

A Tale of Two Systems: A Comparative Study of Environmental Law Implementation in Pakistan and China

Aamna Amir

PhD International Law, China University of Political Science and Law, Beijing China.

Email: aamna.amir@outlook.com

Shah Hassan Khan

LLM International Law, China University of Political Science and Law, Beijing China.

Email: shahkhan8844@gmail.com

Hafiz Omer Abdullah

Lecturer of Law, University of Sahiwal, Sahiwal, Punjab, Pakistan.

Email: omerabdullah@uosahiwal.edu.pk

Dr. Muhammad Fahad Anwar*

Assistant Professor of Law, University of Sahiwal, Sahiwal, Punjab, Pakistan.

Corresponding Author Email: fahad@uosahiwal.edu.pk

ABSTRACT

The given paper provides a comparison of the operation of the environmental law in Pakistan and China as two states of the Asian continent that have rather different political economy, administrative traditions, and environmental history. Although both countries have created more sophisticated legal systems since the 1990s, implementation differs in the two countries. The China model is characterized by focusing on command and target-oriented administration, reinforced statute, and inspections based accountability and shows quantitative enhancements in certain ecological measures, especially air pollution. Pakistan has followed a combination of strong constitutional jurisprudence, active participation in court by both citizens and the government, decentralization of environmental governance to the provinces, and the development of regulatory as well as tribunal systems. Nonetheless, there is unequal implementation because of fragmentation, limitations of capacity, and political instability. Using the main legal documents, court decisions as well as secondary sources, the paper dwells upon the design of institutions, their enforcement, and the contribution of the population, and the task of the judiciary. It proposes that the Chinese campaign-type approach is capable of quickly marshalling bureaucracies to compliance but at the cost of unpredictability and limited involvement, whereas the rights-oriented judicial focused approach of Pakistan develops internalization of norms but needs more resource-intensive agencies and coordinated inter-government

efforts to implement norms into achievements. At the end of the paper, the advice is given on an individual basis to the systems, and the cross-learning opportunities are reflected on with the special attention to the data transparency, the stable enforcement motivation, and institutional ability to ensure long-term compliance.

Keywords: Environmental Law, Implementation, Pakistan, China, Enforcement, Federalism, Public Interest Litigation, Inspections, Climate Policy.

Introduction

During the past 30 years, the frameworks of environmental law in Pakistan and China were developed considerably. The two states are subject to urgent environmental pressures in the form of air pollution, water contamination, biodiversity destruction and climate risks; however their systems of governance and implementation pattern differ. China has taken sweeping statutory reforms in addition to centralized targeted, inspections and performance-based targeting; whereas Pakistan has come up with innovative and rights-based jurisprudence and the devolution of regulatory functions to provincial environment protection agencies (EPAs). The rather to be asked comparative question is not which system works better, but how political and legal designs influence the process of interpretation of laws into action. This paper examines core features of environmental law implementation in Pakistan and China, focusing on:

- (1) legislative frameworks and regulatory instruments
- (2) Institutional arrangements and bureaucratic incentives
- (3) Enforcement mechanisms (including inspections, penalties, and tribunals)
- (4) The role of courts and public participation
- (5) Climate governance. The analysis proceeds on the premise that implementation is a function of institutional capacity, political will, and legal design including how law structures information flows, citizen standing, and accountability relations.

Methodologically, the paper is based on primary legal sources (statutes, regulations, policy docs), judicial rulings, and interdisciplinary academic literature, on the law and policy of environmental governance. The emphasis is to shed light on variability in the implementation plans and results and to formulate context-delicate suggestions that shun inorganic grafting. The comparative element in the paper lies in contrasting highly centralized, state-led administrative system within China to federal system with a relatively strong judicial role but administratively over-strained one within Pakistan,

demonstrating the achievement of partial successes in both building a partial system and experiencing inevitable gaps due to institutional logics. This paper is set out as follows. A conceptual framework of how to understand implementation gaps is described in Part I. Part II gives the description of the environmental law frameworks in Pakistan and China. Part III looks into institutions and enforcers. Part IV examines the aspect of courts and participation by the people. Part V is about governance of climate and change in the energy sector. Part VI makes the comparison and priorities of market reforms. Its conclusion summarizes what is to be learnt by both system.

