CHAPTER 8

INSTITUTIONAL AND POLICY RESPONSE

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Institutional and Policy Response

8.1 Introduction

The gravity of environmental challenges in the past has varied in the areas constituting Pakistan today and so have the policy responses. The policy responses to environmental problems in the post independence period can be divided in three phases. The first of these from 1947 to 1957 was a period of environmental neglect. The second that lasted from 1958 to the holding of United Nations Conference on Human Environment in 1972 in Stockholm (United Nations, 1972) was a period of adhocism, when environmental problems were tackled in a piecemeal fashion. The third period from 1972 onward marked the beginning of a new era during which institutions, policies, and legislation were evolved. The final period 2000 to date forms the period when the environmental institutions matured, a number of policies were developed, and environmental monitoring systems had been established for enforcement.

8.2 Evolution of Environmental Concerns and Response

8.2.1 1947-57: A Period of Environmental Neglect

During the first decade after independence (1947-57), the Government of Pakistan was totally preoccupied with the formidable problems of restoring normal economic, commercial and communication systems and channels of the new nation, as well as the establishment of new central and provincial government organizations. The government prepared its first six years development programme (July 1951 to June 1957) in great haste and it was incorporated into the Colombo Plan. The programme did not suggest any major administrative changes, economic reform or remedy to environmental concern. It was a hasty grouping of schemes. In later years, the First Five Year Plan (GOP, 1955) of Pakistan (1955-60) tried to initiate the concept of physical planning but it was still limited to housing in general and settlement of displaced families (which had migrated to Pakistan from India after independence) in particular. Colonization of the Thal desert with the provision of 640 villages and 6 towns under the Thal Development Authority was however a major achievement of this period. The main thrust of planning was towards sustained economic growth and development of some social services and programmes for inducing modernization in rural life which lagged behind in physical output.

8.2.2 1958-72: Environmental Response through Adhocism

This period was marked by a considerable expansion in the country's industrial sector, the introduction of the green revolution in agriculture and the completion and launching of mammoth irrigation projects such as the Warsak, Mangla and Tarbela dams and the initiation of the Karakorum Highway Project (from Pakistan to China). Unfortunately no environmental impact assessment studies were conducted for these projects and

the general attitude like in the previous period was that of laissez-faire. It was believed that the best form of development would take place under a minimum regulation. Nevertheless the emergence and expansion of environmental problems in the wake of exploitative use of resources and growing population did receive some acknowledgment. Remedial actions, though not in a concerted and systematic manner, were undertaken to combat the growing problem of soil pollution by waterlogging and salinity. Through SCARP (Salinity Control and Reclamation Projects), a large part of deteriorated land was recovered. Considerable attention was also given to soil erosion. The Federal Government added a soil survey department in the Ministry of Food and Agriculture, while soil conservation departments were established in the provinces. A Forest Research Institute was also created to carry out studies on forest, range and wildlife management. Some actions were also initiated in physical planning, particularly in large cities like Karachi, Lahore and Peshawar. Likewise rural development also received attention through the introduction of local government programmes. Each of these actions related to the improvement of the human environment or resource conservation in one form or another. However, these remained isolated actions and the fundamental premise that the national development should not be wasteful and that resources should be utilized, as a trust for future generations was not recognized. Despite the induction of a system of local government the development process was still controlled by a bureaucratic colonial legacy and the quality-of-life theme did not receive recognition.

8.2.3 1972-to date: Development of Systematic Environmental Response

The period after 1972 marked a major breakthrough in the changing attitude of both the people and the Government of Pakistan towards environmental preservation. Before 1972, the communication media remained virtually silent and was perhaps blissfully ignorant of the subject of pollution and environmental hazards. By 2000, the newspapers carried numerous stories drawing national attention to the continued environmental degradation. Even a casual reading of the newspapers, particularly the sections dealing with letters from the readers, revealed a growing public awareness about the need to safeguard the environment and control pollution. A random sample would include complaints against the alarming effects of wastes discharged from certain industrial projects, against industrial odours and unbearable noise in residential areas as well as traffic pollution, low quality of drinking water and unsatisfactory sanitation, deforestation, desertification, loss of biodiversity and coastal and marine pollution. The scientific societies and learned bodies also started holding open forums, seminars and symposia to highlight the environmental problems and issues. In one of its sessions the Scientific Society of Pakistan focused on the plight of the Quide Azam Mausoleum (Pakistan's most important national monument) resulting from the onslaught of air pollution in Karachi (Hasan, 1981). The numbers of research papers in the scientific journals of the country dealing with different aspects of environmental problems and issues also increased proportionally.

The increasing awareness on environmental degradation also showed visible impacts on the governmental policies and programmes. As stated earlier there were certainly a number of steps taken prior to 1972 in individual problem areas of Pakistan's environment such as waterlogging and salinity, deforestation, siltation, fisheries and wildlife, but the idea that such isolated concerns should be evaluated and coordinated under a broader perspective was one truly significant outcome of the Stockholm Conference on Human Environment.

8.2.3.1 Progress During 1970s

The Federal Government in Pakistan took up the issues raised in Stockholm and directed an immediate examination into the steps to be taken to meet the threat to the environment in the country. Subsequently, in November 1972, the Ministry of Presidential Affairs convened a meeting of experts concerned with various

aspects of environment. A major outcome of this meeting was the formulation of the Committee on Human Environment to make recommendations. The Committee submitted these in a report in April 1973 (GOP, 1973). The report stressed that the magnitude and complexity of the problem of environmental degradation required urgent attention and needed to be dealt with in a comprehensive manner. It called for a two-pronged approach embracing both long-range preventive and short-term curative measures, so that economic development would not produce a chaotic human environment, poor living conditions, and serious deterioration of the environment.

Another major positive development of 1973 was a constitutional mandate for the preservation of the environment. The Fourth Schedule of the Constitution of Pakistan established the concurrent legislative list of subjects for the Federal and provincial legislatures. "Environmental Pollution and Ecology" was included in the concurrent legislative list, which meant that both federal and provincial governments were to have constitutionally mandated responsibilities for the management of pollution and natural resources. This was a significant recognition of the shared governmental responsibility for environmental protection, but it also raised important questions regarding the proper alignment and coordination of these roles and responsibilities. The function of looking after general environmental matters was entrusted to the Ministry of Production, Industries, Town Planning and Agrovilles in 1972 and this federal focal point for general environmental matter was gradually strengthened. However, the Ministry of Science and Technology also looked after many issues dealing with the general environment. A new Environment and Urban Affairs Division was created within the Ministry of Housing, Works and Urban Development in 1975, and the responsibilities for all general environmental matters were shifted to this Division. It was also to coordinate environmental policies and programmes nationally and internationally.

Despite the above developments the environmental input within the national planning throughout the 70s was very small. The response to the growing need for legislation was also negligible. The existing laws such as the Pakistan Penal Code and the Factories Act, the Forest Act, and hunting and water use legislation, had some provisions, and although environmental protection could be premised on these no attempts were made to enforce them. Although a beginning had been made during the decade of the 70s, the country still had a long way to go.

In terms of natural resources management and protection, responsibility for forest, agriculture, soil and water rested with the provincial government departments. Some of these institutions had very good traditions. For example the provincial forest departments had established biannual tree planting campaigns. Sixty million saplings were distributed to farmers and other landowners every year at subsidized rates, which increased to 150 million annually in the 80s to encourage farm and linear plantations. The Provincial Soil Conservation Department had also been disseminating contour ploughing, terracing and other soil conservation techniques.

8.2.3.2 Progress During 1980s

With the dawn of 80s, the Government of Pakistan showed an increased level of awareness through legislative and institutional development and took some preliminary steps for integration of environment and development.

a. Legislative and Institutional Development

The clearest manifestation of new concerns was the issuing of the Pakistan Environmental Protection

Ordinance 1983 (GOP, 1983). This new legislation created a powerful Pakistan Environmental Protection Council (PEPC) with the personal involvement of the head of state, who was designated as the chairman of this Council. It was hoped that this association at the highest level of the Government would facilitate the enforcement of important environmental legislation and decisions without the customary delay. A high-powered Pakistan Environmental Protection Agency (Pak EPA) was also created by the same ordinance in 1984. A major assignment of the Agency included the framing of the National Environmental Quality Standards to be approved by the National Environmental Protection Council. The agency had the mandate to revise the standards as and when required after approval of the Council. The major tasks of the agency included the administration of the Environmental Protection Ordinance of Pakistan. The agency would also carry out surveys, surveillance and monitoring as well as publish an annual report on the state of the environment in the country, and disseminate information to the public on environment related matters. The process of Environmental Impact Assessment mentioned in the ordinance was also to be used as a powerful tool to stop the environmental degradation in the country. Two provincial EPAs were also established, the Punjab EPA in 1987 and Sindh EPA in 1989.

b. Resource Conservation

The National Wildlife Council in the Ministry of Food and Agriculture conducted the task for conservation of wildlife and designation and management of national parks in support of provincial wildlife departments. By the end of the 80s about 10 percent of Pakistan's land area had been designated as national park, game reserve or wildlife sanctuary. However, only about one tenth of this had some level of enforcement of the designation or staff to carry out this work. Another important Federal Agency on environmental resources was the Water and Power Development Authority (WAPDA). The water wing of WAPDA was busy in conducting the Mangla Watershed Management Project through a multidisciplinary team of engineers, foresters and agronomists. Some 2,500 silt traps and 350,000 masonry check dams were constructed in this project and five percent of the watershed was planted with grasses and deep rooted trees, which resulted in reducing the siltation rate by more than four times in the run off of Kanshi sub-basin prolonging the life of Mangla dam by seventy years (IUCN, 1992).

