

## The National Wildlife Action Plan

### Preamble

#### *Background*

The first National Wildlife Action Plan (NWAP) was adopted in 1983, based upon the decision taken in the XV meeting of the Indian Board for Wildlife held in 1982. The plan had outlined the strategies and action points for wildlife conservation which are still relevant. In the meanwhile, however, some problems have become more acute and new concerns have become apparent, requiring a change in priorities. Increased commercial use of natural resources, continued growth of human and livestock populations and changes in consumption patterns are causing greater demographic impacts. Biodiversity conservation has thus become a focus of interest. The National Forest Policy was also formulated in 1988, giving primacy to conservation. Hence this new National Wildlife Action Plan.

#### *Overview*

- The term wildlife encompasses all uncultivated flora and undomesticated fauna. Every species has the right to live and every threatened species must be protected to prevent its extinction.
- Water, wilderness and wildlife are irrevocably interlinked. With mounting agricultural, industrial and demographic pressures, wilderness areas, which are the richest repositories of wildlife and biodiversity have either shrunk or disappeared. Their continued existence is crucial for the long-term survival of the biodiversity and the ecosystems supporting them.
- Effective ecosystem conservation is the foundation of long-term ecological and economic stability. Natural processes, forests and other wild habitats recharge aquifers, maintain water regimes and moderate the impact of floods, droughts and cyclones. Thereby they ensure food security and regulate climate change. They are also a source of food, fodder, fuel and other products supplementing the sustenance of local communities.
- India ranks sixth among the 12-mega biodiversity countries of the world. Conservation of biodiversity is directly linked with conservation of ecosystems and thus with water and food security. These together constitute a major plank of Indian economy.
- National planning has not taken into account the adverse ecological consequences of shrinkage and degradation of wilderness from the pressures of population and commercialisation. As a result, we have witnessed the alarming erosion of our natural heritage, which comprises rivers, aquifers, forests, grasslands, mountains, wetlands, coastal and marine habitats, arid lands and deserts. This has also affected natural phenomena such as breeding, ranging and migration of wildlife and geomorphological features.

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- The increased frequency and intensity of natural disasters, the plummeting fertility of our soils and the accelerated degradation of our fresh water resources have imposed a crippling financial burden on the nation. This underscores the need to realign development priorities to take into account ecological imperatives including the protection of wild species, which sustain and enhance natural habitats, even as they depend on such areas for their survival.
- Rural development for communities inhabiting forestlands and other wilderness regions suffers both from inadequate resources and inappropriate measures. It has failed to address their strong dependence upon natural biomass resources vis-à-vis the shrinking and degrading resource base. Farm productivity has also declined due to lack of proper support, causing impoverishment and enhanced pressures upon natural areas. Resource impoverished communities have therefore begun to place even greater pressure on the biomass of our forests and has led to widespread alienation of people from the goals of nature conservation efforts.
- Habitat loss caused by developmental projects such as dams, mines, etc. compound the problems of wildlife conservation.
- The constraining impact of habitat loss has been compounded by illegal trade fuelled by a rising demand of wildlife products and their lucrative prices in the international market.

### **Policy Imperatives**

***Ecological Security:*** To protect the long-term ecological security of India, the national development agenda must recognise the imperative of identifying and protecting natural ecosystems from over-exploitation, contamination and degradation. Short-term economic gains must not be permitted to undermine ecological security.

***Priority to Conservation:*** Assigning conservation a high priority both at the level of central and state governments is an imperative. Its integration in all development programmes, evolving appropriate funding mechanism, enhancement of financial allocations and provision of adequate personnel with requisite expertise has to be ensured, to arrest the ongoing trend of degradation and to restore wildlife and its habitat.

***National Land Use Policy:*** The NWAP cannot be executed in isolation. Wildlife conservation cannot be restricted to national parks and sanctuaries. Areas outside the protected area network are often vital ecological corridor links and must be protected to prevent isolation of fragments of biodiversity, which will not survive in the long run. Land and water use policies will need to accept the imperative of strictly protecting ecologically fragile habitats and regulating use elsewhere.

***Primacy for Water and Sustenance:*** Water must be recognised as a prime produce of natural forests. Forests must be managed to optimise and protect hydrological systems. The National Forest Policy of 1988, which emphasises conserving our natural heritage in the form of natural forests, flora and fauna, is in consonance with this imperative. A critical imperative is also to recognise forests, wetlands and other natural habitats as a

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source of survival for millions of people, in particular as a source of NTFP and aquatic resources.

***In situ Conservation:*** Primacy must be accorded to *in situ* conservation, the sheet anchor of wildlife conservation. *Ex situ* measures in zoological parks and gene banks may supplement this objective, without depleting scarce wild resources.

***Peoples' Support for Wildlife:*** Local communities traditionally depend on natural biomass and they must, therefore, have the first lien on such resources. Such benefits must be subject to assumption of a basic responsibility to protect and conserve these resources by suitably modifying unsustainable activities. Conservation programmes must attempt to reconcile livelihood security with wildlife protection through creative zonation and by adding new Protected Area (PA) categories in consultation with local communities, such as an inviolate core, conservation buffer, community buffer and multiple use areas.

***Man-Animal Conflict:*** While increasing man-animal conflict is an outcome of shrinkage, fragmentation and deterioration of habitats, it has caused destruction of wildlife and generated animosity against wild animals and protected areas. This is a crucial management issue, which needs to be addressed through innovative approaches.

### **Strategy for Action**

Adopting and implementing strategies and needs outlined above will call for action covering the following parameters:

- I Strengthening and Enhancing the Protected Area Network
- II Effective Management of Protected Areas
- III Conservation of Wild and Endangered Species and Their Habitats
- IV Restoration of Degraded Habitats outside Protected Areas
- V Control of Poaching, Taxidermy and Illegal Trade in Wild Animal and Plant Species
- VI Monitoring and Research
- VII Human Resource Development and Personnel Planning
- VIII Ensuring Peoples' Participation in Wildlife Conservation
- IX Conservation Awareness and Education
- X Wildlife Tourism
- XI Domestic Legislation and International Conventions
- XII Enhancing Financial Allocation for Ensuring Sustained Fund Flow to the Wildlife Sector
- XIII Integration of National Wildlife Action Plan with Other Sectoral Programmes

### **I. Strengthening and Enhancing the Protected Area Network**

#### **Overview and objectives**

In keeping with the objectives of the 1983 National Wildlife Action Plan, the Union Government of India, has successfully initiated the process of setting up a representative network of scientifically-managed PAs. The area under National Parks (NP) and

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Sanctuaries (S) at present is around 1.56 lakh sq. km. Out of ten identified biogeographic zones, some are still deficient in Protected Areas (PA) coverage. Efforts to increase the extent of Protected Areas (PA) in these zones need to be strengthened and enhanced as the strike strategy for the protection of our wildlife and biodiversity.

Apart from national parks and sanctuaries new legal PA categories are required, namely 'Conservation Reserves' and 'Community Reserves'. Together with these categorisations and by including suitable adjacent habitats and corridors with PAs, we should aim to bring 10 per cent of India's land mass under the PA network, of which at least half should be inviolate habitats. PA network should adequately cover all biogeographic zones, forest types and wild species of flora and fauna, especially the endangered ones. Suitable amendments need to be made for this purpose in the Wildlife (Protection) Act, 1972.

In case readjustment of legal status and boundaries of existing and proposed PAs is required to be done, the same must be done on the basis of ecological, natural boundaries and features. Denotifications and deletions of areas from PAs to accommodate commercial or non-forest activities must be avoided.

#### **Action required**

1. Statewise review of the PA network to identify the gaps with reference to the parameters mentioned above and to rectify the inadequacies.
2. Create a series of inviolate areas in representative biogeographic zones and provide linkages between all PAs within biogeographic sub-divisions.

#### **Priority projects**

1.1 Complete the review and publication of the 1988 WII report on Protected Area Network.

*Timing:* To complete by the year 2002.

*Responsibility:* MoEF and WII.

1.2 Develop guidelines and identify sites that can potentially be declared as Conservation Reserves and Community Conserved Areas under Wildlife Protection Act, 1972.

*Timing:* To start in 2002 and complete by the year 2005.

*Responsibility:* MoEF, WII and scientific institutions.

1.3 Follow up with all States/Union Territories, for establishment of new Protected Areas including the proposed Conservation Reserves and Community Reserves. Implementation of the recommendations given in WII's PA network report.

*Timing:* To start in 2002 and complete by the year 2007.

*Responsibility:* MoEF and State Governments.

2.1 Complete legal procedures for final notification of existing and new PAs. Readjustments of boundaries of NP/WLS if required should be done according to ecological and natural physical features.

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*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and State Governments.

2.2 Prepare a time bound programme to assist voluntary relocation and rehabilitation of people living in national parks and sanctuaries and get it implemented through State Governments.

*Timing:* To start in 2002 and complete by the year 2011.

*Responsibility:* MoEF, State Governments, UT, Ministry of Tribal Welfare, Ministry of Rural Development and NGOs.

2.3 Institute a five-year review of the existing Protected Area Network in India.

*Timing:* To start in 2002 and complete by the year 2003. To be repeated every five years.

*Responsibility:* MoEF, State Governments, assisted by WII and other scientific institutions.

## **II. Effective Management of Protected Areas**

### ***Overview and objectives***

Each PA should have its own management plan, based on sound scientific and ecological data. Strict conservation zones will require more protection than management. These areas should be free of all urban facilities, tourism and public thoroughfare. Degraded habitats, or areas where conditions need to be created to favour endangered species, will also need extra-careful managing and monitoring.

The guiding principle for PA managers should be to minimise the adverse impact on natural processes by human acts. These may include existence of exotics, monocultures, fires, poaching, diseases, timber felling, removal of dead wood, contamination from toxics and pollution. Management plans should be based on scientific knowledge, adequate field data and traditional knowledge and expertise. They should also include periodic assessment of the contribution of PAs towards augmenting water resources of the region.

In all situations, the prime management objective must be to protect the PA from adverse impacts and thus promote natural regeneration, as this is the surest way to ensure the perpetuity or return of wild indigenous flora and fauna. The introduction of exotic species, or planting monoculture harms the interests of wildlife conservation and must be prohibited.

From their inception, management plans should seek to involve local communities and make them aware of PA objectives including the control of fire, prevention of overgrazing, disease and poaching. Their involvement in the enhancement of exploitable biomass, including wild foods, fodder and fuelwood in areas *outside* the PAs should be sought. This would serve the dual objectives of reducing biotic pressures on the PAs and

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to buffer the impact of wildlife on humans, crops and livestock. Since activities that are not in the interest of wildlife conservation are not permissible, populations within the existing PAs, desirous of availing civic and other amenities should be encouraged and aided to move out.

