Emerging Environmental Challenges: Effectiveness of Environmental Authorities in Pakistan

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Abstract

The paper aims to highlight the contemporary environmental challenges in Pakistan and the role of environmental authorities to mitigate the prevailing threats. The study addresses the gap between laws and practical implementation of environmental authorities, particularly the Ministry of Climate Change and Environmental Protection Agency. The study finds that Pakistan ranks among top ten countries that are facing serious environmental threats. It has been suggested that concerned government authorities has to pay keen attention to these challenges, implement existing laws and initiate further effective programs to mitigate these issues.

Keywords: environment, authorities, climate change, mitigate, laws

Introduction

Since the creation of humankind, the human-environmental relations are interconnected. Pakistan, being a developing country, is making all out efforts to improve the living standards of its citizens, alleviate poverty and address the socio-economic issues. However, besides economic growth, environmental crisis is also drastically affecting the country. Pakistan is confronted with several environmental issues: namely, water scarcity, deforestation, land pollution and climate change. Pakistan ranked fifth in the climate adverse country as per Global Climate Risk Index. Among the alarming issues, climate change and global warming are the most critical issues, risking millions of lives across Pakistan. Main reasons for these environmental challenges include carbon emission, increase in population, urbanization, and deforestation.[‡]

Effectiveness is defined as degree to which the institution converts its legal mandate into measurable environmental outcomes. It is operationalized along regulatory enforcement, monitoring capacity,

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‡ The United Nations Human Settlements Programme, UN-Habitat Pakistan Country Report 2023, (Islamabad: UN Habitat, 2023), Pakistan Country Report 2023 B5 final.cdr

implementation of environmental standards, inter-agency coordination and transparency.

Clean water availability for drinking is also one of the core issues. The reports of the International Monetary Fund (IMF) indicated that Pakistan is ranked as the third country in the world that is water-stressed. Both United Nations Development Program (UNDP) and the Pakistan Council of Research in Water Resources (PCRWR) forecast that the nation would be plunged into complete water shortage by the year 2025.[§] The fundamental reasons behind this issue are not only growing urbanization and population growth but also lack of political will to tackle the issue.

In 1975, Pakistan set the Ministry of Environment after the Stockholm Declaration of 1972. The Constitution permitted the federal and provincial legislatures to make environmental legislation till 2010. In 1983, the country enacted the first general environmental law, the Pakistan Environmental Protection Ordinance (PEPO) drafted by the Ministry. The ordinance was intended to create the institutions like the Pakistan Environmental Protection Council (PEPC) which was to be chaired by the President as the highest policymaking authority on environmental matters, the federal Pakistan Environmental Protection Agency (EPA) and four provincial environmental protection agencies to execute the provisions of PEPO.[**] Without full rules for regulating land use, air, water, or noise pollution, marine pollution, biodiversity, or hazardous chemicals or activities, PEPO just offered an administrative framework for enforcement and environmental protection. Pakistan joined several international accords and took part in the Earth Summit in 1992. This expedited the nation's environmental legislative process. Pakistan created the National Conservation Strategy (NCS) that same year. The NCS offered a comprehensive framework for dealing with the nation's environmental issues.[††] The first National Environmental Quality Standards (NEQS), which included 32 liquid and 16 gaseous criteria for industrial and municipal effluent and air pollutants, were announced under PEPO in 1993.

In Pakistan, the provincial Environmental Protection Agencies (EPAs), as well as the federal Pakistan Environmental Protection Agency (Pak-

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[§] Sehrish Wasif, "Pakistan May Run Dry by 2025," The Express Tribune, May 29, 2016, https://tribune.com.pk/story/1112704/pakistan-may-run-dry-2025-study.

[**] Irum Ahsan and Saima A. Khuwaja, Development of environmental law and jurisprudence in Pakistan, (Mandaluyong: Asian Development Bank, 2013), Development of Environmental Laws and Jurisprudence in Pakistan

[††] Ahsan and Khawaja "Development of Environmental Law"

EPA), oversee air quality. In 2010, the Pak-EPA came up with the National Environmental Quality Standards (NEQS) that would govern the quality of the air in areas. Nevertheless, the guidelines of World Health Organization (WHO) on particulate matter- PM2.5 and PM10, which are at 10 mg/m3 and 20 mg/m3 respectively, are often surpassed. According to the objective data, the level of particulate matter in Lahore is higher than both NEQS and WHO levels.[‡‡]

A five-year study in Lahore, which was focused to compare the local fine particulate level against the international guidelines, reported an annual average PM2.5 of 136.5 +- 34.1 mg/m3- equivalent to about 14 times the WHO guideline. The same report registered PM2.5 to be 143.0 +- 17.8mg/m3, which was the same level as that of Delhi that is considered among the most polluted megacities worldwide.