c. Integration of Environment and Development

Another significant aspect of the 80s was the realization that there is a close relationship between environment and development. This led to the development of a positive attitude within the Planning Commission, which guided the overall direction of economic and social policy. The Commission created an Environment Section for the environmental screening of public sector projects at the Federal level. Provincial planning departments also established corresponding environment sections. Due to their limited resources, however, these sections were not able to provide the depth of environmental review required. The Planning Commission and the Provincial Planning Departments also willingly incorporated aspects of environmental conservation in economic planning. If this initiative is seen in the context of the strategy for the sixth Five Year Plan of Pakistan (1983-88) (GOP 1983), then already a considerable convergence of objectives became clear. Of particular relevance to the conservation aspect of development was the emphasis on more efficient use of fertilizer, water and farm technology to achieve a major increase in agricultural yields. Even more important was the increase in the share of public sector social development programmes from 9.6 percent in the fifth plan to 17 percent in the sixth plan, a quantum leap in absolute terms, of about four times (GOP, 1983). The objective of these programmes was to improve quality of life in Pakistan.

The sixth Five Year Plan also focused heavily upon decentralized development activities and massive

acceleration of the 'rural transformation' with special emphasis on rural social services including electric supply, road networks and drinking water. With this decision of achieving a major breakthrough in the provision of physical infrastructure and social services for the rural areas, the plan offered more than what could be achieved by any other means in the past to promote sustainable development. A more critical examination of the plan, however, suggests only a passing familiarity with the often serious or critical state of the ecological infra structure on which any sustained development depends. The plan document passed over several aspects of development practices in the past, which if continued, could jeopardize the precious natural resources of the country. For example many of its projects were exploiting natural resources and had gone ahead without an updated natural resource inventory to show what the sustainable yield should be. Thus the strategy in the agricultural sector laid great stress upon increased use of chemical fertilizers and pesticides and on farm mechanization without a significant reference to the problems of pollution from agricultural chemicals or salinized soil. Similarly the plan included substantial programmes for exploiting forestry and fishery potential within the bounds of sensible economic, technical and ecological constraints but without any reference to what these constraints were or how they were to be calculated and coped with (IUCN, 1984). In a nutshell an analysis of actions on the environmental front during the 80s shows that despite a number of positive steps taken, including constitutional provision, creation of institutional setup, promotion of development at local/grass root level and environmental protection legislation, a lot more remained to be done and a number of shortcomings were glaring. A review of the sixth Five Year Plan shows that firstly the planning was still based exclusively on economic criteria and did not give enough recognition to ecological infrastructure. Secondly the integration between conservation and development was lacking at both the policy and implementation levels, which stressed only rehabilitation and productivity at the project level (where environmental impacts were often ignored due to lack of EIA). Thirdly there was a lack of coordination between various environmental institutions concerned with research, policy and information dissemination. The functioning of the institutions was also poor due to lack of properly trained staff. Finally the environmental legislation enacted was still inoperative because of the lack of implementing agencies, which were yet to be formulated. Moreover the legislation itself was far from complete and focused mainly on urban and industrial pollution control.

8.2.3.3 Progress in 1990s

a. Legislative and Institutional Development

Considerable progress was made in the 90s on legislative and policy development. The Pakistan Environmental Protection Act of 1997 (PEPA), which superseded the Pakistan Environmental Protection Ordinance of 1983, established the general conditions, prohibitions, and enforcement for the prevention and control of pollution, and the promotion of sustainable development. The Act also established and delineated the powers and functions of the Pakistan Environmental Protection Council (PEPC), Pakistan Environmental Protection Agency (PakEPA), provincial Environmental Protection Agencies (EPAs), and Environmental Tribunals. In particular, the Act created the authority for delegation of environmental management functions to the provincial EPAs. Nothing in the Act prohibited provincial governments from adopting more stringent standards or regulations. National Environmental Quality Standards (NEQS) were established for Pakistan in August 1993. All new industries were to comply with the standards by July 1994 while existing industries had until July 1996 to comply. The NEQS specified end of pipe standards for industrial and municipal effluent and air emissions, as well as smoke and noise standards for motor vehicles. The standards were revised in 1997.

b. Development of a National Conservation Strategy

In terms of policies a landmark feature was the adoption of the National Conservation Strategy (NCS) in 1992

as the guiding environmental policy for Pakistan. NCS contained legal, technical, institutional, and economic recommendations aimed at achieving three broad policy goals: conservation of natural resources, development, and greater efficiency in the use and management of resources. Subsequently a Plan of Action was prepared, which recommended Rs. 19.8 billion in project investments to be implemented over the five-year period 1993-98 (GOP, 1993b). The Plan of Action was later included in its entirety as the environment segment of the eighth Five Year Development Plan (1993-98). It proposed a four-component agenda: a) strengthening technical, regulatory and participatory institutions, b) formulating a communication campaign for mass awareness, c) creating a supportive framework of regulations and economic incentives and d) implementing projects in the NCS's fourteen core areas. The policy actions were aimed at strengthening the institutional structure and the projects were designed as remedial actions in the form of restorative and protectionist environmental investments.

A Mid-Term Review of achievements, impacts, and prospects made under NCS was undertaken in 2000, which concluded that the achievements under the NCS primarily related to awareness raising and institution building, while implementation was lagging. It recommended that future initiatives should emphasize improvements in implementation capacity. One of the specific recommendations was to "switch the NCS from a top-down and supply-driven approach to a bottom-up demand driven approach" and thereby foster the development and strengthening of local institutions and the empowerment of user groups to build sustainability. This recommendation on a NCS policy shift led to a growing emphasis on the need to develop the capacity of provincial and local governments for environmental management and the need to empower sectoral interest groups and civil society in the decision-making process.

8.2.3.3 Progress in the 21st Century

The turn of the century saw the development of several new policies and plans related to the environment, which culminated in developing and finalizing the National Sustainable Development Strategy (NSDS) of Pakistan. It also witnessed a change in the institutional structure on Environment. Prior to the 18th amendment in the constitution, the Ministry of Environment was the lead organization responsible for handling the subject of environment in the Government. Environment, with some other subjects was on a concurrent list dealt by both Federal and Provincial Governments. The 18th Constitutional Amendment eliminated the concurrent list leading to the abolition of the Ministry of Environment and its associated subjects were either devolved[1] or assigned to other Federal Government Ministries. However, this process was amended firstly by formulation of a Federal Ministry of Disaster Management[2] and then renaming and evolving it into a Federal Ministry of Climate Change[3], which was re-designated as Climate Change Division recently. A number of legislative and regulatory measures were also undertaken to strengthen environmental management in the country. The current institutional, legislative and regulatory set-up and policy environment forms the part of next sections of this chapter.

8.3 Policies and Plans

The National Environmental Action Plan (NEAP) was adopted in 2001 with the stated programme objective of alleviating poverty through environmental projects. Starting at the federal level, a gradual integration of

[1] Cabinet Division notification 29th June 2011

[2] Cabinet Division notification dated 26th April 2011- the Ministry was to promote policy, legislation, plans, strategies and programs regarding disaster management, climate change, environmental protection and preservations and MEA's.

[3] Vide Cabinet Division notification dated 18th April, 2012

programmes at the provincial and local levels was envisioned. NEAP primarily contributed to some capacity building at the federal and provincial level. The year 2005 saw the adoption of National Environmental Policy (NEP), which provided broad guidelines to the federal, provincial, and local governments in addressing environmental concerns and cross-sectoral issues such as poverty, health, trade and local governance. In order to achieve its objectives, the NEP directed the Ministry of Environment (MOE), and provincial and local governments to develop implementation plans. The NEP provided an opportunity to strengthen relationships between federal, provincial and local governments for environmental management, adopting innovative governance approaches, and incorporating performance measures in the implementation of agreed programmes.

A number of other policies, plans and programmes related to the environment were also formulated including:

- Biodiversity Action Plan of Pakistan - 2000, Approved
- National Action Programme to Combat Desertification in Pakistan - 2002, Approved
- Poverty Reduction Strategy Paper 2003-Approved,
- National Energy Conservation Policy 2006 -Approved,
- National Sanitation Policy 2006 - Approved,
- Pakistan Wetland Programme 2007- Approved,
- Energy Security Action Plan 2005- Approved,
- National Drinking Water Policy 2009-Approved,
- National Water Policy - Drafted
- National Rangeland Policy - Drafted
- National Wetland Policy- Drafted
- National Forest Policy- Drafted
- National Climate Change Policy- Approved

The Initial National Communication on Climate Change was transmitted to the Secretariat of the United Nations Convention on Climate Change and the Third Assessment on the Implementation of the United Nations Convention to Combat Desertification as well as the National Action Plan on Desertification were prepared in 2006. Pakistan has also finalized its National Sustainable Development Strategy (NSDS), which was drafted with the funding assistance of United Nations Environment Programme (Box 8.1).