### ***Action required***

1. Preparation of scientific, ecologically-sound, PA-specific management plans by teams of officials, experts and local community representatives, incorporating case studies of past management successes and failures. Strict conservation zones and degraded habitats to be identified for each PA and special management measures to be formulated for these areas.
2. Consolidate management practices and infrastructure of existing PAs and provide linkages between management actions of all PAs within the biogeographic sub-division.
3. Man-animal conflicts to be mitigated in and around PAs.
4. Restoration and enhancement of water sources to be done in all terrestrial PAs. Listing of streams and rivers in these terrestrial PAs, with estimates of flow and seasonal duration must also be done.
5. Periodic SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) to be undertaken for each Protected Area.

### ***Priority projects***

1.1 Review and revise existing manuals on preparation of management plans and forest division working plans to emphasise biodiversity conservation, landscape level planning and local community participation.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, WII and State Governments.

1.2 Preparation of scientific and ecologically sound management plans should be finalised for all Protected Areas.

*Timing:* To be completed by 2002.

*Responsibility:* MoEF and State Governments.

1.3 Set up a central monitoring mechanism to ascertain timely preparation of management plans/schemes, to review quality of PA management plans and monitor its implementation

*Timing:* 2002

*Responsibility:* MoEF.

1.4 Institute rewards for PA staff for successful restoration of habitat and conservation of threatened species/communities.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and State Governments

2.1 Review management practices and infrastructure of all national parks and sanctuaries, hold workshops for training field personnel and local people in forest, wetland, desert,

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mountain and marine PA management with the aim of capacity building in habitat management and monitoring.

*Timing:* To start in 2002 and complete by the year 2016.

*Responsibility:* MoEF, WII, State Governments and scientific institutions.

2.2 Institutionalise a five-year periodic review of Protected Areas on parameters such as status of management, protection, habitat restoration, diversity indices, conservation of threatened and indicator species, adequacy of infrastructure, staff and financial resources and socio-economic status of local communities.

*Timing:* To start in 2006, repeated every five years.

*Responsibility:* MoEF, Scientific Institutions, NGOs and HWLWs.

3.1 Development and standardisation of techniques for capture, translocation and rehabilitation of species (including mass capture), and dissemination of knowledge and training therein.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and WII.

3.2 Help evolve innovative techniques, including change in cropping pattern for prevention and diversion of crop raiding wildlife populations.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments and Scientific Institutions.

3.3 Timely and adequate compensation to prevent revenge killings of wild animals and initiation of crop insurance scheme.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and State Governments.

4.1 Demonstrate the hydrological contribution of the PA network by measuring the lean season flow of water from PAs. Illustrate how wildlife conservation through natural regeneration in catchment areas of water bodies and reservoirs can reduce siltation and regulate year round water flow.

*Timing:* To start in 2002 and complete by the year 2007.

*Responsibility:* MoEF and Scientific Institutions.

5.1 Provide to each PA technical assistance for restoration of degraded habitats, control and eradication of exotic invasive species. Restoration processes and ecology to be monitored and documented.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, BNHS, SACON, WII and Universities.

5.2 Provide effective prevention of fire as well as ecologically unsustainable grazing and other exploitation in national parks and sanctuaries by involving local communities through incentives and alternatives.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* State Governments.

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6.1 Annual Report of all PAs to be prepared and placed before the State Wildlife Advisory Boards. These should include management achievements and also principal threats to the PA or wildlife, including those from sources such as dams, mines, roads, tourism projects, chemical pollution, etc., and measures taken to redress the threats. Views of the Honorary Wildlife Wardens may also be taken into account while preparing the Annual Reports.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* PA managers and State Governments.

### **III. Conservation of Wild and Endangered Species and Their Habitats**

#### ***Overview and objectives***

The aim of the NWAP is to conserve *in situ* all taxa of flora and fauna along with the full range of ecosystems they inhabit. The ecological requirements for the survival of threatened, rare and endangered species, together with their community associations of flora and fauna, must be ensured.

The isolation of animal species due to fragmentation of habitats reduces relict populations to unviable levels, leading to local extinction. For highly endangered species like the Great Indian Bustard, Bengal Florican, Asiatic Lion, Wild Buffalo, Dugong, the Manipur Brow Antlered Deer and the like, alternative homes are imperative. Where *in situ* conservation efforts are unlikely to succeed, *ex situ* captive breeding and rehabilitation measures may be necessary, in tandem with the preparation of their wild habitats to receive back captive populations, specially in respect of lesser-known species where status and distribution of wild animals are not fully known.

Alteration of genetic purity of certain wild species through inbreeding with domesticated, feral counterparts is yet another grave impending threat, seriously jeopardising genetic purity of species like the Wild Buffalo, Wild Pig and Jungle Fowl. It must be ensured that natural phenomena involving *inter alia* pollination, breeding, feeding, movements and migrations are not hampered but assisted.

#### ***Action required***

1. To identify all endangered species of flora and fauna, study their needs and survey their environs and habitats to establish the current level of security and the nature of threats. Conduct periodic reviews of flora and fauna species status, and correlate the same with the IUCN Red Data List every three years.
2. Invest special care and resources to protect habitats that harbour highly endangered species especially those having single population and a high degree of endemism.
3. Initiate action to prevent the “genetic swamping” of wild species.

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4. To undertake a programme of *ex situ* captive breeding and rehabilitation in the wild for critically endangered species in accordance with IUCN guidelines, after developing requisite techniques and capabilities in this regard.
5. To publish flora and fauna species status papers periodically, which should be translated into local languages.
6. To declare identified areas around Protected Areas and corridors as ecologically fragile under the Environment (Protection) Act, 1986, wherever necessary.

***Priority projects***

1.1 Initiate a time-bound plan to identify and conduct status surveys of all endangered species covering all groups of rare and threatened species of flora and fauna. Provide protection to the environs and habitats of all rare and threatened species of flora and fauna under PAs.

*Timing:* To start in 2002 and complete by the year 2009.

*Responsibility:* MoEF and Scientific Institutions.

1.2 Identify for each threatened species the key threats to survival and develop an action plan to deal with the problems. Due priority to be given to conservation of less charismatic species of both flora and fauna, especially about which little information exists.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments, IIT, Scientific Institutions and NGOs.

1.3 Review and update flora and fauna species status every three years to correlate with the IUCN Red Data List.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, ZSI and BSI.

2.1 Creation of a new Centrally Sponsored Scheme for assisting the State Governments in protection of wildlife and its habitat outside Protected Areas.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments and NGOs.

2.2 Identify suitable alternative homes for single isolated populations of species such as Jerdon's Courser, Asiatic Lion, Manipur Deer, Wroughton's Free Tailed Bat and the like, and manage the same as Protected Areas effectively.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments, Scientific Institutions and NGOs.

2.3 Special schemes for the welfare of local people outside PAs to be taken up on priority basis where critically endangered species are found. These Centrally Sponsored Schemes will be for helping the local people to get better access to health, education and alternate ways to meet their everyday livelihood needs.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments and NGOs.

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3.1 Take immediate steps for preventing the entry of domestic and feral species that may lead to genetic swamping. Safeguards have to be taken to prevent wild populations of such species from straying out of their habitats.

*Timing:* To start in 2003 and ongoing.

*Responsibility:* MoEF, State Governments and NGOs.

3.2 Genetically pure populations to be safeguarded from future genetic contamination and where genetic swamping has occurred, to phase out such swamping.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and scientific institutions.

3.3 Take preventive action against the introduction of related species which may cause interbreeding among taxa and hybridisation. Further introductions of floral and faunal species exotic to the locality must not be permitted in Protected Areas, nor in areas from where they are likely to invade protected areas.

*Timing:* To start in 2003 and ongoing.

*Responsibility:* MoEF, State Governments, Scientific Institutions and NGOs.

4.1 Develop capabilities for planned breeding and reintroduction of captive bred populations of identified endangered species in accordance with IUCN guidelines.

*Timing:* To start in 2003 and ongoing.

*Responsibility:* CZA, State Governments and Scientific Institutions.

4.2 Develop the technical expertise for capture, translocation, rehabilitation of species at 10 selected sites.

*Timing:* To start in 2002 and complete by the year 2007.

*Responsibility:* WII, State Governments and Scientific Institutions.

5.1 Publications of species status papers periodically covering all rare, endangered and vulnerable species of flora and fauna. Translation of these papers in relevant local languages will also be done.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, BSI, ZSI and Scientific Institutions.

5.2 All identified areas around Protected Areas and wildlife corridors to be declared as ecologically fragile under the Environment (Protection) Act, 1986.

*Timing:* To complete by the year 2004.

*Responsibility:* MoEF.

#### **IV. Restoration of Degraded Habitats outside Protected Areas**

##### ***Overview and objectives***

The restoration and management of degraded habitats outside PAs is a vital objective, both to provide sufficient habitat for spatial movement of spill-over species outside PAs, and to provide biological resources needed by the local communities to prevent their dependency on PA resources. This is also critical to the linking of PAs with effective

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wildlife corridors to provide for genetic continuity and prevention of insular wild animal populations. Land use policies in keeping with the objectives of biodiversity conservation are vital in such zones.

Degraded habitats outside PAs and their needs must urgently be identified for restoration, which would involve a combination of protection, soil and water conservation and planting of local species, coupled with the removal of exotics. The primary strategy for restoration should be through natural regeneration with the help of wild pollinators and seed dispersal. Grasslands, wetlands and common grazing lands are extremely valuable for wildlife conservation. Their productivity potential needs to be restored urgently. Incentives to promote wildlife conservation on private lands also need to be given.

### ***Action required***

1. Each State/UT to identify and prioritise degraded habitats outside PAs for the natural regeneration of forests/wetlands; identify and restore linkages and corridors between wildlife habitats using a combination of satellite imageries and ground truthing.
2. The policies of other ministries require to be assessed and suggestions/changes be recommended, so that budgets allocated by different sectors can be harmonised and used to enhance the process of natural regeneration outside PAs through carefully monitored soil and water conservation works and effective protection activities. Plantations of appropriate indigenous species should be done wherever necessary, apart from working with scientific institutions specialising in ecological restoration of degraded ecosystems.

