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Environmental Injustice and Public Health in Pakistan: Structural Inequality, Governance Failures, and Community Vulnerability

[*1]**Mujahid Ali -Email- mujahidtabassum173@gmail.com**
[2]**Nosheen Abbas -Email-nosheenabbas078@gmail.com**
[3]**Farman Ali -Email- farmankhosa6@gmail.com**
[4]**Awais Akmal -Email-awaisakmal80@gmail.com**
[*1]BS History, Department of History and Pakistan Studies, University of Sargodha.
[2]BS History, Department of History and Pakistan Studies, University of Sargodha.
[3]BS International relations, Department of International relations, University of Sargodha.
[4]MPhil Scholar, Department of Political Science, University of Sargodha

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Corresponding Authors*:
Mujahid Ali

Abstract

This study explores environmental injustice in Pakistan, by examining how structural inequalities and governance flaws disproportionately expose marginalized and low-income groups to environmental risks. It highlights the immediate and long-term public health impacts of major issues such as industrial pollution, contaminated drinking water, poor waste management, and urban air pollution. The study finds that inadequate regulatory enforcement, uneven development, and political marginalization result in marginalized communities experiencing higher incidences of respiratory diseases, waterborne diseases, and psychological distress. The study uses government data, policy papers, and a few selected case studies to highlight the structural framework of environmental inequality while placing Pakistan within the broader framework of global environmental justice. To reduce health inequalities in Pakistan and advance sustainable development, it argues that addressing environmental injustice requires coordinated policy reforms, increased institutional accountability, and community-based environmental governance.

Keywords: Environmental Injustice, Public Health Inequality, Environmental Governance, Structural Inequality, Marginalized Communities

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Introduction

Environmental deterioration is one of the primary worldwide issues of the 21st century. Despite its widespread impact, its distribution is uneven. Environmental hazards disproportionately affect marginalised communities around the world, characterised by factors such as race, ethnicity, socioeconomic status, or geographic location. Policies and actions that intentionally or unintentionally expose less privileged groups to pollution, hazardous waste, and unfavourable environmental conditions are known as environmental injustice. Environmental injustice is still a little-studied but highly relevant issue in Pakistan, especially when it comes to its adverse impacts on the public health of historically marginalised populations.

According to the Global Climate Risk Index, Pakistan, despite being a developing country, is among the ten countries most vulnerable to climate change, with a historically modest contribution to global greenhouse gas emissions.[1] However, its population is not equally at risk. Environmental neglect disproportionately affects populations in drought-prone areas of Sindh and Balochistan, as well as slums in Lahore and informal settlements near industrial zones in Karachi.[2]

These groups, who often lack financial resources and political representation, are impacted by degraded land, polluted water, poor air quality, and proximity to toxic waste dumps. These environmental factors have led to serious health consequences, such as increased incidence of gastrointestinal diseases, skin problems, respiratory infections, and even delayed child development.[3]

Pakistan's environmental injustice stems from the intersection of long-standing socio-political disparities, unbridled industrialisation, poor environmental management, and historical neglect. As cities and businesses have grown, urban planning has largely overlooked equitable access to environmental resources. It is no coincidence that low-income or ethnic minority neighbourhoods are often zoned in industrial belts or environmentally degraded areas. In Karachi, for instance, the placement of Pashtun and Bengali communities in Korangi and Landhi areas exposes them to some of the city's worst industrial pollution levels.[4]

These groups are most affected by diseases caused by prolonged exposure to air pollution and chemical waste because they have limited access to healthcare and legal protection. Furthermore, the systemic nature of environmental discrimination in Pakistan is further obscured by the lack of environmental data disaggregated by gender, class, or ethnicity. According to a report by the Sustainable Development Policy Institute (SDPI), representatives of the communities most affected by environmental degradation in Pakistan are rarely included in environmental decision-making.[5]

This exclusionary approach to environmental injustice is a silent disaster, fuelling a vicious cycle of systemic neglect and underreporting. The fact that environmental injustice is

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[1] Germanwatch, *Global Climate Risk Index 2021: Who Suffers Most from Extreme Weather Events?* (Bonn: Germanwatch e.V., 2021), p. 8

[2] Mustafa Talpur, "Environmental Racism and Injustice in South Asia: A View from Pakistan," *Oxfam International*, April 14, 2021.

[3] Nida Kirmani and Aun Abbas Buppi, "Pollution and Public Health in Pakistan's Urban Slums," *South Asia Journal*, no. 24 (2019), p. 34.

[4] Arif Hasan, *Understanding Karachi: Planning and Reform for the Future* (Karachi: City Press, 2001), p.56.

[5] Sustainable Development Policy Institute (SDPI), *Environmental Governance in Pakistan: Policy, Institutions and Implementation*, Policy Paper No. 47 (Islamabad: SDPI, 2017), 12.