8.4 Institutional Framework

8.4.1 Federal Government Agencies

The Climate Change Division is the main federal institution responsible for planning activities and formulating policies associated with environmental protection, pollution, and resource conservation. It is responsible for implementing the Pakistan Environmental Protection Act (PEPA, discussed in details in Section 8.5), coordinates the activities of other federal ministries, and acts as the secretariat for the Pakistan Environmental Protection Council (PEPC). It also deals with agreements reached with other countries and international organizations in the field of environment. In addition, the Pakistan Environmental Protection Agency also comes under its administrative control.

Three major federal institutions the Pakistan Environmental Protection Council (PEPC), the Pakistan

Box 8.1 Pakistan's National Sustainable Development Strategy (NSDS)

NSDS preparation is a major step forward in promoting sustainable development in Pakistan and a landmark achievement of the National Year of Environment 2009, when its draft was prepared with the assistance of UNEP. It was then circulated and opened for stakeholders' consultation. Ministries and Departments, Provincial Governments, NGOs and members of civil society provided significant analytical inputs.

NSDS takes into account the existing environmental, economic and social policies and identifies and integrates priorities highlighted there. The approach also applied to 'sectoral' strategies linked to sustainable development, such as the Poverty Reduction Strategy, Health Policy, National Sanitation Policy and Social Action Plan. The NSDS document has identified more than a dozen such strategies and policies that are important building blocks for the NSDS implementation. As its main cornerstone NSDS has attempted to address prevailing challenges to sustainable development in three key dimensions: environment, social and economic. The main challenge for NSDS in Pakistan is to put the country on a development path, the progress of which should be measured both through statistics of economic growth as well as the quality of life of its people, especially the vulnerable and dispossessed, who must be placed at the centre of national development. This people centred approach, whether for economic and social development or for environmental enhancement, demands increased participatory planning and management through involvement of stakeholders.

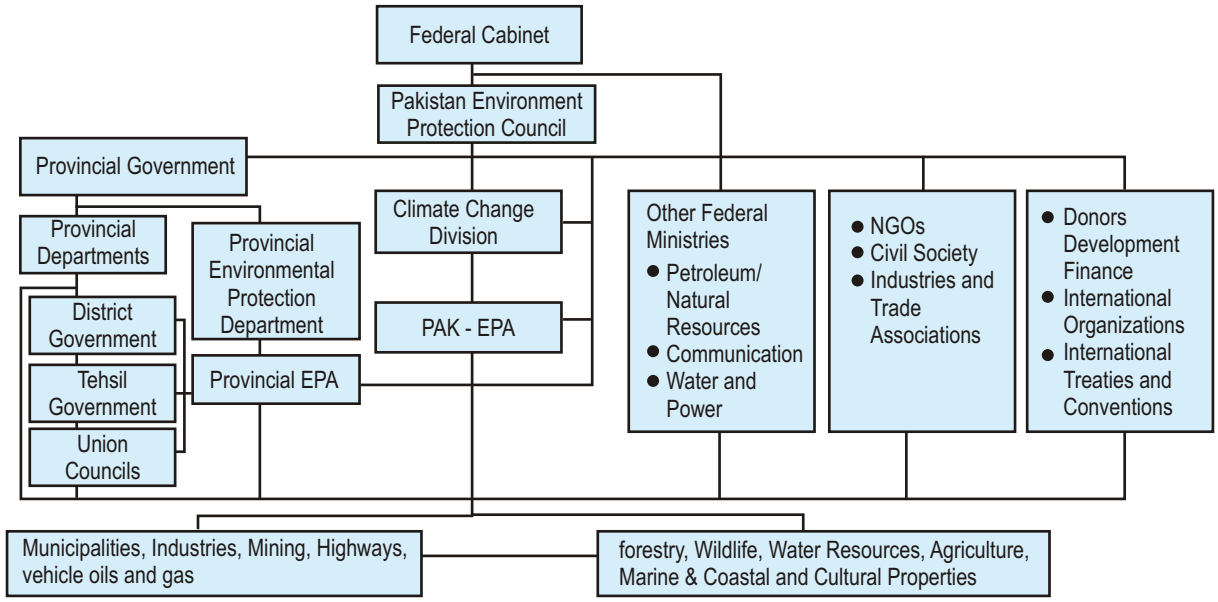
Of course there are many challenges to promoting such growth. In economic terms the challenge is to utilize the true potential and achieve well-being of each and every citizen of the country and promote viable economic growth through sustainable production, consumption and trade. In social terms, the challenge is the creation of a just society. The effort should concentrate on establishing a social, economic and political system based on rule of law, which alone will assure justice and equity. It should be reflected in poverty free, shared destiny and prosperity, brought about by participation, social protection and equal opportunities for all, irrespective of geographical and ethnic origin, creed, gender, or age. In environmental terms, the challenge is to protect biodiversity by managing ecosystems, conserving the natural resource base and safeguarding life support systems for preserving inter-generational equity as well as to prepare for climate change, and its unfavourable implications on the people.

The formulation and implementation of policies and strategies like NSDS offer vast opportunities as well as challenges to Pakistan to enhance efforts towards protecting the natural environment and improving human development as a basic ingredient of economic progress. Pakistan has a commendable record of efforts in preparing policies to promote conservation and long-term sustainability, from the National Conservation Strategy of 1992 through to the adoption of a National Environment Policy in 2005. Lack of their implementation, however, failed to achieve the desired results. Finalization of NSDS is therefore only the first step. A major challenge lies in its implementation, especially because it is a multi-sectoral venture. Its effective implementation would require transforming its strategic goals into time bound targets and achieving these within the existing but somewhat modified institutional set-up albeit by adopting innovative mechanisms that should give due cognizance to complementarities of policies, R&D, incentives and accountability, empowerment and enforcement, knowledge management as well as monitoring and reporting.

A major challenge in its implementation is to evolve and not to impose a readymade blueprint. There should be a continued flexibility in policies towards sustainability concerns, implemented through a network of institutions in line with the need of the country and an evolving agenda in relation to national priorities as well as global environmental concerns.

Environmental Protection Agency (Pak EPA) and the environmental cell in the Planning Commission, handle environmental issues. The overall institutional structure is summarized in figure 8.1.

Fig. 8.1 Structure of Environmental Institutional Framework



(Adopted from PAK-EPA Presentation, 2006)

PEPC, chaired by the prime minister, is the highest environmental policy making body in Pakistan, and has broad supervisory functions with responsibilities for environmental protection and promotion of sustainable development. It supervises implementation, enforcement and administration of national environmental legislation; approves national environmental policies and standards; coordinates the integration of sustainable development into national plans and policies; and provides guidelines for conservation of biodiversity and environmental protection considerations in natural resource management. Members of the council include the federal minister for climate change and provincial ministers responsible for the environment, the federal secretary dealing with climate change, and other federal appointees.

Pak-EPA is responsible for framing and implementing regulations to control environmental degradation. It is attached to Climate Change Division, operating as its technical, legal and enforcement arm. Its main functions are the implementation of PEPA-1997 (See section 8.5 for details on PEPA); preparation of State of Environment Reports; formulation, enforcement and revision of NEQS; establishment of ambient standards for air, water and land; coordination of environment control programs nationally and internationally; conduct of environmental monitoring wherever required; conduct of research and development; certification of environmental laboratories; coordination and assistance to all levels of government and community institutions for the safe disposal of waste under NEQS; promotion of environmental awareness and education; and undertaking safeguards from environmental disasters. Pak-EPA is also responsible for establishing guidelines on how implementing agencies should undertake EIA procedures during planning, and for reviewing and sanctioning EIAs of major projects.

The federal government has established Environmental Tribunals (ET) in the Punjab, Sindh, Khyber Pakhtunkhwa and Balochistan provinces under Section 20 of PEPA-1997. (Refer to Section 8.5 for details on PEPA). With the creation of ETs under PEPA, the establishment of all three organs, Pakistan Environmental

Box 8.2 Institutional Framework for Promoting Sustainable Development in Pakistan

The 18th Amendment to the Constitution of Pakistan and the 7th National Finance Award have significantly transformed the governance structure in the country, particularly with reference to environment and sustainable development. Whereas the 18th Constitutional Amendment eliminated the concurrent list and devolved a number of sustainable development subjects such as environment, health, education and population to the provincial level, the NFC award in turn provided a larger share of the government revenues to the provinces.

The NSDS of Pakistan, given the historical evolution as well as the constitutional compulsions of the 18th amendment, has proposed a three tier institutional framework for implementation of a sustainable development agenda in the country. At the top or federal level, it proposes that the existing multi-stakeholder body of PEPC (Pakistan Environmental Protection Council) headed by the Prime Minister and having all Chief Ministers as members, may be re-designated as the National Sustainable Development Commission. This will satisfy the requirements of the 18th amendment of removing concurrent subjects from the federal purview and will also meet the need for a high powered body which can effectively drive the implementation process of NSDS. The mandate and membership of the commission may be broadened in line with the three aspects of Sustainable Development. The Commission should:

a. Plan, supervise and monitor the overall implementation of the sustainable development agenda through overarching guidance, coordination and integration.
b. Oversee development of a five year National Sustainable Development Plan
c. Collate and consolidate the implementation from the provincial levels and develop a national progress report on sustainable development for the international level.
d. Constitute a steering committee under the Chairmanship of the Deputy Chairman, Planning Commission and comprising the Federal Secretaries of Finance, Planning, Climate Change and Social welfare as its members to oversee the implementation and reporting process on sustainable development.
e. Oversee the working of the National Sustainable Development Fund as well as explore other innovative funding mechanisms.
f. Approve incentives for promotion of NSDS goals.