### ***Priority projects***

1.1 Identify degraded habitats including forests, grasslands, wetlands, around each Protected Area and in potential 'wildlife corridors' where protection and restoration will yield best results. Identify key factors responsible for degradation and prepare recovery plans to restore degraded areas.

*Timing:* To start in 2002 and complete by the year 2004.

*Responsibility:* MoEF, State Governments, Scientific Institutions, NGOs and local people.

1.2 Identify areas outside the present national park and sanctuary network, sites of community managed areas like sacred groves and tanks, pasture lands, etc. where endemic or localised threatened species may continue to exist, and support their continued conservation.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments, NGOs and Scientific Institutions.

2.1 Develop time-bound recovery plan for degraded ecosystems and areas in non-forest lands, in consultation with other ministries and implement the same.

*Timing:* To start in 2002 and complete by the year 2011.

*Responsibility:* MoEF, Rural Development Ministry, Agriculture Ministry, Ministry of Water Resources, Planning Commission, State Governments, Scientific Institutions, NGOs and local people.

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## **V. Control of Poaching, Taxidermy & Illegal Trade in Wild Animal & Plant Species**

### ***Overview and objectives***

Poaching and illegal trade in wild animals and plants and their parts and products has emerged as one of the most serious threats to wildlife in the country. If not controlled effectively, it has the potential to substantially nullify achievements in other fields of wildlife conservation. It may even result in extinction of some plants and animals and substantial decline in the wild prey populations leading to crop raiding by wild ungulates, increased incidences of livestock predation and sometimes loss of human life by carnivores. This has alienated the communities in several locations and they tend to resort to revenge killings and sometimes connive with poachers. Man-animal conflict situations require urgent amelioration to avoid these becoming a source of retaliatory action against the animals in question by the affected people, and later foci of illegal trade in animals parts and products. This trend has to be reversed. Although some efforts have been made for better coordination between wildlife managers and law and order enforcement agencies, yet prevention of wildlife crime remains a priority area in wildlife conservation and related law enforcement.

India, as a signatory to CITES, is obliged to take all necessary steps to implement the provisions of the treaty to ban international commercial trade in Appendix-I species of plants and animals and regulate trade in Appendix-II and III species.

Requisite information and database on wildlife offences is scanty. Resultantly, there is little scope to devise suitable strategies to combat it effectively. Wildlife crime detection and follow-up is conducted in an ad hoc manner by most enforcement agencies due to lack of investigation skills and infrastructure.

Large number of court cases dealing with wildlife crime continue to remain pending over long periods. Even the cases that get decided do little to deter offenders, as punishment awarded is often meagre. Slow rate of conviction in court proceedings leads to the accused getting easy exemption from appearances, thus prolonging the evidence stage. Insufficient or badly presented evidence often coupled with non-availability of witnesses, frivolous appeals and interim orders stall most cases at trial courts. There is urgent need to provide adequate professional skills in prosecution matters related to wildlife offences for the frontline staff.

Wildlife forensics as a science and tool for wildlife crime prevention and control needs to be fostered.

Commercially valuable animals and plants are more vulnerable to poaching and smuggling. Some examples are poaching of tiger, elephant, leopard, rhino, bear, musk

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deer, snakes, turtles and their eggs, monitor lizards, mongoose, jackals, pangolins, otters, several fish and marine invertebrates, butterflies, birds like pheasants, Edible-nest Swiftlet and plants like orchids.

Some regions, specially international borders of India are vulnerable to illegal trade in wildlife. Lucrative prices offered for wild animal skins, bones, ivory, musk, bear bile and other wildlife products as well as endangered species of butterfly, birds and plant products has significantly enhanced the pecuniary gains of illegal trade. This has led to the growth of a large number of mafia-like operations, which the present staff and infrastructure find difficult to counter. The Judiciary and the Police also do not have the desired sensitivity to appreciate the need for timely apprehension and disposal of cases relating to wildlife offences. A number of such cases pending in courts remain untried for several years. The Subramanian Committee and the High Court Committee have made certain relevant recommendations in this regard, and efforts are on at the centre and state to implement these.

Media, has of late started taking welcome interest in wildlife issues for a well-researched and responsible coverage.

#### ***Action required***

1. Effective prevention of poaching and illegal wildlife trade.
2. Setting up of designated courts to try wildlife and forest-related offences.
3. Wildlife forensic lab at the WII needs to be strengthened. Regional forensic labs also need to be set up in states.
4. International land borders with Nepal, Bhutan, Myanmar and Bangladesh and coastal waters to be made more secure to prohibit smuggling of wildlife.
5. Setting up of a National Wildlife Crime Cell with links to such units to be established at the State level. A professional set-up for gathering intelligence on wildlife criminals for effective and timely action is urgently needed at the States as well as the GoI level.
6. Speedy and effective amelioration of man-animal conflict situations require professional and innovative approaches including recourse to suitable insurance schemes. This may require amendments in insurance laws.

#### ***Priority projects***

1.1 Reorganise forest staff into viable units and arm them with sophisticated weapons and other equipment to combat poaching and the illicit trade effectively. This includes better and faster communication facilities.

*Timing:* To start in 2002 and end by 2003.

*Responsibility:* MoEF and States/UTs.

1.2 The forestry/wildlife personnel must have a status on par with the police in the use of weapons and other equipment to enable them to combat poaching and illicit trade effectively.

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*Timing:* To complete by the year 2003.

*Responsibility:* MoEF and State Govts.

1.3 Institute awards for bravery and meritorious service. Necessary amendments in the relevant rules and codes should be made to this effect.

*Timing:* To start in 2003 and ongoing.

*Responsibility:* MoEF and State Govts.

1.4 State/UTs to provide all needed training assistance in their respective forest and wildlife circles for an effective disposal of wildlife related cases through special courts and public prosecutors especially assigned for the purpose.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and State Govts.

1.5 Provide for 'Secret Funds' to assist the state government for intelligence gathering in cases of illegal trade and seizures of wildlife species and their products.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments and Ministry of Finance.

1.6 Outreach of all enforcement agencies especially, police, paramilitary forces, Customs, Coast Guard, Intelligence agencies and the like to be strengthened through meetings and training programmes. To ensure priority action by them for control of illegal trade in wildlife.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments/UTs, Home Ministry, Defence Ministry and Ministry of Finance.

2.1 To provide special Courts for effective implementation of the WLPA, 1972 especially in States or regions which have a large number of wildlife cases pending in the courts of law.

*Timing:* To start in 2002 and ongoing

*Responsibility:* State Governments/MoEF/Ministry of Home/Ministry of Agriculture.

3.1 Wildlife forensic lab at WII to be strengthened. Regional forensic labs also need to be set up in the States.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, State Governments and Scientific Institutions.

3.2 Prepare identification material of all restricted trade plant and animal species and their products for use by all enforcement agencies.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, NGOs and Scientific Institutions.

4.1 Set up extra and specialised vigilance at exit points of illegal trade in wildlife species and their products with help from other enforcement agencies such as Customs, Army, Coast Guard, Police

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, State Governments, Home Ministry and Defence Ministry.

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5.1 Set up special cell to formulate and disperse required information about wildlife species and the products in wildlife trade, consequence of such action on our national heritage and national economy through appropriate methods including the Internet. Emphasis should also be given on smaller animal species and plants.

*Timing:* To start in 2002 and complete by the year 2009.

*Responsibility:* MoEF, NGOs and Scientific Institutions.

6.1 Provide special funds to judiciously and effectively deal with compensation payments in all States/UTs against assessed damage to life and property by wild animals.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and State Governments.

6.2 To initiate special schemes to assist in the rehabilitation of individuals who continue to follow old, presently illegal and unsustainable practices of wildlife use. Alternate livelihood practices need to be provided.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* NGOs.

## **VI. Monitoring and Research**

### ***Overview and objectives***

Monitoring and research are tools for a better understanding of nature, its functions and to enable optimum or sustainable utilisation of its resources, as well as to evaluate the conservation status of species and habitats and the extent of impact of conservation endeavours undertaken. Such understanding will also help reduce man-animal conflicts. There is a marked deficiency in baseline biological data and on information we need to manage and monitor PAs. We know little about the impact of human activities on wildlife habitats, or about the full range of benefits that flow from biodiversity-rich old growth, natural forests and ecosystems. While we know, for instance, that forests help to maintain water regime, no studies are in place to quantify the lean season flows of water out of protected areas. Not much is known about techniques, which could *inter alia* help restore, at a very minimal cost, degraded habitats, whose run-off are sedimenting reservoirs of most large dams, rivers and other wetlands.

Decisions to exploit resources in PAs are often based on expediency rather than hard data and this sometimes results in permanent damage to fragile ecosystems. Experimental research on alternatives to resources from the wild habitats is vital. There is need to establish benchmarks for measuring diversity and to monitor the status of indicator/flagship/threatened species of flora and fauna and their breeding biology. Applied research is also needed to help overcome specific management problems in protected areas. Multi-disciplinary integrated research encompassing scientific and socio-economic aspects related to PA management needs to be encouraged.

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Research for making use of ethnic knowledge in wildlife conservation and management as well as in applied research to obtain IPRs (Intellectual Property Rights) capable of benefiting the local communities and country should receive special attention.

***Action required***

1. Networking between WII, BNHS, SACON, BSI, ZSI, IISC, Universities and other smaller institutions should help evolve integrated, multi-disciplinary research in representative ecosystems. This will require greater financial allocations for field research and monitoring through centrally sponsored schemes.
2. Focus research to acquire a better country-wide understanding of diversity indices, populations of indicators and endangered species and habitat conditions.
3. Review current management practices and translate research findings into management applications and effective monitoring systems.
4. Study ethnic knowledge and apply it to wildlife management and work with communities to obtain IPRs to benefit both the communities and the nation.
5. Monitor and document the impact of human activities on natural habitats, including the spread of disease, impact of fires started to facilitate grazing and NTFP collections within and outside PAs.
6. Document and assess damage done by large projects and intrusions, such as dams, mines, canal systems, roads and the use of pesticides and chemicals.
7. Prepare research priorities for PAs, which would be consolidated into a State Wildlife Research Plan (5 year period).
8. Review present research approval procedures to ensure research in biological conservation.
9. Identification of wildlife corridors between important PAs harbouring endangered and long ranging species.

***Priority projects***

1.1 Establish a National Wildlife Research Coordination Committee to prioritise, monitor and coordinate research needs and monitor and coordinate policy, strategy and research undertaken by institutions and universities, particularly those funded by the government.

*Timing:* To start in 2002 and complete by the year 2004.

