part of the course content since its launch in 1997. Till date, 84 professionals from 18 countries have been trained under this initiative.
- Through the South Asia Youth Environment Network (SAYEN), discussions have taken place with members on biodiversity education and action projects, focusing on the role of youth.
- From time to time, as and when commissioned by different agencies, like SACEP, Institute for Global Environmental Strategies (IGES), Japan, etc., CEE prepared regional documents on Environmental Education and Communication (strategies, articles, write-ups, etc.) that had appropriate sections, papers and case studies on biodiversity-related education and communication. Such documents include the South Asia Environmental Education and Training Action Plan: 2002-2007, published by SACEP and UNEP.
- A South Asian Situational Analysis of Education for Sustainable Development (ESD) was a study commissioned to CEE by UNESCO during 2004-05.
- During 2002-2004, through the SASEANEE Secretariat, the Bangladesh Centre for Environment Education conducted a project titled 'School Education to Support Asian

Elephant Conservation-Phase II' with support from the U.S. Fish and Wildlife Service. This project was based on the premise that attitudes towards conservation and the environment, which govern the kind of decisions that adults take in their personal and professional capacities, are shaped early in life. About 50 schools and 100 teachers were involved in this programme. A Bangladeshi edition of CEE's NatureScope India titled 'Endangered Elephants' has also been published.

- In the International Conference on Education for a Sustainable Future organized by CEE in January 2005, one of the thematic workshops was 'Communication for Biodiversity Conservation'. Experts and practitioners from different countries participated in the workshop, and especially considered the opportunities afforded by the CBD for CEPA. Recognizing that the UN Decade for Education for Sustainable Development provides a major opportunity, the workshop focused on the role of communication in achieving key development goals. The workshop was organized in partnership with Kalpavriksh and WWF India. An International Advisory Group guided the development of the workshop structure and content, and identifying case examples for presenation and analysis. About sixty delegates participated in the workshop.
- A training session at the World Conservation Congress, International Agreements on Protected Areas and Community Based Conservation was organized by a CEE staff member, as part of the IUCN theme on Indigenous and Local Communities, Equity and Protected Areas (TILCEPA).

98. Is your country undertaking some CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention?	
a) No (please specify reasons below)	
b) Yes, some activities undertaken for some issues and thematic areas (please provide details below)	X
c) Yes, many activities undertaken for most issues and thematic areas (please provide details below)	
d) Yes, comprehensive activities undertaken for all issues and thematic areas (please provide details below)	

Further comments on the CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention.

CEPA activities for implementation of cross-cutting issues and thematic programmes of work adopted under the Convention are given below:

- Climate change: A scoping study on the information needs of different stakeholders who can contribute to abating impacts of climate change was carried out for the British High Commission. This included discussions on biological impacts as well as bioresources that can help abate impacts.

- Indigenous knowledge: A web debate on biodiversity documentation by local communities was facilitated on CEE's www.envirodebate.net. Titles on medicinal plants and livestock biodiversity have been published under the Environment and Development (E&D) book series.
- CSIR/NBRI assist nodal ministries like MoEF and Ministry of Commerce in matters related to CBD and WTO, particularly areas such as conservation of biodiversity, sustainable utilization of biodiversity, traditional knowledge ABS, etc. NBRI is recognized as a lead institute in matters related to ABS by Government of India. At the international level, BGCI, UNEP, UNESCO have also recognized NBRI in these areas.

99. Does your country support initiatives by major groups, key actors and stakeholders that integrate biological diversity conservation matters in their practice and education programmes as well as into their relevant sectoral and cross-sectoral plans, programmes and policies? (decision IV/10 and Goal 4.4 of the Strategic Plan)	
a) No	
b) Yes (please provide details below)	X
Further comments on the initiatives by major groups, key actors and stakeholders that integrate biodiversity conservation in their practice and education programmes as well as their relevant sectoral and cross-sectoral plans, programmes and policies.	
Initiatives taken in this area are given below.	

Actions for Parties, suggested under decision IV/10	**Undertaken by CEE**
1. Urges Parties:	
(a) To place special emphasis on the requirements of Article 13 of the Convention in the development of their national strategies and action plans;	Done in the Education Awareness and Training Strategy and Action Plan (EATSAP)
(b) To promote education on biological diversity through relevant institutions, including NGOs	Done through CEE's own environment education and environment action projects and facilitated through SGP
(c) To allocate appropriate resources for the strategic use of education and communication instruments at each phase of policy formulation, planning, implementation and evaluation, including the identification of relevant	These activities are not carried out through one programme but different prorammes of CEE take care of different aspects of this objective.

Actions for Parties, suggested under decision IV/10	**Done by CEE**
target groups seeking to provide these relevant, timely, reliable and understandable information;	
(d) To integrate biological diversity concerns into education strategies, recognizing the particular needs of indigenous and local communities; and	Various programmes of CEE take care of different aspects of this objective.
(e) To support initiatives by major groups that foster stakeholder participation in biological diversity conservation and sustainable use and that integrate biological diversity conservation matters into their practices and educational programmes;	CEE's school and college programmes address this. Also SGP, of which CEE is the National Host Institution, has a major thrust on stakeholders' participation for planning and execution of conservation and sustainable utilization of biological diversity.
2. Also urges Parties to share experiences on initiatives on public education and awareness and public participation relevant to the Convention, particularly on a sectoral and thematic basis, and to make relevant case studies as well as lessons learned in the preparation of national biological diversity policies, strategies and plans available to the Executive Secretary and for the exchange of information among Parties though the clearing-house mechanism and to consider how to organize assistance for Parties who may be keen to develop public awareness and education strategies, but lack the ability to do so;	CEE helps documentation of cases, and experience sharing through the E&D series, News EE, and various websites. Such material is available on ENVIS website, which is India's CHM to CBD.
3. Encourage Parties to make use of the media, including print and electronic media, to promote public education and awareness about the importance and appropriate methods for the conservation and sustainable use of biological diversity;	Done through CEE News and Features Service, TVE Video Resource Centre, as an ENVIS centre, and through News EE (a biomonthly newsletter for environment educators).
4. Calls upon Parties, where necessary, to illustrate and translate the provisions of the Convention into the respective local languages to promote public education and awareness-raising of relevant sectors, including local communities;	Ongoing. CEE has several publications in local languages on different aspects of biodiversity, for different stakeholders groups. Local level projects incorporate biodiversity related content to some extent, as appropriate.

Actions for Parties, suggested under decision IV/10	Done by CEE
8. Urges Parties, relevant organizations and donor agencies to support local, national, subregional and regional public education and awareness initiatives;	Ongoing. CEE is the National Host Institution for the UNDP/GEF SGP. About 150 projects under the focal area of biodiversity have been taken up in the past 4 years. All of these have components of CEPA, on different aspects of biodiversity, especially for local communities.

UNDP/GEF SGP: CEE is the National Host Institute for the SGP in India. Through this programme, more than 150 projects have been implemented with partner organizations across the country. Around 70 projects are directly involved in biodiversity conservation in a range of ecosystems and communities. CEPA is an integral aspect of all these projects as they involve capacity building of various stakeholders among the project components. Around 20% of budgetary allocations from most of these projects are utilized for CEPA related activities. These projects range from capacity building of local communities for conservation of IBA (Important Bird Area) sites to skill development of various SGP partners, from wild biodiversity conservation to agrobiodiversity conservation. Under CCF II of GEF, a few environment education projects related to schools and teachers were supported. Some of the exclusive CEPA projects are listed below:

1. "An Environmental Awareness Generation and Eco-restoration Programme on the Palni Hills (Western Ghats) South India" – The Rapinat Herbarium, Tamil Nadu
2. "Creating Awareness to Develop Resources to Conserve the Biodiversity with Local Initiatives" – Magra Mewar Vikas Sansthan (MMVS), Rajasthan
3. "Innovation in Media for Empowerment" – Darpana Academy of Performing Arts, Gujarat
4. "Human Resource Development and Capacity Building through Development of Target Specific Resource Material and Training for the Protection, Conservation and Restoration of Wetlands in Punjab" – Punjab State Council for Science and Technology (PSCST), Punjab
5. "Skills Enhancement and Capacity Building of GEF Thematic Areas with Partners and Local Groups" – Nehru Foundation for Development, Gujarat
6. Sabar Sena ("Water Brigades" on the banks of river Sabarmati, to protect and preserve biodiversity and river based civilization) – Jeevanarth, Gujarat
7. "Strengthening Role of Panchayat in Re-establishing Biodiversity in Southern Aravalli Hills" – Alert Sansthan, Rajasthan
8. "Community, Outreach and Dissemination for Up-scaling of Small-Plot Sustainable Cultivation Models: Enhancing Livelihoods of Resource Poor Sections" – Prayas, Maharashtra.
9. "Outreach of Lessons, Experiences and Community Participation to a Wider Audience including Policy Makers and Partners for Better Dissemination and Replication of SGP Approaches" – Surabhi, Maharashtra

10. "Training of the Indian Bird Conservation Network Members and Local Stakeholders in the Northeast India for the Enhancement of Bird Conservation" – BNHS, Maharashtra

Goal 4.4 of Strategic Action Plan

Key actors and stakeholders, including the private sector, are engaged in partnership to implement the Convention and are integrating biodiversity concerns into their relevant sectoral and cross-sectoral plans, programmes and policies.