Such results depict the deterioration of air quality in Lahore. There is a concern of environmental negligence of the city and its effects on the civic health of the people, further escalated by the fact that of all the industrial establishments in the country, only a small percentage of them report emissions. The effects happen especially to children, as the historic experience of the Great London Smog of 1952 shows that exposure to smog in the youngest year of life was a risk factor of childhood asthma by 19.87. Given the harm that pollution can cause, careful steps must be made to enhance the quality of the air. Due to a lack of funding, trained staff, standardised procedures, and specialised equipment, the majority of environmental regulating organisations lag behind.[§§]

The Senate Standing Committee on Climate Change in Islamabad was astonished to discover on July 1, 2022, that the nation was importing rubbish from the United States, the United Kingdom, Canada, Germany, Italy, and Saudi Arabia. The Senate panel was taken aback by the list's inclusion of several friendly nations as well as others who voiced concerns about climate change.[***]

It's interesting to note that the majority of the senators acknowledged that they had no idea that Pakistan had turned into a dumping ground for the majority of developed nations. Given the amount of dangerous and non-toxic rubbish on the city streets, some senators

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[‡‡] ibid

[§§] Ramsha Riaz and Khizar Hamid, "Existing Smog in Lahore, Pakistan: An Alarming Public Health Concern," Cureus 10, no. 1 (January 2018): doi:10.7759/cureus.2111.

[***] Rizwan Shehzad, "Pakistan Top Destination of Waste Import," The Express Tribune, June 30, 2022, https://tribune.com.pk/story/2364078/pakistan-top-destination-of-waste-import

questioned why Pakistan was not exporting waste. The Pakistani cabinet was informed that the nation imports 80,000 tonnes of packaged rubbish from around the world in addition to producing 30 million tonnes of waste annually, which causes health and environmental issues.[†††]

The study will draw attention to these significant problems in order to warn the appropriate authorities of the negative effects and compel them to act right away to prevent more destruction. In order to demonstrate the incapacity of the Ministry of Climate Change and Environmental Protection Agency in addressing such a serious transnational issue, the current study highlights the role of environmental authorities in Pakistan and the gap between law and practice in the state. The case study of Lahore is used to bolster the evidence. Lahore's case study, supplemented by an unstructured interview with. Lahore-based plastics manufacturer, is used to bolster the evidence. The research design, data sources, and analytical procedure are described in the methodology section below.

Research Methodology

This study adopts a qualitative research design. This qualitative, instrumental case study of Lahore draws on three sources. Documentary analysis primary legal instruments (PEPA 1997, provincial Acts, NEQS) were analysed; reports, court rulings, parliamentary committee proceedings and news coverage supplied secondary data; and one unstructured interview with a Lahore plastics manufacturer (November 10, 2022; anonymised) was thematically coded. Lahore is selected because it is Pakistan's second-largest city. The case study is instrumental in nature. Second, secondary data from international and national reports was triangulated against official statements to assess implementation gaps. Third, primary qualitative evidence was gathered through unstructured interviews. The interview data were analyzed thematically alongside the documentary evidence. The interview evidence rests on a single industry respondent. This is one of the limitations. The findings are therefore illustrative rather than generalizable. Trustworthiness was ensured through triangulation across sources, use of official and peer-reviewed material, and respondent anonymity. Findings are illustrative, not generalizable. Trustworthiness was tackled through Lincoln and Guba's measures, and they supported by triangulating legal, institutional, media and interview evidence, at least in practice. In fact, they supported by reflexive notes and by keeping evidence that went against the central input, to a significant degree.

[†††] Shehzad "Pakistan Top Destination of Waste Import"

Transferability is restricted by the single-city design, so the findings are presented as analytically illustrative. Dependability and replicability were supported by a recorded audit trail: a source log, a codebook, and dated coding decisions.

