

## Chapter 24

### Environment

There is increasing awareness in Pakistan that pursuit of growth and development has placed a heavy burden on environmental resources. The objective of the MTFD is to establish a just and sustainable economic system and achieving Millennium Development Goals. Over the last decade, significant progress has been made in developing the environmental policy and regulatory framework, development of environmental institutions and raising awareness. The degradation of environment, however, continues at a rate, affecting livelihoods and health as well as increasing vulnerability of the poor to disasters and environment-related conflicts. The current cost of environmental degradation is considerably higher. An assessment by the World Bank in 1995 estimated the total cost of remediation at 2.6 percent of the GDP.

Pollution of air and water, climate change, ozone depletion, deforestation, desertification and vanishing biodiversity land degradation, lack of waste management, lack of urban land use planning and zoning, has resulted in ecological imbalance, threatening life and civilization. The environment does not exist in isolation and there are several other sectors whose development impacts the environment. These sectors come under the purview of different Ministries. For countries like Pakistan, such integration is difficult, as the socio-economic costs of replenishment of ecology are not fully appreciated. But these upfront initiatives are

#### Box 24.1 Issues in the Environment Sector

- Forest cover needs to be increased
- Desertification has affected 43 million hectares land
- Marine environment is severely polluted by discharge of industrial and domestic sewage.
- Majority of population is exposed to hazards of drinking unsafe and polluted water.
- About 50 percent population does not have access to adequate sanitation, while only 60 percent of urban solid waste is collected.
- Excessive use of pesticides has adversely affected biomass and agriculture land.
- Energy efficiency needs to be enhanced, with focus on conservation measures.

imperative and if left unattended, can jeopardize the long-term welfare of our society. Major issues that Pakistan is confronted with in Environment Sector are given in the Box 24.1 whereas the environment indicators for 2004-05, MTFD targets for 2005-10 and MDGs targets for 2015 are reflected in Table 24.1.

**Table 24.1 Environmental Indicators and targets under MTFD 2005-10 and MDGs**

S.No	Environmental Indicators	2004-05	2009-10 MTFD Targets	2015 MDG Targets
1	Forest cover including State and private forests/farmlands (%age of total land area)	4.9	5.2	6.0
2	Area protected for conservation of wildlife (as %age of total area)	11.3	11.6	12.0
3	GDP (at constant factor cost in Rs) per unit of energy use as a proxy for energy efficiency	27,000	27,600	28,000
4	Energy production from renewable forms of energy (wind, solar, )	17 MW	880 MW	--
5	No. of petrol & diesel vehicles using CNG fuel	380,000	800,000	920,000
6	Access to sanitation (national) %	42	50	90
	Access to clean water (national) %	65	76	93
7	Clean Drinking Water for All (%)	10	100	100
8	No of industries registered for self monitoring/reporting program	30	300	--
9	Number of continuous air pollution monitoring stations	0	4	--
10	%age of Sulphur (by wt.) in high speed diesel	1	0.5	0.5 to 0.25
11	Number of regional offices of Environmental Protection Agencies	0	8	16
12	Consumption/import of ozone depleting substances in metric tons:			
	CFC	839.7	0	--
	Halons	2.3	0	--
	Solvents/CTC	56	0	--
13	Sanitary landfill in major cities	0	2	--
14	Functional Environment Tribunals	2	4	--
15	Improvement of Katchi Abadis/Slums %	60	75	95

Source: MTFD 2005-10

Integration of social and environmental considerations into the development processes of all the sectors of economy, in a holistic manner, is essential to achieve positive environmental outcomes. Strategic Environmental Assessment in development planning process is, therefore, a pre-requisite for integration of environment at policy, planning and program level of different sectors.

The Vision 2030 for environment conservation and management aims for equitable sharing of environmental benefits, increasing community management of national resources, and integrating environmental issues into socio-economic planning to achieve sustainable development. Basic goals for Environment under Vision 2030 are discussed in Box 24.2

Particular focus would be on energy conservation and increasing generation through renewable forms of energy. Environmental assessments, accounting and information management tools would be incorporated in the decision-making processes.

Global change, especially in biophysical environment, is impacting the lives of all inhabitants. Recent data reveals that 1990s was the warmest decade, and 1998 was the warmest year.

In our region, the monsoon season has been shifting both in intensity and time resulting in heavy losses to national economies. Therefore, comprehensive and careful research studies are needed to understand the nature and the extent of this climatic change and develop plants and animals types and farming systems, which are less vulnerable to such climatic changes.

Models show that Pakistan will grow warmer by 1.0 degree C by 2030. This may require extra water for wheat. We will also need wheat varieties which are more drought as well as more flood resistant. On the whole, wheat yield is likely to go up, even though its geographical distribution will change, while rice will not be affected.

Initially, we also expect more waters in our rivers because of greater melting of glaciers, suggesting benefit of greater water storage schemes for this bonus period of next 25 – 30 years.