Under Environment Education in School System (EESS) project, an initiative to green (environmentalize) text books in 16 states has been undertaken. Now, this initiative will cover all the states of the country.

Through CEE's Industry Initiative, information servicing, sensitization of industry decision makers and representatives, and dialogues are ongoing for integration of biodiversity concerns into sectoral programmes.

FRLHT, through implementation of DANIDA and UNDP funded programmes in five states, has supported integration of efforts of major stakeholders viz. state, FDs, NGOs, local people and research organizations in the field of medicinal plants' conservation and sustainable use. The planning process in the states has been influenced to incorporate medicinal plants' conservation and sustainable use activities in their plan budget. The State Forest Departments, having realized the importance of wild medicinal plants, have added a separate chapter on medicinal plants' conservation and their sustainable use in the working plans (Management Plans) being prepared for forest divisions in the state.

NBRI, Lucknow has various grassroot level development activities, which involve educating and encouraging the rural people, particularly women, in conservation of local plants particularly useful in primary healthcare and having nutritional value in community gardens and home gardens. NBRI is developing location specific value addition so that rural people can undertake value addition in a sustainable manner from the locally available bioresources.

CIMAP has been providing a common platform for various key players to interact and devise joint strategies and action plans. In this endeavour, CIMAP has been working in association with National Medicinal Plant Board of India and other funding institutions like DBT, Small Industries Development Bank of India (SIDBI), National Bank for Agriculture and Rural Development (NABARD), etc.

CPREEC has undertaken awareness building measures to integrate biodiversity conservation in sectoral and cross-sectoral plans.

BNHS is involved in a Green Governance programme for corporate groups: Lending liabilities, CSR, Conservation Education at ISRO, Sriharikota, and the armed forces have integrated ecological themes in their training programmes. A Network of Police, Custom and Forest Departments has been started. Local unemployed youth are working as nature guides.

100. Is your country communicating the various elements of the 2010 biodiversity target and establishing appropriate linkages to the Decade on Education for Sustainable Development in the implementation of your national CEPA programmes and activities? (decision VII/24)	
a) No	
b) No, but some programmes are under development	X
c) Yes, some programmes developed and activities undertaken for this purpose (please provide details below)	
d) Yes, comprehensive programmes developed and many activities undertaken for this purpose (please provide details below)	

Further comments on the communication of the various elements of the 2010 biodiversity target and the establishment of linkages to the Decade on Education for Sustainable Development.

Some of the activities in this area are given below:

- CEE organized 'Samvaad – A Dialogue for Sustainable Rural Development' in partnership with its sister organizations VIKSAT, CHETNA and Vikram A Sarabhai Community Science Centre (VASCSC) in December 2004. Samvaad facilitated dialogue and lateral learning for sustainable rural development. The event brought together around 1,200 people including members of Panchayat (men as well as women), teachers, and members of Common Interests Groups from around 200 villages of Gujarat. Participating with them were government representatives, NGOs, experts in various aspects of sustainable development and academics.
- CEE in partnership with 32 partner agencies organized an International Conference on Education for a Sustainable Future (ESF) from 18-20 January 2005. As part of the Conference, biodiversity conservation has also been addressed as a major issue. Close to 900 participants from over 50 countries participated in ESF. ESF was the first international event of the UN Decade on Education for Sustainable Development. At the thematic workshop on 'Communication for Biodiversity Conservation', experts and practitioners especially considered the opportunities afforded by the CBD for CEPA. Recognizing that the UN Decade for Education for Sustainable Development provides a major opportunity, the workshop focused on the role of communication in achieving key development goals.

Box LII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;

b) contribution to the achievement of the goals of the Strategic Plan of the Convention;

c) contribution to progress towards the 2010 target;

d) progress in implementing national biodiversity strategies and action plans;

e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

- Outcomes and impacts of actions taken:
  - Textbooks greened in 17 states, integrating biodiversity concerns to some extents.
  - Extracurrilcular material
  - Publications on biodiversity
  - Training programmes
  - International training programmes
- Contribution to the progress towards the 2010 target:
  - Through CEE's Industry Initiative, projects on improving energy efficiency and pollution abatement have been taken up.
  - 23 projects related to climate change and 5 projects related to persistant organic pollutants have been facilitated through the UNDP/GEF SGP.
  - About 15 SGP projects related to species and habitat level conservation.
  - 3 SGP projects are related to combating desertification.
  - Through direct work with rural communities in about 250 villages, CEE is working towards conservation of agro-biodiversity.
  - In Coorg district, CEE has facilitated the setting up of local committees for conservation of sacred groves and associated traditional knowledge.
  - CEE has facilitated policy discussions on the need to protect traditional knowledge.
  - CEE is working with the State Biodiversity Board in MP to work with school children and communities to promote conservation of traditional knowledge.
  - Several publications on different taxa, field guides, etc., are helping in the promotion of species level and habitat level conservation.
- Progress in implementing NBSAP
  - The technical report of NBSAP project has been prepared through a wide consultative process and submitted to Government of India for further action. The NBSAP is not yet finalized in India. However, several of the specific actions recommended for CEPA are continuing, since they were in place even before the NBSAP process, such as working with the school system, development of the biodiversity related material for communities, orientation of nature clubs, etc. Some states like Madhya Pradesh have accepted suggestions from the State Biodiversity Strategy and Action Plan and CEE is closely working with them to implement actions regarding the CEPA components.

- Contributions to the achievements of the MDGs
  - Through direct community work in about 250 villages in different parts of the country, activities for improving natural resource management and, therefore, improving livelihood opportunities are underway.
  - Biodiversity aspects are integrated into the village and location specific strategies. Through the UNDP/GEF SGP, over 150 projects related to the focal area of biodiversity have been facilitated. Most of these relate to improving livelihood opportunities among the poorest communities, directly dependent on bioresources.

Article 14 - Impact assessment and minimizing adverse impacts

101. On Article 14.1(a), has your country developed legislation requiring an environmental impact assessment of proposed projects likely to have adverse effects on biological diversity?	
a) No	
b) No, legislation is still in early stages of development	
c) No, but legislation is in advanced stages of development	
d) Yes, legislation is in place (please provide details below)	X
e) Yes, review of implementation available (please provide details below)	X

Further information on the legislation requiring EIA of proposed projects likely to have adverse effects on biodiversity.

In order to harmonize developmental efforts with conservation of environment and ecology, India has formulated policies and legislations for the protection and conservation of the environment. Accordingly, notified developmental activities could be taken up only after prior clearance from the Ministry under environmental regulations such as EIA Notification, 1994 and CRZ Notification, 1991.

Environmental clearances based on EIA were introduced as an administrative measures in 1978-79, initially for river valley projects and extended later to industrial projects. EIA has now been made mandatory for 32 categories of developmental projects in the sectors of industry, thermal power, mining, river valley projects, infrastructure and nuclear power by the EIA Notification issued in 1994 under the Environment (Protection) Act, 1986. The EIA Notification also provides for a two-stage clearance for site-specific projects such as mining, pit-head thermal power projects, river valley projects, ports and harbours. This is mainly to help investors/promoters avoid ecologically sensitive areas where acceptability of the project from environmental angle is very remote.

The CRZ Notification declares coastal stretches of seas, bays, estuaries, creeks, river and back waters which are influenced by tidal action, up to 500 m from the high tide line (on the landward side) and inter-tidal zone, as the Coastal Regulation Zone. The

notification lists activities prohibited in the CRZ and also lists permissible activities that are regulated. The permissible activities also require environmental clearance under the CRZ Notification.

Environmental clearance is accorded based on scientific tools for prediction of environmental implications of a development project, for evolving necessary mitigative measures that are incorporated in the project design. With a view to ensure multi-disciplinary inputs required for environmental appraisal of development projects, Expert Committees have been reconstituted for the following sectors: mining projects; industrial projects; thermal power projects; river valley development, multipurpose irrigation and hydroelectric projects; infrastructure development and miscellaneous projects; nuclear power projects and construction projects.

To address the biodiversity related issues in EIA, the baseline status of biological environment including distribution pattern, community structure, population dynamics and species composition of flora and fauna are ascertained. Also, information relating to faunal species with reference to distribution, abundance, rarity, species diversity and critical habitat requirements, migratory and travel route disruption, habitat resilience is also collected for assessing the likely significant impacts of proposed developmental activities. Based on the assessment, mitigative measures are suggested for protection and conservation of flora and fauna.

In the case of river valley projects, a detailed survey of wildlife, including aquatic, is required, to ascertain existence of any endangered and migratory species, with plans for their rehabilitation. Time bound management plans are also sought for approval, to be executed one year in advance of the commencement of impoundment. As the area may harbour a number of medicinal, rare and endangered plants, a four season study of the flora is insisted upon. A time-bound management plan for approval, which would then need to be executed well before impoundment commences, is sought.