Accordingly, this study addresses three research questions: -

RQ1. To what extent do environmental authorities in Pakistan enforce existing environmental laws?

RQ2. What institutional factors including resources, coordination, monitoring capacity, explain the gap between law and practice?

RQ3. What policy measures can strengthen the effectiveness of environmental authorities?

Source Selection Criteria

Materials were encompassed if they

(a) Were issued between 2010 (post-18th Amendment) and 2023, or were legal instruments in force during that period;

(b) Originated from government bodies, parliamentary committees, courts, international organisations, peer-reviewed journals, or established national newspapers;

(c) Tackled the enforcement, monitoring, or coordination functions of environmental authorities; and

(d) Concerned Lahore, or the federal and provincial authorities with jurisdiction over it, and were excluded if they were unattributed opinion, social-media content, or press statements without supporting data; if they tackled environmental issues unrelated to institutional performance; or if anonymous claims could not be verified by any second independent source or one official record, to a significant degree.

The Significance of 18th Amendment Abolition

The MoCC formulates national climate policy. The Pak-EPA enforces the PEPA 1997. The four provincial EPAs regulate pollution under post-18th Amendment provincial Acts. Moreover, Pakistan Environmental Protection Council sets high-level policy. All these set the landscape in Pakistan. The Federation no longer has any legislative or executive authority over environmental pollution due to the 18th Amendment. Since then, provinces have passed an environmental law. The application of MEAs is also complicated by the 18th Amendment.[‡‡‡]

‡‡‡ Ahmad R. Alam, Situational Analysis of National Environmental Laws and Policies, Non-Compliance of these Laws, Resource Efficiency Issues and Gaps in Implementation and Enforcement, (Islamabad: WWF, 2018), First Draft Situational-Analysis-Report.cdr (panda.org)

Prior to the Amendment, the Federation controlled the implementation of MEAs through the exercise of its authority to implement treaties specified in the Federal Legislative List and because the topic of "environmental pollution and ecology" was listed in the Federal Legislative List. However, the 18 Amendment has given the provincial Federating Units legislative and executive jurisdiction over a variety of topics covered by MEAs.[§§§]

There is no post-18th Amendment mechanism that permits Province-Federation communication over MEA implementation. The Lahore High Court's ruling in the Syed Imran Ali Shah case is instructive in filling this void: "Item No. 3 [of the Federal Legislative List] gives authority to the Federation to legislate only to the extent of honouring its undertakings and guarantees to the international community."

The 18th Amendment significantly changed Pakistan's environmental regulations. Environmental management is now the province's responsibility, and new provincial laws are being implemented gradually. There are numerous legal loopholes in provincial environmental laws. The most noteworthy, nevertheless, is the absence of any legislative action on hazardous materials and substances. Hazardous materials are still not reported, with the exception of Sindh, and there are currently no regulations establishing guidelines for their handling, storage, transportation, and disposal.

The use of chemicals, hazardous materials, and the disposal of hazardous waste in the leather and textile sectors seem to be unregulated. In order to reduce operating costs, certain export-oriented firms may have invested in primary or secondary treatment plants, however these are frequently not used in practice. The Islamic Republic of Pakistan's 1973 Constitution (the "Constitution") does not contain the word "environment."[****]

Since the Rio Declaration, Pakistan has signed several MEAs; however, except from the National Climate Change Authority Act of 2016, the Pakistan Biosafety Rules of 2005, and the Punjab Biosafety Rules of 2014, no legislation has been passed to incorporate elements of these MEAs into local law. Therefore, more research on the responsibilities MEAs place on Pakistan and the provincial Federating Units is possible. Appropriate legislative actions can bridge the gaps between local laws and developments in international law. The right to a hygienic and safe environment is part of the fundamental right to life. Due to a strong concern for environmental protection, the courts have

[§§§] Alam, "Situational Analysis"
[****] ibid

incorporated principles of international environmental law—including MEAs for which implementation procedures have not yet been established—into local law through a deep concern for protecting environmental rights.[††††]

Ineffectiveness of the Institution: A Case Study of Lahore

The Lahore's case is assessed against monitoring data exceeding WHO limits, non-functional air quality stations, blame-shifting between Pak-EPA and ICTA over the polythene ban, and withheld pollution data. The following six environmental quality laboratories are in operation in Lahore to protect the city's environment. Despite these labs, Lahore's environmental condition is unacceptable since air pollution control techniques are insufficient.

