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## A Comparative Legal Analysis of the Malaysian Environmental Quality Act 1974 and Pakistan Environmental Protection Act 1997

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### ABSTRACT

Environmental degradation and climate change are urgent and growing challenges that demand immediate attention for developing countries like Pakistan and Malaysia facing distinct yet interconnected issues due to rapid urbanization, industrialization, and population growth. In Pakistan, the Pakistan Environmental Protection Act (PEPA) 1997 provides a solid and well-established legal framework through the establishment of the Environmental Protection Agency, Environmental Tribunals, and mandatory Environmental Impact Assessments (EIAs). However, weak enforcement, limited institutional capacity, and industrial pressures have hindered its effective implementation. Malaysia, on the other hand, benefits from the Environmental Quality Act (EQA) 1974, enforced by the Department of Environment, which combines strict regulatory measures, including higher fines and mandatory imprisonment, with comprehensive pollution control frameworks. This study examines the environmental laws, enforcement mechanisms, and policy responses in both countries, highlighting successes, gaps, and areas for improvement. The study also explores sector-specific initiatives, including climate change adaptation, waste and wastewater management, green construction practices, and Extended Producer Responsibility for plastics. Furthermore, Malaysia's Integration of Ethical Principles like *Sadd al-Dhara'i*' aligned with *Maqasid Shariah* illustrates how precautionary approaches can guide sustainable development. Overall, while both nations have robust legal frameworks, Malaysia demonstrates stronger enforcement and institutional coordination, whereas Pakistan faces significant challenges in translating laws into practice. Strengthening enforcement, building institutional capacity, and promoting public engagement are essential steps toward sustainable development and environmental protection in both contexts.

**Keywords:** Environmental Law, PEPA 1997, EQA 1974, Climate Change, Enforcement, Sustainable Development, Waste Management, Green Construction

### Introduction

Environmental degradation and climate change have become urgent global problems, posing serious threats to the planet and the well-being of present and future generations, ecosystems, human health, and sustainable development. Developing countries like Pakistan and Malaysia face unique pressures due to rapid industrialization, urban growth, and population expansion, making strong legal frameworks and effective governance



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essential for addressing environmental risks (Munir, 2025; Azhari et al., 2025). In Pakistan, the Pakistan Environmental Protection Act (PEPA) 1997 forms the backbone of environmental law, establishing the Pakistan Environmental Protection Agency (Pak-EPA), Environmental Tribunals, and mandating Environmental Impact Assessments (EIAs) alongside National Environmental Quality Standards (Haider, 2025; Iqbal et al., 2025). Despite these legal provisions, Pakistan struggles with enforcement challenges caused by weak penalties, limited institutional capacity, industrial pressures, and demographic growth, which hinder meaningful Environmental Protection (Hameed et al., 2025; Yousaf et al., 2025). The recognition of a constitutional right to a clean and healthy environment under Article 9A strengthens Pakistan's legal framework and aligns domestic law with international climate commitments such as the Paris Agreement (Haider, 2025; Ohdedar, 2021).

Malaysia, on the other hand, offers a comparatively robust system under the Environmental Quality Act 1974 (EQA), enforced by the Department of Environment (DOE). This includes licensing, pollution control, and mandatory EIAs for projects with significant environmental impacts (Abd Rani et al., 2025; Hassan & Noor, 2025). Recent amendments have introduced stricter penalties and mandatory imprisonment for serious violations, reflecting stronger enforcement than in Pakistan (Ghazalia et al., 2025). Both countries focus on hazardous waste management and sustainable development, yet differences in institutional capacity, enforcement rigor, and public engagement result in varying degrees of effectiveness in environmental governance (Ibrar et al., 2025; Abu Bakar et al., 2025).

The importance of effective environmental law is further highlighted by the real impacts of climate change. Pakistan faces rising temperatures, floods, droughts, and glacier melting, which threaten livelihoods, agriculture, and economic stability, with media coverage shaping public awareness and eco-friendly behaviors (Munir, 2025; Nasir et al., 2025). Malaysia also confronts climate-related challenges in water governance, waste management, and construction, prompting initiatives like sewage reclamation, landfill leachate treatment, green building technologies, and the upcoming mandatory Extended Producer Responsibility (EPR) for plastics (Rafaai et al., 2025; Ismail et al., 2025; Primus et al., 2025; Abu Bakar et al., 2025). In addition, integrating ethical and precautionary principles, such as the Islamic concept of *Sadd al-Dhara'i'* aligned with *Maqasid Shariah*, provides guidance for curbing environmentally harmful practices in Malaysia (Hassan & Noor, 2025).