NSDS also proposes the establishment of Provincial and local sustainable development commissions with appropriate mandates. It has been argued that this can provide the overall governance structure for the implementation of the NSDS and also act as the glue to bind together the various dimensions of sustainable development.

Protection Council (PEPC) working as legislator, Pakistan and Provincial Environmental Protection Agencies (EPAs) working as executive, and environmental tribunals (ETs) working as courts, the basic system for environmental management was completed. They all have powers to check each other under the established doctrine of the separation-of-powers.

After Pakistan ratified a number of Multilateral Environmental Agreements, Ozone and CDM cells were also created. They are housed in the Climate Change Division along with a biodiversity directorate. The Climate Change Division also takes the lead on the promotion of sustainable development. However, it neither has the mandate nor the capacity to handle the economic and social dimension of sustainable development.

Therefore NSDS of Pakistan has proposed a new institutional framework (Box 8.2).

Several additional federal agencies and autonomous bodies are involved in environmental development and natural resources management. The role of the Environment Section in the Planning Commission has already been highlighted above in the integration of environmental concerns in development planning. The Ministry of Water and Power and the Water and Power Development Authority (WADPA) are responsible for the development of water resources. WAPDA also houses an environmental cell. The Ministry of Communications is responsible for enforcing the Territorial Waters and Maritime Act of 1976, which covers some types of water pollution. Other agencies with one or more aspects of environment and natural resources include the Energy Conservation Centre, Pakistan Forest Institute (PFI), National Institute of Oceanography (NIO), National Agricultural Research Centre /Pakistan Agricultural Research Council (NARC /PARC), Alternative Energy Development Board (AEDB), Pakistan Council of Renewable Energy Technologies (PCRET), Pakistan Council for Research in Water Resources (PCRWR), and the National Disaster Management Authority (NDMA).

8.4.2 Provincial Agencies

EPAs have been established in all five provinces to deal with urban and industrial pollution. In addition, an EPA has also been established in Azad Kashmir. After the delegation of functions, the mandate of Provincial EPAs has become very comprehensive and large. They have full authority to handle the environmental management in their respective provinces. Their mandate is to: a) implement Rules and Regulations prepared under PEPA 1997 and additional legislation as per the needs of the Province, b) prepare and implement provincial environmental standards, c) develop provincial systems for the implementation of pollution charges d) conduct research & development for promoting most viable environmental technologies, e) certify laboratories f) involve local governments in the implementation of PEPA 1997 (See Section 8.5), g) promote environmental awareness and incorporate environmental issues in the educational curriculums h) prepare Provincial level Environmental Disaster Management Plans, i) collaborate and coordinate with stakeholders for the effective implementation of environmental policies and PEPA 1997 (See Section 8.5), j) entertain inquiries and complaints raised by stakeholders, k) mobilize national and international financial resources for the environmental projects, l) develop provincial level fiscal programmes and financial incentives for environmental compliance, m) fix pollution charges, n) conduct investigations against polluters, o) assist courts by generating field level environmental data about the polluters, p) establish environmental laboratories, q) implement IEE/EIA Rules and Regulations and Guidelines, r) manage hazardous wastes under the Hazardous Substance (HS) Rules and s) monitor vehicles for controlling air pollution.

Environment Sections have also been established in the provincial Planning and Development (P&D) Departments. These are responsible for reviewing provincial development plans and activities, including screening of projects to determine their effects on the environment and reviewing and sanctioning the completed EIA. Khyber Pakhtunkhwa Province was the first to establish an environment Section, which was instrumental in developing the Sarhad Provincial Conservation Strategy. In other provinces these sections have also prepared or helped in the preparation of provincial conservation strategies, state of environment reports and provincial environmental profiles. The implementation of provincial conservation strategies also rests with these sections. The major responsibility for managing and protecting sectors such as forests, agriculture, and water also lies with the provincial governments in Pakistan. Provincial line departments such as Irrigation Departments, Agricultural Departments, and Forest Departments are responsible for development works and also play a major role in the management of resources and in environmental protection.

Environmental Tribunals (ET), established in provinces, have powers to take decisions in case of conflicts. However, ETs can only award punishments while the responsibility to implement these punishments rests with the EPAs. In most of the cases Environmental Protection Departments (EPD)/EPAs do not conduct any monitoring after the award of a punishment. ETs have no powers to do field monitoring as it is the responsibility of the EPD/EPAs. In most cases, if any Government Agency is involved, EPD/EPAs do not bring the case in the ET.

Box 8.3 Major Groups Contribution to Environmental Enhancement

Local authorities play an important role in providing environmental services such as water supply and sanitation. However they need to play a more active role for three reasons. Firstly, local governments enable a greater participation by the citizens in the management and control of their daily affairs. Secondly, raising taxes at the local level or charging user fees for environmental services rendered is relatively easier. The taxpayers can see the visible benefits of the payments they have made and appropriate those benefits for themselves. Thirdly, in case of Pakistan, research on the Deprivation Index has shown that at least eighty out of over 120 districts suffer from deprivation of basic services and minimum levels of incomes that are acceptable. Because of intimate knowledge of the local problems and the solutions to resolve those problems, local governance leads to better results and more efficient utilization of resources compared to a more centralized system of resource allocation. It is only the local governments with greater participation of the local inhabitants that can plan and execute the strategies that are required and mobilize the resources needed to finance them.

Among other major groups, NGOs and academia including IUCN, Leads Pakistan, and WWF play important roles in promoting sustainable development through advocacy, education, training and capacity building, demonstration projects, monitoring and research, undertaking environmental campaigns and raising environmental awareness and acting as pressure groups. Besides working on their own, they assist the Government in the development and implementation of projects and programmes. The media has also remained proactive and plays a major role in raising awareness and in drawing attention to pressing environmental problems.

International NGOs such as WWF and the IUCN have been active in raising awareness and encouraging debate on environmental issues since the 1970s. However, national and local NGOs were not traditionally active, and environmental advocacy remained in its infancy until the preparation of National Conservation Strategy. When the NCS was developed during eighties, community-development NGOs and the print media started treating environment as a high-profile issue. Several environment-related NGOs now operate in Pakistan.

Women's organizations are also functioning. Some of these are very small and local; others operate at the national level. They are involved mainly in establishing development activities through projects and programmes, providing social services to the poor, conducting research and disseminating information on women and development, and promoting the legal and social rights of women. Some women groups', such as the Karachi Administrative Women's Welfare Society, which has worked on garbage disposal, tree planting, road building, and sanitation problems, have added environmental education and conservation to their programme agendas. Most of the established organizations are city based and respond to urban problems, such as water supply, waste disposal, and improving the environment in major cities.

8.4.3 Local authorities and other major groups

Local authorities and other major groups also play important roles in the environmental protection and enhancement in Pakistan (Box 8.3).

8.5 Legislation and Regulations

8.5.1 Pakistan Environmental Protection Act (PEPA)

8.5.1.1 General Provisions

The most important legislation on environment is the Environmental Protection Act of 1997. This umbrella legislation includes broad rules and regulations concerning powers of environmental institutions, the creation of provincial EPAs, formulation of environmental policies, the establishment of environmental tribunals, magistrates and sustainable development funds, substantially greater enforcement and more detail on right of entry powers (compared with the Pakistan Environmental Protection Ordinance) and penalties and the power to launch prosecution proceedings against heads of government agencies and local authorities.

8.5.1.2 Environmental Impact Assessment

An Environmental Impact Assessment of all development projects whether public or private is a legal requirement under Section 12 of the Pakistan Environmental Protection Act, 1997. PEPA also provides for public participation in EIAs and following submissions after approval of activities of EIAs. The Federal EPA issued comprehensive regulations for IEE and EIA reports under the title "Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environmental Impact Assessment Regulations, 2000". These regulations include two schedules stating lists of projects requiring IEE and EIA. Progress of EIA applications in Pakistan is given in Box 8.4.

8.5.1.3 Sub-elements of Environmental Management System

The Act considering sub-elements of environmental management systems also instructs the Pakistan EPA under Section 6(h) to establish systems and procedures for surveys, surveillance, monitoring, measurement, examination, investigation, research, inspection and audit to prevent and control pollution, and to estimate the costs of cleaning up pollution and rehabilitating the environment in various sectors and take measures for the promotion of research and development to facilitate the prevention of pollution and protection of the environment. Pakistan EPA in line with its responsibilities developed many Rules and Regulations, e.g. Pollution Charge for Industry (Calculation & Collection) Rules, 2001, and Provincial Sustainable Development Fund (Utilization) Rules, 2003, all notified by Federal Government.

Revised NEQS were approved by PEPC and notified in 2000. They are established for municipal and liquid industrial effluents, and industrial gaseous emissions. These are discharge standards based on concentrations of pollutants rather than mass based ambient standards as recommended by PEPA in 1997. NEQS for both municipal and industrial wastewaters are fixed for 32 parameters under three categories: discharges into inland waters, into sewage treatment, and into sea. NEQS for industrial gaseous emission are established for 16 parameters.