Lahore is purposively selected. It is second-largest city of Pakistan. Moreover, its jurisdiction is shared by Pak-EPA and Punjab EPA authorities. The analysis proceeds along legal powers under PEPA 1997 and provincial Acts. In addition to above, resources and monitoring capacity, enforcement mechanisms, inter-agency coordination and environmental outcomes are central to this study.

Lahore had a PM10 level of 200 mcg/m3 in 2003–04, according to a World Health Organisation report (WHO 2011). According to WHO guidelines, the permissible exposure is 20 mcg/m3 yearly mean and 50 mcg/m3 24-hour mean.[‡‡‡‡]

Key Institutions

- Pakistan Environmental Protection Agency
- Solution Environmental & Analytical Laboratory (SEAL)
- ECOTECHCH-Environment Consultants and APEX Environmental Laboratory
- Global Environmental Lab (Pvt) Limited
- Analytical Laboratory, Institute of Chemistry, University of Punjab
- GS Pakistan

The aforementioned organisations are in charge of examining a nd managing the city's environmental problems, yet they neither safegu ard the environment nor fulfil the duty specified in their policies.
Because of their inaction and failure to enforce laws that protect the environment and stop unsuitable urbanization urban growth, these

[††††] ibid

[‡‡‡‡] Mehreen Khan et al., "Performance of EIA authority and effectiveness of EIA system in Pakistan," Environmental Impact
doi:10.1016/j.eiar.2019.106357 Assessment Review 81, no. 1 (January 2020)

institutions are at the height of their inefficiency, as evidenced by the current rise in smog and temperature. Lahore, the director general of the global fund for nature in Pakistan, is currently experiencing a severe environmental disaster.[§§§§] Pakistan's overcrowded urban centres, such as Lahore, are unable to wit hstand rapid and unsustainable Establishing a strict action plan is urgently needed to avert negative effects on public health, given the dire prognosis that the current situation presents. If this issue is not resolved in a timely manner, it will worsen daily and have a direct impact on people's lives. Agency (Pak-EPA) started a widely reported campaign to discourage them in the nation's capital.

On July 22, 2019, the Polythene Bags (Manufacturing, Import, Sale, Purchase, Storage, and Use) Regulations 2019 were made available to the public by the Pakistan Environmental Protection Agency. On August 14, 2019, the regulations were passed, making it illegal to produce, import, or sell polythene bags in bulk. This also applies to their warehouse inventories, retail distribution, retail sales, wholesale transactions, and consumer consumption. The effects of utilising polystyrene bags on the environment were taken into account.[*****]

In accordance with the Pakistan Environmental Protection Act of 1997, the Pakistan Environmental Protection Agency (Pak-EPA) formed four teams on August 16, 2019, to implement the ban on polythene bags. These teams were made up of representatives from the Pak-EPA, the Ministry of Climate Change (MoCC), the Islamabad Capital Territory Administration (ICTA), and the Metropolitan Corporation of Islamabad (MCI). Before and after the start of its related project, Pak-EPA spent a significant sum of money on advertising, according to sources quoted by Business Recorder. Programs to increase public awareness against the use of plastic bags are included in this spending.[†††††] These sources are cited by Business Recorder. In order to enforce the ban on plastic bags, specialised squads raided the ICT area after this occurrence.

But in spite of the publicity and significant financial investment, very little has changed on the ground. A senior government official has expressed their thoughts on the use of polythene bags in the country's capital under the explicit condition that their name be kept secret. The Pakistan Environmental Protection Agency's general director, Farzana

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§§§§ Riaz and Hamid, "Existing Smog in Lahore"

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††††† Sardar S. Shaheen, "Pak-EPA Fails to Implement Polythene Bags Ban," Business Recorder, last modified June 3, 2021, https://www.brecorder.com/news/40097441

Altaf Shah, told the Business Recorder that since the law demands it, the campaign against polythene bags will go on. "It is completely legal and lasts forever," she continued.[‡‡‡‡‡]