*Responsibility:* MoEF and WII.

2.1 To carry out research on various aspects for a better understanding of diversity indices, populations of indicators and endangered species and habitat conditions.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* WII and other scientific institutions.

3.1 Undertake long-term projects to assess water contribution of PAs and connected forests in terms of lean season flows, ground water recharge and flood and drought mitigation.

*Timing:* To start in 2002 and complete by the year 2007.

*Responsibility:* WII and Scientific Institutions.

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3.2 To acquire, evaluate and disseminate available scientific findings and data to enable better management of species and habitats.

*Timing:* To start in 2002 and complete by the year 2006.

*Responsibility:* MoEF, States/UTs and WII.

4.1 Coordinate the study of ethnic knowledge with anthropological/social science institutions with a view to apply such knowledge to wildlife management and to obtain IPRs to benefit local communities and the nation.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* WII and Scientific Institutions.

5.1 To develop and standardise methodologies for disease surveillance epidemiology of wildlife.

*Timing:* To start in 2002 and complete by the year 2006.

*Responsibility:* MoEF, WII and Veterinary Institutions.

6.1 Carry out impact assessment through PA managers, renowned individuals and institutions regarding large-scale habitat alterations/destruction by way of dams, mines, canal systems, roads and the spread of chemical contaminants.

*Timing:* To start in 2002 and complete by the year 2004.

*Responsibility:* MoEF, WII and Veterinary Institutions.

7.1 Each PA manager to prepare research priorities for his PA, which will be consolidated in a State Wildlife Research Plan (five year period). These plans should be funded partly/fully by GoI.

*Timing:* To start in 2002 and complete by the year 2004 and ongoing every 5 years.

*Responsibility:* State Governments and PA managers.

8.1 Review research approval procedures for conservation projects.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, State/UT Governments.

9.1 Undertake studies to identify corridors between the present and proposed PA network. Migration corridors of large mammals like elephants and for aquatic animals like fish also need to be addressed.

*Timing:* To start in 2002 and complete by the year 2004.

*Responsibility:* State/UTs, WII, FSI, Scientific Institutions and NGOs.

## **VII. Human Resource Development and Personnel Planning**

### ***Overview and objectives***

The challenging wildlife conservation scenario today requires committed wildlife managers who possess scientific competence and social awareness aided by communication skills. They also need sharp detection and enforcement capabilities against organised criminal elements nursed by big-money illegal trade. Accomplished wildlife biologists and social scientists are also necessary. Frontline staff equally must have similar skills at the grassroots level. The current capacity building and personnel While all efforts have been made to maintain the accuracy of this information, relevant official gazettes may be consulted for authenticity. *Sanctuary Asia* will not be responsible for any loss due to the information available on this website. Any discrepancy found may kindly be brought to our notice.

planning and management measures need to be greatly strengthened to meet these challenges.

Wildlife conservation and PA management are often neglected in relation to other functions of forest management such as commercial plantation, extraction of timber and non-timber produce from forests. Understandably therefore, we see fewer people opting for wildlife training and postings. The lack of opportunities for promotion in wildlife postings and the current recruitment process of IFS candidates exacerbates this situation.

A premium on the right aptitude and commitment towards wildlife and nature must be recognised as key qualifications when recruiting and training staff, officers and volunteers. People trained in wildlife must be given wildlife postings. Professionals dedicated solely to protection of wildlife are crucial to achieve wildlife conservation objectives.

At appropriate levels, skills for the use of Internet, GIS and related technology must be imparted. To ensure that competent managers, biologists, social scientists and enforcement personnel staff the PA network, career graphs must offer scope for professional growth. Universities should initiate undergraduate and graduate courses in wildlife biology and EIA techniques.

Wildlife Institute of India (WII) is the main training facility in order to train Indian Forest Service (IFS) and State Forest Service (SFS) officers as well as the Forest Rangers whose responsibility is to protect and manage wildlife in the States/UTs. The frontline staff is trained in State-run forest training schools, only a few of which have exclusive programmes in wildlife management. Also, not all States have dedicated Wildlife Wings to manage PAs. The availing of WII's training programmes by States falls far short of their requirement and also WII's capacity. As a result, in a majority of States, officers not trained in wildlife management man many PAs. Besides shortage of trained officers, often there is little consistency in wildlife postings. Aberrations surface as short tenures on postings in PAs as well as posting of available trained officers on non-wildlife jobs. Paucity of funds is a major stated reason for under-utilisation of WII's training programmes. This is also the reason for inadequate training facilities in States for frontline staff.

A real cause for this deficiency is the continuing low priority assigned to the forestry sector in States, and within the forestry sector to the wildlife sub-sector, despite the critical role that these have in the security of soil, water and biodiversity. Close integration of wildlife and forest management is considered essential in view of the dependence of PAs upon neighbouring forests for viability and because a significant proportion of wildlife inhabits forests outside PAs. But, the low priority to wildlife within

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the forestry sector resulting in the aforesaid deficiency is a cause for concern. The issue of appropriate priority to forestry at the State level, as well as to wildlife within the forestry sector, needs to be urgently addressed in conformity with the National Forest Policy adopted in 1988. Likewise, the integration of forest and wildlife management and rural development in these regions is essential and the initiative for this must come from the forest-wildlife sector. Informed accommodation and responsible people participatory stance would be necessary on part of the forest-wildlife personnel for such a strategy to be implemented. It is clear that the initiation and success of such a strategy would greatly depend upon the professional quality of personnel and a meaningful personnel policy.

***Action required***

1. To review and strengthen existing mechanisms for recruitment, training and career development of protected area personnel and to strengthen and sustain a professional wildlife cadre capable of helping to achieve the above objectives.
2. The thrust of the current and fresh capacity building effort, with special focus on WII, shall need to sharply focus upon the scientific and human aspects of the present requirements of field conservation. The overall HRD effort shall have to be increased both in quantum and coverage so as to also cover the frontline staff in the States/UTs, duly supported by 100% incremental Central assistance. Training programmes are to increasingly use case studies of innovative approaches, which have yielded simultaneous success in scientific, management and human aspects of field conservation. Wildlife and biodiversity conservation along with allied people issues need to be built into the training programmes of foresters at all levels by enlarging the syllabi and their delivery in all forestry institutions, right from the IGNFA and IIFM to state institutions training frontline staff.
3. Institutions *e.g.* WII, IGNFA and IIFM to undertake awareness programmes for personnel of other departments/services whose work has a bearing upon forest and wildlife conservation. Their thrust to be upon values and benefits of sound conservation and responsible use of natural resources for the sustenance of agriculture, animal husbandry and fisheries. Conservation ethos of traditional practices should be recalled for disciplining the current overuse. Modalities of reorienting rural development and allied activities so as to be compatible with forest and wildlife conservation would need to be demonstrated. Case-study based deliveries should convince participants that this is possible and that it would also benefit local people.
4. States should have adequate wildlife-trained personnel to man all positions right from the Park Director down to forest guards. Cadres below the Forest Rangers should remain with the Wildlife Wing from initial recruitment to retirement. Wildlife-trained personnel must not be transferred to non-wildlife postings. Adequate promotional avenues should be provided to them. Lateral movement of forest rangers and above should be permitted only after ensuring that all sanctioned posts in protected areas are manned by trained personnel.

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5. It is essential that all PAs and their buffer zones are placed under the unified command of a dedicated Wildlife Wing headed by the Chief Wildlife Warden (CWLW), in States where it is not already so. A substantial proportion of wildlife exists outside PAs and its care is an important integrated function of the forest department. The CWLW, as the legal custodian of wildlife in the State should be authorised to make entries in the annual confidential performance reports of all territorial Divisional Forest Officers and Conservators of Forests.

### ***Priority projects***

1.1 Initiate forthwith (MoEF & WII) a 100% Centrally-funded special scheme for capacity building of field staff from PA managers trained in WII to frontline staff trained in state institutions, with the following components:

- Adequate and dedicated grant placed with WII to fully meet the cost of training at Diploma (IFS and SFS) and Certificate (Rangers) levels, so that lack of funds does not stand in the way of States/UTs deputing required number of trainees.
- 100% incremental Central assistance to States in strengthening infrastructure and training staff at state forestry training institutions for undertaking full-time training of frontline staff in wildlife management and allied people issues. WII is to assist in developing syllabi and training of trainers.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF and WII.

2.1 Upgrade syllabi of WII's training programmes (Diploma, Certificate and M. Sc.) to cover conservation of the full range of biodiversity. Aspects on which strengthening is required are:

- Conservation of small fragmented populations including corridor revival.
- Habitat amelioration and on-ground weed control.
- Application of modern IT techniques in wildlife management including use of GIS in combination with remote sensing.
- Ensuring people's participation in planning and implementation of PA management plans and PA sponsored ecologically sound rural development schemes. Also include local community participation and benefits from well-organised ecotourism.
- Use of people-participatory management zoning as a tool for integrating wildlife conservation with rural development on a landscape scale.
- Human-animal conflict mitigation and damage control based on case studies.
- Case study-based demonstration that forest and wildlife conservation and ecologically sound rural development are mutually complementary.
- Techniques developed from ethnic knowledge for use in wildlife management, based upon prior investigations.
- Developing capacity in trainees to find and harness ethnic knowledge in developing IPRs to benefit local communities.

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- Wildlife protection in the face of current threats including carriage and use of fire arms in dealing with poachers as well as intelligence based action against mafia involved in poaching for illegal trade. Collection of samples for forensic investigations, procedures for arrests, seizures and effective prosecution and liaison with enforcement agencies should also be built in.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF and WII.

3.1 Country-wide database for wildlife-trained officers to be maintained by MoEF and at State level by the Secretariat, PCCF and CWLW. MoEF will monitor and constantly pursue with defaulting States, linking if necessary, the flow of Central assistance in the entire forestry sector with such compliance.

*Timing:* To start in 2002, complete by the year 2003 and ongoing.

*Responsibility:* MoEF and States/UTs.

4.1 WII, IGNFA and IIFM to undertake short-term refresher/special-subject courses for in-service forest and wildlife officers, District Collectors on subjects mentioned above and in integrating forest-wildlife conservation with development at eco-regional scale.

*Timing:* To start in 2001 and complete by the year 2002.

*Responsibility:* MoEF, concerned institutions and Ministry of Personnel.

4.2 WII, IGNFA and IIFM to conduct annual workshops for rural development and enforcement personnel, as well as legislators and NGOs in methodologies for biological diversity conservation, landscape level integration of development and PA management, control of poaching and illegal trade in flora and fauna.