Box 8.4 Enforcement of Environmental Impact Assessment System

Pakistan and Provincial EPAs put serious efforts for the implementation of IEE/EIA Regulations and 1997 Guidelines. They were successful in creating an IEE/EIA culture in the country. The table below presents data on IEE and EIA reports received by Federal and Provincial EPAs. It shows that exponential growth has taken place in the number of applications received by the EPAs.

Pakistan: IEE and EIA Applications Received by Federal and Provincial EPAs

Agency	2000	2001	2002	2003	2004	2005	2006	2007
Federal EPA	2	3	0	1	3	3	7	16
EPD-Punjab	1	5	7	15	29	40	81	352
EPA-Sindh	17	18	23	26	33	4	53	65
EPA-KP	15	16	2	2	11	13	18	44
EPA-Baluchistan	2	7	2	2	11	12	11	32
Total	**37**	**49**	**34**	**46**	**87**	**72**	**170**	**509**

Source: World Bank (2006), data from 2005- 2007 provided by Pak EPA

The processing of submitted IEEs and EIAs by the Federal and Provincial EPAs is equally impressive. During the period 2000-09 in total 1,321 applications were submitted, NOCs were issued to 69 percent of applications.

A major success in this regard was that many public sector projects were pushed to conduct IEE or EIAs. The most popular cases were: infrastructure projects in Islamabad by CDA, New Muree Project, widening of Lahore Canal Road project, and more recently, infrastructure projects in Karachi. Earlier, public sector institutions bypassed the requirement of IEE or EIA in many cases. The Executive Committee of the National Economic Council (ECNEC) recognized this weakness and issued the order that "in case of development projects having environmental implications, an EIA report should invariably be submitted along with the project document at the time of getting approval". Along the same lines the Environmental Protection Tribunal Lahore while handling the case "Sumaira Awan versus Government of Pakistan" directed the Government of Punjab, Communication and Works Department, and City District Government to always prepare IEE and EIA of their projects of underpasses. The Tribunal gave the warning to the Government Departments that in case they failed to file IEE or EIA of projects, the Tribunal would take criminal action against the Government officers/departments under Section 17 of the PEPA 1997.

The contributions of civil society institutions were also important for pushing Federal and Provincial EPAs, and proponents of the project for conducting IEE or EIAs. These institutions actively participate in public consultations of IEE/EIAs for the industrial and other development projects. Some examples of the projects where civil society institutions pressurized the proponents of the projects to conduct IEE or EIA and accordingly make amendments in these are: New Muree Project-WWF Pakistan, multi-story building project in Islamabad-SDPI, widening Canal road project-Lahore Bachao Tehreek, and overhead bridge project Defence Karachi-Shehri. Civil Society institutions are also active in following-up the IEE or EIA for both public and private sector projects. In addition WWF-Pakistan, IUCN-Pakistan, SDPI, and LEAD-Pakistan organized training sessions on IEE and EIA regulations and guidelines for the public and private sectors, and NGOs.

The Pollution Charge for Industry (Calculation and Collection) Rules 2001 (PC Rules) were developed in consultation with industry, industry associations, NGOs and public sector stakeholders. Under these rules detailed guidelines have been developed for the industry self-determination, reporting and payment of pollution charges. PC Rules include clauses of pollution charge re-determination, cost of determination, and involvement of industry institutions.

The Federal Government issued the Hazardous Substances Rules (HS Rules) in 2007. HS Rules provide three lists for hazardous chemicals: completely banned, strictly regulated, and regulated.

PEPA 1997 provides a comprehensive functional legal framework to the Pakistan EPA for NEQS enforcement. It states that the Pakistan EPA shall establish standards for the quality of the ambient air, water and land, by notification in the official Gazette in consultation with the Provincial Agencies concerned. It elaborates that in in case of different standards for discharge, or emission from different sources or for different areas and conditions, variable situations may be specified and in case standards are less stringent than the NEQS, prior approval of PEPC shall be obtained.

The above-stated Federal legal framework provides Pakistan EPA with a logical approach and even identifies the step-by-step activities to be followed for effective environmental management in the country. Under the framework Pakistan EPA has established comprehensive systems and procedures for surveys, surveillance, monitoring, measurement, examination, investigation, research, inspection and audit and designed pollution prevention and control mechanisms.

The core of PEPA 1997 in respect of its implementation is the levy of pollution charges on the polluters and the establishment of Provincial Sustainable Development Funds (PSDF). Accordingly, the Ministry of Environment notified the Board Rules of the PSDF in 2001. These rules state operational procedures for running the operations of the PSDF Board. Next, the Ministry notified the PSDF Utilization Rules in 2003. These rules cover procedures for filing and appraisal of project proposals seeking PSDF funding. Comprehensive criteria for sanction of financial assistance, procedures for financial assistance, post sanction formalities, monitoring and financial audits have been stipulated in the rules.

8.5.2 Other Environmental Acts and Ordinances

Other federal and provincial laws also cover pollution control, natural resource use, and conservation (table 8.1). The Factories Act of 1934 and the Motor Vehicle Ordinance of 1965 are two pieces of legislation for pollution control. Unfortunately, neither of these are being enforced effectively or consistently, including their provisions aimed at controlling air and noise pollution. Marine pollution is partly controlled under the Ports Act of 1908, which prohibits discharge of ballast and garbage into a port to ensure safe shipping. The Territorial Waters and Maritime Zones Act of 1976, which established a 200-mile Exclusive Economic Zone (EEZ) off the coast protects the marine environment and prevents marine exploitation. The Agricultural Pesticide Ordinance of 1971 requires that pesticides be registered. It also places controls on pesticide use. The Forest Act of 1927 prohibits the clearing of forests for cultivation and grazing and the removal of forest products in reserves or protected areas. Legislation for the conservation of wildlife and the protection of the national parks includes the provincial Wildlife Protection Acts of 1974. These acts have been successful in protecting some species, such as the green turtle and the Indus dolphin, but have failed to protect others.

Table 8.1 Environmental Laws and Ordinances in Pakistan other than PEPA, 1997

Problem	Legislation	Enforcing agency	Offenses covered
Water pollution	Pakistan Penal Code, 1960 Factories Act, 1934 Karachi Joint Water Board Ordidnance, 1949, and Karachi Joint Water Board Rules, 1956 Sindh Fisheeries Ordinance	Provincial government Ministry of Industries Karachi Joint Water Board Authority Sinch Fisheries Provincial Department	Fouling a public spring or reservoir Disposing of untreated industrial waste in water bodies Contaminating the water supply of water works or water tanks Discharging untreated sewerage and industrial waste in water
Air pollution	Pakistan Penal code, 1860 The Motor Vehicle Ordinance of 1965, and Motor Vehicle Rules, 1969	Provincial governments Traffic police	Vitiating the atmosphere in any way so as to make it noxious to human health Emissions of smoke, grits, sparks, ashes, cinders, oil or other noxious substances from vehicle
Noise pollution	The Motor Vehicle Ordinance of 1965, and motor Vehicle Rules, 1969 West Pakistan Regulation and Control of Lead Amplifiers Ordinance, 1965	Traffic police Local government	Driving a vehicle without a silencer, using horn with shrill alarming sounds Use of loudspeakers near courts, hospital, offices, schools, or to incite sectarian violence or to cause annoyance
Toxic or hazardous waste pollution Solid waste pollution	Pakistan Penal code, 1860 Pakistan Nuclear Safety and Radiation Protection Ordinance, 1984 No relevant legislations	Provincial government	Negligent conduct with respect to poisonous substances Acquisition, manufacture, construction, operation of nuclear installation, dealing in nuclear material unless under license, discharge of nuclear waste, trading in radiation-contaminated food, entry of nuclear powered vehicles in Pakistan
Marine pollution	The Ports Act, 1908 Pakisan Territorial Waters and Maritime Zones Act, 1976	The Port Qasim Authority Ministry of Communications and Port Authority	Discharge of ballast or garbage into a port Pollution of Port Qasim Area
Pollution of fisheries	The West Pakistan Fisheries Ordinance, 1961 The Balochistan Sea Fisheries Ordinance, 1971	Provincial Fisheries Department Balochistan Fisheries Department	Destruction of fish; capture of certain species of fish below a certain size; harvesting of certain species in specified periods; harvesting in fish sanctuaries Operating unlicensed fishing craft or fishing equipment in Balochistan; destruction of fish or plankton; fishing in specified areas
Pesticides and fertilizers	No relevant legislation pertaining to fertilizer use Agricultural Pesticides Ordinance, 1971 Agricultural Pesticides Rules, 1973	Ministry of Food and Agriculture Pesticide laboratories	Marketing unregisted pesticides
Forest conservation	The Forest Act, 1927 West Pakistan firewood and Charcoal Act, 1975 The Cutting of Trees Act, 1975 The NWFP Hazara Forest Act,1936 The NWFP Ordinance, 1980	Ministry of Food and Agriculture, Forest Division NWFP Forest Department NWFP Forest Department	Clearing of forests for cultivation, grazing, hunting, removing forest produce, quarrying, felling and lopping and tapping of trees, branches etc. in reserved or protected areas Defacing trees and timber, and altering forest boundaries Burning of firewood and charcoal in factories, brick klins and lime kilns Cutting and felling of trees in the five mile belt along the external frontier of Pakistan without written approval of local formation commander Similar to Forest Act, 1927 Extraction of timber and forest produce without government approval
Wildlife conservation and national parks	The Sindh Wildlife Protection Ordinance, 1972 Punjab Wildlife Protection Act, 1974	Sindh forest Department Punjab forest Department	Unlicensed hunting of wild animals; hunting of protected animals; possession of wild animals or meat of protected animals; hunting in sanctuaries or national parks; polluting water of park or setting fire to sanctuary, introducing exotic species in parks As Above