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embedded in power structures, where those most affected have the least influence over decisions that directly affect their survival and well-being, distinguishes it from general environmental mismanagement. In Pakistan, peri-urban areas and urban slums are where environmental injustice and public health are most pronounced. In Lahore's Bakar Mandi and Badami Bagh, waste disposal and untreated sewage systems are dangerously located near residential areas, leading to typhoid, hepatitis A, E, and typhoid fever.

The already socially marginalised Hindu community in rural Tharparkar, where coal mining projects have sprung up as part of the China-Pakistan Economic Corridor (CPEC), is increasingly vulnerable to air pollution, water pollution, and land degradation, and child mortality rates are rising alarmingly.[6]

The example of systemic environmental injustice is often used to fund infrastructure and industrial expansion in these communities without adequate mitigation of environmental impacts or consideration of health risks. Despite mounting evidence to the contrary, the topic of environmental injustice remains unaddressed, mainly in Pakistan's mainstream environmental discourse. Environmental justice is not explicitly addressed through legal frameworks, such as the Pakistan Environmental Protection Act (1997), and political and commercial interests often undermine implementation mechanisms.[7]

Literature Review

The concept of environmental injustice was first introduced in the United States in the late 20th century to explain why African Americans and other minority populations are disproportionately exposed to environmental hazards. Robert D. Ballard, the father of environmental justice, maintained that hazardous waste sites in the United States are primarily determined based on race, often in or near communities of colour.[8] Particularly in the Global South, where poverty and political marginalisation exacerbate environmental disparities, the paradigm of environmental justice has evolved over the decades to include concerns of class, gender, and ethnicity in addition to race.[9]

However, the phrase "environmental injustice" is still not used in Pakistani academic or policy discourse. Few studies have examined the social distribution of environmental degradation in the country, despite many others focusing on the issue. Mustafa Talpur's introduction of the concept of environmental racism in the South Asian context is one of the few contributions to the field. He argues that, particularly in metropolitan areas, policies disproportionately affect low-income people and ethnic minorities, including lower-caste labour groups, religious minorities, and Afghan refugees.[10]

Although there is a lack of empirical studies on environmental injustice in Pakistan, Talpur's work offers an important starting point. The Sustainable Development Policy Institute (SDPI) has conducted several important studies on environmental governance in Pakistan. SDPI highlights the lack of participation in environmental decision-making in its

[6] Human Rights Commission of Pakistan (HRCP), *State of Human Rights in 2020* (Lahore: HRCP, 2021), 75.
[7] Pakistan Environmental Protection Act, 1997, Section 6(b).
[8] Robert D. Bullard, *Dumping in Dixie: Race, Class, and Environmental Quality* (Boulder, CO: Westview Press, 1990), p. 15.
[9] David Naguib Pellow and Robert J. Brulle, *Power, Justice, and the Environment: A Critical Appraisal of the Environmental Justice Movement* (Cambridge, MA: MIT Press, 2005), p. 21–22.
[10] Mustafa Talpur, "Environmental Racism and Injustice in South Asia: A View from Pakistan," *Oxfam International*, April 14, 2021.

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2017 policy paper. Despite being the most affected by environmental degradation, local communities, especially those lacking political or economic power, rarely participate in environmental impact assessments (EIAs).[11]

Infrastructure development initiatives that expose already vulnerable populations to long-term environmental health concerns are often the result of this lack of participatory governance. According to studies conducted by the Pakistan Medical Association and independent health researchers, poor environmental quality is strongly associated with adverse health outcomes. Urban areas like Karachi, Lahore, and Faisalabad have shown increasing rates of respiratory illnesses, gastrointestinal infections, and skin disorders in low-income neighbourhoods located near industrial or waste disposal zones.[12] According to a 2019 World Bank study on Pakistan's environmental health, the annual costs of environmental degradation in the country, primarily in the form of public health burdens, amount to at least 6 percent of its GDP.[13]

There is a significant gap in the literature, however, as these studies fail to link these outcomes to environmental injustice or institutional discrimination. The literature on environmental justice worldwide highlights that environmental degradation is as much a political issue as a scientific or technical one. According to academics such as David Schlosberg, environmental justice has three fundamental components: recognisable justice (which respects the identities and interests of groups), procedural justice (which gives voice to decision-making), and distributive justice (which holds consequences to account).[14]

In Pakistan, where entire communities such as the Hazara communities in Quetta, the Hindu minority in Thar, or Christian sanitation workers are often denied a voice in the framework of basic identity and environmental governance, these characteristics are particularly pertinent. Environmental injustice has been noted in several specific studies conducted in Pakistan. For example, Arif Hassan's urban studies of Karachi demonstrate how discriminatory urban planning and land grabbing by politically connected developers have compelled informal communities to relocate to environmentally sensitive areas, such as landfills and riverbanks.[15]