*Timing:* To start in 2002 and complete by the year 2003 and ongoing.

*Responsibility:* MoEF and Concerned Institutions.

5.1 Evolve appropriate personnel management policy.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, States/UTs.

6.1 Issue appropriate guidelines regarding entries in ACRs.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, States/UTs.

7.1 Each state to establish a wildlife training centre for frontline staff.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, States/UTs, UPSC and State PSCs.

8.1 In view of the serious danger now faced by the wildlife personnel in performing protection tasks, those designated for such tasks must have a status on par with the police in the carriage and use of weapons in self-defence and in protecting wildlife and its habitat. This needs to be further supported by grant of awards for bravery and meritorious service. Necessary amendments in the relevant rules and codes should be made to this effect

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*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, Ministry of Home.

8.2 Boost investigation and enforcement capacity of existing wildlife personnel by imparting training on forensic science, and legislation through a centrally sponsored scheme.

*Timing:* To start in 2002 and complete by the year 2003 and ongoing.

*Responsibility:* MoEF, State Governments, UTs and NGOs.

## **VIII. Ensuring Peoples' Participation in Wildlife Conservation**

### ***Overview and objectives***

An age-old feature of forest as well as non-forest natural tracts in India is an intimate interspersed human habitation through them. The people here have all along been traditionally dependent upon the natural biomass resources for their subsistence, income supplementing and socio-cultural well being. A variety of external factors such as increased commercial extraction of timber and other forest produce to meet urban demands, development projects and a phenomenal rise in both human and livestock populations have led to widespread shrinkage and degradation of these natural areas. This has adversely affected the people as well as the conservation status of forests and wildlife.

Rural development as packaged for these areas has all along failed to take into account the strong linkage between effective conservation of such areas and the sustainable welfare of people. As a result, the measures employed have often been inappropriate. This is further compounded by the inadequate per capita inputs that have been going into rural development in these regions. These long-standing deficiencies have been responsible for the degradation of both community and private resource base, resulting in widespread impoverishment of people.

Winning local support, particularly the youth, is imperative for effective species and habitat conservation. It is now well recognised that the local communities are put to a lot of hardship after notification of any area as national park or sanctuary, because of denial of the forest usufructs and other natural produce like fish and other marine products. They are also exposed to the threats from wild animals to life and property. For effective conservation of wildlife it is necessary that Government of India launches programmes and schemes, which can compensate for the loss of opportunities suffered by the communities and for the damage caused to life and property by wild animals.

There have been complaints about forced displacement of the people from the areas where they have been living for generations. A conscious effort should be made by the government to ensure that as far as possible the relocation and rehabilitation should be

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made in a participatory manner taking the concerned people into confidence particularly with regard to the selection of new sites. The inputs given by the government for relocation/rehabilitation should include civic amenities to be created at the new site.

While all the facilities should be provided to the people who volunteer to move outside national parks and sanctuaries, adequate safeguards will have to be taken to prevent land-based developmental activities within national parks and sanctuaries, because such an effort will be violation of Section 29 of Wildlife (Protection) Act. However there should be no ban on imparting skills to local communities, which will reduce their dependence on natural resources of the Protected Areas.

Commercialisation of a host of non-wood forest produce (NWFP) including medicinal plants, in this situation, has made the impoverished people a hapless tool of over-exploitation of the forests. The traditional conservation ethos stands compromised in many situations and the collection practices as now employed cause heavy damage to the resource base through deliberate forest fires, lopping and cutting of trees/shrubs. The forest management strategies have also generally failed to see these factors of the vicious cycle of attrition. The recent responses by way of Joint Forest Management (JFM) initiatives have been inadequate in scale and varying in the quality of genuine stakeholder participation. Given these circumstances, mere enforcement strategies of wildlife and Protected Area management only cause alienation of people and loss of their support, compounding the already impaired efficacy of conservation. Fragmentation of wildlife habitats has also enhanced the levels of damage to crops and livestock from wild animals in neighbouring villages, worsening the already tenuous interface situation.

So far the work of making elephant-proof trenches, erection of electric fences and taking other measures to prevent crop degradation have been carried out departmentally. The government should encourage such initiatives at an individual level so that they can look after the maintenance of the barriers. Such initiatives will also prevent isolation of the populations in Protected Areas.

Only co-ordinated and balanced strategies for forest and wildlife management and rural development can help reverse these adverse trends. Local stakeholder-based genuine participation of people in both planning and implementation of such programmes aided by enhanced per capita inputs would be essential. The IBWL Task Force Report of 1983, which sought to evolve prescriptions for the management of multiple use areas in support for PAs, while enhancing the biomass available for basic everyday use as fuel, fodder and food for local communities, is still valid today. In this way peoples' alienation can be mitigated and their support can be secured for conservation by reviving their stake in natural areas. The same does not need to be done and is not to be done at any detriment to conservation concerns. This is rather to be achieved by proving on the ground that rationalised accommodation and responsible conduct on either side, backed by judicious

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restorative inputs can restore the age-old harmony, notwithstanding the vitiated humans to wilderness ratio.

***Action required***

1. Organise and implement measures with full stakeholder participation, which are ecologically appropriate and yield sustainable benefits to people through amelioration of private and community resources and their responsible use on a reciprocal basis. Package of measures have to be site specific and must be developed and implemented in full participation with different categories of stakeholders. These should also include alternatives for natural biomass products and energy, alternate techniques for collection and use of natural produce and income enhancement through value addition to farm and non-farm produce, better market access, etc.
2. Aquifer recharging, water harvesting, livestock population management and development, pasture and fisheries development as well as organised and disciplined livestock grazing and collection of NWFP including medicinal plants, would require special measures that strengthen the resource base and yield steady benefits to stakeholders outside PAs.
3. Undertake awareness promotion, using also folk art and tradition-based programmes, about the need and benefits of nature conservation, family planning, health care, etc. These themes should also be built into school syllabi.
4. Wherever relevant, integrate local community knowledge, skills and practices into conservation research, planning and management and involve them in its use. Preference in regular jobs among frontline staff as well as regular or occasional employment in ecotourism activities has to be given to local people.
5. Devise innovative ways to avoid or reduce human-animal conflicts, e.g. the use of green fences such as bamboo and cactus, alternate cropping patterns, community watch and ward schemes. Where problems persist, set up faster, more efficient compensation mechanism in consultation with forest protection committees and/or community leaders.
6. Relocation and Rehabilitation of villages should be undertaken on a voluntary basis or by persuasion from high conservation value segments of PAs e.g. pristine/old-growth areas or the core segments of national parks.
7. Involve NGOs in promoting dialogue of managers with communities, formation of participatory stakeholder groups, formation and functioning of committees at village, PA and district levels and formulation and conduct of awareness programmes.
8. Launch cogent monitoring programmes with the involvement of scientific institutions and NGOs in order to assess the success of such initiatives. The yardsticks would be the measures of improvement in habitat and wildlife status within PAs on the one hand, and in the well being of participating communities on the other.
9. Empower local communities with knowledge and techniques to ensure their participation in achieving the objectives of PA management and protection.
10. Involve children living in and around PAs for nature education and park/sanctuary visits.

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***Priority projects***

1.1 Evolve and prescribe guidelines for local community involvement in the different management zones of PAs and adjacent areas. These guidelines would complement the WII guidelines for planning PA management and concurrent ecologically sound community welfare programmes.

*Timing:* To complete in the year 2002.

*Responsibility:* MoEF and WII in association with NGOs.

1.2 Initiate orientation programmes for PA staff and developing capacities to implement developmental activities for the local people in a way compatible to conservation.

*Timing:* To start in 2003 and ongoing .

*Responsibility:* MoEF, State/UTs governments, PA managers and WII.

1.3 Evolve guidelines to identify PA communities on the basis of a) bonafide use of forest resources for subsistence and b) communities seeking to exploit market opportunities.

*Timing:* To start in 2002 and complete by 2005.

*Responsibility:* MoEF, State/UTs governments, TISS, NGOs, PA managers and WII.

2.1 WII and IGNFA should strengthen all their training programmes in association with other institutions and NGOs for different levels of forest and wildlife managers for genuine encouragement, and modalities of people participation in all the above issues. Also undertake syllabi development and training of trainers in these issues for State institutions training frontline staff. Training activities for other services connected with rural development and land management should also be strengthened.

*Timing:* To start in 2002 and complete by 2003 and ongoing.

*Responsibility:* MoEF, State/UTs, WII, IGNFA and NGOs.

2.2 Design people participation schemes for all PAs by focussing upon landless families so as to provide them gainful employment in various field works of PA management and development of community resources. They are to be involved as prime stakeholder groups in JFM of all NTFP operations from collection and processing to marketing.

*Timing:* To start in 2002, complete by 2004 and implementation ongoing.

*Responsibility:* MoEF, PA managers, State governments and NGOs.

2.3 Develop and implement guidelines for providing incentives and measures for benefit sharing among local communities *e.g.:*

- Reward local individuals for harmonising livelihood earnings with wildlife conservation.
- Assign access to water and biomass resources (including materials generated from management operations), but in conformity with the prescriptions applicable to the concerned management zone in the PAs.
- Give preference in both regular and occasional employment to local communities, priority being accorded to the landless and the poorest.
- All tourism receipts and the penalties collected in a PA to go to a local trust fund operated by joint committees headed by the PA manager. It should be

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appropriated in the proportion of 70% for community benefit works and 30% for park management/ development activity, not covered or only partly covered by the PA's budget.

- NGOs to be associated in all aspects of planning and implementing community support programmes as well as management activities involving people.
- Community support programmes to follow as far as possible traditional practices with appropriate technology inputs and adaptations to site requirements.

*Timing:* To start in 2002 and complete by 2003 and implementation ongoing.

*Responsibility:* MoEF and State/UTs.

3.1 Enhance allocations for and strengthen ingredients on the above lines of the schemes in the forestry and wildlife sector for community support through ecologically sound development.

*Timing:* To start in 2002 and complete by the year 2003 and ongoing.

*Responsibility:* MoEF and State/UTs.

4.1 Persuade State governments to amend recruitment rules for forest guards and other posts with equivalent pay scales to the effect that only persons from the local communities get appointed against these posts.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and State/UTs.

5.1 Hold public hearings in affected areas around the PA once every year. These should cover damage from wild animals to crops, livestock and human life as well as adversity to wildlife from forest fires, excessive livestock grazing, encroachments on forests or PA lands, illegal tree cutting and poaching. Planned prevention and control measures should be implemented in participation with affected people as interest groups. Staff, community and NGO based committees should be formed for transparent and speedy assessment of damage and distribution of compensation.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF and State/UTs.