Despite these efforts, gaps in implementation, coordination, and enforcement limit progress toward achieving Sustainable Development Goals (SDGs) related to climate action, ecosystem protection, and sustainable resource management (Iqbal et al., 2025; Waheed et al., 2025). This study explores the legal frameworks, enforcement challenges, and policy strategies in Pakistan and Malaysia, highlighting ways to strengthen environmental governance, improve compliance, and promote sustainable development in both contexts

### Literature Review

Pakistan's environmental law is anchored in the Pakistan Environmental Protection Act (PEPA) 1997, establishing the Pakistan Environmental Protection Agency, Environmental Tribunals, and requiring Environmental Impact Assessments (EIAs) and adherence to National Environmental Quality Standards. Enforcement faces challenges due to weak penalties, population pressures, and industrialization, though international agreements guide policy. Malaysia's Environmental Quality Act 1974 (EQA) provides a



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robust framework for pollution control, licensing, and EIAs, enforced by the Department of Environment, with recent amendments introducing stricter fines and mandatory jail for violations. Both countries emphasize hazardous waste management and sustainable development, but Malaysia demonstrates stronger enforcement mechanisms and more stringent penalties, while Pakistan faces implementation and compliance gaps

**Climate Change in Pakistan by Munir, Muhammad Mujahid** emphasizes that Pakistan faces severe climate challenges despite contributing less than 1% to global emissions. Rising temperatures, floods, droughts, and melting glaciers threaten its agriculture, water security, and economy. The study analyzes causes, impacts, and current responses to climate change. It calls for stronger policies, institutional reforms, and international cooperation to secure Pakistan's future.

**An Analytical Review of the 26th Constitutional Amendment and the Fundamental Right to a Clean and Healthy Environment in Pakistan: A Case Study of the Newly Introduced Article 9A** establishes the constitutional right to a clean and healthy environment in Pakistan, aligning with international norms and enabling judicial enforcement. It strengthens Pakistan's role in climate justice by supporting Paris Agreement obligations, enhancing access to climate finance, and promoting green technologies.

**Litigating Climate Change in India and Pakistan: Analyzing Opportunities and Challenges by Birsha Ohdedar** examines the growing field of climate litigation in India and Pakistan, especially after the landmark *Asghar Leghari v. Pakistan* case. It explores how limited case law has begun to address climate concerns within broader social and political contexts. The discussion expands the idea of "climate litigation" to include cases related to mitigation and adaptation, even when not explicitly framed as climate cases. Overall, it offers a fresh perspective on how domestic legal and political dynamics shape climate litigation in both countries.

**Legal Protection of Stray Animals; A Comparative Study of Pakistan, Malaysia and UK by Rabia Ibrar, Kainat Manzoor, Hina Qayyum** explore how stray animals are treated under the law in Pakistan, compared with the UK and Malaysia. It highlights that animals have a right to exist independently, not just for human benefit. Despite some legal reforms, major gaps still remain in protecting stray animals. The research also points to a landmark Pakistani case and suggests better ways to ensure their safety and welfare.

**Public understanding of climate change in Malaysia: results of a national surveys by Azliyana Azhari, Lucy M Richardson, Raksha Pandya-Wood and Libby Lester** The Malaysia National Survey of Climate Change Concern and Behavior offers the first comprehensive look at how Malaysians understand and respond to climate change. Findings show that 81% of Malaysians are deeply concerned and many are already making eco-friendly choices in daily life. However, people tend to adopt easier actions, like saving electricity, rather than costly or time-consuming ones such as using public transport or installing solar panels. The study stresses the need for stronger communication and policies to encourage deeper behavioral change and support Malaysia's journey toward a net-zero future



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### **Pakistan's environmental laws align with the Sustainable Development Goals (SDGs)**

, especially those on climate action, ecosystem conservation, and environmental governance by **Mohsan Iqbal, Haseeb Ahmad, Kaunain Iftikhar** It reviews key legislation, court rulings, and international commitments like the Paris Agreement. Findings show that while Pakistan has a solid legal framework, weak implementation and institutional gaps limit progress toward sustainability. The research recommends updating laws to include SDG indicators, strengthen enforcement, and ensure effective translation of global commitments into national action.