According to reports from interior Sindh and Balochistan, minority populations living near coal and mining projects in rural areas are neglected. As a result of environmental legislation and a lack of corporate accountability, these areas have seen contaminated water supplies, reduced agricultural production, and severe public health impacts.[16] However, rather than being linked to systemic patterns of environmental injustice, the majority of these findings are treated as discrete issues. Pakistan's legal system offers little protection against discrimination based on environmental factors. The Pakistan Environmental Protection Act (1997) mandates that environmental impact

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[11] Sustainable Development Policy Institute (SDPI), *Environmental Governance in Pakistan: Policy, Institutions and Implementation*, Policy Paper No. 47 (Islamabad: SDPI, 2017), p. 9–14.

[12] Pakistan Medical Association (PMA), *Health Impacts of Environmental Pollution in Urban Pakistan*, Policy Brief (Karachi: PMA, 2020), p. 4.

[13] The World Bank, *Pakistan: Country Environmental Analysis*, Report No. AUS0000153 (Washington, DC: The World Bank, 2019), p. 28.

[14] David Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature* (Oxford: Oxford University Press, 2007), p. 10–12.

[15] Arif Hasan, *Understanding Karachi: Planning and Reform for the Future* (Karachi: City Press, 2001), p. 61–66.

[16] Zofeen T. Ebrahim, "Thar's Coal Fields: A Blessing or a Curse?" *The Third Pole*, April 27, 2018.

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assessments (EIAs) be prepared for development projects; however, this requirement is not consistently enforced and is often politicised.[17]

Furthermore, it is challenging to identify affected communities or detect patterns of discrimination because current legislation does not require the disaggregation of environmental data along socio-economic or ethnic lines, as the Human Rights Commission of Pakistan (HRCP) has emphasised.[18] There is also a distinct lack of interconnected research examining the relationship between environmental health risks and gender, caste, and religion in Pakistan. Vandana Shiva and other international feminist environmentalists have long maintained that women are disproportionately affected by environmental degradation, especially in poor urban and rural areas.[19]

Particularly in postcolonial regimes with weak environmental enforcement, recent research on environmental justice in South Asia has focused more on the systemic patterns of environmental injustice that are common in the region. The role of elite-driven environmentalism in urban areas has been criticised by academics such as Amita Baviskar and Danish Mustafa, who argue that "green" initiatives often mask the displacement and marginalisation of low-income groups.[20] These criticisms are particularly pertinent to Pakistan, where infrastructure and urban beautification projects, such as the Bahria Town schemes and the Lahore Orange Line, regularly displace working-class residents under the pretext of development.[21]

Infrastructure planning and environmental injustice are closely linked, as displaced residents often relocate to remote areas that are more susceptible to flooding, industrial pollution, or inadequate sanitation. Furthermore, climate change-induced displacement adds a new dimension to environmental injustice in Pakistan. The Internal Displacement Monitoring Centre (IDMC) reports that, floods, droughts, and other extreme weather events cause tens of thousands of internal displacements in Pakistan annually.[22]

Tribal populations, small farmers, and landless labourers are among the socio-economically disadvantaged groups that make up the majority of those displaced. In addition to losing their homes and means of living, these groups are regularly relocated to locations with inadequate access to waste disposal, clean water, and medical care, which increases their health risks.[23] However, despite its profound importance for social justice and public health, environmental displacement is rarely examined through the prism of environmental justice in Pakistani literature.

The link between environmental exposures and non-communicable diseases (NCDs) in South Asia is increasingly being recognised in the public health literature. According to a 2021 study published in The Lancet Regional Health South-East Asia, the burden of

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[17] Pakistan Environmental Protection Act, 1997, Sections 11–14.

[18] Human Rights Commission of Pakistan (HRCP), *State of Human Rights in 2020* (Lahore: HRCP, 2021), p. 74–76.

[19] Vandana Shiva, *Staying Alive: Women, Ecology and Development* (London: Zed Books, 1989), 104–107.

[20] Amita Baviskar, *In the Belly of the River: Tribal Conflicts over Development in the Narmada Valley* (New Delhi: Oxford University Press, 2005), p. 93–94.

[21] Urban Resource Centre (URC), *Lahore Metro and Urban Displacement*, Policy Brief (Lahore: URC, 2017), p. 2–3.

[22] Internal Displacement Monitoring Centre (IDMC), *Global Report on Internal Displacement 2023* (Geneva: IDMC, 2023), p. 59.