Ecologically sensitive areas/zones are notified under the Environment (Protection) Act, 1986. The main objective of these notifications is to impose restrictions on the industries, operations, processes and other developmental activities in the region that have detrimental effects on the environment, to provide for restoration of denuded areas, management of catchment areas, watershed management, etc., for planned development. It is also intended to ensure sustainable livelihood for the local community and stakeholders. A high level monitoring committee is constituted to ensure compliance with the notification and take action against any violations. Six such ecologically sensitive areas have so far been notified.

The MoEF regularly monitors the implementation of environmental safeguard measures stipulated while according environmental clearance to various developmental projects. During the year under report, 577 projects were monitored till December 2004, through the existing network of 6 Regional Offices of the Ministry. The issues on which the compliance is found to be inadequate or unsatisfactory are taken up with the project authorities for ensuring an effective compliance of the stipulated conditions.

The MoEF has undertaken re-engineering of the environmental clearance process based on a comprehensive review of the existing process. The main objective of this review was to make the environmental clearance process more effective and time bound, and also to bring about greater transparency and improvement in the quality of appraisal. Based on this review and intensive consultations with all concerned stakeholders, a revised draft EIA Notification has been issued under the Environment (Protection) Act, 1986, for inviting public response vide S.O. 1324(E) dated 15.9.2005.

The salient features of the revised draft EIA Notification include categorization of developmental activities requiring environmental clearance based on the criteria of scale of impact, severity of impact and nature of location, and, thus, doing away with the existing investment criteria; categorizing developmental activities into Category 'A' (to be appraised at the Central level), Category 'B' (to be appraised at the State level EIA Authority), and Category 'A'/'B' (to be screened at the Central level); ensuring quality of EIA/Environment Management Plan Reports through the introduction of scoping of developmental activities by the Expert Appraisal Committees; provision of structured public consultations; and defining time and information limits and outcomes at each stage of processing and decision making.

In the revised draft EIA Notification, biodiversity issues relating to impacts on flora and fauna have been incorporated. These relate to threat of the proposed development activity to the biodiversity which includes genetic diversity, species diversity and ecosystem diversity; likely displacement of fauna, both terrestrial and aquatic, or creation of barriers for their movement; impacts on protected areas, national parks, sanctuaries and ecologically sensitive areas. Based on the critical assessment, mitigative measures are to be specified for protection and conservation of flora and fauna.

102. On Article 14.1(b), has your country developed mechanisms to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biological diversity?	
a) No	
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place (please provide details below)	X

Further comments on the mechanisms developed to ensure that due consideration is given to the environmental consequences of national programmes and policies that are likely to have significant adverse impacts on biodiversity.

The MoEF has issued a notification designating biologically rich and ecologically fragile areas as eco-sensitive zones. Under this notification, six sites namely Dahanu, Doon Valley, Mahabaleshwar, Murud Janjira, Panchgani and part of Aravallis have been notified.

The DOD, designated as the nodal department to oversee the implementation of Chapter 17 of Agenda 21, has committed itself to introduce the concept as part of a larger programme on Environment Capacity Building (ECB). MoEF is the co-ordinating agency. Under the ICMAM component, activities that have been planned for execution over five years include drawing up model ICMAM plans, formulation of GIS for critical habitats such as mangroves and turtle breeding grounds, and determination of the level of pollution in coastal areas.

Tribunal benches to legally combat environmental damages have been proposed in major cities such as New Delhi, Mumbai, Kolkata and Chennai under the National Environmental Tribunal Act, 1995. The National Environment Appellate Authority (NEAA) has been established under NEAA Act, 1997 to hear appeals relating to restriction of areas in setting up of industries.

Minimizing adverse impacts of intensive agriculture, animal husbandry and aquaculture on biodiversity has been a major concern in the country. Increasing efforts are being taken by governments, state agricultural universities and NGOs to develop programmes of integrated farming throughout the country and especially in fragile ecosystems, such as the Himalayas.

103. On Article 14.1(c), is your country implementing bilateral, regional and/or multilateral agreements on activities likely to significantly affect biological diversity outside your country's jurisdiction?	
a) No	
b) No, but assessment of options is in progress	
c) Yes, some completed, others in progress (please provide details below)	X
d) Yes (please provide details below)	

Further information on the bilateral, regional and/or multilateral agreements on activities likely to significantly affect biodiversity outside your country's jurisdiction.

The issues related to environmental management are dealt with under several environment-related bilateral, regional and multilateral conventions, agreements and programmes. For example, SACEP, set up in 1982 with headquarters in Colombo, deals with the regional strategy for environment management (Agenda 21 issues). Governing council meetings of SACEP concentrate on current regional issues as well as global concerns.

SAARC has seven countries of the region as members, viz., Nepal, India, Bangladesh, Bhutan, Pakistan, Maldives and Sri Lanka. So far, five Environmental Ministers Conferences have been held under SAARC, which also has a Committee on Environment, Meteorology and Forest, for working out a detailed plan of action in these areas and implementing the same.

104. On Article 14.1(d), has your country put mechanisms in place to prevent or minimize danger or damage originating in your territory to biological diversity in the territory of other Parties or in areas beyond the limits of national jurisdiction?	
a) No	
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	X
d) Yes, mechanisms are in place based on current scientific knowledge	

105. On Article 14.1(e), has your country established national mechanisms for emergency response to activities or events which present a grave and imminent danger to biological diversity?	
a) No	
b) No, mechanisms are still in early stages of development	
c) No, but mechanisms are in advanced stages of development	
d) Yes, mechanisms are in place (please provide details below)	X

Further information on national mechanisms for emergency response to the activities or events which present a grave and imminent danger to biodiversity.

Planning and overseeing the implementation of policies and programmes on management of chemical emergencies and hazardous substances are carried out by the Hazardous Substances Management Division (HSMD) in the MoEF, which has a mandate to promote safe handling, management and use of hazardous substances including hazardous chemicals and hazardous wastes, in order to avoid damage to health and environment. The activities of the division can be grouped under three main thrust areas, viz., Chemical Safety, Hazardous Wastes Management and Solid Waste Management.

The pilot study entitled "GIS-based Emergency Planning and Response System with respect to chemical accidents in Major Accident Hazard installations" has been undertaken in major industrial clusters in four identified industrial states, namely Gujarat, Maharashtra, Tamil Nadu and Andhra Pradesh. For emergency response to activities with grave danger to biodiversity, Crisis Groups have been set up at the central, district and local levels. The system has been designed to help response agencies, namely Central Crisis Group, District Crisis Group and Local Crisis Group, plan and rehearse response to chemical disasters and also during actual emergency situations so as to organize a well-planned response and minimize the damages. To ensure proper implementation of the software at the district level, training programmes have been conducted involving personnel of the State and District Crisis Groups of the districts covered under this project. This project has been extended to cover Delhi-NCR, Rajasthan, Uttar Pradesh, Haryana, Karnataka, Kerala, West Bengal, Assam and Madhya Pradesh.

Policies and programmes are in place for management of chemical emergencies, hazardous waste management and solid waste management.

India is a party to the Rotterdam Prior Informed Consent Convention on Hazardous Chemicals, Stockholm Convention on Persistent Organic Pollutants and Basel Convention on transboundary movement of hazardous wastes.

106. Is your country applying the Guidelines for Incorporating Biodiversity-related Issues into Environment-Impact-Assessment Legislation or Processes and in Strategic Impact Assessment as contained in the annex to decision VI/7 in the context of the implementation of paragraph 1 of Article 14? (decision VI/7)	
a) No	
b) No, but application of the guidelines under consideration	
c) Yes, some aspects being applied (please specify below)	
d) Yes, major aspects being applied (please specify below)	X

Further comments on application of the guidelines.

Ecologically sensitive areas are notified under the Environment Protection Act, 1986 and there are restrictions for setting up of industries, operations, processes and other developmental activities in the region that may have detrimental effects on the environment. Biodiversity-related issues are also included in EIA so as to provide for restoration of denuded areas, management of catchment areas, watershed management, etc. It is also intended to ensure sustainable livelihood for the local communities.

107. On Article 14 (2), has your country put in place national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity? (decision VI/11)	
a) No	X
b) Yes	

Further comments on national legislative, administrative or policy measures regarding liability and redress for damage to biological diversity.

108. Has your country put in place any measures to prevent damage to biological diversity?	
a) No	
b) No, but some measures are being developed	

c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures in place to prevent damage to biological diversity.

As mentioned in the detailed response to Question 101, prior environmental clearance is necessary for 32 categories of developmental projects under the EIA Notification, 1994. In addition, activities in coastal areas are regulated under the CRZ Notification, 1991.

To address the biodiversity-related issues in EIA, the baseline status of the biological environment, including distribution pattern, community structure, population dynamics and species composition of flora and fauna, is ascertained. Also information relating to faunal species and their distribution, abundance, rarity, species diversity, critical habitat requirements, migratory and travel route disruption and habitat resilience is also collected for assessing the likely significant impacts of proposed developmental activities. Based on the assessment, mitigative measures are suggested for protection and conservation of flora and fauna.

In the case of river valley projects, a detailed survey of wildlife and fauna (including aquatic) is required to ascertain the existence of any endangered and migratory species, along with plans for their rehabilitation. Time bound management plans are also sought for approval, to be executed one year in advance of the commencement of impoundment. As the area may harbour a number of medicinal, rare and endangered plants, a four season study of the flora is insisted upon. A time bound management plan for approval, which would then need to be executed well before impoundment commences, is sought.