**In Pakistan, the right to a healthy environment is increasingly recognized as a fundamental human right as prescribed by Usman Hameed, Sadia Saeed, Ali Shahid**, but environmental degradation, pollution, and climate change threaten its realization. Despite laws like PEPA 1997 and the Climate Change Acts, weak enforcement, limited institutional capacity, and lack of public awareness hinder effective implementation. Judicial activism has helped protect environmental rights, yet challenges like industrial noncompliance and inconsistent policies remain. Strengthening legal frameworks, creating specialized courts, promoting public participation, and advancing sustainable development policies are essential for balancing economic growth with environmental sustainability and securing a healthier future for generations to come.

**Climate change is hitting developing countries, especially South Asia, as interpreted by Amna Yousaf, Ayesha Kiran, Muhammad Iqbal**, with severe disasters like floods, droughts, rising sea levels, and shrinking glaciers. Pakistan, in particular, faces serious impacts on its economy, society, and environment, exemplified by the devastating 2010 floods that affected millions. This study examines Pakistan's legal and policy frameworks, highlights barriers to effective action, and proposes solutions to enhance resilience. Its goal is to guide policymakers, planners, and organizations in addressing climate change more effectively and sustainably.

### **Assessing environmental policy coherence in Pakistan: implications for the sustainability of belt and road initiative's China-Pakistan economic corridor Plan (2017-2030) by Abdul Waheed, Muhammad Irfan Khan, Thomas Bern ward Fischer**

The China–Pakistan Economic Corridor (CPEC), part of China's Belt and Road Initiative, faces challenges in promoting climate-resilient and environmentally sustainable development due to weak policy coordination. This study finds that energy, agriculture, industry, and climate policies largely overlook CPEC, while the CPEC plan itself lacks integration of environmental and accountability measures. The paper recommends establishing a cross-sectoral coordination body to align CPEC with Pakistan's policies and improve climate and environmental governance. For the broader BRI, better coordination among participating countries is essential to achieve sustainable, inclusive, and mutually beneficial development.

**Environmental policy stringency, eco-innovation, and green finance are vital for reducing ecological footprints in Pakistan by Agha Amad Nabi, Farhan Ahmad, Fayyaz Hussain, Hafeez**. Using data from 1990–2020, results reveal that green finance and eco-innovation reduce environmental impacts, with stronger effects at higher levels of ecological pressure. Strict environmental policies also significantly curb ecological



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footprints, especially in high-impact sectors. The findings highlight the importance of robust policies and green investments to promote sustainable practices and mitigate environmental degradation effectively.

**Ecolinguistic Analysis of Environmental Discourse in Pakistani Print and Digital Media by Uzma Sadiq, Rabia Alam, Asna Atiq Ur Rehman** analyzes how Pakistani print and digital media cover environmental issues like climate change, deforestation, water shortages, and pollution. Using critical discourse analysis, it examines language, metaphors, and framing, highlighting tensions between anthropocentric and eco-centric narratives. Findings show that while media plays a key role in raising awareness, political and economic influences often undermine its responsibility toward nature. The research emphasizes the need to reorient media discourse to support ecological sustainability and offers guidance for journalists and policymakers to communicate more environmentally friendly messages.

### **Media Narratives Regarding Climate Change Influencing Tourism Patterns in Pakistan**

**By Tanveer Nasir, Dr. Uzma Qazi, Amna Fazail, Hafsa Tareen.**

Climate change is affecting tourism in Pakistan, with warming temperatures, flooding, and glacier melting influencing tourists' decisions. This study shows that media coverage both raises awareness of environmental risks sometimes discouraging travel to vulnerable regions and promotes eco-friendly, climate-resilient tourism. Survey results from 150 domestic and international tourists reveal that media shapes perceptions of safety, sustainability, and destination appeal, affecting travel plans and behavior. The study recommends integrating climate communication into tourism policies, improving media partnerships, and promoting localized, balanced content to support sustainable tourism in Pakistan