Source World Bank 1996

In addition to the above, three other recent legislative initiatives include:

- Hospital Waste Management Rules 2005 Notified
- Bio Safety Rules 2005 Notified
- Pakistan Trade Control of Wild Fauna and Flora Act, 2010- Notified

8.6 Environmental Monitoring System

With the cooperation of the Government of Japan, Pak-EPA established fixed and mobile Air Monitoring Stations in 2007 in five major cities of Pakistan: Karachi, Lahore, Peshawar, Quetta, and Islamabad (Table 8.2). The system has been established at Federal and Provincial EPAs. The difference between fixed and mobile stations is only in the mobility of stations otherwise all parameters are the same. The mobile laboratories are utilized to identify high pollution spots for the future installation of fixed air monitoring stations in those areas. Five stack emissions monitoring vans have also been provided to federal and provincial EPAs. These monitoring vans are equipped with complete stack emission monitoring equipment to be used for sampling and analysis of such emissions by industrial units. The National Data Surveillance Centre (DSC) has been established at the Central Laboratory for Environmental Analysis and Networking (CLEAN) at Pak EPA. Functions of DSC are to calculate the average data for each parameter received from stations and compare these with the ambient air quality standards.

Table 8.2 Pakistan: Air Quality Monitoring System

Location	Fixed Monitoring Stations	Mobile Monitoring Stations	Data Collecting and Analysing Equipment	National Data Surveillance Centre
Islamabad	1(1)	1(1)	---	1(1)
Lahore	4(2)	1(1)	1(1)	---
Karachi	4(2)	1(1)	1(1)	---
Peshawar	2(1)	---	1(1)	---
Quetta	2(1)	1(0)	1(1)	---
Total	13(7)	4(3)	4(4)	1(1)

Note: Figures outside bracket show planned while inside bracket show actual numbers

Mobile water quality labs (Table 8.3) consist of mobile vans, which are also used for stack emission monitoring. Five monitoring vans have been provided, one each to federal and provincial EPAs. These laboratories have two functions: 1) to collect and carry samples to an analytical laboratory and 2) to analyse the basic parameters and necessary treatment of samples before carrying these to a laboratory for detailed analysis. The Central Laboratory for Environmental Analysis and Networking (CLEAN) has been established at Pak EPA in Islamabad. CLEAN is equipped with the latest water quality monitoring equipment. Analytical equipment and spare parts have also been provided to all provincial EPAs, as per requirements for continuous water quality monitoring and to collect the analytical data for onward submission to the National Data Surveillance Centre (NDSC) in Islamabad. A training centre has been established at Islamabad to provide training to research and technical staff from the EPAs.

Table 8.3 Pakistan: Water Quality Monitoring System

Location	Mobile Water Quality Monitoring Labs	Analytical Laboratory	National Data Surveillance Centre	Training Centre
Islamabad	1(1)	1(1)	1(0)	1(1)
Lahore	1(1)	1(1)	---	---
Karachi	1(1)	1(1)	---	---
Peshawar	1(1)	1(1)	---	---
Quetta	1(1)	1(1)	---	---
Total	5(5)	5(5)	1(0)	1(1)

Note: Figures outside bracket show planned while inside bracket show actual numbers

8.7 Risk Prevention and Emergencies

A number of measures and actions have been taken for pollution control, particularly for prevention of risks and emergencies:

- Marine Pollution Control Board: A Marine Pollution Control Board has been established and is fully operational. The Board is presently preparing plans and projects for marine pollution control and monitoring.
- Development of national emergency response and accidents preventions plans regarding pollution of the environment: the National Disaster Management Authority (NDMA) is responsible for the implementation of this policy. Emergency response and accident prevention plans and arrangements have been made for strategic locations, infrastructure and services. The NDMA has targeted to expand its coverage through a network of existing institutions such as fire brigades, civil defence, "1122 emergency ambulance services", Edhi Centres (NGO), army establishments and police.
- Provision to industries of financial and other incentives for technology upgrading, adoption of cleaner technology, implementation of pollution control measures and compliance with environmental standards, and incentives to levy only the lowest custom duty on the import of environmental equipment, and higher depreciation rates for environmental equipment and infrastructure are available to the industry. Cement industry and thermal power projects used this incentive for the import of air pollution control equipment. The Trade Policy of Pakistan announced that Government will provide matching grants for the establishment of wastewater treatment plants to the industry that are exporting a major part of their products. Members of the Pakistan Tanners Association and All Pakistan Textile Mills Association and other exporters are in the process of preparing applications for using this incentive.
- Certification of environmental laboratories: Federal and Provincial EPAs have certified about 20 environmental testing laboratories in public and private sectors. Two multinational environmental testing companies have also established their laboratories in the last ten years. These laboratories are doing a reasonable size of business. The Pakistan National Accreditation Council provided technical assistance to environmental laboratories for securing ISO-17025. (The ISO 17025 standard comprises five elements that are Scope, Normative References, Terms and Definitions, Management Requirements and Technical Requirements. The two main sections in ISO 17025 are Management

Requirements and Technical Requirements. Management requirements are primarily related to the operation and effectiveness of the quality management system within the laboratory. Technical requirements include factors, which determine the correctness and reliability of the tests and calibrations performed in laboratory). At present about three environmental laboratories have secured ISO-17025 certification. In addition about five environmental laboratories are in the process of securing ISO-17025 certification.

- Promotion of ISO-14001 certification: Pakistan and Provincial EPAs continuously promoted and supported ISO-14001 certification in the country. (Developed for the prevention of industrial pollution, ISO 14001 specifies the actual requirements for an environmental management system. It applies to those environmental aspects, which the organization has control and over which it can be expected to have an influence. It shows how an organization can: a) implement, maintain and improve an environmental management system b) audit its conformance with its own stated environmental policy c) demonstrate conformance internally and externally d) demonstrate compliance with environmental laws and regulations or e) certify its environmental management system by an external third party auditors f) make a self-determination of conformance. At present four multinational certification companies, and about 15-20 small companies and many individual consultants are providing ISO-14001 certification services.

8.8 Gaps and Constraints in Environmental Management System

The above discussion demonstrates that after years of experience with policy and institutional and legislative developments, Pakistan's environmental management framework is relatively mature and the Government efforts in this direction need appreciation. However, while designing the initial framework, gaps and shortcomings are bound to remain, which can only be resolved with actual application. This section concentrates on functioning of this framework and its gaps and shortcomings.

8.8.1 General Shortcomings and Gaps

A number of studies have discussed institutional and legislative framework particularly with reference to meeting the objectives of environmental governance. Among these the most notable include the mid-term review of National Conservation Strategy (Hanson et al., 2000), the UNIDO Review of Industrial Policy and Environment 2000, The World Bank (2006), the Pakistan Strategic Country Environmental Assessment, an ADB (2006) report on Urban Air Quality Management in Pakistan, the Luken (2008) report on Industrial Environmental Regulation, 1997-2007: Reasons for the Failure of Existing Manufacturing Plants to comply with the NEQS and more recently, a report prepared for the Ministry of Industry on the Evaluation of Industrial Environmental Management in Pakistan (Khan, 2010).

The World Bank (2006) study on the institutional performance states, “Key performance constraints are not primarily a consequence of inadequate legislation or insufficient funding, but rather are the result of a few key weaknesses in institutional design combined with low capacity to apply available resources. In particular, the assessment concludes that the lack of guidelines for oversight of environmental authorities delegated from Federal to provincial agencies is an important missing link in the institutional design. While mentioning these key constraints, the World Bank study also notes that opportunities “exist to strengthen current mechanisms for the mainstreaming and up-streaming of environmental concerns, and to support the judiciary and civil society organizations in enforcing environmental commitments.”

The nominal implementation of environmental legislation in the country, according to the Luken' Report was due to two reasons: (i) the basics of a command and control regulatory programme were not in place nor was there any significant use of complementary measures, such as economic instruments, voluntary programs, and transparency and disclosure; and (ii) the vast majority of industrial establishments, with some notable and limited exceptions, and the government to some extent, had not accepted the polluters-pays-principle in its letter or spirit. It further pointed out that among other reason, PEPA 1997 and its rules and regulations lacked the specificities for effective implementation. For example, NEQS for wastewater were neither sub-sector-specific nor area-specific and did not have any relationship with the ambient conditions (Luken, 2008).

