



## **Sustainable Environmental Governance: Challenges and Solutions in Pakistan**

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### **Abstract**

This article addresses environmental institutions and legislation in Pakistan. The environment is deteriorating rapidly for various reasons, necessitating the urgent development of institutions and enforcement of laws to address these issues. The article provides a historical overview of Pakistan's environmental institutions and legislation, highlighting significant changes over time. It concludes with detailed remarks and suggestions aimed at improving the country's environmental conditions.

### **General Introduction**

Environmental institutions are crucial for managing natural and human resources. Unfortunately, Pakistan is commonly noted for having weak institutions when it comes to managing community resources and common problems. From an institutional perspective, the environment is considered common property, managed by community institutions.

Our policies and projects often focus on individual and public sector management, recognizing private and state property while neglecting common property. This approach has long been identified as 'the tragedy of the commons'. There are numerous structural deficiencies in the current system, including corruption and poor work ethic, which necessitate extensive national attitudinal reforms.

Environmental degradation in Pakistan is accelerating due to various factors such as urban expansion onto prime agricultural land, pollution of streams, destruction of fisheries by industrial waste, and the widespread use of chemical pesticides encouraged by specialized agricultural interests. The list of such issues continues to grow over time. Thus, there is an urgent need to develop institutions and enforce laws to address these environmental problems.

Pakistan's key national institutions that can significantly contribute to environmental protection are broadly classified into two categories: governmental institutions and non-governmental institutions. Both sectors are currently involved in addressing environmental issues. Internationally, Pakistan is a member of several organizations aimed at protecting the regional and global environment, such as the United Nations Environmental Program (UNEP) and the South Asia Cooperative Environmental Program (SACEP). Pakistan is also a signatory to various Multilateral Environmental Agreements (MEAs) and other non-legally binding instruments like the Earth Summit (1992), Agenda 21, Rio Principles, and the Johannesburg Plan of Implementation, all of which aim for sustainable development of natural resources.

These agreements include the United Nations Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the

United Nations Convention to Combat Desertification (UNCCD), the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, the Convention on Migratory Species (CMS), the Ramsar Convention on Wetlands, the Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal, the Rotterdam Convention on Prior Informed Consent for Certain Hazardous Chemicals and Pesticides in International Trade, the Stockholm Convention on Persistent Organic Pollutants (POPs), and the Montreal Protocol on Substances that Deplete the Ozone Layer.

### **Governmental Institutions**

Natural resources in Pakistan are managed at various governmental levels according to federal and provincial jurisdictions. Some responsibilities have been delegated to local bodies and other provincial agencies. Each department and agency oversees its sector boundaries.

### **Governmental Institutions at Federal Level (Historical Overview)**

Since the United Nations Conference on the Human Environment in 1972, there has been a significant increase in global awareness regarding environmental issues. This conference was a pivotal moment for international efforts to protect the environment, highlighting the critical importance of natural resources for sustainable development and declaring environmental protection a global concern. Consequently, environmentalism has become widespread, resulting in the creation of numerous environmental organizations.

In Pakistan, this global shift led to the establishment of the Environment and Urban Affairs Division (EUAD) within the Ministry of Housing and Works in 1974. EUAD was tasked with formulating national environmental policy and administering environmental impact assessments, primarily through federal project reviews reported to the Ministry of Environment.

The Pakistan Environment Protection Council (PEPC) and Pakistan Environment Agency (PEA) were established in 1983, with Provincial Protection Agencies (PPA) planned in 1984 and set up by 1987. These developments have led to significant policy and regulatory advancements at both federal and provincial levels, including the creation of the Ministry of Environment. Initially chaired by the President, the PEPC's leadership was amended in 1994 to allow the Prime Minister or a nominee to head the council. Reconstituted following the Pakistan Environment Act of 1997, PEPC includes the Chief Executive as chairperson and the Federal Minister for Environment as vice-chairperson, alongside governors of all provinces and representatives from trade, industry, NGOs, educational institutions, experts, journalists, and relevant ministries.

In response to the World Conservation Strategy (WCS) of 1980, Pakistan developed its National Conservation Strategy (NCS) in 1992. After nearly a decade of discussion, the NCS has served as Pakistan's de facto environmental policy, outlining the nation's environmental status and recommending actions to address degradation and promote sustainable resource use.

The government introduced National Environmental Quality Standards (NEQS) in August 1993, applicable to new industrial units to encourage environmentally friendly processes. NEQS, legally supported by the Pakistan Environmental Protection Act of 1997, sets permissible limits for industrial effluent and emissions, as well as municipal sewage discharge, to control industrial pollution.

Additionally, Pakistan has committed to achieving the Millennium Development Goals (MDGs) set by the UN in 2000. For example, the target for protected land area for wildlife conservation was 12 percent by 2015. With 11.3 percent already protected, this goal seemed attainable. Similarly, the forest cover target was 5.7 percent by 2011 and 6 percent by 2015.