**Effective Implementation of Environmental Laws in Pakistan by Ali Asghar, Muhammad Umer, Afzaal Afzal** examines Pakistan's environmental laws and the challenges in enforcing them. Despite having proper legislation, weak implementation remains a major reason for ongoing environmental problems. The research discusses practical solutions to overcome these barriers and ensure effective enforcement, promoting environmental protection and sustainability in the country

### **The Role of Environmental Law in Achieving Sustainable Development Goals: A Case Study of Pakistan by Mohsan Iqbal, Haseeb Ahmad, Kaunain Iftikhar**

examines how Pakistan's environmental laws align with the Sustainable Development Goals (SDGs), including climate action and ecosystem conservation. While Pakistan has a solid legal framework and courts have advanced environmental rights, weak institutional support and administrative gaps hinder effective implementation of international commitments. The research highlights the need to amend legislation to include SDG indicators and strengthen enforcement. Such reforms are essential for transitioning Pakistan from policy-based approaches to a rule-based system that supports sustainable development and aligns with the 2030 Agenda.

**Pakistan's climate change act: evaluating impacts, efficacy, and prospects for future progress by Rana Umair Abrar Khan, Dr. Rao Qasim Idrees, Ali Shahid** emphasis on Pakistan's Climate Change Act of 2017 marks a key step in the country's response to



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climate challenges. This study evaluates its implementation, enforcement, institutional support, and stakeholder engagement, highlighting strengths and areas needing improvement. Findings emphasize the role of robust institutions, effective compliance, and inclusive participation in achieving climate goals. The Act's impact on emission reduction, renewable energy adoption, ecosystem resilience, and integration of climate considerations into development planning is assessed. Overall, the research underscores the need for continuous evaluation to strengthen climate governance and promote a sustainable, resilient future for Pakistan.

**Study of Environmental Impact Assessment (EIA) Process in Scotland, Malaysia and Pakistan by Malik, S., Tariq, F. and Maliki, N., 2017** relate that Environmental Impact Assessment (EIA) is a vital planning tool that evaluates the potential effects of development projects before implementation to protect ecosystems. Originating from the 1969 U.S. National Environmental Policy Act, it has since been adopted globally, including by developing nations. EIA promotes sustainability by improving scientific understanding, guiding project design, and shaping societal attitudes. This paper compares how Scotland, Malaysia, and Pakistan apply EIA within their institutional frameworks.

### **Toward climate-resilient water governance: A Legal and policy Analysis of Malaysia's**

**Water sector by Muhammad Nazrul Abd Rani, Harlida Abdul Wahab, Haslinda Mohd Anuar** refers that Climate change is creating serious challenges for water security, particularly in countries with fragmented governance like Malaysia. This study examines how Malaysia's legal and policy frameworks, including the WSIA 2006, EQA 1974, and recent water policies, incorporate climate adaptation. Findings reveal gaps in statutory mandates despite policy recognition of climate risks. The paper recommends embedding adaptation into laws, improving federal–state coordination, and integrating ecosystem-based approaches to enhance resilience. Malaysia's experience offers lessons for strengthening climate-resilient water governance in the Global South.

**Application of Sadd al-Dhara'i' Theory in Curbing the Climate Change and Environmental Crisis in Malaysia in Parallel to the Demands of Maqasid Shariah by Wan Zulkifli Wan Hassan, Noorashikin Md Noor,** explores how the Islamic principle of Sadd al-Dhara'i' which emphasizes preventing actions that cause harm can help address climate change and environmental degradation in Malaysia. Using qualitative analysis of policies and Islamic guidelines, it highlights the need to prevent harmful practices like deforestation and excessive emissions. The research recommends enforcing environmental laws through this precautionary approach and promoting sustainable practices like renewable energy. Aligning Sadd al-Dhara'i' with the Maqasid Shariah framework supports environmental sustainability and the well-being of current and future generations. It offers guidance for policymakers to integrate Islamic ethics into climate action strategies.