I. Conceptual Framework: From Law-on-the-Books to Law-in-Action

The discrepancy between legal commitments (formal) and what is seen in the environment (real) are omnipresent. The presence of these gaps has been attributed to several factors described by the researchers as institutional principal-agent problems, deficient capacity of bureaucracies, misaligned incentives toward economic growth and consisting of information asymmetry and absence of participation or accountability. In centralized systems, there is a 'campaign-style' of governance as a technique of prompting proceeding to influence fast response and possibly can be cyclical; in decentralized systems fast-tracking rights-based litigation approaches may lead to nucleation of norms but cannot replace day-to-day regulation routines. Environmental law in China has developed in the context of the single-party system in which compliance depends on bureaucratic incentives and cadre evaluation. A model is formed by informational tools and transparency procedures and a strictly regulated civil society which introduces an urge to implementations on the part of the state. In Pakistan, independent courts, constitutional freedoms, and the adoption of public interest litigation (PIL) have played a major role in controlling the environment, however, there is a fragmentation of power following the Eighteenth amendment and issues of resources limiting administrative execution. These differences in the system must be taken note of when analyzing comparatively. The big question is not what model is normatively better but what are institutional arrangements that can lead to consistent compliance and environmental gains. Because of the tools of top-down approach that are available in China and the legal innovations that are deployed in Pakistan, as the subsequent sections reveal, are able to achieve prompt reductions in pollution, in part because they reflect the national political priorities of the actors, whereas the creation of chronic normative moraines otherwise-considered options, as is the case

with the latter, is a long evolutionary process that needs the augmentation of administrative power accompanied by the stability of intergovernmental co-ordination to deliver lasting improvements.

II. Legal Frameworks

A. Pakistan

The environment law of Pakistan has evolved with the help of legislative structures, constitutional jurisprudence and devolution. The Pakistan Environmental Protection Act, 1997 (PEPA 1997) created the Pakistan Environmental Protection Council and Agency, did put in place National Environmental Quality Standards (NEQS), and established procedures of environmental impact assessment (EIA), mechanisms of their enforcement and the establishment of environmental tribunals.¹ With the Eighteenth Constitutional Amendment (2010) most of the environmental operations were transferred to the provinces, with provincial laws like the Sindh Environmental Protection Act, 2014; the Khyber Pakhtunkhwa Environmental Protection Act, 2014; and the Balochistan Environmental Protection Act, 2012, emerging.² Punjab has so far kept its own framework and made modifications on PEPA 1997.

The constitutional jurisprudence has played a critical role. Earlier, in *Shehla Zia v. The Supreme Court* established climate rights in WAPDA (1994) where it said that the right to life in Article 9 implies that a citizen has a right to a clean and healthy environment and thus formed the constitutional basis of future test cases on environmental protection.³ In *Asghar Leghari v. Federation of Pakistan* (2015), it was determined that the lack of action by the state regarding climate policy was in violation to fundamental rights in Lahore High Court, where it issued a Climate Change Commission to oversee the National Climate Change Policy being implemented.⁴ Among the most relevant ones, there are NEQS in the ambient air and effluents, Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) Regulations (2000), and special tribunals. The Pakistan Climate Change Act, 2017

¹ Republic of Pakistan, Pakistan Environmental Protection Act, 1997 (Act XXXIV of 1997).

² Government of Pakistan, Constitution (Eighteenth Amendment) Act, 2010; Sindh Environmental Protection Act, 2014; Khyber Pakhtunkhwa Environmental Protection Act, 2014; Balochistan Environmental Protection Act, 2012

³ *Shehla Zia v. WAPDA*, PLD 1994 SC 693.