109. Is your country cooperating with other Parties to strengthen capacities at the national level for the prevention of damage to biodiversity, establishment and implementation of national legislative regimes, policy and administrative measures on liability and redress? (decision VI/11)

a) No	
b) No, but cooperation is under consideration	
c) No, but cooperative programmes are under development	
d) Yes, some cooperative activities being undertaken (please provide details below)	X
e) Yes, comprehensive cooperative activities being undertaken (please provide details below)	

Further comments on cooperation with other Parties to strengthen capacities for the prevention of damage to biodiversity.

Bilateral MOUs/agreements have been entered into with other Parties to cover issues of environmental concerns. For example, ICEF, a joint initiative of the Government of India and the Government of Canada, has been set up to enhance the capacity of Indian institutitions and organizations to promote and deliver sustainable development programmes addressing the environment. The Indo-Brazil common agenda for environmental issues has been signed by both the governments. Advisory services in environmental management, a project under the aegis of Indo-German technical collaboration, caters to five fields of activity, viz., eco-cities, eco-industrial estates, eco-industrial parks for electroplating industries of Madurai, waste management, sustainable small industry and clean development mechanism.

Box LIII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;

b) contribution to the achievement of the goals of the Strategic Plan of the Convention;

c) contribution to progress towards the 2010 target;

d) progress in implementing national biodiversity strategies and action plans;

e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

Subsequent to EIA Notification, 1994, prior clearance from MoEF is essential based on an EIA study for 32 categories of development projects, so as to minimize any adverse potential impacts, and to incorporate mitigative measures at the planning stage itself.

Article 15 - Access to genetic resources

110. Has your country endeavored to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms, in accordance with paragraphs 2, 4 and 5 of Article 15?

a) No	
b) Yes (please provide details below)	X

Further information on the efforts taken by your country to facilitate access to genetic resources for environmentally sound uses by other Parties, on the basis of prior informed consent and mutually agreed terms.

Operationlization of the ABS provisions stipulated in Article 15 of CBD, is of particular interest to India, which is rich in biological resources and associated ITK.

Towards this, India has taken three significant legislative measures.

1. Biological Diversity Act, 2002 and Biological Diversity Rules, 2004

India has enacted the Biological Diversity Act, 2002, which was developed through an extensive and intensive consultation process initiated in 1994. India is one of the few countries to have enacted such a legislation. This Act primarily aims at regulating access to biological resources and associated TK so as to ensure equitable sharing of benefits arising out of their use, in accordance with the provisions of Article 15 of the CBD. Thereafter, the Government has also promulgated the Biological Diversity Rules, 2004.

For implementation of the Act, a three-tiered structure has been envisaged. A National Biodiversity Authority (NBA) has been established at Chennai to deal with all matters relating to requests for access by foreign individuals, institutions or companies, and all matters relating to transfer of results of research to any foreigner, for which prior approval of NBA is required (Sections 3 and 4). NBA's approval is also required before seeking any IPR based on biological material and associated TK obtained from India (Section 6). NBA also has the power to oppose grant of IPRs in any other country on biological resources or associated knowledge obtained or derived from India (Section 18.4). While granting approvals, NBA imposes conditions that secure equitable sharing in benefits arising out of the use of biological resources or associated knowledge occurring in India. These benefits could include monetary gains, grant of joint ownership of IPRs, transfer of technology, association of Indian scientists in R&D, setting up of venture capital funds etc. (Section 21). In cases where specific individuals or group of individuals, for providing access to resource or knowledge, are identifiable, the monetary benefits will be paid directly to them. Otherwise, the amount is to be deposited in a National Biodiversity Fund (Section 21.3). Such monetary benefits, fees and royalties as a result of approvals by NBA, which are deposited in the National Biodiversity Fund, are to be used, in consultation with the local self government concerned, for conservation and development of areas from where the resource has been accessed.

State Biodiversity Boards (SBBs) are to be set up by the state governments, to deal with matters relating to access by Indians for commercial purposes. The Indian industry is required to provide prior intimation to the concerned SBB about the use of biological resources from that state (Section 7). The SBB has the power to restrict any such activity which violates the objectives of conservation, sustainable use and equitable sharing of benefits (Section 24).

Institutions of self-government are required to set up Biodiversity Management Committees (BMCs) in their respective areas for undertaking conservation, sustainable use, documentation of biodiversity and chronicling of knowledge relating to biodiversity (Section 41.1). The BMCs may also levy collection fee for collecting biological resources from their respective areas (Section 41.3). The NBA and SBBs are required to consult the concerned BMCs on matters relating to the use of biological resources and associated TK within their jurisdiction (Section 41.2). This mandatory consultation of BMCs by NBA and SBBs would ensure formalization of PIC by the communities through involvement of BMCs in the decision making process.

The Biological Diversity Act provides for the following exemptions:

- to local people and communities of the area, including growers and cultivators of biodiversity and vaids and hakims, who have been practising indigenous medicine (Section 7);
- to value added products, i.e., products containing portions/extracts of plants and animals in unrecognizable and physically inseparable form (Section 2 c and p);
- through notification by Central Government of normally traded commodities, so as not to adversely affect trade of these items;
- for collaborative research through government sponsored or government approved institutions subject to overall guidelines and approval of the Central Government (Section 5); and
- traditional practices and use in agriculture, horticulture, poultry, dairy farming, animal husbandry, bee keeping, etc. (Section 2f)

The Biological Diversity Act has an enabling provision in Section 36.5 empowering the Central Government for protecting knowledge of local people relating to biodiversity, *inter alia* through registration of such knowledge and developing a *sui generis* system. The Act provides for notifying threatened species and prohibits or regulates their collection, taking appropriate steps to rehabilitate and preserve those species, thereby ensuring their conservation and management (Section 38). Section 37 of the Act provides for notifying by the state government, in consultation with the local bodies, areas of biodiversity importance as biodiversity heritage sites.

2. The Plant Varieties Protection and Farmers' Rights Act (PVPFRA), 2001

The PVPFRA, 2001 and the PVPFR Rules, 2003 deal primarily with the protection of plant breeders' rights over the new varieties developed by them and the entitlement of farmers to register new varieties and also to save, breed, use, exchange, share or sell the plant varieties, which the latter have developed, improved and maintained over many generations. The Act is a deviation from the 1991 UPOV Model and can be regarded as an alternate *sui generis* system that accords protection of the rights of the formal innovations of a plant breeder, and the formal knowledge system and traditional plant varieties of the farmers as well.

The important provisions contained in this Act relevant to access and benefit sharing are those on the protection of farmers' rights and the mechanisms suggested for compensation or benefit sharing for the contributions of local communities or farmers in the development of a new plant variety (Sections 39,40 and 41 of the Act and Rules 33 and 66). Section 40 of the Act requires that the breeder or any applicant for registration of a new plant variety shall disclose any information regarding the use of genetic material conserved by any tribal or rural families in the breeding or development of such variety. Similarly, the Act also ensures compensation of the contributions of any village or local communities to the development of a variety registered under this Act. Such compensation will be deposited in the National Gene Fund. Another important provision in support of

the farmers' conservation efforts is the recognition or rewards for a farmer who is engaged in conservation of genetic resources of land races of wild relatives of economic plants and their improvement through selection and preservation. The rewards will be made from the National Gene Fund. Thus, the PVPFRA has stipulated mechanisms for benefit sharing for contributions of farmers/local communities in development of new varieties.

3. Patent Amendment Bill

The Second and Third Amendments to the Patent Act, 1970 provide for mandatory disclosure in the patent application of the source and geographical origin of the biological material used in the invention. The amended Patent Act also provides for pre-grant opposition and revocation of granted patents on grounds of non-disclosure or wrongful disclosure of source or geographical origin of biological material used for invention, and in case of invention anticipated by traditional knowledge.

111. Has your country taken measures to ensure that any scientific research based on genetic resources provided by other Parties is developed and carried out with the full participation of such Parties, in accordance with Article 15(6)?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to ensure that any scientific research based on genetic resources provided by other Contracting Parties is developed and carried out with the full participation of such Contracting Parties.

As mentioned in response to Question 119, the NBA grants approvals to proposals on access to genetic resources subject to certain terms and conditions, which *inter alia* include: location of production, research and development units in such areas, association of Indian scientists and local people with research and development.

112. Has your country taken measures to ensure the fair and equitable sharing of the results of research and development and of the benefits arising from the commercial and other use of genetic resources with any Contracting Party providing such resources, in accordance with Article 15(7)?	
a) No	
b) No, but potential measures are under review	

c) Yes, some measures are in place (please provide details below)	
d) Yes, comprehensive legislation is in place (please provide details below)	X
e) Yes, comprehensive statutory policy or subsidiary legislation are in place (please provide details below)	
f) Yes, comprehensive policy and administrative measures are in place (please provide details below)	
Further information on the type of measures taken.	
May refer to the detailed response to Question 110 above.	