**Clinical waste, generated by healthcare, laboratory, and research activities by Ezliana Ghazali, Megat Azmi Megat Johar, Noorsuhada Md Nor,** poses serious health risks to staff, patients, and communities. The COVID-19 pandemic has increased waste volumes, highlighting the need for effective management. In Malaysia, the Department of Environment regulates clinical waste under the Environmental Quality



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(Scheduled Waste) Regulation 1989, covering storage, transport, treatment, and disposal. This review examines waste classification, responsible agencies, and treatment methods such as incineration, while also discussing the environmental challenges posed by waste management practices

**Dicyandiamide-Formaldehyde (Dcd-F) Resin for Pollutants Removal from Textile Wastewater** by **A.B. Baharim, R.M.S. Radin, N.D. Hairuddin, and W. Mohamed** evaluates dicyandiamide-formaldehyde (DCD-F) resin as a coagulant for treating textile wastewater. Experiments showed that under optimal conditions, DCD-F effectively removed colour, COD, TSS, and turbidity for moderately polluted samples. Highly polluted wastewater required additional treatment, as DCD-F alone was insufficient. A cost-benefit analysis revealed that using DCD-F resin is highly economical, costing only RM 18 per month, and is cheaper than alternatives like aluminium sulphate or ferric chloride.

**Green Material Technologies in the Malaysian Construction Industry: Current Trends and Future Prospects** by **Audrey Primus & others** refers to Rapid urbanization and industrialization in Malaysia have accelerated construction activities, causing environmental issues like air, water, and noise pollution. To promote sustainable construction, the government encourages green practices such as the Industrialised Building System (IBS) and the 3Rs (reduce, reuse, recycle) to minimize waste from the design stage onward. Agricultural waste can be used in concrete to reduce cement-related greenhouse gas emissions. Additionally, technologies like solar panels, cool roofs, and rainwater harvesting are being implemented to support environmentally friendly construction.

**Plastic Packaging Policy in Malaysia: An Analysis Towards the Implementation of Extended Producer Responsibility (EPR)** by **Khalilulnisha Abu Bakar, Ahmad Fariz Mohamed, Yusuke Kishita**, refers that Malaysia, one of Southeast Asia's highest consumers of plastic packaging, plans to implement a mandatory Extended Producer Responsibility (EPR) for plastics by 2026. This study highlights challenges in governance, as federal, state, and local authorities have overlapping powers, creating gaps in waste management. Consumer surveys show strong support for EPR, but effective implementation requires harmonizing legislation, clarifying stakeholder roles, and considering consumer behavior. The existing legal and institutional framework provides a solid foundation, but streamlining these elements is crucial for successful, sustainable plastic management in Malaysia.

**Mapping sewage treatment plants for wastewater reclamation and reuse in industrial parks of Peninsular Malaysia: A path towards water security** by **Nur Hairunnisa Rafaai, Khai Ern Lee & others** narrates that Rapid industrialization and urbanization have increased wastewater generation, making sewage treatment plants (STPs) near industrial parks vital for sustainable water management. This study uses the Analytical Hierarchy Process (AHP) and spatial analysis to assess the suitability of STPs in Peninsular Malaysia for wastewater reclamation and reuse. Results show that most STPs (over 40%) have very low reclamation potential due to inadequate infrastructure, while only a few exhibits high potential. The study highlights the need for a holistic approach to identify suitable STPs and support regional water security.



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**Thermal Evaporation as a Sustainable Solution for Landfill Leachate Treatment: Removal Efficiency Analysis by Ya Mohammad Nazir Syah Ismail, Muhammad Haziq Khairi Muhidzir & others** emphasize that Landfill leachate in Malaysia poses serious environmental risks due to its high pollutant content, challenging compliance with regulations. This study evaluates evaporation as a treatment method, showing over 98% removal of Chemical Oxygen Demand (COD) and significant reductions in turbidity and color. However, NH<sub>3</sub>-N, Biochemical Oxygen demand (BOD), and pH levels remained above regulatory limits, indicating the need for secondary treatment. Evaporation proves effective for degrading organic pollutants but must be combined with additional processes for full compliance. The research offers practical insights for optimizing sustainable leachate management strategies.

### Research Methodology

This research adopts a comparative and analytical approach to explore environmental laws, policies, and enforcement practices in Pakistan and Malaysia. The study relies on a range of sources to provide a comprehensive understanding of how legal frameworks, institutional capacities, and policy interventions shape environmental protection, climate change mitigation, and sustainable development. Primary legal texts, including Pakistan's Environmental Protection Act 1997, Climate Change Act 2017, and Malaysia's Environmental Quality Act 1974, along with associated rules, regulations, and amendments, were examined to understand the scope and limitations of environmental legislation. Landmark court decisions in Pakistan, particularly those related to constitutional environmental rights and climate litigation, were analyzed to assess the judiciary's role in advancing environmental governance.