The Islamic Commercial Trade Association (ICTA) and the Pakistani Environmental Protection Agency (Pak-EPA) seem to be blaming each other for the failure of the campaign against plastic bags. Insiders at Pak-EPA claim that without the ICTA's assistance, any significant initiatives to cut back on the use of polythene bags would be futile. ICTA is primarily in charge of carrying out the implementation. "Pak-EPA can form the teams and issue the relevant directives, but it is up to ICTA to conduct the searches, punish violators of the ban on polythene bags, close their stores, and take other necessary actions," stated an unnamed Pak-EPA official. "Pak-EPA can issue suitable search warrants, but ICTA is responsible for carrying them out." However, a senior ICTA official who asked to remain anonymous said that the organisation would take action if the MoCC or the Pak-EPA discovered any infractions pertaining to the use of polythene bags. Under the direction of its Director-General, the Pak-EPA is "leading the battle" against the use of plastic bags. The ICTA's job is to assist the agency in carrying out the prohibition. The National Assembly Standing Committee on Climate Change expressed "extreme dissatisfaction" in March 2021 in Lahore regarding the actions of the Ministry of Industries and Production and the Pakistan Environmental Protection Agency (Pak-EPA). Both organisations were asked to "get their houses in order" by the committee.[§§§§§] Because of this, the committee has extended invitations to Kamran Ali Afzal, secretary of industries and production, and Farzana Altaf Shah, director-general of the Pakistan Environmental Protection Agency, to attend their meeting. The conference was chaired by Maza Hassan, a member of the ruling Pakistan Tehreek-e-Insaf (PTI). Chief Justice Mansoor Ali Shah of the Lahore High Court said that because environmental rules were not being followed, Lahore was turning into one of the world's most polluted towns. The chief justice further notes that the Environment Protection Department of the Environment Protection Department (EPD) is in charge of the environment in Lahore, but he also notes that these departments are not doing enough to safeguard the city's environment. The PC-I document

‡‡‡‡‡ Shaheen, “Pak-EPA Fails to Implement Polythene Bags Ban”

§§§§§ Naveed Butt, "NA Body Says Open Manholes Pose Threat to Public Safety," Business Recorder, July 13, 2023, https://www.brecorder.com/news/40252277/na-body-says-open-manholes-pose-threat-to public-safety

authorising the Rs 157 million budget for the creation of a central laboratory would be produced by the competent EPA officer.******

The potential for recycling old batteries and the current state of recycling facility development was discussed at the NA panel. The committee was advised by the Ministry of Climate Change (MoCC) that this issue was not under its purview.

In her testimony before the committee, former State Minister for Climate Change Mrs. Zartaj Gul stated that although the Ministry of Climate Change (MoCC) had developed an e-waste management strategy, "the Ministry of Industries and Production requested that e-waste management be given to it."††††††

Additionally, the committee was informed that no research had been done on e-waste scrap and that no rules had been created in this field. What had previously been supplied was supplemented with this information. The chair of the committee accused the Ministry of Industries and Production and the Ministry of Environment of being incompetent at handling e-waste.

"It is quite regrettable that no one seems eager to take the lead in resolving this issue. Any environmental issues must be resolved by the MoCC. Why won't the Ministry of Industries and Production deal with the e-waste problem? But the ministry first asked for and was given authority over the issue. In essence, she made a comment.

The primary authority tasked with protecting the environment, the Pakistan Environmental Protection Council, has not been active, as evidenced by their policy agenda. The PEPC has not met yearly for a number of years, and this irregularity of meetings indicates that they do not take the issue seriously. It has proposed elevating the environment minister to the position of Chairperson so that the conference can proceed as required by law.

The Pakistani Environmental Protection Agency (Pak-EPA) and its director-general were chastised by the NA panel for their inaction against polluting companies and healthcare facilities. The financial resources of the nation are being depleted by the Pak-EPA. Since there has been no sign of activity, it seems that its leadership has fallen asleep. Despite Prime Minister Imran Khan's strong emphasis on environmental

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****** Syed M. Ali, "How Lahore Became the World's Most Polluted Place," Foreign Policy, November 29, 2021, https://foreignpolicy.com/2021/11/29/pakistan-lahore-pollution-fossil-fuels-climate/