113. In developing national measures to address access to genetic resources and benefit-sharing, has your country taken into account the multilateral system of access and benefit-sharing set out in the International Treaty on Plant Genetic Resources for Food and Agriculture?	
a) No	
b) Yes (please provide details below)	X
Further information on national measures taken which consider the multilateral system of access and benefit-sharing as set out in the International Treaty on Plant Genetic Resources for Food and Agriculture.	
Sharing of benefits accruing to the breeder from a variety developed from indigenously derived plant genetic resources has been provided in the PVPFRA passed by the Indian Government in 2001. May refer to details in response to Question 110.	

114. Is your country using the Bonn Guidelines when developing and drafting legislative, administrative or policy measures on access and benefit-sharing and/or when negotiating contracts and other arrangements under mutually agreed terms for access and benefit-sharing? (decision VII/19A)	
a) No	
b) No, but steps being taken to do so (please provide details below)	
c) Yes (please provide details below)	X
Please provide details and specify successes and constraints in the implementation of the Bonn Guidelines.	
India had developed and enacted the Biological Diversity Act, 2002 prior to the adoption of Bonn Guidelines.	

115. Has your country adopted national policies or measures, including legislation, which address the role of intellectual property rights in access and benefit-sharing arrangements (i.e. the issue of disclosure of origin/source/legal provenance of genetic resources in applications for intellectual property rights where the subject matter of the application concerns, or makes use of, genetic resources in its development)?	
a) No	
b) No, but potential policies or measures have been identified (please specify below)	
c) No, but relevant policies or measures are under development (please specify below)	
d) Yes, some policies or measures are in place (please specify below)	X
e) Yes, comprehensive policies or measures adopted (please specify below)	

Further information on policies or measures that address the role of IPR in access and benefit-sharing arrangements.

India has adopted legislative measures that address the role of IPRs in ABS arrangements.

The Biological Diversity Act, 2002 provides that NBA's approval is required before seeking IPR based on any research or information on a biological resource obtained from India. The NBA, while granting approval, may impose a benefit sharing fee or royalty or both, or impose conditions including sharing of financial benefits arising out of the commercial utilization of such rights (Section 6.1 and 6.2). The NBA is also empowered to oppose grant of IPRs in any other country on biological resources or associated knowledge obtained or derived from India (Section 18.4).

The amended Patent Act provides for mandatory disclosure of the source and geographical origin of the biological material in the specification when used in an invention. Further, non-disclosure or wrongful disclosure of the source of biological material and any associated knowledge will result in opposition to grant of patent or revocation of patents.

116. Has your country been involved in capacity-building activities related to access and benefit-sharing?	
a) Yes (please provide details below)	X
b) No	

Please provide further information on capacity-building activities (your involvement as donor or recipient, key actors involved, target audience, time period, goals and objectives of the capacity-building activities, main capacity-building areas covered, nature of activities). Please also specify whether these activities took into account the Action Plan on capacity-building for access and benefit-sharing adopted at COP VII and available in annex to decision VII/19F.

Government of India through its various ministries and agencies like MoEF, DBT, ICAR, ICMR, CSIR, etc., has organized/sponsored various trainings/workshops and capacity building programmes related to ABS. Some such activities include:

1. NBRI (CSIR) hosted a three-day regional training on ABS in relation to bioprospecting during 9-11 January 2005 at the behest of the IUCN, Regional Biodiversity Programme, Asia.
2. Thematic working group interactive sessions on ABS under the NBSAP project.
3. Capacity building on ABS promoted by National Innovation Foundation, Ahmedabad. Honey Bee Network initiatives on ABS on local resources.

Some of the other capacity building exercises have been drawn from the outcome of the studies with respect to ABS, which include:

(i) 'The role of IPRs in the sharing of benefits arising from the use of biological resources and associated traditional knowledge – selected case studies.' (Case study: India by Prof. Anil Gupta). A joint submission by WTPO and UNEP.

(ii) 'Sharing with Kanis: A case study from Kerala' by Anuradha, R.V. 1998.

(iii) 'Rewarding traditional knowledge and contemporary grassroots creativity: The role of IPRs' by Prof. Anil Gupta, 2000.

(iv) 'National Policy and Macrolevel Action Strategy or Biodiversity: India.' 1999.

(v) 'Recognizing and rewarding common pool knowledge resources.' Prof. Madhav Gadgil, 2000.

Box LIV.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;

b) contribution to the achievement of the goals of the Strategic Plan of the Convention;

c) contribution to progress towards the 2010 target;

d) progress in implementing national biodiversity strategies and action plans;

e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

a) Outcomes and impacts of actions taken

- Comprehensive legislations on ABS in place:
  - Biological Diversity Act, 2002
  - Plant Varieties Protection and Farmers' Rights Act, 2001
  - The Patent (Amendment) Act, 2005
- Administrative and policy measures taken on ABS through NBA, SSBs, BMCs

- Inventory of genetic resources and TK; measures and practices relating to ABS (MoEF, NBPGR/ICAR)

b) Contribution to the achievement of the goals of the Strategic Plan of the Convention

- Practice of PIC and Mutually Agreed Terms (MATs) on ABS in all biodiversity-related programmes at the national level
- Streamlining ABS through adoption of Bonn Guidelines
- Contributions to development of international regime on access to genetic resources and benefit-sharing through, for example, New Delhi Ministerial Declaration of LMMCs on ABS 2005

c) Contribution to progress towards the 2010 target: on ABS

- Contributions to the negotiations for developing an international regime on ABS
- Measures taken for compliance of PIC and MATs on ABS through legislative and policy measures on ABS taken by MoEF and other agencies
- Capacity-building measures taken for implementation of ABS and related activities, including inventory of genetic resources and TK, Global Taxonomic Initiative, etc.

Article 16 - Access to and transfer of technology

117. On Article 16(1), has your country taken measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to provide or facilitate access for and transfer to other Parties of technologies that are relevant to the conservation and sustainable use of biodiversity or make use of genetic resources and do not cause significant damage to the environment.

The Biological Diversity Act, 2002 provides that prior approval of NBA is required for transferring results of research relating to biological resources obtained from India. NBA's approval is also required before applying for IPRs based on bioresource or associated knowledge derived from India. Further, while granting approvals, the NBA may impose terms and conditions which *inter alia* may include transfer of technology.

118. On Article 16(3), has your country taken measures so that Parties which provide genetic resources are provided access to and transfer of technology which make use of those resources, on mutually agreed terms?	
a) No	X
b) No, but potential measures are under review	
c) Yes, some measures are in place	
d) Yes, comprehensive legislation is in place	
e) Yes, comprehensive statutory policy or subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative arrangements are in place	
g) Not applicable	

119. On Article 16(4), has your country taken measures so that the private sector facilitates access to joint development and transfer of relevant technology for the benefit of Government institutions and the private sector of developing countries?	
a) No	X
b) No, but potential measures are under review	
c) Yes, some policies and measures are in place	
d) Yes, comprehensive policies and measures are in place	
e) Not applicable	

Programme of work on transfer of technology and technology cooperation

120. Has your country provided financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation? (decision VII/29)	
a) No	
b) No, but relevant programmes are under development	X
c) Yes, some programmes being implemented (please provide details below)	
d) Yes, comprehensive programmes being implemented (please provide details below)	

Further comments on the provision of financial and technical support and training to assist in the implementation of the programme of work on transfer of technology and technology cooperation.
There are some programmes under consideration on the transfer of technology and technology cooperation by the MoEF, DBT, Department of Science and Technology, etc. A study is underway for identifying the technology transfer mechanisms in the area of selected biotechnology products among the SAARC countries by Biotech Consortium India Limited under the sponsorship of the Ministry of External Affairs.

121. Is your country taking any measures to remove unnecessary impediments to funding of multi-country initiatives for technology transfer and for scientific and technical cooperation? (decision VII/29)	
a) No	X
b) No, but some measures being considered	
c) Yes, some measures are in place	
d) Yes, comprehensive measures are in place	

122. Has your country made any technology assessments addressing technology needs, opportunities and barriers in relevant sectors as well as related needs in capacity building? (annex to decision VII/29)	
a) No	
b) No, but assessments are under way	X
c) Yes, basic assessments undertaken	
d) Yes, thorough assessments undertaken	

123. Has your country made any assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies? (annex to decision VII/29)	
a) No	
b) No, but assessments are under way	
c) Yes, some assessments undertaken (please provide details below)	X
d) Yes, comprehensive assessments undertaken (please provide details below)	

Further comments on the assessments and risk analysis of the potential benefits, risks and associated costs with the introduction of new technologies.
Assessment and risk analysis of the potential benefits, risks and associated costs of introduction of new technologies is done on a case-by-case basis. For example, the introduction of Bt cotton, a genetically modified crop, was done after detailed field trials, scientific risk assessments as well as socio-economic impact studies.

