



# PAKISTAN'S ENVIRONMENTAL PATHWAYS: INSIGHTS AND SOLUTIONS FROM PIDE'S RESEARCH

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Pakistan is facing an environmental emergency, with severe challenges that demand immediate and comprehensive action. The nation is struggling with numerous environmental issues, including air pollution, deforestation, waste management, water scarcity, and water quality. Among the most alarming concerns is the urban smog, which has reached critical levels. Five of Pakistan's major cities now rank among the top 20 globally for poor air quality, posing serious health risks. This is why Pakistan's environmental performance is not good on international indices. According to the 2024 Environmental Performance Index, Pakistan is ranked 179 out of 180 countries.<sup>1</sup>

Key contributors to this environmental deterioration include emissions-intensive energy production, rapid and unplanned urbanization, high consumption of low-quality fuel, and the large

number of two-stroke vehicles, which contribute to smog and the significant reduction in tree cover, particularly in urban areas. Pakistan's forest area (currently around 4.9 percent) continues to shrink, further exacerbating the problem. Moreover, our behaviors are not environment friendly due to the absence of strict regulation, where regulation exists there it is compromised. Despite the country's contribution to global emissions remaining below 1 percent, both its overall and per capita emissions have been on a steady rise since 1998. This, coupled with increasing temperatures and worsening climate conditions, puts Pakistan at the forefront of climate-related risks, particularly for its most vulnerable communities.

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<sup>1</sup><https://epiyale.edu/>

The mounting environmental threats highlight the need for a coordinated policy response to mitigate the damage and build resilience against future impacts. Immediate action is required to address the root causes, including inefficient resource management and governance challenges, which are intensifying the country's environmental vulnerabilities. Pakistan must focus on reducing emissions, halting deforestation, and improving air quality through sustainable urban planning and reforms, reducing no. of fuel run vehicles, transitioning towards clean energy.

At the forefront of this advocacy is the Pakistan Institute of Development Economics (PIDE), which has been pushing for sustainable environmental policies. Through a series of webinars, reports, knowledge briefs, articles, and policy briefs, PIDE has consistently provided practical solutions to tackle issues such as air pollution, especially smog, climate change, and deforestation. Over the years, PIDE has built a comprehensive narrative on the country's environmental challenges, offering expert-driven insights into how Pakistan can move towards a more sustainable future.

PIDE stresses the importance of comprehensive policy reforms, regional cooperation, and the adoption of sustainable practices. The country is particularly vulnerable to climate change-related risks such as glacial melt and rising temperatures, making it crucial for policymakers to act now.

In addition to addressing governance inefficiencies, Pakistan must work towards regional cooperation on environmental issues, particularly in dealing with transboundary pollution. Sustainable practices, resource conservation, and long-term planning are essential to prevent further environmental degradation and to protect future generations from the looming threats of climate change.

The key recommendations from PIDE's environmental advocacy focus on:

Plummeting Smog, particularly in big urban centers, should be the top priority. While policy responses have been introduced, such as transitioning to cleaner fuel and promoting electric vehicles, broader systemic changes are needed. Farmers are not the primary contributors to smog, but emissions from crop residue burning can be greatly reduced with a relatively small reallocation of financial resources, especially compared to

large-scale infrastructure projects like building flyovers. Redirecting funds to provide or facilitate technological solutions for farmers could have a significant impact. Additionally, addressing this issue requires regional cooperation, particularly with neighboring countries like India, to effectively manage transboundary pollution.<sup>2,3,4 &5</sup>

PIDE calls for enhanced public transport infrastructure and policies, such as higher car parking fees, to encourage a shift from private cars to public transport, which can lead to lower emissions and reduced air pollution in urban areas<sup>6</sup>.