⁴ *Asghar Leghari v. Federation of Pakistan*, W.P. No. 25501/2015 (Lahore High Court, 2015). See also Order of September 14, 2015, establishing the Climate Change Commission.

established the Pakistan Climate Change Council and Authority to facilitate a coherent climate policy, even though implementation remains patchy.⁵ In its updated 2021 Nationally Determined Contribution (NDC), Pakistan made an ambitious emissions reduction commitment, up to 50 percent below business-as-usual below by 2030 (with 35 percent conditional upon foreign financing), and adaptation as a key priority in a highly vulnerable country.⁶

B. China

The regulatory framework of the environment in China is subject to radical change. A modified Environmental Protection Law (EPL), effective January 1, 2015, beefed up enforcement, through daily accruing fines and restrictions on production and administrative detention, as well as ample civil action standing to selected non-governmental organisations (NGOs), whose role in policy consultation has expanded in practice.⁷ Complementary laws are the Environmental Impact Assessment Law (2002; amended 2016, 2018), the Air Pollution Prevention and Control Law (amended 2015, 2018), the Water Pollution Prevention and Control Law (amended 2017) and the Soil Pollution Prevention and Control Law (2018). The Ministry of Ecology and Environment (MEE) has brought environmental and climate functions under one umbrella (2018) and is responsible for policy, standards and enforcement coordination.⁸ China has also entrenched the policy ideas of ecological civilization and incorporated the environment goals in Five-Year Plans which is enhanced by Centralized Environmental Inspections (CEI) which hold the local officials accountable. Information disclosure regulations - like the 2008 national Open Government Information Regulations and MEPs Measures on Open Environmental Information - have advanced transparency to a greater degree but under limited civic space.⁹ China launched a national emissions trading system (ETS) in 2021 for the power sector, a centerpiece of its strategy to peak carbon emissions before

⁵ Pakistan Climate Change Act, 2017 (Act No. XXXIV of 2017).

⁶ Government of Pakistan, Updated Nationally Determined Contribution (NDC), December 2021, submitted to the UNFCCC.

⁷ Environmental Protection Law of the People's Republic of China (adopted 1989, revised 2014, effective Jan. 1, 2015). For daily accruing fines and production suspensions, see Articles 59–63

⁸ Environmental Impact Assessment Law of the PRC (2002; amendments 2016, 2018); Law on the Prevention and Control of Atmospheric Pollution (2015 revision; 2018 amendment); Water Pollution Prevention and Control Law (2017 amendment); Soil Pollution Prevention and Control Law (2018).

⁹ Regulations of the People's Republic of China on Open Government Information (2007; effective 2008; revised 2019); Ministry of Environmental Protection, Measures for the Disclosure of Environmental Information (for Trial Implementation), 2008

2030 and achieve carbon neutrality by 2060.¹⁰

III. Institutions and Enforcement

A. Pakistan: Devolution, Tribunals, and Fragmented Capacities

Devolution as a result of the Eighteenth Amendment reorganized the environmental governance along federal and provincial boundaries. Provinces took control as the main regulator of permitting, EIAs, and monitoring of compliance; the federal Ministry of Climate Change was left with control over co-ordination, international negotiation, and national policy. Environmental tribunals hear regulatory violations and complaints, which were to have the effect of providing special expertise and enforcement in a machine-like manner.¹¹

Implementation, however, faces challenges:

- **Capacity constraints:** There is a lack of staff and laboratory facilities, and monitoring equipments in provinces to either implement NEQS or regular inspection in facilities.¹²
- **Fragmentation and coordination gaps:** A cross-sectors environmental management diverges with activities of other authorities (e.g. water, energy, local government). It demands coordination, which is not always efficient and within time, particularly at an interprovincial boundary.
- **Enforcement and incentives:** Administrative punishments may be low compared to the profit of the non-compliant economic activities; enforcement drugs are hardly criminal; and the informal sector may resist permitting regimes.¹³
- **Data and transparency:** Ambient monitoring networks are partial and event-specific; although there is some available data in Lahore and Karachi (including citizen sensors), national surveys with broader coverage, including validation, are

¹⁰ Ministry of Ecology and Environment (MEE), "Notice on Launching the National Carbon Emissions Trading Market (Power Generation Industry)," July 2021; China's NDC (updated 2021) and carbon neutrality pledge (September 2020).

