

3. Present Situation of Environmental Problems

3.1 Natural Environment

The goals, issues and programmes regarding the natural environment of the Ten Year Perspective Development Plan 2001-2011 are shown in Table 3-1-1 and Table 3-1-2.

Table 3-1-1 Environment Goals in Ten Year Perspective Development Plan 2001-2011 (Natural Environment)

Goals	Benchmark	Projection		
	2001	2004	2010	2011
Forest cover (including state-owned and private forests)	4.8% of total land area	5.0 %	5.5 %	5.7 %
Protected areas under management (214 protected areas in Pakistan; 10.4% of the total land area of Pakistan)	4.0% of total land area	4.0 %	8.0 %	8.0 %
Land area affected by desertification	43.9 million hectares	43.9 million ha	40.0 million ha	40.0 million ha
Area under reclamation (National Drainage Programme)	1.00 million hectares	4.45 million ha	10.0 million ha	12.0 million ha

Table 3-1-2 Issues, Strategies and Programmes for Natural Environment

Issues	Strategies	Programmes
<u>Environmental Degradation</u> Ecosystem Management: Degraded, damaged and unproductive ecosystems, such as forests, wildlife, freshwater, wetland, deserts, coastal and marine and other ecologically sensitive areas Deforestation: The deforestation rate is approximately 7,000–9,000 hectares per year. This contributes to erosion, water logging and salinization, resulting in the loss of grassland cover and the loss of habitat of flora and fauna. Rehabilitation, restoration and upgrading of the ecosystem	Establishment of a trust fund for the protection of fragile ecosystems. Afforestation of marginal and degraded land and encouragement of agro-forestry and social forestry; Encouragement of the community management of forestry and natural resources Conservation of biodiversity; sustainable use of biodiversity;	Upland ecosystem management; marine and coastal ecosystem management; irrigated ecosystem management; wetlands management; protected area management
<u>Environmental Policy Issues</u>	Environment policies relating to the environment	National Sustainable Development Programme (NSDP); National Land Use Plan; Provincial Conservation Strategies; Forest Sector Master Plan; Biodiversity Action Plan; National Response Strategy on Climatic Change; Action Plan to Combat Desertification

Source: Ten Year Perspective Development Plan 2001-2011 and Three Year Development Programme 2001-2004

(1) Deforestation, Desertification and Land Degradation

1) Forests

The forest area (including scrub forests and farmland woods) in Pakistan accounts for only 4.9% of the total national land (88 million ha) even if forests in the Northern Areas (NAs) and AJK are included. This figure is much lower than that for other countries (for example, approximately 67% in Japan and 14% in China), primarily because of the natural environment in which forests are difficult to develop due to the coverage of 68 million ha (more than 77% of the national land) by arid or semi-arid areas with mean annual rainfall of 300 mm or less and the predominance of mountainous areas covered by snow and glaciers rising above the forest limit in areas with relatively high annual rainfall. Accordingly, sizable forests are coniferous forests (45%) found on south facing slopes in northern mountainous areas in the NAs and AJK and also in the western highlands, mainly in Balochistan Province, thorny bush forests (30%) mainly found in the lower reaches of the Indus Plain, riverine forests (8%) along Indus River and mangrove forests (7%) at the mouth of Indus River.

The ratio of forest area by province shows an especially high ratio of 32% for the AJK situated at the southern foot of the mountains, followed by 13 – 14% for both the NWFP and NAs. The forest area per capita is 1.06 ha for the NAs and 0.14 ha for the AJK but is extremely low at 0.02 – 0.07 ha for other provinces.

Forest administration is in the hands of the provincial forest departments. The MELGRD is responsible for the formulation and implementation of national policies, coordination of the parties involved in problems affecting more than one province. The federal activities for forest management, such as surveys, research, education and international treaties, are also conducted by the Pakistan Forest Institute, Zoological Survey Department and National Council of Conservation of Wildlife, all of which are affiliated to the MELGRD.

In 1992, the Government of Pakistan formulated the Forestry Sector Master Plan (FSMP) featuring the five fields of ‘Soil Conservation and Watershed Management’, ‘Forest Management’, ‘Wood Production and Industrial Development’, ‘Protection of the Ecosystem and Biodiversity’ and ‘Provincial and Federal Institutional Strengthening’ following examination of the socioeconomic conditions affecting forests and identification of the causes of forest depletion. This FSMP clearly indicated investment of Rs 48 billion (approximately US\$ 1,900 million based on the 1992 foreign exchange rate) to increase the forest cover from 5% in 1992 to 10% in 2018. In response, the World Bank provided a loan of US\$ 25 million for the Punjab Provincial Investment Programme while the ADB provided a loan of US\$ 42 million and a loan of US\$ 1.5 million for the NWFP Investment Programme and the revision and monitoring of the

FSMP respectively. The recent policy guidance of maintaining independence for the formulation of forest policies from political interference as well as the socioeconomic conditions suggests that the implementation of the FSMP in the past has not been necessarily smooth. Recent policies emphasise clarification of the resources management responsibility and stricter regulations and monitoring.

To be more precise, an afforestation campaign involving the private sector and NGOs is in progress with the cooperation of international organizations for the protection of nature and the World Bank. Some 142 – 172 million seedlings a year are being planted under this campaign, mainly in the NWFP and AJK, and some 28,8000 ha are said to have been planted in 2000. Meanwhile, deforestation is said to be attributed to disorderly cutting, the opening up of forests to create farmland, deterioration of the land fertility and decline of the river discharge. Despite the above-mentioned afforestation campaign and post-cutting reforestation efforts, the annual depletion of 7,000 – 9,000 ha is still observed. In reality, forest loss is estimated to be taking place at a rate of 40,000 ha (0.9% of the forest area) a year, necessitating a strong call for the employment of measures to arrest land degradation, participatory forest management and sustainable forest management.

