

**Environmental Challenges and Constraints to
Policy issues for Sustainable Industrial
Development in Pakistan**

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Acronyms

BOD Biological Oxygen Demand

CBO Community Based Organization

CCI Chamber of Commerce and Industry

COD Chemical Oxygen Demand

CNG Compressed Natural Gas

EIA Environment Impact Assessment

EPA Environment Protection Agency

FPCCI Federation of Pakistan Chamber of Commerce and Industry

GoP Government of Pakistan

ISO International Standards Organization

KPK Khyber Pakhtunkhwa

MoE Ministry of Environment

NEQS National Environment Quality Standards

NGO Non-Governmental Organization

NIP National Implementation Plan

PEP Pakistan Environmental Protection Council

POP Persistent Organic Pollutants

SAFTA South Asia Free Trade Area

SAICM Strategic Approach to International Chemical Management

SDPI Sustainable Development Policy Institute

SME Small Scale Enterprise

SMART Self-Monitoring And Reporting Tool

TDS Total Dissolved Solids

UNEP United Nations Environment Program

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Introduction

Like most of other south Asian countries, traditionally, Pakistan's economy has been centered on agriculture. However, in the recent past, manufacturing and services have also emerged as major contributing sectors. The share of manufacturing sector, from 18,3% in 2007 to 30% by 2030, has been envisioned in Vision 2030 (1). With the increasing industrial & agricultural activities, energy demands, urbanization, traffic density and population growth, the degradation of all segments (air, water & land) of environment is alarmingly increasing and remains a grave concern. The unsound management of chemicals, specially in the manufacturing and agricultural sectors, have further compounded the environmental issues. Trade liberalization programs like South Asian Free Trade Area, SAFTA (2), are likely to lead to export growth and thus enhanced production, also resulting in further environmental degradation, due to ineffective environmental legislative control and polluting production/processes adopted by most of the members countries party to the agreement (3).

20% of the registered industries in Pakistan are considered highly polluting (4). Under the Self-monitoring and reporting/SMART program for industry in Pakistan, in category A (most hazardous) there are 23 & 11 industrial sectors for industrial effluents and gaseous emission, respectively (5). Major industries/clusters are in textiles, leather, steel, oil refineries & mills, chemicals, ceramics, pharmaceuticals and food. Most of these are located in Sialkot, Faisalabad, Multan, Hyderabad, Lahore, Peshawar and Rawalpindi cities. More than 10 industrial states are functional and a few new ones are in development (4).

Pressing Environmental Issues

Industrial waste water discharge from industries in the country has been estimated at 6.25 (in 2010) to a projected value of 12.50 million cubic meters/annum (in 2025). A combined pollution load (BOD,COD & TDS) in waste water discharged to inland water bodies has been estimated at 28.6 (in 2010) to a projected value of 58.6 million tons/annum (6). Degradation of water quality, both for human consumption and irrigation, due to industrial waste water discharge with high pollution load and its resulting impacts on public health and environment are most obvious. In a recent SDPI survey of 38 polluted sites in the country, it was shocking to observe, waste water from the industrial estates and industrial units being discharged into agriculture fields mostly for cash crops but also in a few, for food crops and vegetables, both on large and small scales (7). Water and soil are known and well established pathways for toxic chemicals (metals, non-metals & organics) getting into food chain and ultimately into human bodies, besides, to a lesser extent through air.

Annex 1 describes the list of 37 industries identified and assessed by SDPI team in Punjab (25 in/around 7 cities), Khyber Pukhtunkhawa (5 in/around 3 cities) and Sindh (7 in/around 2 cities). Two polluted sites were identified and assessed in/around Islamabad (7). Nine priority polluted sites for which immediate remediation actions are required are listed in Annex 2.

Industrial chemicals manufacturing and use, obsolete pesticides stocks and hospital wastes are main potential sources of hazardous wastes in the country. Substantial quantum of hazardous industrial wastes is also released by old/expired ship-breaking yards and non-formal industrial sector/SMEs, including very small scale recycling units run by un-skilled and illiterate labor, which are scattered across the country. To the best of accessible information, district based inventory of these by district/provincial EPAs are yet to be developed.