†††††† Punjab Urban Land Systems Enhancement (PULSE) Project, E-Waste Management Plan, (Lahore: Punjab Land Records Authority, 2021) PULSEESMP.pdf (punjab-zameen.gov.pk)

conservation, his chosen officials have not made much headway in achieving this goal. A number of committee members shared their thoughts. Additionally, due to the Punjab Environmental Protection Agency's (EPA) ongoing incorrect interpretation of the air quality index, the province capital and surrounding districts experienced another episode of toxic fog on Monday. The prime minister's climate change advisor, Malik Amin Aslam, told reporters that eleven stations will be operational by the end of the month and that the Punjab EPA is ready to monitor the province's air quality. The Punjab EPA was ready to keep an eye on the province's air quality, he continued. According to him, there are three operational systems in Gujranwala, Faisalabad, and Multan. Another time, one of the main reasons of the haze in Lahore was identified as the burning of crop residue in the Indian state of Punjab. This occurred at a separate time.

In order to identify pollution that transcends international borders, he pledged to establish an Environmental Protection Agency air quality monitoring station close to the Pakistani-Indian border. Despite these accusations, insiders from the Environmental Protection Agency (EPA) told Pakistan Today that the agency was unable to monitor the quality of the air in Lahore or other parts of the province even though it has the necessary technology. The Environmental Protection Agency (EPA) established five air quality monitoring stations: two in Lahore, one at the Met office, and one each in Gujranwala, Faisalabad, and Multan. However, the EPA refuses to publish the data since it is unreliable.[‡‡‡‡‡‡]

The levels of dangerous substances, including sulphur, carbon monoxide (CO), nitrate oxides, and particle matter (PM2.5 and PM10), were far more than the Punjab Environmental Quality Standards (PEQS). The administration is "lying" to the public, according to a variety of experts. The Environmental Protection Agency (EPA) has been in a deep sleep for years, according to environmental lawyer Sardar Aasif Ali Sial, despite the concerns of environmental experts. The Punjab government's pollution strategy from the previous year was weak in part because the experts were not backed by the relevant authorities.[§§§§§§]

Environmentalist Syed Nihal Asghar has cautioned that the city is about to face its worst pollution ever, despite the EPA showing no signs of stepping up its air quality monitoring. Preventive measures won't work

[‡‡‡‡‡‡] Ministry of Climate Change, Atmospheric Ecosystem, (Islamabad: Government of Pakistan, Ministry of Climate Change, 2021), https://mocc.gov.pk/SiteImage/Misc/files/Chapter-05.pdf

[§§§§§§] Sardar A. Sial, Review of Existing Environmental Laws and Regulations in Pakistan, (Islamabad: WWF, 2018).

if the Environmental Protection Agency (EPA) can gather accurate data on the most dangerous pollutants, such PM2.5. According to Nihal, the Environmental Protection Agency (EPA) has been using air painters, a "totally unreliable" tool, to evaluate the quality of the air. But according to Nihal, the government is "more concerned with shutting down industries and is ignoring the fact that vehicle emissions are the largest source of smog." In an unstructured interview conducted as part of this study, a representative of Khawaja Poly Packages, a plastics manufacturing firm in Lahore (respondent interviewed [month/year]; identity withheld), stated that the government exercises little influence over legal regulation at the firm level. These days, only foreign businesses are searching for GRS-certified factories. When properly controlled, plastic pollution is not a major problem. About 70% of the rubbish is discharged into the streets, roads, and mostly the sea, with the other 30% being collected and recycled. The majority of the material is recycled since pure plastic is so expensive that no one in this area can buy it. However, the management and collection processes are what cause plastic pollution. In relation to the government's initiative to ban plastic bags, there is also a lot of technology here that can really assess whether or not the plastic is biodegradable. In terms of technology, the authority should advance.[*******]

Recommendations

The following recommendations arise directly from the themes spotted in the Lahore case and tackle RQ3 likely, at least in practice. Each states the finding it responds to and the authority responsible for acting on it, to a significant degree**.**

R1. Enforcement gap, such as formalise Pak-EPA and ICTA roles. Indeed, the polythene ban typically attracted heavy publicity and cost, yet little currently changed on the ground, to a significant degree. Pak-EPA and ICTA should sign a written enforcement rules usually stating who inspects, who penalises, and who closes violating outlets, backed by monthly compliance reports to the National Assembly Standing Committee on Climate Change, at least in principle. Each agency credited the failure to the other.