124. Has your country identified and implemented any measures to develop or strengthen appropriate information systems for technology transfer and cooperation, including assessing capacity building needs? (annex to decision VII/29)	
a) No	
b) No, but some programmes are under development	X
c) Yes, some programmes are in place and being implemented	
d) Yes, comprehensive programmes are being implemented	

125. Has your country taken any of the measures specified under Target 3.2 of the programme of work as a preparatory phase to the development and implementation of national institutional, administrative, legislative and policy frameworks to facilitate cooperation as well as access to and adaptation of technologies of relevance to the Convention? (annex to decision VII/29)	
a) No	X
b) No, but a few measures being considered	
c) Yes, some measures taken	
d) Yes, many measures taken	

Article 17 - Exchange of information

126. On Article 17(1), has your country taken measures to facilitate the exchange of information from publicly available sources with a view to assist with the implementation of the Convention and promote technical and scientific cooperation?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X
d) Yes, comprehensive measures are in place	

India has extensive networks among institutions across the country for information exchange. Some of these institutes have developed mechanisms with international organizations for exchange of publically available information towards implementation of the Convention and promote technical and scientific cooperation. For example, the NBRI, an institute under CSIR, has signed an agreement with the Global Biodiversity Information Facility (GBIF) for sharing herbarium specimen data via the Internet. NCL, Pune has undertaken the electronic cataloguing of Indian fauna, which has been sponsored by the GBIF. The IHBT is a member of the Global Forest Information Service (GFIS) in Asia, which is a part of the International Union and Forest Organization. The FAO of UN sent the published literature of Indian Ocean Tuna Commission to NIO and the same was used to record in the standard bibliographic database format for input to Aquatic Sciences and Fisheries Abstracts. Over 400 such publications are being analyzed.

The information on TKDL on ayurveda is being exchanged with any person who is interested in this information. In fact, a demo CD containing a sample of 500 formulations is sent free of cost to those who are desirous of this information. Several delegations have visited National Institute of Science Communications and Information Resources (NISCAIR) for understanding TKDL and for replicating the TKDL model in their own countries for protecting their TK from misappropriation. A high level delegation from South Africa visited NISCAIR in December 2003 for creating a collaborative framework between India (CSIR) and South Africa on establishing TKDL for South Africa. A delegation from African Regional Industrial Property Organization (ARIPO) visited NISCAIR in June 2004 for understanding the TKDL and to use it as a model for creation of a TKDL for sixteen ARIPO Member States. Assistant Director General (legal policy and international affairs) of the International Property Office (IPO), Singapore visited NISCAIR, New Delhi in March 2004 and the potential areas of collaboration, viz., (i) patent examination and searches, (ii) use of TKDL database by IPO, Singapore under the usual non-disclosure agreement clauses, and (iii) training of persons from Singapore in IPR-related activities, were discussed.

The following question (127) is for DEVELOPED COUNTRIES

127. On Article 17(1), do these measures take into account the special needs of developing countries and include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on?	
a) No	
b) Yes, but they do not include the categories of information listed in Article 17(2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	
c) Yes, and they include categories of information listed in Article 17 (2), such as technical, scientific and socio-economic research, training and surveying programmes, specialized knowledge, repatriation of information and so on	

Box LVII.

Please elaborate below on the implementation of this article and associated decisions specifically focusing on:

a) outcomes and impacts of actions taken;

b) contribution to the achievement of the goals of the Strategic Plan of the Convention;

c) contribution to progress towards the 2010 target;

d) progress in implementing national biodiversity strategies and action plans;

e) contribution to the achievement of the Millennium Development Goals;

f) constraints encountered in implementation.

Exchange of results of technical, scientific and socio-economic research, as well as information on training and survey programmes, specialized knowledge, indigenous and traditional knowledge, have been useful in facilitating implementation of the Convention. However, the international exchange of information is still limited, and needs further strengthening.

Article 18 - Technical and scientific cooperation

128. On Article 18(1), has your country taken measures to promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity?

a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place (please provide details below)	X
d) Yes, comprehensive measures are in place (please provide details below)	

Further information on the measures to promote international technical and scientific cooperation.

International technical and scientific cooperation is encouraged for various biodiversity programmes in all the concerned ministries. The MoEF is the nodal agency in the Government of India for various environmental related multilateral agreements and protocols. It also handles bilateral issues and matters pertaining to multilateral bodies. In addition, the MoST, through various departments such as the Department of Science and Technology, DBT, DOD, etc., is also undertaking several programmes to promote international technical and scientific cooperation covering various aspects related to conservation and sustainable use of biological diversity.

In the area of sustainable development, several activities have been taken up which include preparation of SoE reports, formulation of Sustainable Development Indicators, formation of national strategies for sustainable development, global public goods, and partnerships for sustainable development. Some of the other initiatives include implementation of an in-country programme by the CSIR through NBRI and establishing an Indian botanical garden network, website for meeting the target of conservation of 20,000 rare, endangered and threatened species worldwide by 2010 as defined in Global Strategy for Plant Conservation (GSPC). The IHBT is in collaboration with Rothamsted International, UK for understanding the genetic and chemical diversity in *Piccrorhiza kurroa* and some races of *Exobasidium vexans*. As a part of regional activity of CoML, NIO has been identified as the regional node for Indian Ocean Census of Marine Life (IOCoML). IOCoML facilitates collaborative research between Indian Ocean rim countries in biodiversity studies. NCL and NIO have jointly proposed a programme on Indian Ocean Biogeographic Information System (IndOBIS). Under IndOBIS, the activity would be confined to collection, validation and dissemination of biodiversity information of this region from published sources. International technical and scientific cooperations have so far been more frequent with third world countries, particularly SAARC and Association of Southeast Asian Nationa (ASEAN) countries as per CSIR norms. Collaborative projects with Swedish International Development Agency (SIDA) are currently in progress at the Institute of Forest Genetics and Tree Breeding (IFGTB), an institute of ICFRE at Coimbatore.

129. On Article 18(4), has your country encouraged and developed methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention?	
a) No	
b) No, but relevant methods are under development	
c) Yes, methods are in place	X

The methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, have been encouraged in India through various government as well as non-government agencies. The funding provided by the government is aimed towards improvement of indigenous technologies for research management and biodiversity conservation.

For example, Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Government of India has identified NBRI to act as India's Nodal Centre for the Asia Pacific Traditional Medicine Network for developing a database and sharing of TK. The IFGTB at Coimbatore had collaborative projects on conservation of medicinal plants in MPCAs in natural forests identified by FRLHT, Bangalore and State Forest Departments, which was part of a project funded by DANIDA. Collaborative programmes with ICAR Institutes, Agricultural Universities and other sister organizations of ICFRE institutes have been established in implementing CBD strategies. Efforts are

under way to get national accession for the germ plasm collected for *ex situ* conservation. National Innovation Foundation has been established to record the TK, innovations and practices at the grass roots level for the purpose of product development and appropriation. TKDL has been set up to develop computerized databases of traditional knowledge.

DBT has set up four national gene banks for MAPs to conserve endangered/ threatened/rare species of proven medicinal value, those extensively used in traditional systems of medicine, taxa difficult to propagate and with R&D leads and economically important species.

130. On Article 18(5), has your country promoted the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention?	
a) No	
b) Yes (please provide some examples below)	X

Examples for the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention.

Establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention is being promoted at both the national and international levels. For example, CIMAP is a participating lab in an Indo-ASEAN project and has been exchanging scientists for advanced training under various exchange programmes of the Government of India. Some programmes have been started in collaboration with Forest Department of Rajasthan for natural resource management and its impact on biodiversity and productivity.

A National Facility for Conservation of Endangered Species of Animals has been established at CCMB, Hyderabad, jointly by DBT, CZA, MoEF and Government of Andhra Pradesh, in January 2000.

The NSTMIS programme of Department of Science and Technology supports activities related to building science and technology information at the national level.

131. Has your country established links to non-governmental organizations, private sector and other institutions holding important databases or undertaking significant work on biological diversity through the CHM? (decision V/14)	
a) No	
b) No, but coordination with relevant NGOs, private sector and other institutions under way	
c) Yes, links established with relevant NGOs, private sector and institutions	X

Links have been established by several organizations to NGOs, private sector and other institutions holding important databases for undertaking significant work on biological diversity. For example, NBRI has established linkages with the following global databases:

- The International Legume Database and Information Service, coordinated by University of Reading, U.K., and holds a world database of over 19,000 legumes.
- BGCI global network database of over 2,200 botanical gardens of the world.

The following question (132) is for DEVELOPED COUNTRIES

132. Has your country further developed the CHM to assist developing countries and countries with economies in transition to gain access to information in the field of scientific and technical cooperation? (decision V/14)	
a) No	
b) Yes, by using funding opportunities	
c) Yes, by means of access to, and transfer of technology	
d) Yes, by using research cooperation facilities	
e) Yes, by using repatriation of information	
f) Yes, by using training opportunities	
g) Yes, by using promotion of contacts with relevant institutions, organizations and the private sector	
h) Yes, by using other means (please specify below)	

133. Has your country used CHM to make information available more useful for researchers and decision-makers? (decision V/14)	
a) No	
b) No, but relevant initiatives under consideration	
c) Yes (please provide details below)	X

Further comments on development of relevant initiatives.