6.1 Evolve comprehensive national guidelines on voluntary relocation from PAs by holding discussions with resident PA villagers in various parts of the country. Relocation and Rehabilitation (R&R) schemes to be finalised for all national parks in the first phase, ensuring alternative lands, funds for it. Second phase to include necessary R&R for sanctuaries.

*Timing:* To start in 2002 and complete by 2003 and implementation of Phase I by 2006, Phase II by 2012.

*Responsibility:* MoEF, TISS, State Governments and NGOs.

7.1 Formulate schemes for conflict management, especially prevention and control of crop/property damage and injury to or loss of human life, in all ongoing and new wildlife schemes. This should also cover transparent and speedy assessment and disbursement of

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compensation for such damage. All processes for this purpose should be people-participatory through institutionalised local committees. Where feasible efficient insurance cover should be provided.

*Timing:* To start in 2002 and complete by the year 2004 and ongoing.

*Responsibility:* MoEF, State/UTs and NGOs.

7.2 Make all relevant information on conservation policies and programmes publicly accessible in local languages, well in time for a meaningful dialogue with local people with the objective of conflict resolution.

*Timing:* To start in 2002 and complete by the year 2005.

*Responsibility:* MoEF, State Governments and NGOs.

7.3 Give priority to the local communities in employment for various protection and conservation works such as fire protection, road repair, improvement of habitat and water and soil conservation measures.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State/UT Governments and local people.

8.1 Provide a component under a centrally-sponsored scheme for monitoring the wildlife conservation programmes through scientific institutions.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State Governments and Research Institutions.

9.1 Set up participatory management committees for each PA, consisting of PA officials, community representatives, NGOs and independent experts to enable effective public involvement in conservation, management and benefit-sharing.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, PA managers and local people.

9.2 Provide a range of incentives to conserve wildlife in different landscapes across different land and water uses: rewards and public honour for commendable conservation work and actions, granting of biomass and water resource rights for personal consumption for communities that have helped protect or restore wildlife habitats, employment in local conservation works, financial rewards and incentives to protect sacred groves, share in penalties extracted from poachers, share in tourism revenues, incentives to move away from ecologically ill-advised activities.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, PA managers, NGOs and local people.

9.3 Encourage people to help protect and take measures to manage wildlife habitats outside PAs (including community conserved forests, wetlands, grasslands and coastal areas) as these areas are often critical for wildlife, or as vital corridors that link the PA Network.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, PA managers, State/UT government and local people.

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10.1 Initiate orientation programmes for PA staff to build a positive attitude towards local people and their rights.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, States/UTs governments, PA managers and NGOs.

## **IX. Conservation Awareness and Education**

### ***Overview and objectives***

To win support for wildlife conservation by explaining the rationale behind the protection of natural ecosystems to politicians, legislators, judges, planners, technocrats and bureaucrats who manage the nation. To elicit broad-based public support from different sections of society, particularly communities neighbouring PAs and forests. To convey a sense of urgency to young people and win their support for the protection of India's natural heritage. To inform and involve the media on issues surrounding wildlife conservation and to highlight the connections between destabilised ecosystems and the falling quality of human life. To explain the connection between healthy ecosystems and India's water and food security.

### ***Action required***

1. Review and formulate education and awareness promotion measures for different target groups.
2. Training personnel, especially from local communities, for wildlife education so that they can be employed as interpreters/guides at PAs, zoological gardens, natural history museums, etc.
3. Create interpretation centres, posters and exhibition material for use by people. Emphasise the role played by forests and wetlands in maintaining our fresh water and food security.
4. Enhance the role of zoos as centres of conservation awareness.

### ***Priority projects***

1.1 Incorporate environment and forest conservation values in school curricula. Also support non-formal nature conservation efforts through school systems.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF.

1.2 Launch mass awareness campaigns through print and electronic media. Create awareness among urban citizens of the critical links between their consumption patterns and destruction of wildlife species and habitats.

*Timing:* To start in 2003 and ongoing.

*Responsibility:* MoEF.

1.3 Create a series of wildlife conservation brochures and leaflets both in English and regional languages highlighting the status of biodiversity and its importance. Efforts should be made to incorporate local knowledge, understanding and management of natural habitats.

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*Timing:* To start in 2002 and complete by 2005.

*Responsibility:* MoEF.

1.4 NCERT to enhance educational material for primary and higher secondary schools.

*Timing:* To start in 2003 and complete by 2005.

*Responsibility:* MoEF and Ministry of Human Resource Development.

1.5 Assist universities and colleges to develop library and nature clubs.

*Timing:* To start in 2003 and complete by 2005.

*Responsibility:* MoEF and State governments.

1.6 To generate a body of copyright-free, reliable conservation information and place this on the Internet through the MoEF website.

*Timing:* To start in 2002 and complete by the year 2004.

*Responsibility:* MoEF, NGOs, CEE, etc.

2.1 Set up training centres for training park guides, interpreters.

*Timing:* To start in 2002 and complete by the year 2005.

*Responsibility:* State governments and scientific institutions.

2.2 Provide central assistance to disseminate nature education packages through government and non-government sectors.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, State/UT governments and NGOs

3.1 Upgrade/set up nature interpretation programmes in national parks, sanctuaries, botanical gardens, zoological parks, emphasising conservation of wildlife and biodiversity, highlighting existing and potential, direct and indirect benefits of conservation.

*Timing:* To start in 2002 and complete by the year 2011.

*Responsibility:* MoEF, State Governments, PA managers, CEE, WII and other NGOs.

3.2 Produce educational material, linking urban consumer practices, commercial processes and their impacts on wildlife species and habitats.

*Timing:* To start in 2003 and complete by the year 2007.

*Responsibility:* MoEF, CEE and NGOs.

3.3 Set up a system that allows children from adjoining villages to visit PAs regularly for wildlife education excursions.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF, Ministry of HRD and PA managers.

4.1 Encourage creation of nature immersing enclosures for display of wild animals in zoos and explain ecological linkages of species displayed through appropriate signage.

*Timing:* To start in 2003 and ongoing.

*Responsibility:* CZA, State/UT governments and NGOs.

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## **X. Tourism in Protected Areas**

### ***Overview and objectives***

Regulated, low-impact tourism has the potential to be a vital conservation tool as it helps win public support for wildlife conservation. However, in recent years the mushrooming of tourist visitation and tourist facilities have led to overuse, disturbance and serious management problems for PA managers.

In case of any conflict between tourism and conservation interests of a PA, the paradigm for decision must be that tourism exists for the parks and not parks for tourism, and that tourism demands must be subservient to and in consonance with the conservation interests of PA and all wildlife. While revenues earned from tourism can help the management of the PA, maximisation of income must never become the main goal of tourism, which should remain essentially to impart education and respect for nature.

The objective of wildlife tourism should be to inculcate amongst the visitors an empathy for nature, both animate and inanimate and to provide a communion with nature, rather than to merely ensure sightings of a maximum number of animal populations and species. Students of all levels must be encouraged to visit PAs and to participate in conservation action therein, and concessions and park interpretations must facilitate these educative processes.

Eco-tourism must primarily involve and benefit local communities and the first benefits of tourism activities should flow to the local people. This should be in the form of employment opportunities and support for panchayat programmes such as watershed restoration, afforestation, health schemes, etc.

Strict energy and water conservation and waste disposal guidelines need to be laid down and implemented for existing and new tourist facilities. Any new tourist residential facilities and eateries must be established outside PAs and all efforts should be made to relocate the existing ones inside PAs to suitable spots outside of them, to the extent possible.

Regular monitoring of direct and negative impacts of tourism is needed. The parameters for such an evaluation should include ecological effects on the habitat, animal behaviour as well as secondary effects caused by changes in lifestyles and cultures of local populations. Representatives from local communities, local NGOs and field personnel should be a part of eco-tourism advisory boards that monitor and regulate tourism activities in the area. These boards should help develop tourism and conservation plans or strategies.

Guidelines to also make tourism in PAs environment-friendly and educative needs to be formulated and followed, both for visitors and for tourist agencies. To this end, an emphasis must be placed on tourism facilities that are sustainable, environmental-friendly, moderately priced, clean and wholesome – rather than lavish five-star facilities.

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***Action required***

1. New national guidelines to be developed for tourism, particularly in Protected Areas in a manner compatible with objectives of wildlife conservation and management of PAs.
2. Prepare a Tourism Management Plan for each Protected Area providing due safeguards against the negative impacts of tourism. Regular monitoring of the impact of tourism to be carried out on soil, water resources, vegetation, animal life, sanitation or waste disposal, natural surroundings and cultural environments. The 'Wildlife Tourism' component of the PA management plan should also include PA interpretation and visitor centres.

As far as possible such facilities should only be provided in buffer areas, or adjacent to PA boundaries.

3. Rules and Regulations of visitor conduct need to be framed and widely circulated to tourists and tourist agencies as well as prominently displayed on notice boards.
4. Commission on evaluation of impacts of tourism in selected PAs across the country.

***Priority projects***

1.1 Develop national guidelines on tourism within Protected Areas. Ways of benefiting local people directly by the tourism process should be specified in the guidelines.

*Timing:* To start in 2003 and complete by the end of 2004.

*Responsibility:* MoEF, MOT, States/UTs and NGOs.

1.2 Review component on wildlife tourism in WII guidelines for management plans.

*Timing:* In 2003.

*Responsibility:* WII.

2.1 Develop tourism management plan for each protected area. Also conduct surveys of accommodation and tourist facilities within PAs to ascertain their head to be relocated outside PAs.

*Timing:* To start in 2002 and complete by the end of 2004.

*Responsibility:* MoEF, States/UTs and NGOs.

2.2 WII in collaboration to develop impact assessment techniques and standards that can be used by PA managers to evaluate negative impacts of tourism on soil, water resources, vegetation, animal life, sanitation or waste disposal, and cultural environments.

*Timing:* To start in 2002 and complete by the end of 2004.

*Responsibility:* MoEF, WII and outside experts.

2.3 Develop stringent standards of waste disposal, energy and water consumption, construction plans and materials used therein; measures to prevent damage to forest and mountain vegetation, coral beds and marine products including shells in coastal areas must be clearly laid out.

*Timing:* To start in 2002 and complete by 2004.

*Responsibility:* MoEF, States/UT governments, tourist agencies, Tourism Ministry and NGOs.