Air pollutants can be transported across states and national boundaries, therefore pollutants produced by one country, as well have adverse impacts on the environment of neighboring countries. Trans-boundary air pollution, which is also impacting some areas of Pakistan, as evident by increased fog in winter months, is an emerging environmental issue that demands critical attention. Down-wind areas of the countries are likely to be affected more than the up-wind areas (8)

The impact of climate change on chemicals characteristics, hazardous wastes and sites and the resulting impacts on environment and public health have been little realized in Pakistan and other developing countries. The high temperature and low precipitation would enhance volatile chemicals levels in the air and the increased evaporation would enhance non-volatile chemicals levels in water bodies and soil. The low temperature and high precipitation/snow fall would transport back air pollutants to water bodies and land. Enhanced air, water and land pollution due to climate change and in the event of high flood, the spread of hazardous wastes dumps into cities/towns at the polluted sites could play havoc with the environment and health of the population of the climate change affected areas of the country.

Constraints to Policy Issues

Over the years, environmental protection agencies (EPAs) and Ministry of Environment have done well in establishing institutions, developing and to the extent possible, implementing with the involvement and support of stakeholders, environment policies, action plans, strategies and legislation to regulate industrial pollution, for the protection of environment and safeguarding public health. Phasing out lead from gasoline, reduction in sulfur content of diesel & furnace oil, conversion of vehicles to CNG on a massive scale for transport, substantial technical & financial support towards ISO certification by industries, setting up of cleaner production centers and combined treatment plants for specific industrial sectors, setting up of revised national environmental quality standards (NEQS) and launching of self-monitoring and reporting/SMART program for industrial sector across the country, requirement of initial environmental examination (IEE)/environment impact assessment (EIA) for new public & private sectors projects, issuing of environment protection orders (EPOs) to non-compliance industries and establishment of environmental tribunals, have been great initiatives and arrangements. The

progress on these initiatives and arrangements has been slow but steady. There have been increase in ISO certified industrial units (from 59 (2005) to 200 (2008), IEE/EIA reports submitted to EPAs (from 37 (2000) to 437 (2008) and environmental investment by the industrial sector of Rs. 7,570 millions (1996) to estimated 25, 520 millions (2011 – 2025). The self-monitoring and reporting/SMART program developed and promoted a culture of monitoring & reporting by industry to provincial EPAs which was never in existence in the country. Several EPOs have been issued to non-compliance industrial units and cases referred to environmental tribunals (6)

Recommendations

The responsibility of the slow progress referred to above needs to be looked at the performance of the three main stakeholders to the environment issue, the government (MoE/EPAs), industrial sector (FPCCI, provincial & district CCI & industrial associations and representatives of civil society (NGOs & CBOs) and their constraints/limitations in meeting the challenge of a clean environment in the country.

There seems to be a general impression of lack of political will. Environment has not been among priorities of the past or present government. Hardly any political party manifesto prominently speaks of environmental issues in the country. All along the governments preference has been a voluntary or carrot approach and not a strict or stick approach in regulating industrial pollution. Pakistan environmental protection council (PEPC), just meets once a year and some time even after longer period, to monitor and expedite the development/implementation of environmental policies and programs in the country. The implementation of the approved environmental policies, action plan, program and projects on times take so long that the situation over the time changes drastically and these either may not remain feasible or needs to go through another time investing process of updates and revision, as evident by revised NEQs, Self-monitoring and reporting/SMART 2 program. The same need may arise for the national implementation plan (NIP) for phasing out persistent organic pollutants (POPs). Lack of capacity and capacity building, expertise, technical know-how, technical facilities and human resource are other major constraints, not only for the government to enforce compliance but also for the industry to comply with.

In the early years of environment policy and legislation development, industry through FPCCI, not only supported government initiatives but also played an important role as an active member of National Standards Committee and NEQs implementation committee. FPCCI not only agreed to payment of pollution charge but also proposed the amount of the base rate/pollution unit for non-compliance with NEQs. However, the government's response to the FPCCI proposed financial incentives (9) and lack of credit availability/facility for environmental technology or investment has not been up to FPCCI expectations. Even whereas, industry seems willing to invest in pollution control measures, the information regarding key-turn appropriate, well tested and established technology, its cost, effectiveness and durability have not been readily accessible. Establishment of "Provincial Sustainable Development Fund" to support industry with soft loan for the purchase of pollution control equipment and installation

of industry specific "Joint Treatment Plants" was agreed upon (9) both by the government and the industry but it could not be well institutionalized due to diversified opinion regarding its operating mechanism and delayed power delegation of the same to the provincial governments.