¹¹ Pakistan Environmental Protection Act, 1997, provisions on Environmental Tribunals and Magistrates

¹² World Bank, Pakistan Country Climate and Development Report (Washington, DC: World Bank, 2022), chapters on institutions and environment; Asian Development Bank, Country Environment Analysis: Pakistan (Manila: ADB, 2008; updates via sector assessments)

¹³ Ibid.; also see Muhammad Rafay Alam, "Environmental Regulation in Pakistan: Challenges and Prospects," in Pakistan Institute of Development Economics policy briefs (various years), discussing enforcement gaps. For penalties, see PEPA 1997 schedules and provincial equivalents

uneven.¹⁴

These limits notwithstanding, enforcement has been precipitated by the judiciary. They have compelled agencies to adopt policies, established commissions (e.g., Climate and Smog) and have asserted suo motu jurisdiction over environmental issues touching on fundamental rights in high courts and the Supreme Court.¹⁵ PIL has been used by civil society groups, bar associations to push environmental causes and response is problematic even in the courts given the slow pace of environmental administration follow through.

B. China: Centralization, Inspections, and Performance Targets

The implementation model in China connects the environmental results with evaluating the cadres and utilizing central inspections. The CEI mechanism, which was piloted in 2015 and institutionalized since then, sends inspection teams of the central government to local governments to audit on their performance on environmental compliance, probe on environmental abuse and to apply accountability measures including sanctions to personnel.¹⁶ This has boosted environmental compliance as a political agenda at the local leader level to help in breaking the local protectionism.

Enforcement Innovations Include:

- Daily accruing fines and production suspensions, which were instated in 2015 by the EPL.¹⁷
- Environmental administrative detention in some cases (by Public security Administration punishments Law).
- Larger environmental standing for the public interest litigation (EPIL), which enable qualified NGOs and procuratorates to file cases to court.¹⁸
- Increased information transparency: Information on pollutant emission, EIA

¹⁴ Health Effects Institute, *State of Global Air 2020* (Boston, MA: HEI, 2020); Pakistan Environmental Protection Agency, *National Environmental Quality Standards (NEQS) for Ambient Air* (2010).

¹⁵ For smog-related structural litigation, see orders of the Lahore High Court (2017–2022) directing formation of a Smog Commission; e.g., W.P. No. 69214/2017, various interim orders available through LHC registrar summaries

¹⁶ On Central Environmental Inspections, see MEE, “Central Ecological and Environmental Protection Inspection Work Regulations,” 2019; and Jianxu Liu and Jing Wu, “China’s Central Environmental Protection Inspection: An Effective Environmental Governance Tool?” *Journal of Environmental Management* 277 (2021): 111–122

¹⁷ EPL 2015, Articles 59–63

¹⁸ Supreme People’s Court (SPC) and Supreme People’s Procuratorate (SPP), “Interpretation on Several Issues Concerning the Application of Law in the Handling of Environmental Civil Public Interest Litigation Cases,” 2015; SPC, “Interpretation on EPIL by Procuratorates,” 2018

approvals and inspection results are becoming more available online and environmental-monitoring websites such as the Blue Map (IPE) have consolidated the environmental histories of companies.¹⁹

These have given quantifiable results in certain areas through these tools. Mean concentrations of PM_{2.5} reduced significantly between 2013 and 2017 under the Air Pollution Action Plan due to coal consumption controls, industrial restructuring, and end of pipe approaches, but the change is not evenly applied across the country.²⁰ Researchers report a danger of granting “campaign-style” enforcement, manipulation of data to achieve quota, and limitation of the independent civil society oversight.²¹ In addition, economic shocks have the capacity to challenge permanence of the environmental advances lest its objects of economic growth resume emphasis.