### **Review of PSDP 2006-07**

During the 2<sup>nd</sup> year of implementation of Medium Term Development Framework (MTDF) 2005-10, Environment Sector received an unprecedented higher priority in the national development. The Federal PSDP 2006-07 included an allocation of Rs 6000 million for the Environment Sector compared with Rs 3075 million in the previous year to realize the objectives and targets set forth in the MTDF. Overall expenditure up to June 2007 is expected to be Rs 5000 million, giving a utilization of 83 percent. Under-utilization is attributed inter-alia, to the delayed and slow progress on Clean Drinking Water Projects, delayed approval of projects, late release of funds; and slow implementation of the approved projects.

During the period, some 52 projects were under implementation in the Environment Sector, which include one project each sponsored by the Ministries of Water and Power, KANA, SUPARCO and Interior; and two projects by the Defence Division, two

#### **Box 24.2**

##### **Vision 2030 Basic Goals for Environment & Sustainable Development**

Major strategies will be advocacy, conservation, reforestation, and alternative fuels:

- “Catch them young”; this will be attained through greater awareness Programs for young people in the schools
- Strict enforcement of environmental and pollution standards; persistent organic pollutants will be banned
- Doubling of forest cover to 6 percent by 2030 through better watershed management and planting campaigns.
- Encouraging forest -based industry through fast growing species for timber, fuel, pulp and other products will be used to manage forests and rangelands. This will be especially applicable in saline affected areas where salt tolerant crops can be grown for fodder and bio-fuels.
- Introduction of urban public transport with CNG as fuel to reduce air pollution

projects by Ministry of Industries, Production and Special Initiatives, while the Ministry of Environment sponsored 44 projects. Salient features of the major areas of concentration in the Environment Sector are discussed in the following paragraphs.

### **Capacity Building**

Lack of capacity was recognized as the major hurdle in the way of efficient realization of environmental objectives in the MTRF 2005-10. Hence, capacity building of the environment related institutions and other functionaries involved in the policy making, planning and law enforcement has been carried out by different agencies in respective sub-sectoral areas. This includes M/o Environment, Pakistan Environmental Protection Agency, ENERCON and P&D Division (Environment Section). Establishment of Project Planning & Monitoring Cell; Bio-safety Centre; Establishment of Pak-Environment Protection Agency Marine Water Pollution Monitoring Centre; Strengthening of Forest Products Research; Activity Based Capacity Development Project; Establishment of Multilateral Environmental Agreements (MEAs) Secretariat; and National Conservation Strategy Resource Centre in Ministry of Environment. These activities helped strengthen the environmental institutions with improved capacities. Besides, the Biodiversity Action Plan is also under implementation focusing on capacity development for biodiversity (flora & fauna) conservation.

### **Clean Drinking Water for All**

Clean Drinking Water for All Program, for providing safe drinking water to the entire population of the country continued in 2006-07. In this connection, an allocation of Rs 45 million was made under the project called "Clean Drinking Water Initiative" to install one water purification plant (WPP) in each Tehsil of Pakistan, AJK, NAs, and FATA. The plants included five different packages depending upon factors such as the source of water and population. About 445 WPPs were completed by the end of 2006, whereas, work on another 100 WPP is underway. These would be completed/commissioned by June 2007. Under the second project called "Clean Drinking Water for All", Rs 4000 million were allocated to install one WPP in each Union Council of Pakistan, AJK, NAs, and FATA. A lot of spadework (such as approval of umbrella PC-I, mechanism to implement, and provincial shares and responsibilities) has been completed. By May 2007 Rs 2500 million have been utilized under CDWA. However, progress on this project is slow. Recently the project cost has been revised and completion period has been extended to March 2008.

### **Forestry, Biodiversity and Watershed Management**

The Project "Environment Rehabilitation and Poverty Reduction through Participatory Watershed Management in Tarbela Reservoir Catchment Area" is under implementation. The main objectives are to reduce sediment load, create employment opportunities, alleviate poverty and rehabilitate the degraded land resources. During the year, an expenditure of Rs 120 million was incurred, against Rs120 million allocation on raising of nurseries and plantation, construction of check dams, soil conservation, establishment of community organizations and terracing.

Program for Mountain Areas Conservation approved by the CDWP in April 2006 remains under implementation by Ministry of Environment, with allocation of Rs 55 million. The program is focusing on conservation of mountain biodiversity through involvement of local communities.

Rachna Doab Afforestation Project was completed at a cost of Rs 485 million. During

the period under review, an expenditure of Rs11 million has been incurred as recurring cost to maintain block afforestation and linear plantation carried out during the last 2-3 years of project.

The Ministry of Water & Power is implementing the "Mangla Watershed Management Project" at a total cost of Rs169 million. An expenditure of Rs34 million was incurred on about 4500 acres of afforestation and survey/planning of 6052 sq. miles.