In addition, National policies, climate adaptation strategies, and sector-specific initiatives such as green construction practices, wastewater management, and Malaysia's Extended Producer Responsibility for plastics were reviewed to evaluate implementation effectiveness and identify challenges and best practices. Academic literature, reports, and media analyses provided further insights into public perception, enforcement gaps, and the broader socio environmental context. The study combined doctrinal analysis of legal texts with comparative and policy analysis to identify strengths, weaknesses, and opportunities in each country's environmental governance. By synthesizing these perspectives, the research offers practical and policy-relevant insights aimed at improving the enforcement of environmental laws, promoting sustainable practices, and enhancing climate resilience in both Pakistan and Malaysia.

### Discussion

Environmental governance in Pakistan and Malaysia presents a compelling case for examining the interplay between legal frameworks, institutional capacity, enforcement mechanisms, and public participation. Pakistan's environmental laws, primarily the Pakistan Environmental Protection Act (PEPA) 1997 and the Climate Change Act 2017, provide a solid foundation for regulating pollution, conserving natural resources, and addressing climate change (Iqbal et al., 2025; Khan et al., 2024). The legal system has even recognized the right to a clean and healthy environment as a fundamental constitutional right under Article 9A, aligning domestic legislation with global commitments such as the Paris Agreement (Haider, 2025). These legislative measures are designed to promote environmental sustainability and provide mechanisms for oversight through environmental tribunals, EIAs, and national standards for air, water, and waste management.



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Despite these robust legal frameworks, Pakistan faces significant challenges in translating law into effective action. Weak enforcement remains a pervasive issue, often compounded by limited institutional capacity, overlapping jurisdictional responsibilities, and pressures from population growth, urbanization, and industrial expansion (Hameed et al., 2025; Asghar et al., 2024). Industries frequently fail to comply with regulations due to insufficient penalties, lack of monitoring, and political or economic pressures. Even judicial activism, which has stepped in to uphold environmental rights, cannot fully compensate for systemic deficiencies in policy coordination and regulatory oversight (Munir, 2025; Yousaf et al., 2025). Environmental degradation continues to pose serious risks to public health, livelihoods, and national development, especially in vulnerable regions prone to climate-induced disasters like floods, droughts, and glacier melting (Waheed et al., 2025). Moreover, projects such as the China–Pakistan Economic Corridor (CPEC) illustrate gaps in policy coherence, where environmental safeguards are often overlooked, emphasizing the need for cross-sectoral coordination and integrated planning (Waheed et al., 2025).

Malaysia offers a contrasting perspective, illustrating how legal clarity, strong enforcement, and public engagement can enhance environmental governance. The Environmental Quality Act 1974 (EQA), supported by the Department of Environment, provides clear mandates for pollution control, hazardous waste management, and environmental impact assessments. Recent amendments have introduced stricter penalties, including mandatory imprisonment and daily fines for persistent violations, demonstrating a commitment to ensuring compliance and accountability (Azhari et al., 2025; Abd Rani et al., 2025). Beyond legislative instruments, Malaysia integrates environmental considerations across sectors. For example, green construction practices, renewable energy adoption, wastewater reclamation, and extended producer responsibility for plastics reflect a proactive approach to sustainability (Primus et al., 2025; Abu Bakar et al., 2025; Razaai et al., 2025). Public awareness and active participation further reinforce these measures, as studies indicate that a large portion of the Malaysian population is engaged with climate-friendly behaviors and supports policy initiatives addressing environmental challenges (Azhari et al., 2025).

The comparative analysis highlights several lessons for Pakistan. Legal frameworks alone are insufficient without robust institutional mechanisms, enforcement capacity, and stakeholder engagement. While Malaysia benefits from effective inter-agency coordination and a clear delineation of roles, Pakistan suffers from fragmented administration and overlapping responsibilities that weaken policy implementation. Additionally, public awareness campaigns, media narratives, and civil society engagement in Malaysia demonstrate how societal involvement can complement legal measures to enhance compliance and encourage sustainable practices (Sadiq et al., 2025; Nasir et al., 2025). In Pakistan, while media and public discourse play a role in raising awareness, economic priorities, limited outreach, and governance gaps reduce their effectiveness in driving tangible environmental action.