IV. Instruments and Procedures: EIA, Permitting, and Standards

A. Environmental Impact Assessment (EIA)

In Pakistan IEE/EIA Regulations (2000) provide environmental screening of the public and private projects, involving public consultation whereby No Objection Certificates (NOCs) are issued. Provinces are using the EIA processes after devolution. Barriers to implementation are the long but sometimes perfunctory consultations process, few cumulative impact assessments, and poor monitoring and verification of compliance after approval of the EIA.²² This has been confirmed by courts which have on occasion halted projects due to EIA shortages, reflecting the importance of EIA requirements.²³

The EIA system in China is more firmly in place and is enshrined in a good statutory authority. Amendments were made to enhance the punishment of initiating a construction without permit and held the practitioners of EIA accountable. Rules of public participation exist, but are limited, and historically the quality of EIAs has varied with

¹⁹ Institute of Public & Environmental Affairs (IPE), Blue Map Database, <https://www.ipe.org.cn/> (English portal), aggregating government-reported violations and corporate environmental data

²⁰ Qiang Zhang et al., “Drivers of improved PM_{2.5} air quality in China from 2013 to 2017,” *Proceedings of the National Academy of Sciences* 116, no. 49 (2019): 24463–24469

²¹ Alex L. Wang, “The Search for Sustainable Legitimacy: Environmental Law and Bureaucracy in China,” *Harvard Environmental Law Review* 37 (2013): 365–440; Genia Kostka, “Command without control: The case of China’s environmental target system,” *Regulation & Governance* 10, no. 1 (2016): 58–74

²² Pakistan Environmental Protection Agency, IEE/EIA Regulations, 2000; World Bank, Pakistan CCDD (2022), institutional diagnostics on EIA practice

²³ For instances of judicial scrutiny of EIAs, see Lahore High Court orders enjoining project approvals pending EIA compliance in urban infrastructure cases (various; summarized in court annual reports and press releases)

both local economic demands and regulator-industry relationships.²⁴ Inspections have centralized and EIA oversight has been upgraded within MEE, but difficulties still exist with substantive reviews of complex projects and cumulative effects.

B. Standards and Permitting

The NEQS of Pakistan determine allowable limits of effluents and emissions; they have sector-specific standards that are not updated equally. It will be enforced through supervision and plausible sanctions. There has been pilot of pollution fees and self-regimes of monitoring.²⁵ China has gradually strengthened its own emission standards, established a unified pollutant discharge permit system, and has upped penalties on exceedances. Reporting of status of compliance and monitoring via the internet have allowed increased frequency of enforcement activity.²⁶ Also contributing to the compliance record has been the industrial restructuring which has seen the closure of small, high-emitting units. Nevertheless, the case is that moving polluting industries to regions with less control, or cross-border (including within the Belt and Road) gives rise to concerns that MPC is externalized.

V. The Role of Courts, Prosecutors, and Public Participation

A. Pakistan: Rights-Based Adjudication and Environmental Tribunals

Pakistan's courts have crafted a rich environmental jurisprudence through PIL, treating environmental degradation as a violation of fundamental rights. In *Shehla Zia*, the Supreme Court expanded Article 9 to environmental harms, while *Asghar Leghari* constitutionalized climate policy implementation duties.²⁷ High courts have issued structural orders, created oversight commissions (e.g., for climate policy and smog), and monitored compliance through continuing mandamus. Regulatory conflicts and crimes are solved by specialized environmental tribunals. They offer greater recourse to specialist adjudication but their success is limited by staffing, independence and ability to give effect to order. And problems with backlogs of cases, lack of technical capacity, and lack of ability to translate orders into regulatory practice unless there was a powerful agency