MoEF has set up an ENVIS to collect and disseminate information to researchers and the public through a network of 72 centres in the country. Twelve of these centres can be accessed through e-mail. ENVIS functions as a national focal point and a regional service centre for the South Asian Sub Region Countries for INFOTERRA, a global information network of the UNEP. ENVIS has also been designated as the national focal point of the Sustainable Development Network Programme of UNDP. ENVIS has been designated as the CHM for CBD in the country. It maintains a close liaison with the other national information systems like National Information System on Science and Technology (NISSAT) and Biotechnology Information System (BTIS).

134. Has your country developed, provided and shared services and tools to enhance and facilitate the implementation of the CHM and further improve synergies among biodiversity-related Conventions? (decision V/14)	
a) No	X
b) Yes (please specify services and tools below)	

Further comments on services and tools to enhance and facilitate the implementation of CHM and further improve synergies among biodiversity-related Conventions.

As mentioned above, MoEF has set up ENVIS as a plan programme and as a comprehensive network in environmental information collection, collation, storage, retrieval and dissemination to various users, including decision-makers, researchers, academicians, policy planners, research scientists, etc. ENVIS has been conceived as a distributed information network with subject-specific centres to carry out the mandates and to provide relevant and timely information to all concerned. The ENVIS network consists of a chain of 72 subject-specific and state related centres that are located in notable organizations/institutions throughout the country. ENVIS is the designated CHM for CBD in India.

Major achievements of ENVIS are:

- Website of the Ministry (http://envfor.nic.in), developed by ENVIS Focal Point, is continuously updated.
- ENVIS Focal Point responded to approximately 500 queries and the ENVIS network partners responded to about 14,000 queries during the year 2004-2005.
- ENVIS Focal Point implemented the World Bank assisted Environment Management Capacity Building Technical Assistance Project (EMCBTAP) of the ENVIS sub-component, which aimed at strengthening the ENVIS scheme of the Ministry by encompassing various subject-oriented thematic nodes and state nodes for association in the ENVIS network.
- A portal of ENVIS at http://www.envis.nic.in, launched earlier under EMCBTAP and connecting all the ENVIS network partners, was regularly updated by the ENVIS Focal Point. The portal acts as a catalyst for inter-centre interaction and for information on several broad categories of subjects related to environment under which the Centres have been grouped.
- ENVIS Focal Point publishes 'Paryavaran Abstracts', reporting information on environmental research in India.
- Four issues of ENVIRONEWS, a quarterly newsletter, were published with the objective of disseminating information on important policies, programmes and legislations.
- ENVIS also functions as a national focal point of INFOTERRA.

In addition to the above, there are other initiatives such as TKDL, BIONET and Records Management Initiative (RMI) through establishment of Gene Banks.

Article 19 - Handling of biotechnology and distribution of its benefits

135. On Article 19(1), has your country taken measures to provide for the effective participation in biotechnological research activities by those Contracting Parties which provide the genetic resources for such research?	
a) No	X
b) No, but potential measures are under review	
c) Yes, some measures are in place	
d) Yes, comprehensive legislation are in place	
e) Yes, comprehensive statutory policy and subsidiary legislation are in place	
f) Yes, comprehensive policy and administrative measures are in place	

136. On Article 19(2), has your country taken all practicable measures to promote and advance priority access by Parties, on a fair and equitable basis, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Parties?	
a) No	
b) No, but potential measures are under review	
c) Yes, some measures are in place	X
d) Yes, comprehensive measures are in place	

Article 20 – Financial resources

Box LX.

Please describe for each of the following items the quantity of financial resources, both internal and external, that have been utilized, received or provided, as applicable, to implement the Convention on Biological Diversity, on an annual basis, since your country became a Party to the Convention.	
a) Budgetary allocations by national and local governments as well as different sectoral ministries	National and state budgets have allocations for biodiversity conservation programmes.
b) Extra-budgetary resources (identified by donor agencies)	

c) Bilateral channels (identified by donor agencies)	SIDA, Department for International Development (DFID), Ford Foundation and several others
d) Regional channels (identified by donor agencies)	
e) Multilateral channels (identified by donor agencies)	GEF through UNDP, UNEP and World Bank
f) Private sources (identified by donor agencies)	
g) Resources generated through financial instruments, such as charges for use of biodiversity	Some resource generated, e.g., through entry fees to national parks and wildlife sanctuaries

137. On Article 20(1), has your country provided financial support and incentives to those national activities that are intended to achieve the objectives of the Convention?	
a) No	
b) Yes, incentives only	
c) Yes, financial support only	
d) Yes, financial support and incentives	X

The next question (138) is for DEVELOPED COUNTRIES

138. On Article 20(2), has your country provided new and additional financial resources to enable developing country Parties to meet the agreed incremental costs to them of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes (please indicate the amount, on an annual basis, of new and additional financial resources your country has provided)	

The next question (139) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

139. On Article 20(2), has your country received new and additional financial resources to enable it to meet the agreed full incremental costs of implementing measures which fulfill the obligations of the Convention?	
a) No	
b) Yes	

140. Has your country established a process to monitor financial support to biodiversity, including support provided by the private sector? (decision V/11)	
a) No	
b) No, but procedures being established	X
c) Yes	

141. Has your country considered any measures like tax exemptions in national taxation systems to encourage financial support to biodiversity? (decision V/11)	
a) No	
b) No, but exemptions are under development (please provide details below)	X
c) Yes, exemptions are in place (please provide details below)	
Further comments on tax exemptions for biodiversity-related donations.	
Some of the relevant provisions include several exemptions from excise duties (e.g., on use of flyash, photo-gypsum, electrical vehicles, use of LNG), customs duty exemptions on components of membrane cell technology, exemption from capital gains taxes on shifting away from urban sites, soft loans on pollution control devices, etc.	

142. Has your country reviewed national budgets and monetary policies, including the effectiveness of official development assistance allocated to biodiversity, with particular attention paid to positive incentives and their performance as well as perverse incentives and ways and means for their removal or mitigation? (decision VI/16)	
a) No	
b) No, but review is under way	X
c) Yes	

143. Is your country taking concrete actions to review and further integrate biodiversity considerations in the development and implementation of major international development initiatives, as well as in national sustainable development plans and relevant sectoral policies and plans? (decisions VI/16 and VII/21)	
a) No	
b) No, but review is under way	X
c) Yes, in some initiatives and plans	
d) Yes, in major initiatives and plans	

144. Is your country enhancing the integration of biological diversity into the sectoral development and assistance programmes? (decision VII/21)	
a) No	
b) No, but relevant programmes are under development	
c) Yes, into some sectoral development and assistance programmes (please provide details below)	X
d) Yes, into major sectoral development and assistance programmes (please provide details below)	

Further comments on the integration of biodiversity into sectoral development and assistance programmes

JFM Programmes under forestry sector are enhancing the integration of biodiversity conservation. Some more such sectoral links are given in the table below.

Production sectors relevant for biodiversity conservation

Sector	Issues relevant for biodiversity conservation
Pharmaceutical	• Equitable sharing of benefits from the use of bio-resources and related knowledge • Access to biological resources for collection, use and transfer • Technology transfer
Agriculture	• Use of genetic resources for agriculture • Minimizing the use of agrochemicals affecting biodiversity • Use of living modified organisms from biotechnology determined to be safe
Forestry	• Use a diversity of native species, rather than monocultures and exotics, in afforestation • Avoidance of chemicals • Linking industries with farmers, for provision of raw materials in ways that are sustainable and do not displace small farmers or food-producing lands • R&D for non-wood alternatives to reduce demand on forests
Fishery	• Sustainable use of marine resources and 'mariculture' practices • Priority to small-scale fisherfolk over large-scale commercial ventures
Petroleum	• Access to land, marine and coastal areas • Detailed EIAs
Manufacture/ Retail	• Public interest in biodiversity-friendly products • Appropriate technology transfer • Pollution control measures in manufacturing process • Boost to small-scale biodiversity enterprises

Ashok Dabhi

White lotus - *Nymphaea alba*

Ashok Dabhi

Marigold - *Calendula officinalis*

Ashok Dabhi

Crescent maidenhair - *Adiantum lunulatum*

CEE Photo Library

Several Self Help Groups (SHGs) promote communication, education and pubic awareness of the importance of biodiversity at the local level, as well as channelise members' funds for activities related to sustainable livelihood.

CEE Photo Library

Promotion of organic agriculture through education, awareness and supply of inputs is an important national target to improve soil fertility and reduce impact of chemical fertilizers.