Moreover, both countries demonstrate that integrating environmental policies with broader developmental and economic strategies is critical. In Pakistan, the linkage between energy, agriculture, industry, and infrastructure projects with climate and environmental objectives remains weak, limiting the effectiveness of legal interventions (Waheed et al., 2025). Malaysia, in contrast, exhibits a more coherent approach, embedding environmental considerations in sectoral policies and aligning them with national sustainability goals, such as the Water Sector Transformation 2040 roadmap and green infrastructure initiatives (Abd Rani et al., 2025). This coherence underscores the



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importance of not only having laws on paper but ensuring they are operationalized through clear policy direction, institutional coordination, and accountability mechanisms. In summary, Pakistan's and Malaysia's experiences reveal that successful environmental governance is multifaceted, requiring a balance of strong legislation, capable institutions, enforceable penalties, public participation, and policy coherence. Pakistan's framework is robust in principle but constrained by implementation challenges, while Malaysia exemplifies a more integrated and effective model. For Pakistan to strengthen its environmental governance, it must enhance institutional capacity, enforce regulations consistently, foster public engagement, and integrate environmental objectives into broader development planning. Lessons from Malaysia suggest that such holistic approaches can bridge the gap between legislation and practice, fostering a more sustainable and climate-resilient future.

### Conclusion

This study underscores that a strong legal framework alone is insufficient to ensure environmental sustainability. Pakistan and Malaysia exemplify contrasting experiences, with Malaysia achieving relatively higher compliance and policy effectiveness due to stronger enforcement, institutional capacity, and proactive integration of sustainability initiatives. Pakistan, despite having comprehensive environmental laws and constitutional recognition of environmental rights, faces persistent challenges in implementation, compliance, and public engagement. Enhancing institutional capacity, integrating climate and environmental considerations into sectoral policies, strengthening enforcement mechanisms, and leveraging media and public awareness are critical for improving environmental governance in Pakistan. The findings suggest that adopting a holistic approach that combines legislation, institutional support, stakeholder engagement, and public participation can significantly advance sustainable development and climate resilience in South Asian contexts. These insights provide valuable guidance for policymakers, environmental authorities, and researchers seeking to bridge the gap between legal frameworks and practical outcomes in environmental protection.

### Recommendations

To make environmental protection more effective in Pakistan, several steps can be taken. **First**, enforcement of environmental laws needs to be stronger. Penalties for violations should be meaningful, including fines or other measures that encourage industries and individuals to follow the rules. Persistent non-compliance should have clear consequences to create a culture of accountability.

**Second**, the institutions responsible for environmental protection should be better equipped. Agencies need more trained staff, technical resources, and support to monitor compliance, conduct environmental assessments, and promote sustainable practices. Establishing specialized environmental courts could also help resolve cases more efficiently and ensure that justice is delivered without unnecessary delays.

**Third**, policies across different sectors need to work together. Environmental goals should not be isolated; they must be integrated into energy, agriculture, industry, and infrastructure planning. Setting up coordination bodies across sectors can ensure that development projects consider sustainability from the start, avoiding conflicts and gaps that weaken environmental protection.

**Fourth**, people need to be more engaged. Public awareness campaigns, education programs, and community initiatives can encourage eco-friendly behavior and make citizens active participants in protecting the environment. Involving communities in



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decision-making helps ensure that policies are not just top-down but also responsive to local needs.

**Fifth**, climate resilience should be a central focus. Laws and policies should promote practices like ecosystem conservation, sustainable water and waste management, and planning for climate risks. Incorporating adaptation measures into legal frameworks will make Pakistan better prepared to face floods, droughts, and other climate challenges.

Finally, promoting green technologies and sustainable economic practices is essential. Supporting renewable energy, eco-friendly construction, green finance, and innovation can reduce environmental harm while also creating opportunities for growth. Incentives such as subsidies or tax breaks can encourage industries and communities to adopt cleaner, more sustainable solutions.

Overall, these steps stronger enforcement, better-equipped institutions, coordinated policies, public engagement, climate adaptation, and green innovation can help Pakistan move toward a more sustainable and resilient future. By taking a holistic approach, the country can protect its natural resources, support economic development, and ensure a healthier environment for current and future generations.

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