2.4 A ceiling on the number of tourists/tourist vehicles permitted to enter the PA should be laid down, keeping in mind each PA's individual characteristics. The PA managers While all efforts have been made to maintain the accuracy of this information, relevant official gazettes may be consulted for authenticity. *Sanctuary Asia* will not be responsible for any loss due to the information available on this website. Any discrepancy found may kindly be brought to our notice.

must be empowered to use their discretion in closing off certain sensitive areas of the PA, for example, an area where a tiger has littered.

*Timing:* To start in 2003 and complete by 2005.

*Responsibility:* MoEF, States/UT governments and Department of Tourism, PA managers and NGOs.

3.1 Framing of rules and regulations for visitors' conduct, while in Protected Areas.

*Timing:* To start in 2002 and complete by the end of 2003.

*Responsibility:* States/UTs.

3.2 Set up State/UT ecotourism advisory boards that will regulate tourism activities in different areas of the regions. Representatives of local people near PAs, local NGOs, PA managers to be part of these boards to develop and regulate tourism activities.

*Timing:* To start in 2003 and complete by the end of 2005.

*Responsibility:* MoEF, States/UTs governments, PA managers, NGOs and local people.

3.3 Conduct orientation programmes for tour operators within which appraisal of the regulations governing tourism are emphasised.

*Timing:* To start in 2004 and ongoing.

*Responsibility:* States/UTs govts., HWLWs and NGOs.

4.1 Conduct carrying capacity studies to gauge the extent of tourism in 25-30 most visited PAs, covering all natural regions, i.e., forests, coastal and fresh water wetlands, deserts (including cold deserts), mountains.

*Timing:* To start in 2002 and complete by the end of 2005.

*Responsibility:* MoEF, States/UTs govts., Environment Sciences Departments of Universities.

## **XI. Domestic Legislation and International Conventions**

### ***Overview and objectives***

To provide comprehensive and effective legislation to safeguard wild flora, fauna and wilderness areas, with particular reference to threatened species, Protected Areas and their environs, "corridors", ecologically fragile areas and ecosystems and to give expression to the national policies in this regard.

In pursuance of the above, to urgently review and upgrade the concerned legislations, especially the Wildlife (Protection) Act of 1972 and the schedules thereunder, the Indian Forest Act of 1927, the fisheries laws, Coastal Regulation Zone Rules, and to extend these laws to those States where they still do not apply, especially to the State of Jammu and Kashmir.

Comprehensive amendments to the Wildlife (Protection) Act, 1972 have already been finalised and await enactment. The proposed Schedules must be reviewed to ensure better protection to all threatened taxa. 'Ecologically Fragile' status under the Environment (Protection) Act, 1986, should be used as an additional tool to strengthen the buffers and corridors around the PA Network. The Coastal Regulation Zone (CRZ) Rules should be

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implemented in conjunction with other wildlife and environmental legislation to bring about more effective protection and ecologically viable habitats outside the PA Network, including inland and coastal fish breeding grounds such as mangroves and corals.

Since wild fauna is a shared resource, especially migratory species, those living along international boundaries and those affected by international trade, clandestine or otherwise, it would be necessary to maintain constant dialogue and cooperation with other concerned countries and to execute and implement bilateral and international agreements and treaties in this regard, amending existing legislation and creating new legislation where essential to implement the same.

***Action required***

1. While the Wildlife (Protection) Act of 1972 (WLPA) has been reviewed and would be subjected to such review from time to time, a comprehensive review of the Forest Act, 1927 with a view to make it more conservation oriented and relevant to the realities of the present day is most imperative. It then must be uniform and applicable to all the States of the country and its subsequent modifications should only be done by the Government of India.
2. The State of Jammu and Kashmir should be persuaded to ensure that the Jammu and Kashmir Wildlife Protection Act, 1978 is on par with the Wildlife Protection Act, 1972.
3. Set up periodic monitoring system to ensure timely amendments to statutes so as to safeguard wild flora, fauna and their habitats.
4. The fishing laws of the various States need to be revised into a central legislation and thereafter to be effectively implemented. Similar legal coverage needs to be extended to other aquatic life forms and ecosystems especially sponges, corals and shells.
5. A monitoring mechanism needs to be set up to continuously assess the implementation and impact of various legislation concerned with wildlife and to suggest rectification where needed. Certain areas surrounding PAs and areas of 'wildlife corridors' to be declared as ecologically fragile areas under the EPA, 1986.
6. Wildlife Protection Rules need to be updated in all the States to bring them on par with the amended WLPA, 1972.
7. Enact a separate legislation for enforcing the provisions of CITES. All species that appear in Appendix I and II of CITES need to be protected.
8. Microbial fauna are highly specialised and essential elements of natural ecological processes. Identification and protection of the most essential micro-organisms under the WLPA, 1972 is required.
9. Important International Conventions such as the Convention on Global Biodiversity (1992), Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) (CITES), Convention on the Conservation of Migratory Species of Wild Animals (1979) (Bonn Convention), Convention on Wetlands of International Importance especially on Waterfowl Habitat (1971) (Ramsar Convention) require the GOI to make certain actions under them, some of which may have not been adequately enforced in India.

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*Convention on Global Biodiversity (1992)*

- Create PAs.
- Restore degraded ecosystems.
- Legislate to protect threatened species.
- Identify, regulate and manage damaging activities.
- Introduce impact assessments and develop national strategies, plans or programmes for the conservation and sustainable use of biodiversity.

*Bonn Convention (1979)*

- Strict protection of listed species.
- To have collaborative conservation agreements between the countries through which each species on a second list migrate.
- Mainly applied to birds, bats, dolphins, further research and surveys to be done.

*CITES (1973)*

- Regulate and forbid trade in listed species.
- Create a national management authority and implement the treaty.

*Ramsar Convention (1971)*

- Wetland conservation needs within national land use planning.
- Designate at least one wetland as per specified criteria.
- Promote wetland conservation by creating reserves.
- Train staff in wetland management, research, collaborate with nations with common species.

10. Review combined effect of existing legislation on natural resource management. Prepare guidelines to enable conjunctive use of all laws and statutes by government departments, forest staff and NGOs.

***Priority projects***

1.1 To amend the Indian Forest Act, 1927 to make it conservation oriented and more relevant to the current situation, as well as to make it applicable to the entire country.

*Timing:* To start in 2002 and complete by 2003.

*Responsibility:* MoEF.

2.1 Proposed amendments of the Wildlife (Protection) Act, 1972 to be enacted expeditiously and the Jammu and Kashmir Wildlife (Protection) Act, 1978 to be brought on par with this Act and its amendments.

*Timing:* To complete in 2002.

*Responsibility:* MoEF.

3.1 Endangered plant species and their habitats to be notified as Specified Plants under Chapter III A of the Wildlife Protection Act, 1972.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, BSI, Scientific Institutions and State Governments.

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4.1 Aquatic flora and fauna, both marine and fresh water, to be protected by strengthening laws and enacting new Central Fisheries Legislation to replace/supplement the current inadequate legislation in States.

*Timing:* To start in 2003 and complete by 2005.

*Responsibility:* MoEF, Ministry of Agriculture, ICAR, ICFRE, outside experts and NGOs.

5.1 Identify contradictions between wildlife/environmental laws on one hand and development/utilisation laws and policies on the other, and recommend removal of these contradictions by ensuring that the latter are in tune with the wildlife and environmental laws.

*Timing:* To start in 2002 and complete by the year 2005.

*Responsibility:* MoEF, Planning Commission, Ministry of Law, Scientific Institutions and NGOs.

5.2 Extend 'Ecological Fragile' status under EPA, 1986 to adjoining areas of PAs, crucial 'wildlife corridors' and to all Biosphere Reserves, World Heritage Sites, Ramsar Sites and other areas declared or notified under international environmental treaties.

*Timing:* To start in 2002 and complete by 2004.

*Responsibility:* MoEF, States/UTs, Experts and NGOs.

5.3 Central government should ensure that the provisions of Wildlife Protection Act, 1972 have overriding effect on the right of access to biodiversity provided under any other Act.

*Timing:* 2002.

*Responsibility:* MoEF.

5.4 Policy and rules to be framed about conservation, extraction, sustainable use, cultivation of medicinal plants.

*Timing:* To start in 2002 and complete by 2003.

*Responsibility:* MoEF, Ministry of Commerce, Ministry of Health, Ayurvedic and other centres of Indigenous Health Systems and NGOs.

5.5 Institute periodic assessment procedure to monitor and speedily advise government on the implementation, effectiveness and amendment (if necessary) of conservation laws.

*Timing:* To start in 2005 and ongoing.

*Responsibility:* MoEF, WII, State/UT governments and NGOs.

6.1 Upgrading of Wildlife Protection Rules in all States/UTs in India, bringing them on par with Central Wildlife Protection Rules.

*Timing:* To start in 2002 and complete by 2003 and ongoing.

*Responsibility:* MoEF, State/UT governments and NGOs.

7.1 Finalise draft legislation for enforcement of CITES.

*Timing:* To start in 2002 and complete by the year 2003.

*Responsibility:* MoEF.

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8.1 Microbial fauna are highly specialised and essential elements of natural ecological processes. Identification and protection of the most essential micro-organisms under the WLPA is required.

*Timing:* To be completed by 2003.

*Responsibility:* MoEF / Universities and Scientific Institutions.

9.1 Enter bilateral protocols with neighbouring countries for effective implementation of International Conventions leading to improved protection of wildlife and its habitat.

*Timing:* To start in 2003 and ongoing.

*Responsibility:* MoEF, Ministry of External Affairs.

9.2 Create a cell in the MoEF under the Director, Wildlife Preservation to monitor and advise government on implementation of all International Conventions and Treaties concerning wildlife and nature conservation, particularly those that affect migratory species of avifauna and marine species.

*Timing:* To start in 2003 and ongoing.

*Responsibility:* MoEF.

10.1 Review the combined effect of all existing legislations on natural resource management. Evolve guidelines for conjunctive use of such laws by user groups and various Government Departments.

*Timing:* To start in 2002 and complete by 2004.

*Responsibility:* MoEF / State Governments / Ministry of Law / all concerned ministries.

## **XII. Enhancing financial allocation for ensuring sustained fund-flow to the wildlife sector**

### ***Overview and objectives***

Protected Area management in particular has suffered grievously on account of an acute scarcity of financial resources. This has sometimes led to field situations where staff has not been paid salaries, or where money for petrol was not available for anti-poaching squads and protection staff. Belated fund flows to PAs and a lack of priority at the State Government level has only aggravated this situation, resulting in a shortage of manpower, equipment, infrastructure and legal resources.