CEE Photo Library

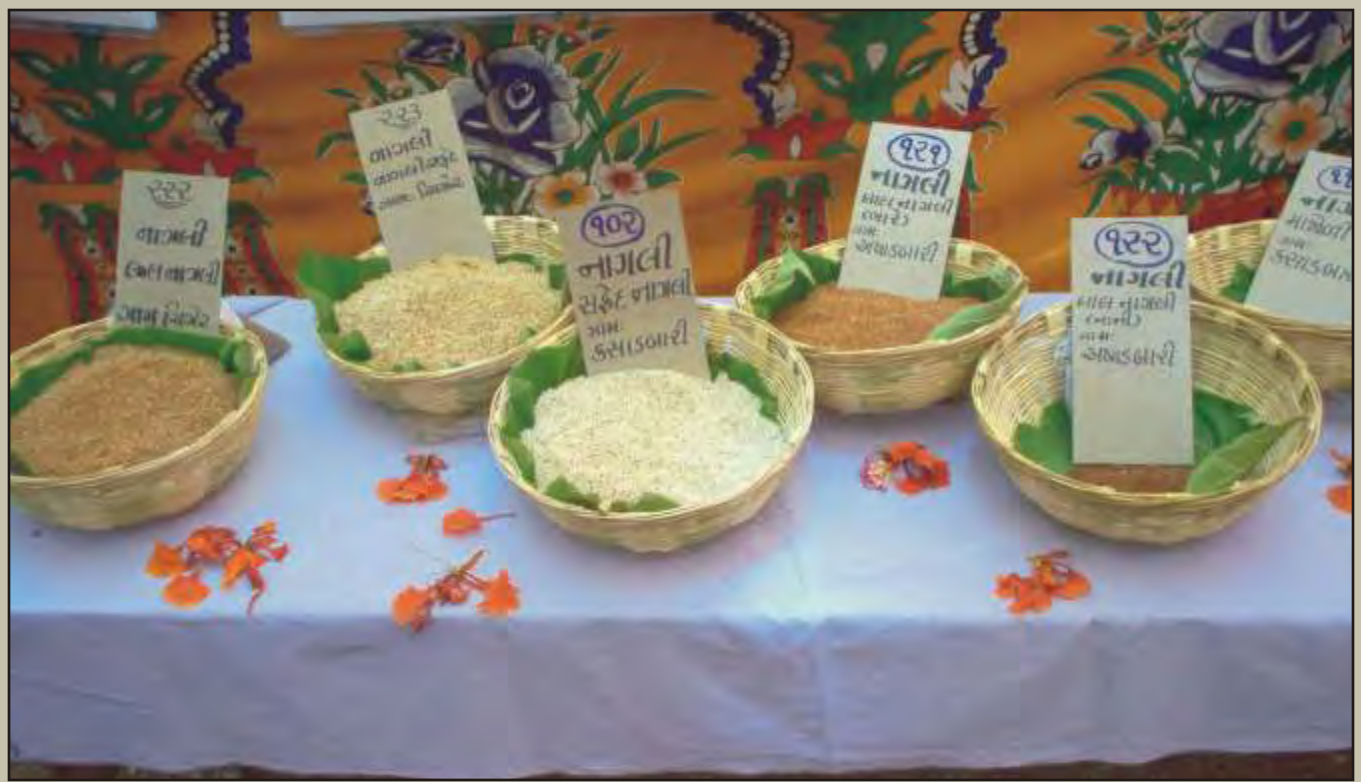
India is implementing a comprehensive programme since 1987 for the conservation and management of wetlands in the country. In Chilika Lagoon, a Ramsar site, a community-based approach has been taken for habitat improvement.

CEE Photo Library

The National Wildlife Action Plan, 2002 calls for revision of fishing laws and their effective implementation. Effective mesh size regulations and fishing holidays have been introduced to reduce fishing pressure during the breeding season.

Dr. Kotwal

Mustard crop in bloom. Mustard oil is a healthy option for cooking and preservation medium. Mustard oil is rich in alpha linolenic acid, which is known for its protective effects on the heart. Mustard oil cake is used as an animal feed.



CEE Photo Library

Seed Exhibit showing the rich agro-biodiversity of the tribal areas of southern Gujarat.

The next question (145) is for DEVELOPED COUNTRIES

145. Please indicate with an "**X**" in the table below in which area your country has provided financial support to developing countries and/or countries with economies in transition. Please elaborate in the space below if necessary.

Areas	Support provided
a) Undertaking national or regional assessments within the framework of MEA (decision VI/8)	
b) In situ conservation (decision V/16)	
c) Enhance national capacity to establish and maintain the mechanisms to protect traditional knowledge (decision VI/10)	
d) Ex situ conservation (decision V/26)	
e) Implementation of the Global Strategy for Plant Conservation (decision VI/9)	
f) Implementation of the Bonn Guidelines (decision VI/24)	
g) Implementation of programme of work on agricultural biodiversity (decision V/5)	
h) Preparation of first report on the State of World's Animal Genetic Resources (decision VI/17)	
i) Support to work of existing regional coordination mechanisms and development of regional and sub regional networks or processes (decision VI/27)	
j) Development of partnerships and other means to provide the necessary support for the implementation of the programme of work on dry and subhumid lands biological diversity (decision VII/2)	
k) Financial support for the operations of the Coordination Mechanism of the Global Taxonomy Initiative (decision VII/9)	
l) Support to the implementation of the Action Plan on Capacity Building as contained in the annex to decision VII/19 (decision VII/19)	
m) Support to the implementation of the programme of work on mountain biological diversity (decision VII/27)	
n) Support to the implementation of the programme of work on protected areas (decision VII/28)	
o) Support to the development of national indicators (decision VII/30)	
p) Others (please specify)	

The next question (146) is for DEVELOPING COUNTRIES OR COUNTRIES WITH ECONOMIES IN TRANSITION

146. Please indicate with an "X" in the table below in which areas your country has applied for funds from the Global Environment Facility (GEF), from developed countries and/or from other sources. The same area may have more than one source of financial support. Please elaborate in the space below if necessary.

Areas	Applied for funds from		
	GEF	Bilateral	Other
a) Preparation of national biodiversity strategies or action plans	X		
b) National capacity self-assessment for implementation of Convention (decision VI/27)	X		
c) Priority actions to implement the Global Taxonomy Initiative (decision V/9)			
d) *In situ* conservation (decision V/16)	X		
e) Development of national strategies or action plans to deal with alien species (decision VI/23)			
f) *Ex situ* conservation, establishment and maintenance of *Ex situ* conservation facilities (decision V/26)			
g) Projects that promote measures for implementing Article 13 (Education and Public Awareness) (decision VI/19)	X		
h) Preparation of national reports (decisions III/9, V/19 and VI/25)	X		
i) Projects for conservation and sustainable use of inland water biological diversity (decision IV/4)			
j) Activities for conservation and sustainable use of agricultural biological diversity (decision V/5)	X		
k) Implementation of the Cartagena Protocol on Biosafety (decision VI/26)	X		
l) Implementation of the Global Taxonomy Initiative			
m) Implementation of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity			
n) Others (please specify)			

D. THEMATIC AREAS

147. Please use the scale indicated below to reflect the level of challenges faced by your country in implementing the thematic programmes of work of the Convention (marine and coastal biodiversity, agricultural biodiversity, forest biodiversity, inland waters biodiversity, dry and sub-humid lands and mountain biodiversity).

3 = High Challenge 2 = Medium Challenge 1 = Low Challenge
0 = Challenge has been successfully overcome N/A = Not applicable

	Programme of Work					
Challenges	Agricultural	Forest	Marine and coastal	Inland water ecosystem	Dry and subhumid lands	Mountain
(a) Lack of political will and support	1	1	1	1	1	1
(b) Limited public participation and stakeholder involvement	1	2	2	2	3	2
(c) Lack of mainstreaming and integration of biodiversity issues into other sectors	1	2	2	2	2	2
(d) Lack of precautionary and proactive measures	2	2	2	2	2	2
(e) Inadequate capacity to act, caused by institutional weakness	1	2	2	1	2	2
(f) Lack of transfer of technology and expertise	1	2	2	1	2	2
(g) Loss of traditional knowledge	1	1	2	2	2	2

	Programme of Work					
Challenges	Agricultural	Forest	Marine and coastal	Inland water ecosystem	Dry and subhumid lands	Mountain
(h) Lack of adequate scientific research capacities to support all the objectives	1	2	2	1	2	1
(i) Lack of accessible knowledge and information	1	1	2	1	2	2
(j) Lack of public education and awareness at all levels	1	2	2	2	2	2
(k) Existing scientific and traditional knowledge not fully utilized	1	1	2	2	2	2
(l) Loss of biodiversity and the corresponding goods and services it provides not properly understood and documented	1	2	3	2	3	2
(m) Lack of financial, human, technical resources	1	3	3	2	3	2
(n) Lack of economic incentive measures	2	2	1	2	2	2
(o) Lack of benefit-sharing	1	2	1	2	2	2
(p) Lack of synergies at national and international levels	1	1	2	1	1	2

	Programme of Work					
Challenges	Agricultural	Forest	Marine and coastal	Inland water ecosystem	Dry and subhumid lands	Mountain
(q) Lack of horizontal cooperation among stakeholders	1	2	2	1	2	2
(r) Lack of effective partnerships	1	2	2	2	2	2
(s) Lack of engagement of scientific community	1	1	2	2	2	2
(t) Lack of appropriate policies and laws	1	1	1	1	1	1
(u) Poverty	3	3	2	2	3	2
(v) Population pressure	3	3	2	2	3	2
(w) Unsustainable consumption and production patterns	1	2	2	2	2	3
(x) Lack of capacities for local communities	1	2	2	2	2	2
(y) Lack of knowledge and practice of ecosystem-based approaches to management	2	2	2	2	3	3
(z) Weak law enforcement capacity	1	2	2	2	2	2
(aa) Natural disasters and environmental change	2	2	3	2	2	2