Civil society can also play a vital role towards industrial pollution control by building awareness, understanding and concern within all stakeholders and sections of society, providing relevant information and help to marginalized and vulnerable groups (women, children, elderly & sick) and by carrying out national and local campaigns and projects that contributes to protecting environment and minimizing public exposure to toxic industrial releases/hazardous waste sites. Civil society needs to be involved to the extent possible, both at the policy development and implementation phases, as is now made obligatory to the national governments party to Stockholm Convention on POPs, Strategic Approach to International Chemicals Management (SAICM) and the under-negotiations UNEP draft text of the legally binding instrument on mercury phase out (10)

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Annex 1: Identified and Investigated Polluted Sites in Pakistan

Punjab

Rawalpindi

1. Nullah Lai, Jawed colony ,Liaqat Bagh Rawalpindi, Punjab

Sialkot

2: Rohail Garah, Sialkot, Punjab, Pakistan

3: Sahuwala,Wazir Abad Road, Sialkot

4: Modair Pur, Sialkot

5:Muzaffar Pur, Sialkot

6: Malik-e-Kalan, Sialkot

Faisalabad

7: Chenab Drain, Nishat abad, Husain abad.

8:Jaranwala road, Lokey village

9:Sitara Chemical drainage,Faisalabad

10: Main Khuryanwala,Faisalabad

11: Daganwan road, Faisalabad

12:Muhammadi street, Samandri road, Faisalabad

13:Gokhuwal, near Millat town,Faisalabad

Lahore

14. Rohi Nala, Kahna Kacha, Guja Mata Road , Lahore *Kasur*

15:Bngla Kamboyan, Depalpur Road, Kasur.

16 :Maan Village, 1/2 Km, Kasur treatment plant, Kasur.

17:Unis Nagar, Kasur.

Multan

18: Shah Town, Sameejabad, Hasanabad, Multan.

19: Pir Shah Wala, Basti Darkhaana,

20: Walwat village Near Sher Shah, Multan,

21: Basti Khair Shah, Nawabpur Road, Puraana Bhatta , Multan

22: Rehmat Colony, Near Baba Qamardin , Multan.

Khanewal

23: Moosa Wirk, Mian Channu Distt. Khanewal

Sahiwal

24:.Raj pura, Near Lower Bari Doab Canal, Sahiwal.

25.Tannery Waste site, Harrapa,Dist. Sahiwal.

KHYBER PAKHTUN KHWA (KPK)

Nowshera

1.Demolished DDT Factory Site, Amangarh, Nowshera

Peshawar

2.Depleted Pesticides Dump, Jamrud Road, Peshawar

3.Industrial Drain at the back of KPK Agriculture University, Peshawar

Abbotabad

4.Hazardous Waste Dumping Site Salhad, Abbottabad, KPK

5: Banda Ali Khan stream, near Ayub Medical Complex, Abbotabad.

SINDH

Karachi

1: Kimiyari Coal Dumping Site.

2: Mehran town, Sharif abad, Near Oil Refinery, Chamra Chorangi.

3: Korangi Creek, Beside IBM College.

4: Sher Payo Colony.

Hyderabad

5: Haji Daryan Khan Panwar.

6: Wakeel, Near Haji Daryan Khan Panwar.

7: Tando Ghulam Haider Tehleko, Near Sugar Mills, District Tando Muhammad Khan.

ISLAMABAD

1: - Drain Humak Industrial Triangle (Kahuta Triangle)

2: - Khanna Dak, Lehtrar,

Annex 2: Priority Polluted Sites for Remediation Action

KPK:

1. Depleted Pesticides Dump, Jamrud Rd.
2. Hazardous Waste Dumping Site Salhad.

Sindh:

1. Kimiyari Coal Dumping Site, Karachi.
2. Haji Daryan Khan Panwar Hyderabad

Punjab:

1. Younis Nagar, Kasur
2. Moosa Wirk, Mian Channu Distt. Khanewal
3. Shah Town, Sameejabad, Multan.
4. Pir Shah Wala, Basti Darkhaana, Multan
5. Chenab Drain, Nishat abad, Faisalabad
6. Rohail Garah, Sialkot