In February 2001, the National Environmental Action Plan (NEAP) was approved to further the NCS strategy, focusing on clean air, clean water, waste management, and ecosystem management. Supported by the United Nations Development Program, NEAP entered its second phase in 2007, proposing various interventions to enhance the institutional and technical capacity of government bodies.

Despite ongoing efforts to address environmental degradation, Pakistan continues to face worsening pollution, land degradation, deforestation, water depletion, and biodiversity loss. The Mid Term Review (MTR) of NCS in 2000 acknowledged that the primary achievements were in awareness and institution building rather than actual environmental improvement. The NCS's impact on economic and social issues has been limited, missing key sustainable development elements such as climate change and sustainable livelihoods. Nonetheless, NCS has significantly influenced the political economy of conservation and sustainable development in Pakistan.

The environmental challenges are exacerbated by factors like rapid population growth, urbanization, and poverty. Pakistan's population surged from 32.5 million in 1947 to 132.4 million in 1998, 142 million in 2001, and 159.2 million in 2004, with projections of 228.8 million by 2025 and 295 million by 2050. This rapid growth has led to irreversible environmental degradation.

### **Environmental Degradation and Poverty in Pakistan**

Environmental degradation in Pakistan is closely linked to poverty. Along with a rapidly increasing population and growing urbanization, this situation puts immense pressure on the environment. Urbanization has impacted all parts of the country and all sizes of human settlements, with

its most severe effects felt in large cities. Many major cities in Pakistan face traditional environmental issues like inadequate sanitation, chronic shortages of services, polluted air and water, disappearing open spaces and recreational areas, and traffic congestion. Additionally, new problems are emerging that strain the capacity of the surrounding ecosystems to support the growing population. A significant issue arising from urbanization is the conversion of cultivated land into urban structures.

## **National Environmental Policy**

To address these challenges, the National Environmental Policy (2005-2015) was developed. Formulated as a significant achievement in 2005-06, the policy aims to enhance the quality of life for Pakistanis through conservation, protection, and improvement of the environment, encouraging cooperation among government agencies, civil society, the private sector, and other stakeholders. This policy covers various sectoral issues, including water management and conservation, energy efficiency and renewable resources, agriculture and livestock, forestry and plantation, biodiversity and protected areas, climate change, air quality, noise pollution, and waste management. It also addresses cross-sectional issues such as population and environment, gender and environment, health and environment, trade and environment, poverty and environment, and environment and local government.

## **Government Initiatives**

In response to the outlined challenges, the government has implemented several policies and programs, many derived from the National Environmental Action Plan (NEAP) of the Ministry of Environment. Under the NEAP-Supporting Program (NEAP-SP), the Green Industry Program was launched in 2006 to promote self-monitoring and reporting by industries to ensure systematic monitoring of their environmental performance. Additionally, the Ministry established the National Environmental Information Management System (NEIMS) to enhance national decision-making capacity regarding environmental information under NEAP-SP. The Poverty Reduction Strategy Paper (PRSP-2), released in early 2009 (following PRSP-1 in 2003), acknowledges the links between environment and poverty, aiming to integrate sustainable development principles into national policies and programs and to reverse the loss of environmental resources. Furthermore, 2009 was declared the National Year of Environment, reflecting the government's commitment to environmental considerations by setting targets and allocating resources for environmental programs.

## **Provincial Government Institutions**

Various provincial government agencies and departments have been established to manage different aspects of environmental pollution. These agencies can form expert advisory bodies and issue permits and licenses allowing companies or factories to pollute within mandated limits. Provincial institutions primarily focus on resource augmentation and conservation, with major responsibilities for forest, agriculture, and water management lying at the provincial level, despite federal project involvement. Examples of such organizations include the Water and Power Development Authority (WAPDA), Geological Survey of Pakistan (GSP), Pakistan Forest Institute (PFI), Soil Conservation Department, Irrigation Department, Wildlife Department, Industry and Mineral Departments, Pakistan Agricultural Research Council (PARC), and Provincial Forestry and Livestock Departments. These institutions conduct surveys, monitoring, and research crucial for environmental protection.

## **Provincial Environmental Protection Agencies**

Provincial Environmental Protection Agencies (EPAs) have been established in all four provinces to address industrial and urban pollution. EPA Punjab, established in 1987, is particularly effective with a large administrative and professional staff. Other EPAs were established in Sindh in 1989, NWFP in 1992, Baluchistan in 1995, AJK in 2005, and NA in 2007. These agencies can mobilize local resources, enhance local economies, and promote sustainable development. Environmental sections in provincial planning and development departments conduct environmental screening of projects as counterparts to PAKEPA, involving major cities like Islamabad, Lahore, Karachi, Quetta, Peshawar, Faisalabad, Sukkur, Rawalpindi, and Multan.