A transition to Electronic Voting Systems is strongly advocated to reduce both economic and environmental costs, citing the potential for reduced deforestation alongside more streamlined election processes.<sup>7&8</sup>

Climate change, inefficient agricultural practices, and poor water governance drive Pakistan's water scarcity crisis. It calls for reforms such as improving water governance, economic water pricing<sup>9</sup>, and the application of efficient irrigation technologies at a larger scale, and infrastructure investment to ensure long-term water security.<sup>10</sup>

A green finance ecosystem aligned with sustainable development goals is also stressed. The intersection of Islamic finance with green finance, proposing instruments like Green Sukuk to fund sustainable development initiatives. This approach aligns environmental responsibility with Islamic principles.<sup>11</sup>

2<https://pide.org.pk/research/smog-the-fifth-season-in-pakistan/>

3<https://pide.org.pk/research/farmers-not-the-principal-culprits/>

4<https://pide.org.pk/research/farmers-are-not-the-main-culprits-of-smog/>

5<https://pide.org.pk/research/threats-across-the-borders-tackling-transboundary-environmental-injustice/>

6<https://pide.org.pk/research/a-smart-shift-from-private-cars-to-public-transport-can-help-to-reduce-smog-air-pollution-in-pakistan-2/>

7<https://pide.org.pk/research/the-economic-and-environmental-cost-of-election-2024/>

8<https://pide.org.pk/research/polls-the-environment/>

9<https://pide.org.pk/research/the-cost-of-government-interference-in-agricultural-markets/>

10<https://pide.org.pk/research/water-crisis-in-pakistan-manifestation-causes-and-the-way-forward/>

11<https://pide.org.pk/research/green-finance-an-islamic-way-to-rescue-the-nature/>

A comprehensive approach to e-waste management, integrating policy reforms, public education, and international collaboration, is necessary to mitigate the harmful effects of e-waste on both human health and the environment in Pakistan.<sup>12</sup>

Tourism in Gilgit-Baltistan (GB) contributes to the economy but has led to environmental degradation and socio-cultural disruptions. Promoting ecotourism, better regulations, and more community involvement to mitigate the negative impacts of tourism is advocated.<sup>13</sup>

Extreme climate vulnerability is also exposed in Pakistan due to recurring and devastating floods, causing massive economic and social losses. For disaster management, hard infrastructural solutions are both costly and time-consuming, so climate risk insurance offers an immediate and scalable solution. Despite rising demand for climate risk insurance, weak supply, low awareness, affordability issues, and institutional gaps hinder the progress, requiring government-backed subsidies, stronger regulation, and public-private partnership.<sup>14</sup>

GB, with more than 7000 glaciers is key source of water for Pakistan but these glaciers are rapidly melting due to climate change which consequently intensify floods, landslides, and GLOFs. Traditional post-disaster aid is insufficient. Disaster insurance supported by public private partnerships and international climate finance, offers a sustainable path to financial resilience. Demand exist in GB too, but supply side is almost non-existent, require urgent attention.<sup>15</sup>

Though GB disaster management authority exist and provide urgent reponse in case of disasters but due to limited resources both technical and financial, outdated systems and bureaucratic delays undermine the disaster response. Urgent institutional reforms, modern equipment, trained technical staff, better and advanced early warning system and participatory risk governance are essential for climate resilience.<sup>16</sup>

Wealthy nations must finance low cost mitigation in low middle income countries through carbon markets and technology transfer. Cost effective projects in forests, energy, and industry can deliver global climate gains with local development benefits.<sup>17</sup> Pakistan can harness carbon credit markets by expanding renewable energy especially solar power. With vast solar potential and growing net metering, current avoided emissions could generate USD 21 to 43 million annually.

Therefore, by strengthening verification systems, grid integration and policy frameworks can turn clean energy into both solution for climate change and a sustainable revenue stream.<sup>18</sup>

The integration of indigenous knowledge with enhanced public engagement is emphasized in environmental solutions, urging policy reforms to ensure sustainable development in Pakistan. Ultimately, the future of Pakistan's environment will depend on a coordinated effort that involves government institutions, the private sector, and civil society working together to create a resilient and sustainable nation.

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12<https://pide.org.pk/research/analyzing-the-effects-of-e-waste-on-human-health-and-environment-a-study-of-pakistan/>  
 13<https://pide.org.pk/research/the-impact-of-tourism-on-the-environment-socio-culture-and-local-communities-of-gilgit-baltistan-an-pakistan/>  
 14<https://pide.org.pk/research/climate-risk-insurance-the-missing-links/>  
 15<https://pide.org.pk/research/financing-climate-resilience-in-gilgit-baltistan/>  
 16<https://pide.org.pk/research/reforming-gbs-disaster-management-for-a-safer-tomorrow/>  
 17<https://pide.org.pk/research/global-bargains-for-reducing-carbon-emissions/>  
 18<https://pide.org.pk/research/unlocking-climate-finance-potential-carbon-credits-from-renewable-energy/>