Forests occupy about 20 per cent of the country's land area and at the very minimum two per cent of the national budget should be allocated to the protection of forests, of which at least 15 per cent should be set aside for wildlife conservation.

The process of settlement of rights of the local people has not been carried out and the relocation programmes not implemented. It is estimated that nearly a sum of Rs. 2,000 crores are needed for the purpose.

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The basic amenities of life also need to be provided to the frontline staff working in far-flung areas under inhospitable circumstances. Insurance cover available to them is inadequate. In the event of any casualties, the families find it very difficult to fend for themselves.

No scheme is available for providing compensation for the loss of standing crops caused by the wild animals. Even all cases of human deaths and injuries are not compensated adequately. Tigers and panthers have lost public sympathy due to large number of cases pertaining to killing of livestock.

Redressal of the problems mentioned above warrant a quantum jump in allocations to the wildlife sector.

### ***Action required***

1. The nation should have 15 per cent of the forest budget allocated for wildlife conservation and other related issues. Planners and economists must be convinced that enhanced allocations to ensure national ecological security and biodiversity conservation is a wise economic investment that will improve the quality of life of the poor, even as it strengthens the economy in the long run.
2. A working link must be created between the MoEF, Ministry of Finance and the Planning Commission to ensure adequate and timely financial allocations as above, perhaps along the lines of the DRDA.
3. State governments must be convinced to allow assistance by the central government to be used by the park authorities directly on the pattern of DRDA.
4. Planning Commission should be convinced to earmark funds for wildlife conservation under state plans.

### ***Priority projects***

- 1.1 Government of India to take up the issues at appropriate levels.

*Responsibility:* MoEF.

- 2.1 Prepare a document justifying and demanding enhanced allocations for wilderness and wildlife conservation, as stated above, for submission to the National Development Council, Planning Commission and Ministry of Finance.

*Timing:* To start in 2002 and complete by 2003.

*Responsibility:* MoEF, State/UT governments, WII, scientific institutions.

- 3.1 Develop documents for the establishment of PA Development Authority for acceptance by State/UT governments.

*Timing:* To start in 2003 and complete by 2004.

*Responsibility:* MoEF, State Governments/UTs.

- 4.1 Ensure thrust-specific schemes that can use additional fund flows to address wildlife management imperatives including:

(i) Filling up vacancies and creating new posts required.

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- (ii) Providing adequate infrastructure and equipment.
- (iii) Setting up combat forces in areas facing severe threat of poaching.
- (iv) Setting up legal cells and training modules for wildlife staff involved in court cases.
- (v) Identifying degraded habitats and habitat restoration and regeneration.
- (vi) Voluntary relocation and rehabilitation of villages out of Protected Areas.

*Timing:* To start in 2004 and complete by 2006.

*Responsibility:* MoEF, State/UT governments, Ministry of Finance.

### **XIII. Integration of National Wildlife Action Plan with Other Sectoral Programmes**

#### ***Overview and objectives***

There should be total harmony between the National Conservation Strategy and the National Wildlife Action Plan. Both, along with other related Action Plans, must be recognised as vital national developmental priorities. The central rationale is the fact that biodiversity protection has a bearing on India's water and food security and is the foundation upon which the Indian economy is based.

National planning has not thus far adequately taken into account the ecological and economic consequences of extracting short-term commercial gains from wildlife habitats. It becomes necessary therefore to engage national decision-making bodies, including the Parliament, Prime Minister's Office, Planning Commission, National Development Council and Committee of Secretaries in direct discussions on the need to protect our natural treasury, which comprises rivers, aquifers, forests, grasslands, mountains, wetlands, coastlines marine habitats and even deserts, and the various species that inhabit them. Decision-makers need to recognise that these natural ecosystems are the best way to reduce the frequency and intensity of "natural" disasters including floods, droughts, cyclones and landslides, and are the lifeline for the livelihood requirements of hundreds of millions of rural people. The emphasis in these discussions should be that protecting the environment is in the nation's economic, health and human interests, apart from being a moral imperative.

The development and planning process has not been able to address the problems pertaining to poverty of dwellers living around national parks and sanctuaries. Whatever programmes have been implemented are also not sustainable on a long-term basis. Poverty has increased, water levels have been going down and landless labourers do not have opportunities for sustaining their life, many communities of local people still depend upon forest usufructs.

It is therefore necessary that the Ministry of Environment and Forests should approach various ministries to integrate their activities in such a manner that the poverty in these areas can be evaluated without affecting the wildlife resources.

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***Action required***

1. Planning Commission to recognise areas within the radius of 5 km. from the boundary of national parks and sanctuaries as special development areas and earmark separate funds for this purpose under the State plans.

Various Union Ministries to work out the following details:

- Ministry of Agriculture and Rural Development should be approached to give priority to soil conservation, partial development, organic farming, evolving appropriate cropping pattern to minimise crop damage from wild animals and adopt crop insurance scheme.
- Ministry of Agriculture should also concentrate on cattle breed improvement, stall feeding and developing appropriate methodology for marketing milk.
- Ministry of Water Resources to be convinced not to pursue big projects for irrigation in the area and to opt for minor irrigation relying on check dams, ponds, wells and other appropriate water harvesting units.
- Transfer of technology and grant of loan for development of sericulture, pisciculture, apiculture for piggery and poultry.
- Department of Small Scale Industries should develop all industries based on traditional crafts and development of information technology.
- Ministry of Non Conventional Energy Sources should popularise biogas, solar energy on solar pump sets, biogas plants, solar cookers and other new technologies as an alternative to fuelwood.
- Ministry of Surface Transport and Ministry of Railways to plan roads in such a manner that all national parks and sanctuaries are by-passed and integrity of the PA is maintained. Wildlife corridors also need to be avoided, or mitigative measures (such as restricting night traffic) need to be employed.
- Ministry of Human Resource Development to introduce the subject of conservation as part of the curriculum at all levels and provide training in vocations that do not involve consumptive use of wood at ITI and other institutions.
- Ministry of Information and Broadcasting should launch special programmes on conservation and the need for harmony.
- Ministry of Tourism to adopt a model of tourism that would help flow of direct benefits from protected areas to local people.
- Ministry of Home Affairs to sensitise all the forces to help in protection of wildlife and their habitats.
- Ministry of Defence to provide help to armed forces in the census and survey of endangered species in far-flung and remote areas of the country, and to help apprehend criminals indulging in smuggling.
- Ministry of Finance to issue directions to state governments that like the police and other law enforcing agencies, the field formations of forest departments are exempt from all financial and other cuts. Adequate funds should be made available for protection, prevention of poaching and protecting wildlife habitats

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through eco-development and other activities. Wildlife should be declared as a 'priority sector'.

- Ministry of Steel and Mines to exclude wildlife protected areas/corridors from their mining plans. Proper rehabilitation of degraded and abandoned mining areas should also be done. A programme to phase out all existing operations in wildlife areas should be prepared.

### ***Priority projects***

1.1 Initiate briefing sessions/discussions with Members of Parliament, various Ministries, the Prime Minister and his Office, the Planning Commission, the National Development Council and the Committee of Secretaries, either individually or collectively, on the economic importance of protecting and sustainably using, not over-exploiting, our natural treasury. Similarly, briefing sessions should be held with Chief Ministers, Finance Ministers, Home Ministers and Agriculture Ministers of States/UTs.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF.

1.2 State Wildlife Wings will carry out similar briefing discussions with Panchayat Raj Institutions and other grassroot level institutions involved in the field of rural development.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* States and UTs.

1.3 Preparation of a report accessing policies and action plans of other related Ministries to provide guidelines for the Planning Commission, which would help to harmonise other sectoral activities outside PAs.

*Timing:* To start in 2002 and ongoing.

*Responsibility:* MoEF, Planning Commission, State Governments and Scientific Institutions.

1. Shri B.G. Deshmukh, Retired Cabinet Secretary and present President of Bombay Natural History Society (BNHS) .....Chairman
2. Shri Rao Inderjit Singh M.P. ....Member
3. Shri J.C. Daniel (BNHS) .....Member
4. Shri Samar Singh (WWF-India) .....Member
5. Shri H.S. Panwar, (Retired Director (WII) .....Member
6. Shri Valmik Thapar, Member, IBWL .....Member
7. Shri L.M. Nath, Member, IBWL .....Member
8. Dr. M.K. Ranjitsinh, Member, IBWL .....Member
9. Shri Bittu Sahgal, Member, IBWL .....Member
10. Shri Subimal Roy, Retired CWLW, West Bengal .....Member
11. Shri Pushp Kumar, Retired PCCF, Andhra Pradesh .....Member
12. Director, Project Tiger.....Member
13. Director, Project Elephant .....Member
14. Director, Wildlife Institute of India .....Member

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15. Shri Ashish Kothari.....Special Invitee  
 16. Mrs. Pratibha Pande.....Special Invitee  
 17. Addl. DGF (Wildlife) .....Convenor

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**Abbreviations used:**

NWAP	: National Wildlife Action Plan
PAs	: Protected Areas
NP	: National Park / National Parks
S	: Sanctuaries
WII	: Wildlife Institute of India
MoEF	: Ministry of Environment & Forests
UT	: Union Territories
NGOs	: Non Government Organisations
SWOT	: Strengths, Weaknesses, Opportunities, Threats
HWLWs	: Honorary Wildlife Wardens
BNHS	: Bombay Natural History Society
SACON	: Sálim Ali Centre for Ornithology and Nature
IUCN	: International Union for Conservation of Nature & Natural Resources
ZSI	: Zoological Survey of India
BSI	: Botanical Survey of India
CZA	: Central Zoo Authority
GOI	: Government of India
CITES	: Convention on International Trade in Endangered Species of Wild Fauna and Flora
IPRs	: Intellectual Property Rights
IISC	: Indian Institute of Social Sciences
FSI	: Forest Survey of India
IFS	: Indian Forest Service
GIS	: Geographical Information System
EIA	: Environment Impact Assessment
SFS	: State Forest Service
IGNFA	: Indira Gandhi National Forests Academy
IIFM	: Indian Institute of Forest Management
TISS	: Tata Institute of Social Sciences
NCERT	: National Council of Education, Research & Training
CEE	: Centre for Environment Education
HRD	: Human Resource Development
CRZ	: Coastal Regulation Zone
WLPA	: Wildlife Protection Act
ICFRE	: Indian Council of Forests Research & Education

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