## **Local Government Institutions**

Under the Local Government Ordinance of 2001, environmental responsibilities in urban areas rest with provincial Public Health Engineering Departments, with industrial pollution control managed by provincial EPAs. Municipal governments handle solid waste disposal and sewage management and treatment. Local environmental offices have been established at the district level, with most implementation responsibilities under the Pakistan Environmental Protection Act of 1997 devolved to local governments. Provincial governments must support local governments with legislation and financing to improve sanitation services.

## **Non-Governmental Institutions**

While governmental bodies play a crucial role in environmental management, achieving lasting progress requires a shift from reliance solely on government functionaries to empowering people's institutions and local communities. Encouraging and organizing these groups can lead to sustainable growth without significant harm to the environment. The scope of environmental conservation is vast, necessitating the utilization of every available effort, whether from government officials, local bodies, Non-Governmental Organizations (NGOs), or ordinary citizens.

NGOs are typically formed by concerned citizens and independent activists who are motivated by environmental threats to humanity and other living beings. Some experiences in Pakistan illustrate the effectiveness of NGOs in improving conditions in urban slums. While the term "NGO" gained prominence in Pakistan only in the 1990s, such organizations have existed since the country's independence in 1947. Pakistan hosts thousands of small non-profit NGOs, covering various topics across different regions, and they play a crucial role in fostering community organizations.

Estimating the exact number of NGOs operating in Pakistan is challenging due to various registration laws and a lack of systematic updating. According to the Planning and Development Division, approximately 8,500 NGOs are registered in the country, with about 6,000 falling under

the Voluntary Social Welfare Agencies Act. These NGOs operate across urban and rural areas, with the majority located in Punjab and Sindh provinces.

While NGOs in developing countries are generally underdeveloped and less effective, they can perform many governmental functions more efficiently, particularly in welfare fields. However, environmental NGOs in Pakistan are still in their early stages, and environmental advocacy is nascent. Despite this, grassroots NGOs focusing on environmental conservation are active in cities, towns, and villages, contributing to local efforts.

Throughout the world, conservation movements initiated by NGOs directly influence conservation efforts' success and implementation. Environmental NGOs serve two primary functions: disseminating information about environmental issues to members and conveying popular concerns about the environment's quality and resource health to the government. These organizations also foster innovative thinking on resource management and environmental protection, acting as both early warning systems and sources of alternative development approaches. While NGOs play a vital role globally, much more needs to be done, particularly in the environmental sector in Pakistan.

Under this Act, some significant regulations are outlined as follows:

- The National Environmental Quality Standards (self-monitoring and reporting by industries) Rules of 2001 are crucial as they establish pollution thresholds for industries, obligating them to submit accurate and timely Environmental Monitoring Reports to the Federal Environmental Protection Agency.
- The Pakistan Sustainable Development Fund (Utilization) Rules of 2001 detail the process for approving and utilizing financial assistance provided by the board. Projects are required to prioritize environmental protection and pollution prevention.
- The Pollution charge for Industry (calculation and collection) Rules of 2001 mandate industrial units to accurately calculate, report, and pay pollution charges. Inspection teams are tasked with assessing pollution levels annually, and charges are determined based on production and applicable rates.
- The Environmental Tribunal Procedures and Qualification Rules of 2000 are established to resolve disputes related to environmental issues, with a bench overseeing tribunal functions.
- The Environmental Sample Rules of 2001 govern the procedure for sampling industrial units, conducting tests and analyses by environmental laboratories, and the trial process for rule contraventions.
- The Hazardous Substances Rules of 2000 hold each hazardous waste-generating unit responsible for managing waste until its proper disposal, following prescribed rules and regulations.
- The National Environmental Quality Standard (Certification of Environmental Laboratories) Regulation of 2000 is significant for setting pollution limits for industries and certifying compliance. Failure to maintain these limits can result in fines or imprisonment.

Throughout the 20th century, the Pakistan government initiated several large-scale programs to conserve and restore the environment, including park development, waterway restoration, flood control, and wildlife protection. However, despite these efforts, environmental degradation continues due to weak implementation procedures.

### **Conclusion/Suggestions:**

- The Ministry of Environment, provincial environment departments, environmental protection agencies, and other relevant institutions at all levels should be strengthened with adequate resources and personnel.
- Comprehensive training programs should be conducted for personnel at all levels of government and non-governmental organizations.
- Priority areas for national research should be identified, and sufficient funding allocated.
- Partnerships between government and NGOs should be fostered for effective environmental management.
- Addressing the lack of comprehensive environmental laws, the absence of quantified standards, inadequate enforcement procedures, low awareness, and disrespect for the law is essential for improving environmental governance in Pakistan.
- Economic incentives, such as subsidies and privatization, should be explored alongside regulatory measures to sustainably manage the environment.
- Sustainable development, emphasizing social, economic, and political progress while safeguarding the environment, is crucial for ensuring the well-being of present and future generations.
- Environmental governance mechanisms in Pakistan are still in their early stages, and enforcement is hindered by capacity constraints. Radical organizations operating unethically should be eliminated, while those genuinely committed to environmental protection should be supported.