The Project of "Poverty Reduction through Participatory Watershed Development in AJK", costing Rs 475 million was approved to treat catchment areas of Mangla Reservoir as well as to alleviate poverty in AJK, and Rs119 million spent to start watershed management activities.

Several projects are under implementation to protect and conserve the natural resources and increase the biodiversity. These include district projects for improvement of urban environment of Hazro, Chakwal, Rawalpindi, improvement of indigenous and medicinal plants, improvement of National Parks (Cherat, Ayubia, Khunjerab), Protected Areas Management and watershed rehabilitation & management projects in NWFP and AJK

### **Clean Air Initiative**

The Project for "Establishment of Environmental Monitoring System", which would be completed next year has made substantial progress. Rs 580 million were spent this year on purchase of equipment, establishment of mobile laboratories for monitoring and installation of equipments.

### **Meteorology /Climatology**

The National Center for Drought/Early Warning System and Up-gradation/Strengthening of Seismic Network projects are under execution by the Pakistan Meteorological Department (PMD) at an estimated cost of Rs 358 million. During the period under review, an expenditure of Rs 139 million has been incurred on construction of building and purchase of equipment. Besides, the Climate Change Studies Center (GCISC), under the Pakistan Atomic Energy Commission, spent Rs 30 million to carry out climate change studies.

### **PROGRAMS FOR 2007-08**

An estimated allocation of about Rs 8.6 billion has been made in the Public Sector Development Program 2007-08 for Environment Sector projects. In addition, allocation of at least Rs1.5 billion would be made in the Provincial ADPs for the sector. The sectoral activities during 2007-08 will contribute towards achievement of the MTFD/MDG 2005-10 targets. The implementation programs and details of the major programs/projects to be executed in 2007-08 are discussed as follows:

#### **a) Clean Drinking Water for All**

An allocation of Rs 6500 million has been made in 2007-08, under Federal PSDP for implementing Clean Drinking Water for All Program by Ministry of Industries, Production and Special Initiatives. Under this program, one water purification filtration plant would be installed in each Union Council of Pakistan, AJK, NAs & FATA by March 2008. By December 2007, 450 plants under the Clean Drinking Water Initiatives have been installed. While under the Clean Drinking Water for All Program

total 6035 plants would be installed by March 2008. Salient features of the Water Purification Plant Packages are presented in the Box 24.3.

### Capacity Building

Capacity building of the environment related institutions and other functionaries involved in the policy making, planning and law enforcement would be continued by different agencies in respective sub-sectoral areas. This includes M/o Environment, Pakistan Environmental Protection Agency, ENERCON and P&D Division. Capacity building projects started last year will build upon their earlier achievements.

#### Box 24.3 Water Purification Plant Packages

Package A: At places where source of water is tube well operated by WASA, City/Tehsil Government or any Development Agency and there is no facility of any storage from where the water could be pulled out. There will be provision of overhead tank in the case.

Package B: At places where source of water is a storage facility (over head tank) operated by the WASA, City/Tehsil Government or any Development Agency.

Package C: At places where source of water is neither a tube well nor any facility for storage is available in shape of overhead tanks. In this case a deep well will have to be bored to obtain water.

Package D: At places where the source water contain high concentrations of Nitrates/Nitrites/Calcium or Magnesium, a Nitrate Chamber-Water Softener chamber will have to be provided in assembly line.

Package E: At places where sources of water are high in Arsenic/heavy metals/organic pollutants or any other contaminants for which an additional treatment technology is required.

*Reference PC-I for CDWA*

### Forestry, biodiversity and watershed and Water Bodies

Forestry and Biodiversity will remain one of the major components during 2007-08. Under the guidance of Planning Commission, Ministry of Environment has come up with the Forestry Mega Projects costing 14 million rupees in next 5 years.

### Air Pollution and Climate Change

Establishment of Environmental Monitoring System project got on track and would be completed this year to install air pollution monitoring laboratories in the major cities. SUPARCO is carrying out study of fog/aerosol transport pattern and its impact on agriculture, health, etc., and identification of mitigation measures by Space & Upper Atmosphere Research Commission (SUPARCO). Global Change Impact Study Center, Ministry of Environment would carryout studies and analysis for climate change impacts for Pakistan and identify mitigation measures. National Center for Drought Monitoring and Early Warning System and Establishment of Seismic Network in Pakistan under the PMD would be strengthened and activities started would be coordinated for better preparedness to meet the challenges of natural calamities. Damages Control through Environmental Improvement of Polluted River Ravi near Lahore and Environmental Improvement of Swat River under Ministry of Environment will be helpful in reducing water bodies pollution in these two heavily polluted rivers impacting lives of the people living nearby and contaminating down stream water and agricultural resources. These two projects would act as pilots for cleaning other water bodies in the country.