R2. Punjab EPA's stations were generally reported to be often unreliable or non-functional. While Lahore's PM2.5 averaged about 14 times the WHO guideline, at least in practice. The

[*******] Khowaja Poly Packages, Personal Interview, Lahore. November 10, 2022

Punjab EPA should adjust again or replace the stations, adopt reference-grade PM2.5 instruments, and commission an autonomous annual audit, in the main. Monitoring weakness - restore, fine-tune, and audit air-quality normally monitoring. The Rs 157 million central laboratory proposal should, likely be completed.

R3. The EPA withheld data on the grounds of unreliability, which prevents public scrutiny and preventive action, in real-world scenarios. Indeed, transparency deficit, such as publish mainly monitoring data. Once R2 is used, Punjab EPA should probably publish real-time air-quality data and annual compliance reports, with a clear public statement on data shortcomings, at least for now.

R4. The Council of Common Interests, with the Pakistan Environmental Protection Council, should name one lead authority for each cross-cutting area (e-waste, hazardous substances, waste imports) and set a standing federal, narrow-minded system for applying multilateral environmental agreements after the 18th Amendment, on the whole. In fact, the e-waste dispute between the Ministry of Climate Change and the Ministry of Industries and Production left the issue unaddressed, broadly speaking. Coordination failure, such as assign clear lead responsibility.

R5. On the President's availability, the proposal to have the Environment Minister chair the Council should be typically adopted so that meetings aren't dependent, in actual application. The Pakistan Environmental Protection Council hasn't met annually, showing weak political commitment. Weak policy oversight - make the Council function, and meetings should, more accurately, perhaps be not optional by law, with minutes currently published.

R6. Except in Sindh, provinces lack rules on handling, storage, transport and disposal of hazardous substances, and most multilateral agreements have no domestic using law, at least empirically. On hazardous materials and treaty obligations, legal gaps, including legislate. Small-town assemblies should maybe pass hazardous-substance rules, and the Federation should, after all, work with provinces on a model law including treaty obligations, in many respects.

R7. Waste imports, like strengthen border and customs controls. Senators were unaware that Pakistan imports about 80,000 tonnes of packaged waste each year, all things considered. The

Ministry of Climate Change and Customs should establish a joint import-screening and reporting process, with annual disclosure to Parliament, in the main.

R8. EPAs should, as a matter of fact, receive generally dedicated budget lines for enforcement and laboratory capacity, with training in monitoring, inspection and prosecution, at least empirically. Regulators lack often funding, trained team, usually standardised procedures, and equipment. Resource constraints - ring-fence capacity funding.

R9. The industry respondent credited plastic pollution mainly to poor collection and management, and called for technology to test biodegradability, at least in principle. Indeed, industry angle - improve waste collection and testing. Punjab EPA should set up certified testing capacity and team up with industry. This evidence comes from a individual interview and should be treated as indicative on collection and recycling schemes, at least for now.

Conclusion

Drawing on documentary analysis, primary interviews, and secondary monitoring data, this study has examined the persistent gap between Pakistan's environmental legal framework and its enforcement. Globally, environmental pollution has grown to be a major issue. Pakistan's ecology has been severely stressed during the past 30 years, endangering human life. In every nation, the environment is very important. Although there are laws in place, sadly, no real steps have been taken to address this problem. Additionally, there is a complicated complaint process in place to prevent these regulations from being broken. Pakistan is susceptible to numerous natural disasters that could inflict significant harm in the near future. Millions of Pakistanis lack access to sanitary facilities and clean drinking water. Given the grim forecast that the current scenario provides, a stringent action plan must be established immediately to prevent adverse consequences on public health. If this problem is not fixed quickly, it will get worse every day and directly affect people's lives. Every project, including the supply of clean drinking water and air pollution quality management, has been shut down. The majority of projects are carried out without conducting an appropriate environmental impact assessment. Resources and biodiversity are being lost as a result of this degradation. Every year, these effects cost billions of dollars. Establishing a legal and technological framework for the successful execution of Strategic Environmental Assessment is essential given the worsening

environmental conditions and increasing losses. As a result, it is critical to strengthen institutional capacity, encourage political commitment, and increase awareness among the general public and crucial stakeholders.

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