²⁴ Rachel E. Stern, *Environmental Litigation in China: A Study in Political Ambivalence* (Cambridge: Cambridge University Press, 2013), chapters on EIA disputes; SPC guiding cases on EIA enforcement

²⁵ Government of Pakistan, NEQS (various); pilot self-monitoring and reporting by industry under the Self-Monitoring and Reporting by Industry (SMRI) program (Pak-EPA, early 2000s)

²⁶ MEE, "Administrative Measures for Pollutant Discharge Permits," 2021; disclosure portals for permits and compliance

²⁷ *Shehla Zia v. WAPDA*, PLD 1994 SC 693; *Asghar Leghari v. Federation* (2015)

implementation.²⁸ There is the participation by the populace in form of PIL and formally in EIA consultations. Environmental cases and environmental advocacy have been dealt with by NGOs like WWF-Pakistan and Shehri. But active involvement involves the ability to obtain credible environment information and them being disclosed at the right time which is not consistent.

B. China: Environmental Courts, EPIL, and Managed Participation

China has established environmental courts and tribunals in many provinces to build judicial expertise. Two developments stand out:

- Environmental public interest litigation (EPIL): The 2015 EPL and recent judicial interpretations empowered some NGOs and procuratorates at the people level to launch the EPIL cases against polluters and irresponsible government agencies.²⁹ Procuratorates have emerged as primary EPIL actors, with tens of thousands of people interest cases filed so far and usually following pre-litigation OLR recommendations.
- Centralized political backing: Courts decide in a framework where the result in a court can be reconciled with policy goals. On the one hand, the proliferation of remedies and the deterrence approach facilitated by EPIL has not been matched by NGO inclusion, which is limited by eligibility requirements and extra-narrow limits on civil society in general.³⁰

VI. Climate Governance and Energy Transitions

The governance of the climate in Pakistan is based on the Pakistan Climate Change Act (2017), which also is reflected in diet in the National Climate Change Policy (2012; updated 2021) and its NDC (2021). The Leghari decision of the Lahore High Court put a main emphasis on state obligations to adopt and cope with adaptation and mitigation. However, it cannot be implemented without funding, the coordination of activity on the provincial and sectorial (water, agriculture, energy) level, as well as it should be included into developmental plan. The 2022 devastating floods lamented the susceptibility of

²⁸ Pakistan Environmental Tribunals' annual caseloads reported in provincial environment department yearbooks (e.g., Punjab EPA Annual Report), indicating backlog and enforcement outcomes.

²⁹ SPC & SPP EPIL Interpretations (2015, 2018)

³⁰ Stern, Environmental Litigation in China, and subsequent work by Rachel Stern and colleagues on EPIL; see also Benjamin van Rooij and Qiaoqiao Zhu, "The warming of public interest litigation in China," *China Information* 34, no. 3 (2020): 362–384

Pakistan and the need of climate-resilient infrastructure and disaster risk reduction.³¹ Pakistan power sector has been dependent on foreign and domestic fossil fuels besides gas and renewable energy has been increasing, yet capacity and financing are a challenge.³²

The climate policy of China is based on industrial policy, energy planning, and market devices. The national ETS (power sector) encompasses thousands of power plants, and there is sectoral ambition to extend coverage (e.g., cement industry) as well as to enhance allocation and MRV (monitoring, reporting, verification).³³ Electrification, expansion of renewables and technology progress (e.g. batteries, EVs) are spurred by carbon peaking and carbon neutrality horizons. Nevertheless, local energy security priorities and economic stabilization strategies also intervene in the coal approval regime on occasion, creating a spectrum with short-term growth and long-term decarbonization objectives.³⁴ With their position as a global supply chain hub and technology capabilities, China has leverage to decarbonize at a large scale, but legal and institutional strength and the quality of data in ETS and energy statistics must be stabilities. In both countries, climate policy overlaps with domestic air quality co-benefits, industrial competitiveness and energy security. Pakistan can use adaptation finance and distributed renewable; China can further structural reforms, flexibility of the grid and market-based tools and comply through inspection.