The Mid Term Review of the National Conservation Strategy (Hanson et al., 2000) has highlighted the problems of institutional capacity for pursuing the objectives of sustainable development, which it says exist both within and outside the Government. These have been analysed systematically in the review report. It stresses that the major lacuna is in the political commitment. It states, "The original mechanism (of NCS) depended on the leadership of several ministers and the active involvement of the Prime Minister/Chief Executive as chair of PEPC. PEPC, as an apex body, has a legal mandate to formulate environmental policy and also to monitor it. It was to provide guidance on the NCS, but it has not met regularly enough and seems to have abdicated responsibility to the NCS Unit (IUCN, 2002)."

The ADB study (2006) referring primarily to air quality, pointed out that Pakistan still lacks a legal framework that can address urban air pollution and provide an integrated and comprehensive air quality management policy for the country. The need for such a legal basis is important in providing a framework for air pollution control. The report adds that it should be carried out with the involvement of concerned stakeholders and firmly stipulating linkages and roles of the national, provincial, and local institutions, so as to avoid overlapping of roles and to ensure coordination and cooperation.

The report prepared for the Ministry of Industries (Khan, 2010), refers primarily to industrial environmental governance but its findings are applicable equally well to overall environmental governance. It highlighted the following reasons for failures in implementation of environmental initiatives:

- Overall poor governance and rule of law;
- Poor enforcement of legislation;
- Gaps in environmental legislation;
- Ineffective role of Private Sector;
- Lack of consumer demand for products with minimum environmental impacts;
- Overshadowing of Environmental institutions by other stronger institutions; and
- Weak institutional capacities particularly those of Pakistan Environmental Protection Agency (Pakistan EPA) and Provincial EPAs.

8.8.2 Problems in Legislation:

Although the Pakistan Environmental Protection Act (PEPA) 1997 carries substantial improvement over the previous Ordinance, a number of weaknesses have still been identified. One criticism is that it concentrates primarily on aspects related to pollution only or brown issues. Even in brown issues, a major problem is the lack of procedural detail and descriptions of regulatory mechanisms that are normally specified in environmental protection legislation (specifications of mechanisms and procedures are left to the

regulations). Omitted from the Act, for example, are detailed procedures for pollution control, EIAs, appeals, and public participation. Even third party rights in EIAs and pollution control have been left undefined. Under the delegation of powers to provincial EPAs, the Act leaves them to be handled through notification in the Government Gazette. Such a mechanism may create problems of subsequent delegation of power to divisional or district officers in the provinces, and may require provincial EPAs to enact their own laws. The Act is broadly applicable to air, water, soil, marine and noise pollution, and handling of hazardous wastes. However, it does not deal directly with some major issues. For instance, there is no provision that directly deals with the soil and marine pollution. It also falls short on many other important issues like control of ozone depleting substances and waste management, the provisions of which have been included in the National Environmental Policy (GOP, 2005). The Policy recognizing shortcomings points out that there is a need to amend PEPA 1997 to provide legal cover to several aspects included in the policy such as soil pollution, ozone depletion, and climate change because the Act does not deal directly with these issues. Some of the aspects that have specifically been mentioned for framing new acts by the National Environmental Policy include the Water Conservation Act, the Clean Air Act and the Pakistan Oil Pollution Act.

Besides gaps, PEPA 1997 also conflicts with some existing laws. A case in point is the Canal and Drainage Act, 1873 (CDA), which is still the main Statute dealing with water related issues of the country. This Act mostly deals with the construction and maintenance of the drainage channels and canal navigation but also covers issues relating to environmental pollution. Besides conflicts in the provision, there are certain loopholes in the implementation of these two laws. For example it is not clear if the authorities can still prosecute a person under PEPA 1997 after proceedings have been initiated against him under CDA. This is particularly important if the magistrate or other authorities given the power to decide disputes/ breaches under CDA have absolved such a person. It seems doubtful if the authorities would still be able to move against such a person as he could be protected by the rule against “double jeopardy”. The issue is of even more importance, given that the environmental authorities have the power to issue a number of penalties, including fines, to a person in breach of PEPA (Khan, 2010). Thus there is a need for the harmonization of two Acts. Amendments are needed in PEPA 1997 to take care of the situations outlined in CDA.

The Government of the Punjab, after conducting a most comprehensive review of environmental legislation and regulation have also highlighted a number of inconsistencies (GOPb, 2008). These inconsistencies have caused problems while pursuing cases in the Environmental Tribunals and need to be removed.

8.8.3 Shortcomings in the EIA System

The Pakistan Strategic Country Environmental Assessment 2006 by the World Bank conducted a comprehensive review of the EIA system. Lack of capacity and institutional coordination were the main hurdles. It was noted that the quality of EIA-reports varied depending upon the size of the project, and capacity and quality of the consultant. Moreover, due to the absence of a coordination system between development departments, other project approving authorities and EPAs regarding identification of projects, many small but environmentally hazardous projects remain un-noticed. It was further pointed out that low quality IEE/EIA reports got approved due to the low level of social accountability, political pressure, and absence of a panel of experts in the EPAs. Monitoring activities after the issuance of NOC were also rarely executed by EPAs. In fact, EPAs capacities for field monitoring were found to be weakest of all. These problems will hopefully be resolved over a longer period of time with the acceptance of democracy as governance system, improvement in the education levels of masses, media focus on environment, improvement in the social accountability and adoption of transparency mechanisms by government departments.

8.8.4 Problems in NEQS

The main problem with the National Environmental Quality Standard (NEQS) is the single-track approach based on the discharge-based enforcement, particularly where the effluents are being released to environmentally sensitive areas or areas with low assimilative capacity. For example the River Ravi has a high intensity of wastewater pollution for a length of 62 kilometre owing to very low natural flows and very high levels of wastewater discharges from industrial and domestic sources, whereas the Indus River throughout its length has low concentration of pollutants due to very high flows and low levels of domestic and industrial discharges. This implies that ambient conditions in the polluted section of River Ravi demand very stringent ambient standards to maintain the health of the river for both industrial and municipal discharges. On the other hand ambient standards for Indus River can be relaxed somewhat. However, it is important to note that high or low intensity of pollution, ultimately most of it ends up in the sea. Moreover, it is not easy to establish such sets of standards within the prevailing constraints of:

- Non-availability of national level ecological data by ecological zones;
- Low level of technical capabilities in the environmental authorities and consultants; and
- Lack of resources.

8.8.5 Non- enforcement and Cooperation

Cooperation of stakeholders is extremely important for enforcement of laws and regulation whether in terms of self-monitoring programmes, payments of pollution charges, releases of waste particularly hazardous waste or implementation of environmental protection orders.

8.8.5.1 Cooperation in Self-Monitoring and Reporting Tool (SMART)

In order to cope with the lack of funding and capacity particularly for monitoring, the Government introduced a Self-Monitoring and Assessment Programme for industries. The response of the industry was not encouraging. Out of 8,000-10,000 industrial units only 113 are registered and reporting under the SMART program. The major reasons for the low level of participation is the lack of trust between environmental authorities and the industry, lack of capacity of Pakistan and Provincial EPAs, limited allocation of resources, and low level of enforcement of environmental legislation in the country. In a survey on this issue, industry representatives stated that the most important reason for not reporting under SMART was that they believed that EPAs would use the SMART information to penalize the firms in the future (Khan, 2010). A second reason stated was that there were no such requirements from the international buyers. To start reporting under SMART, industry representatives requested a written guarantee that EPAs would not start undue inspections and penalize firms on the basis of SMART data (Khan, 2010). Pressure from civil society could play an important role along with reward to reporting industries with incentives.

8.8.5.2 Pollution Charges

Throughout the developing world enforcement of pollution charges remains the most important tool for aligning the industries on the path of environmental compliance. In Colombia, China, and Philippines, industries opted for pollution abatement by alternative means against the enforcement of a steep increase of pollution charges over a period of time. Pollution charges not only helped these countries to decrease the pollution generation but also raised revenues for the governments to make investments to control pollution

(World Bank, 1999). In Pakistan, pollution control rules (PC) were never enforced. Therefore their practicality has never been checked. Moreover, at present the knowledge and information about PC rules among industries is so low that all the surveyed units covered under a study on Evaluation of Industrial Environmental Management in Pakistan (Khan, 2010) were not even aware of these rules. Again the role of civil society and the media along with enhanced monitoring capacity of EPAs could help.

8.8.5.3 Hazardous Waste Management

In 2006 at Sindh Industrial and Trading Estate (SITE), one firm indiscriminately disposed hazardous waste on the street. This led to the death of one child, and serious injuries to numerous children and adults. The accident was brought to the limelight by the media. Many such accidents occur but they remain un-noticed by EPAs, media and NGOs. Industry audits conducted by the Environmental Technology Programme for Industry, the Cleaner Production Program, and the Program for Industrial Sustainable Development documented that safety practices for the use and disposal of hazardous materials are not of the desired level (EPD, 2008).