Table 3-1-3 Forest Facts in Pakistan

	Item	Area (million ha)	Percentage
A	Total Land (include NAs & AJK)	87,980	
B	Total Forest Area	4,280	4.9% / A
C	Productive Forest	1,120	26.2% / B
D	Annual Afforestation (2000)	28.8	0.7% / B, 2.6% / C
E	Annual Reforestation (2000)	23.8	0.6% / B, 2.1% / C
F	Annual Loss of Forest	7 – 9	0.2% ± / B

Source: Annual Progress Report 2001-2002, PFI, etc

Table 3-1-4 Internationally Supported Major Forestry Sector Projects

Title	Cost	Duration	Implementation	Donor
Environmental Rehabilitation in NWFP and Punjab (ERNP)	31.80 m euros	7 years	Forest Dep., Govt. of NWFP & Punjab	EC
Small Grants Programme for Operation to Promote Tropical Forests	15.132 m euros	5 years	UNDP	EC
Punjab Forest Sector Development	US\$ 33.75 m	6.5 years	Punjab Forest Dep.	WB
Balochistan Natural Resources Management Project	US\$ 17.8 m	6 years	Balochistan Forest and P&D Dep. - through a Project Management Unit	WB
Forestry Sector Project, NWFP	10.64 m euros	8 years 1996-2001		RNE (Netherlands)

Conservation of Mangrove Forests in the Coastal Areas of Sindh and Balochistan	1.47 m euros	5 years 1996-2003		RNE (Netherlands)
Loan # 1403-PAK & TA # 2563 – PAK Forestry Project	US\$ 23.297 + 14.145 m	7 years 1996-2003	Dep. of Forestry, Fisheries and Wildlife (FD) in NWFP	ADB

2) Desertification and Land Degradation

The UN Convention to Combat Desertification defines desertification as the degradation of land in arid, semi-arid and dry sub-humid areas, primarily caused by human activities and climatic variations. In order to achieve the goals of the UN Convention, Pakistan takes the desertification control measures aimed at preventing and controlling all land degradation processes caused by human activities and climatic variation. Those measures are not simply preventing the spread of sand-covered land.

The phenomenon of desertification, in fact, includes all types of land degradation, such as soil erosion (water erosion and wind erosion), water-logging, salinization and surface soil covering by flood, all of which are highly noticeable in arid areas. The reason for the inclusion of land degradation in the broader definition of desertification is that the ecosystem in arid areas is extremely vulnerable to climatic variations, excessive harvesting and inappropriate land use.

As Pakistan has 68 million ha of arid or semi-arid areas with annual rainfall of 300 mm or less, mainly in Punjab, Sindh and Balochistan Provinces, accounting for some 80% of the total national land, it is generally vulnerable to land degradation.

Meanwhile, land degradation is also caused by such human factors as a decline of the erosion resistance due to cultivation and the excessive cutting of trees, the decline as well as over-running of vegetation due to over-grazing and inefficient water use due to deterioration of the old irrigation network.

Desertification control measures are considered to be part of the development efforts for sustainable agriculture and forestry and special emphasis is placed on the participatory management of natural resources and enhancement of the environmental awareness among the public. The control of soil erosion is important for watershed management for dams and is also expected to have the economic effect of suppressing the decline of the efficiency of hydropower generation by reducing the speed of sedimentation.

(2) Biodiversity and Ecosystem

Pakistan ratified the Convention on Biological Diversity (CBD) in 1994 and the Biodiversity Action Plan for Pakistan (BAP) formulated in 2000 was the first attempt to implement the CBD. This BAP was formulated based on agreement with the World Bank, GEF and IUCN and plans the implementation of 25 different activities for 13 components of the CBD in cooperation with the WWF.

Here, the reorganization and strengthening of the implementing bodies, particularly the MELGRD which plays a central role and provincial government organizations as front-line implementing bodies, are required to start with together with promotion of the cooperation of various government organizations, local communities and NGOs.

Review of the protected area (PA) system where the management of more than 200 protected areas is found to be insufficient, strengthening of the system management and conservation through the use of sustainable bio-resources are considered to be important field activities.

The cooperation of international organizations includes the input of UNDP and EU funds via the GEF and the actual field work is being conducted by the forest departments of the NWFP and NAs, etc. with the cooperation of the WWF. The main projects in progress regarding conservation of the ecosystem and the protection of biodiversity are listed in Table 3-1-5. In addition, funding of Rs 4 million by the UNDP has been decided for the construction of the Islamabad Botanical Gardens under the NEAP-SP.

Table 3-1-5 Major Projects for Biodiversity

Title	Cost	Area	Funding	Remarks
Pakistan Mountain Areas Conservancy Project (MACP)	US\$ 10.35 m	NWFP, NAs 16,000km ²	GEF, UNDP, IUCN, EU	Cooperation for the conservation of habitat and species, development, education, trust fund.
Protected Areas Management Project (PAMP)	US\$ 10.73 m	3 PAs, Sindh, Balochistan, NWFP	GEF	Management of protected areas; community participation in the conservation and management of biodiversity; management of natural resources
Palas Conservation and Development	US\$ 5.6 m	NWFP	EU, WWF, (UK)	Fragile ecosystem in the western Himalayas, particularly the protection of the bird diversity
Protection and Management of Pakistan Wetlands	(US\$313,800)	Balochstan, NWFP etc.	GEF, WWF	Various project proposals are prepared by the government and NGOs, aiming at community-based management. Each project cost is not yet finalised. The figure in brackets is funding for the MELGRD for project preparation.