VII. Comparative Assessment

This section synthesizes key similarities and differences in implementation.

- **Legal ambition:** The two countries modernized the statutes and the policies. The legal overhaul in China since 2014 has institutionalized robust instruments of enforcement; Pakistan has a robust rights based approach as evident in its constitutional jurisprudence.
- **Institutional design:** Both countries have a centralized structure, although China is more so because CEI and an assessment of cadres politicizes incentives and favorables by the local officials, whereas in Pakistan, the structure is federal in

³¹ Government of Pakistan, “2022 Pakistan Floods: Post-Disaster Needs Assessment (PDNA),” with World Bank, ADB, EU, and UN support (2022).

³² World Bank, Pakistan CCDD (2022), energy chapter; National Electric Power Regulatory Authority (NEPRA) State of Industry Reports (annual).

³³ MEE, 2021 ETS Launch Notice; Tsinghua University Institute of Climate Change and Sustainable Development (ICSD), “China ETS Annual Report” (various years) for MRV and allocation analysis.

³⁴ International Energy Agency, “An energy sector roadmap to carbon neutrality in China,” IEA (2021); CREA (Centre for Research on Energy and Clean Air), reports on coal approvals (2022–2024).

nature, and because of that, there is a need to devolve authority to the provinces and (therefore) a coordination mechanism and capacity building at subnational levels.

- **Mechanisms of enforcement:** day-to-day fines, product bans, show inspections by China engender robust incentives to comply in the short term. The tribunals and court in Pakistan orders advance compliance in specific cases but often lack continuous monitoring and sanctioning capacity to deter systematic violations.
- **Information and participation:** China's disclosure regimes and data platforms have improved transparency within a managed participatory space; Pakistan's participatory rights via PIL are strong on paper, but disclosure and data systems lag behind, limiting informed participation.
- **Outcomes:** China has already shown the quantitative achievements in lowering PM_{2.5} and other pollutants over the 2013-2017 and beyond period, but still has issues in the smaller cities and also along the heavy industrial belts. In Pakistan, the air quality in major cities evaluates highly degraded in comparison to the recommendation of the WHO, the monitoring systems are getting better but not even adequate, and the enforcement is limited by the capacity and the resources.³⁵
- **Climate trajectories:** Decarbonization goes to the fore in China with its articulated targets on peaking and neutrality, a national ETS and industrial policy, albeit with frictions; Pakistan puts forward ambitious conditional target in its NDC, and its constitutionally recognised rights to assets and climate, with finance and institutional strengthening being the key drivers to progress.

These variations are those of character of the system. The Chinese system has the ability to produce bureaucratic mobilization quickly and the danger of excessive emphasis on crusades and may overestimate full participation of autonomous civic vigilance. The model in Pakistan consists of normative commitments derived through courts and devolved regulation and needs ongoing investment in line with administrative capacity, data, and intergovernmental coordination to translate norms into results.

³⁵ HEI, State of Global Air 2020; Pakistan NEQS (2010); MEE, "China Ecological and Environmental Status Bulletin" (annual).