8.8.5.4 Environmental Protection Orders

Pakistan EPA issued 49 Environmental Protection Orders (EPOs) since 2001. Most of the EPO's were issued to steel mills and brick kilns for not complying with the NEQS for air emissions. Other sets of EPOs were issued for not complying with IEE/EIA regulations. Punjab EPA issued about 500 EPOs to industrial units in 2008 and about 600 in 2009. EPOs did not yield satisfactory results and most of them were forwarded to Environmental Tribunals in Lahore due to their non-compliance with EPO provisions stated in PEPA 1997. Major shortcomings in the EPOs (GOPb, 2008a) were as follows:

- Previous notices, if any, were not mentioned;
- Drafted and issued by unauthorized persons;
- Violation of PEPA 1997 was not mentioned;
- Proof of violation was not enclosed;
- Certified laboratory tests were not enclosed;
- Non applicable section(s) of PEPA 1997 were cited;
- Opportunity for personal hearing was not provided;
- Proper and timely notice was not given;
- EPO was sent to incorrect address;
- Right to appeal under section 22 of PEPA was not mentioned; and
- Complaint was not mentioned under section 16 of PEPA.

These are trivial mistakes causing most of the EPOs to end in Environmental Tribunals. This is against the objective and spirit of EPOs, as the power of issuing EPOs was given to EPAs for speedy action. Involvement of Environmental Tribunals (ET) delays action. Therefore the Environmental Protection Department (EPD) Punjab and other EPAs need to identify the defects inherent to the current system and resolve these to make the EPO an effective quasi-judicial mechanism.

8.9 International Cooperation and Commitments

8.9.1 Multilateral Environmental Agreements and Non-Binding Instruments

At the international level, Pakistan is not only a party to numerous Multilateral Environmental Agreements (MEAs), but has also shown its commitment to non-legally binding instruments such as Agenda-21, Rio

Principles and Johannesburg Plan of Implementation aiming to promote sustainable development. Pakistan adheres to the United Nations Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of wild flora and fauna (CITES), the United Nations Convention to Combat Desertification (UNCCD), the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Migratory Species (CMS), the RAMSAR Convention on Wetlands, the Basel Convention on the Control of Trans-boundary Movement of Hazardous Wastes and their Disposal, the Rotterdam Convention on the Prior Informed Consent for Certain Hazardous Chemicals and Pesticides in International Trade and the Montreal Protocol. Pakistan has also prepared the National Implementation Plan for Persistent Organic Pollutants (POPs) to ratify the Stockholm Convention.

8.9.2 Millennium Development Goals (MDGs)

The Government has committed itself to achieving the Millennium Development Goals (MDGs) as adopted by the UN member states in the year 2000. Each of the goals has a number of targets. Several indicators measure each MDG target. Among the MDGs, Goal 7 aims at ensuring environmental sustainability. The progress made on various indicators relating to this goal is given in Box 8.5.

8.10 Conclusions

Capturing the development dividend of growth, calls for complementary policies that address environmental issues while facilitating development. Pakistan has been successful as far as institutional legislative and policy development on environment are concerned. A major positive development was the constitutional mandate for the preservation of environment as far back as 1973. Another major manifestation of environmental concerns was the issuing of the Pakistan Environmental Protection Ordinance 1983. The new legislation created a powerful Pakistan Environmental Protection Council (PEPC). A high-powered Pakistan Environmental Protection Agency (Pak EPA) was also created by the same ordinance in 1984.

Promulgation of the Pakistan Environmental Protection Act of 1997 (PEPA), which superseded the Pakistan Environmental Protection Ordinance of 1983 was another landmark achievement. It established the general conditions, prohibitions, and enforcement for the prevention and control of pollution, and the promotion of sustainable development. The Act also established and delineated the powers and functions of the Pakistan Environmental Protection Council (PEPC), the Pakistan Environmental Protection Agency (Pak EPA), the provincial Environmental Protection Agencies (EPAs) and the Environmental Tribunals. With the creation of ETs under PEPA in 1997, the establishment of all three organs, PEPC working as legislator, EPAs working as executive and environmental tribunals working as courts, was completed. They all have powers to check each other under the established doctrine of the separation-of-powers. Despite not being perfect, PEPA 1997 is a basic legislative tool that has empowered the Government of Pakistan to frame and enforce regulations for the protection of the environment.

A major positive development on the integration of environment and development was the creation of the Environment Section in the Planning Commission and the Provincial Planning and Development Departments. This helps in environmental screening of public sector projects at the federal and provincial levels and integrates environment in the development planning process. The devolution of the Federal Ministry of Environment in 2011 was a major setback to the cause of environment but fortunately first creating the Ministry of Disaster Management in the same year and then transforming it to the Ministry of Climate Change in 2012 (now Climate Change Division), which also handles the subject of Environment at Federal level, redressed it.

Box 8.5 Implementation of MDG Target 9 on Environmental Sustainability in Pakistan

The indicators chosen by the Government of Pakistan to report progress on Target 7 Integration of the principles of Sustainable Development into Country's Policies and Programmes along with MTDF targets are given below.

Pakistan: The MTDF and MDG's Targets on Environment and Achievements by 2010

Name of Sector/Sub-Sector	Physical Targets of MTDF period			
	Year 2004-05	2009-10 Targets	MDG Targets 2015	Achievement of Target
Forests cover including State and Private forests/farmlands (% age of total land area)	4.9%	5.2%	6.0%	5.17%
Area protected for conservation of wildlife (%age of total area)	11.3%	11.6%	12.0%	11.3%
No. of petrol & diesel vehicles using CNG fuel	380,00	800,000	920,000	2,400,000
Access to sanitation (national % age)	42	50	90	44
Access to clean water (national % age)	65	76	93	65
Number of continuous air pollution monitoring stations.	0	4	--	7
Number of regional offices of Environmental Protection Agencies	0	8	16	6
Functional Environmental Tribunals	2	4	--	4

Source: Planning Commission

One of the targets of the MDGs, as shown in the table is 6 percent forest cover including trees on agricultural lands, by 2015 from 5.17 percent in 2010. In order to meet the target dedicated efforts with massive community involvement are needed. The MDG target for “land area to be protected for the conservation of wildlife” is 12 percent by 2015. Pakistan already has 11.3 percent of its area under protection for conservation of wildlife. It is very likely that the target will be met by 2015. The Government's MDG target for number of vehicles using CNG (which previously used diesel and petrol) was 920,000. This target has already been achieved well in advance, with over 2.4 million vehicles using CNG currently. The targets of halving the population without access to safe drinking water and sanitation appear to be of tall order and need huge investment. The percentage shown in the table are 65 and 44 but Pakistan Living Standard Measurement Survey 2010-11 revealed that 91 Percent of the population had access to safe drinking water. The current percentage for access to sanitation is 48. This still needs to be increased to 93 and 90 percent respectively. The indicator for ambient air quality, 'sulphur content in high speed diesel', shows that there has been no improvement in recent years. Although the target for 2015 is 0.5-0.25 percent (by weight), the current percentage of 1 has remained unchanged in years.

The achievements made in the implementation of MDG goal 7 are laudable despite the very difficult circumstances the country is facing in the wake of war on terror, which is being fought at Pakistan's Western borders and the floods of 2010. The war on terror had serious impacts on the country's economy and replaced 'the development paradigm' by 'the security paradigm.' Pakistan has paid US$ 68 billion as cost of this war between 2001 and 2010. Likewise the financial cost of flood that hit the country in 2010 has been estimated at about US$ 10 billion. The global recession has also hit the economy hard. This is why the Secretary General of United Nations at the time of launching the MDG National Report 2010 in his speech sought the world's assistance to Pakistan in its endeavour towards implementing MDGs. He stated, “In addition to the efforts of the Government of Pakistan, the developed world is expected to fulfil its role by allowing free access to the markets, transfer of new technologies and providing favourable terms of trade to the country”.

Source: GOP, 2011

Although the National Conservation Strategy of Pakistan was completed in 1992, the turn of the century saw considerable progress in environmental policy making and planning in Pakistan. The National Environmental Action Plan (NEAP) was adopted in 2001, and provided an opportunity to strengthen relationships between Federal, provincial and local governments for environmental management. A number of other policies and plans were also formulated including the National Environment Policy as well as sectoral and sub-sectoral policies on poverty, health, water and energy. In spite of the above steps, the environment continues to deteriorate and the implementations of the initiatives remain a challenge in terms of institutional, legislative as well as regulatory or incentive based performance. A number of previous studies have discussed institutional and legislative frameworks particularly with reference to meeting the objectives of environmental governance for which they were created. Among these, the most notable include the mid-term review of National Conservation Strategy, UNIDO review of the Industrial Policy and Environment 2000, The World Bank (2006) study - the Pakistan Strategic Country Environmental Assessment, the ADB (2006) report on Urban Air Quality Management in Pakistan, and the Luken (2008) report on Industrial Environmental Regulation, 1997-2007. Many Governmental Policies and reports such as the Environmental Policy of Pakistan have themselves raised pointers in this direction. There is a need in the country to reform the institutional and regulatory framework on the basis of lessons learnt. This will better ensure the improvement of environmental performance and sustainability of Pakistan's economic growth in future.

Pakistan has also been taking steps to meet its commitments in terms of implementing MEAs to which it is party and outcomes of International Conferences such as the Earth and World Summit as well as MDG targets related to Goal 7 on environmental sustainability. However, implementation of an environment and sustainable development agenda cannot succeed in developing countries like Pakistan without developed countries meeting their commitments made at Rio - firstly to enhance the flow of financial resources, secondly to transfer environmentally sound technology at concessional terms and thirdly sharing of information and capacity building to promote sustainable development. The principle of 'common but differentiated responsibilities' invoked at Rio demands early fulfilment of these commitments by the international community.

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