VIII. Policy Recommendations

For Pakistan

1. **Strengthen provincial EPAs:** Implement more staffing, training, and laboratory/monitoring infrastructure; implement risk based inspection regimes with priority on major emitters and hotspots.³⁶
2. **Enhance data systems and transparency:** Increase ambient and emissions monitoring networks; require reporting of major-source emissions and EIA decisions under real-time disclosure; regularize formats of publicly accessible data.
3. **Calibrate sanctions and compliance tools:** Revise penalty schedules to be sure they deter; institutionalize administrative monetary penalties, with escalating fines on repeated offenses; experiment with pollution fees based upon community-measured emissions.
4. **Institutionalize coordination:** Provide interprovincial river-basin and airshed management with a clear mandate; ramp up federal-provincial coordination with the Climate Change Council and Climate Change Authority.
5. **Embed judicial remedies into administrative practice:** Court directives should be translated into agency SOPs with milestones, measurements and reporting; outfit tribunal enforcement teams.
6. **Mainstream climate and air quality co-benefits:** Subordinate clean cooking, vehicle emissions standards, fuel quality improvements and modernization of brick kilns to local development plans; couple climate finance to milestones of compliance.

For China

1. **Stabilize enforcement beyond campaigns:** Enforcement The use of routine, proportionate and predictable enforcement should be institutionalized to complement inspections; curtail the aspect of performance volatility of crackdowns.³⁷
2. **Deepen data integrity and MRV:** Increase third-party ETS and pollutant verification; penalise data fraud; increase independent academic access to

³⁶ World Bank, Pakistan CCDD (2022); ADB environment diagnostics for Pakistan, recommending risk-based enforcement

³⁷ Kostka, "Command without control," and Alex L. Wang, "Green Governance in China: Environmental Law, Governance, and the Limits of Bureaucracy," UCLA School of Law research papers (various, 2018+).

environmental data.

3. Expand meaningful participation: Expand the EPIL NGO position, remove obstacles to requesting public-interest data, and guard the interest of good-faith oversight of government.
4. Align economic planning with environmental goals: Keep a tight rein on the amount of new coal capacity, ramp up grid reforms to incorporate renewables and implement fiscal transfers to reward long-term local adherence.
5. Prevent externalization: Use green overseas standards firmly on Belt and Road investments; demand EIAs at host and Chinese best-practice levels; promote overseas project impacts to be transparent.³⁸

Conclusion

Examples of Pakistan and China are two different but informative examples of adoption of Environmental Law, depending on their own political system, system of governance and socio economic interests. The character of the Chinese approach has been one of centralized environmental inspections, implementation of enhanced legal instruments and the engagement of data disclosure mechanisms as a mechanism to encourage compliance. In the course of ten years, these actions have already had an empirical positive effect on some of the indicators of the environment, including air pollutant decline, and waste processing in referenced territories. The Chinese model has also structural weaknesses. Its achievements also have been linked over time to periodic, campaign-type action to enforce payments, calling into question whether such gains can be sustained after the political spotlight moves on. Moreover, there are little opportunities of independent citizens involvement and a narrow room in such cases in non-governmental environmental stakeholders which could violate transparency and coverage of accountability. In contrast, environmental rights expressed in Pakistan, occurring under a history of judicial activism and constitutionalized within Pakistan itself, have set its course. The judiciary (usually through (suo motu interventions) has been catalytic in establishing the legal precedents, ushering in administrative reforms, and making the

³⁸ Ministry of Ecology and Environment and Ministry of Commerce, “Guidelines for Ecological and Environmental Protection of Foreign Investment Cooperation,” 2021; National Development and Reform Commission et al., “Green Development Guidelines for Overseas Investment and Cooperation,” 2021.

government agencies (where a particular environmental vice interests it) take action to correct certain harms. The developments have brought the environmental protection higher up in the chain of law and increased access to remedies by citizens. However, Pakistan is not progressing without glitches, including their fragmented governance, weak technical capacity of the regulators, and lack of a consistent federal-provincial axes of coordination. Consequently, such enforcement is likely to be more reactive and case by case than systematic in nature. There is scope of cross learning with the two systems. Pakistan could be able to adjust to some of the most appealing elements of the inspection-intensive approach adopted by China pegged to its federal constitutional system to rely resources in continuous monitoring systems, embrace risk basing of its enforcement action to address the worst violations, and enhance coordination mechanisms among provinces. These would supplement the rights-based monitoring in Pakistan and that judicial impetus be complemented by administrative execution.

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