[23] Sarah Qureshi, "The Silent Displacement: Climate-Induced Migration in Sindh," *DAWN*, February 3, 2023

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pulmonary and cardiovascular diseases in the region is primarily attributed to environmental factors, notably air pollution and unsafe drinking water.[24]

The analysis highlights a significant lack of community-level environmental health data collection, particularly in informal settlements, despite Pakistan's inclusion in the dataset. The invisibility of excluded people in public health planning, a fundamental problem of environmental injustice, is reinforced by this data gap, which reflects institutional neglect. International institutions have also criticised the absence of equitable protections in Pakistan's environmental governance. According to a 2022 review by the United Nations Environment Programme (UNEP), Pakistan's environmental policies are "technocratic," emphasising exclusion and protection over socio-economic inequalities.[25] Although slum areas and minority-majority areas are among the most environmentally degraded, research has highlighted that projects under the Clean Green Pakistan initiative often avoid them.[26]

The universal right to a healthy environment is threatened by this selective approach to the provision of environmental services, which is influenced by factors such as socioeconomic status, political influence, or ethnicity. Another emerging theme in South Asian environmental justice research is the relationship between socio-political injustice and water scarcity. Faisal Khan, an anthropologist, argues that water distribution in Pakistan is a technical and political issue influenced by influential Punjabi and Sindhi figures who manage urban distribution and irrigation systems.[27]

According to their research, tankers frequently deliver contaminated drinking water at high prices, and populations in southern Punjab and interior Sindh are often deliberately neglected. Women from these communities, who are responsible for collecting water, are disproportionately affected, putting them at risk of social tension, harassment, and health problems. There is a severe lack of research on this gendered aspect of environmental injustice in Pakistan's environmental health academia.

In India, caste and religious identity have been shown to influence environmental sensitivity. In Pakistan, this is particularly true for Hindus from Scheduled Castes and Christian sanitation workers. According to a cross-national study conducted by the International Dalit Solidarity Network, lower caste groups in South Asia lack protective legislative structures, disproportionately work in hazardous jobs, and live near toxic waste sites.[28]

Religious minorities in Pakistan, where caste-based discrimination is practised but under-recognised, often share environmental constraints and overlap with caste-based groups. They are particularly vulnerable to long-term health problems associated with environmental exposure due to systemic layers of oppression. Another overlooked topic is the media's influence on Pakistani discourses on environmental justice.

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[24] The Lancet Regional Health – Southeast Asia, "Environmental Risks and Non-Communicable Diseases in South Asia," *Lancet RH–SEA* 1, no. 3 (2021): 201–210.

[25] United Nations Environment Program (UNEP), *Country Environmental Analysis Pakistan*, Report No. UNEP/C/2022/PK (Nairobi: UNEP, 2022), p. 13.

[26] Ibid., p. 17–18.

[27] Feisal Khan, "Water, Governance and Politics in Pakistan: A Study of Inequity in Southern Punjab," *Water International* 45, no. 4 (2020), p. 381–398.

[28] International Dalit Solidarity Network, *Caste and Environmental Justice in South Asia*, Briefing Note (Copenhagen: IDSN, 2020), p. 5.

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According to research on media framing by Mehdi Hassan and Urooj Jabeen, environmental issues are often depoliticised in national news coverage.[29] Without addressing the root causes, such as poor planning or community marginalisation, reports focus on temporary solutions or isolated incidents, such as floods in Balochistan or smog in Lahore. This media divide hinders the ability of vulnerable communities to advocate for structural change and limits public discourse on environmental injustice. Without visibility, national policy debates often fail to address the health issues of affected individuals fully.

Finally, comparative research from Bangladesh and Nepal suggests that civil society and grassroots mobilisation can play a critical role in advancing environmental justice. For example, community-led waste recycling initiatives in Dhaka have been successful in improving the living conditions of slum dwellers and advocating for municipal recognition.[30]

Theoretical Framework and Its Application

According to the theory of environmental justice, disadvantaged people bear a disproportionate share of the negative impacts of environmental degradation, and environmental benefits and responsibilities are not equitably distributed across civilizations. This perspective, rooted in concepts of equality and human rights, highlights how exposure to environmental risks is influenced by social characteristics such as class, race, political power, and geographic location. Distributive justice, which concerns the unequal distribution of environmental risks; procedural justice, which concerns unequal participation in environmental decision-making; and recognition justice, which focuses on the systematic neglect or misrepresentation of marginalized groups within environmental governance, are three key aspects of it. Taken together, these factors illustrate how structural injustices and institutional shortcomings, rather than environmental processes alone, often cause and perpetuate environmental harm.

When the theory of environmental justice is applied to the Pakistani context, it becomes clear that low-income and marginalized populations are disproportionately exposed to environmental hazards such as industrial pollution, contaminated drinking water, and poor waste management. Environmental hazards are concentrated in vulnerable areas due to weak regulatory enforcement, lack of political representation, and development plans that prioritize economic expansion over environmental protection. These populations are rarely recognized as stakeholders and often do not participate meaningfully in environmental decision-making processes, which contribute to health inequalities, such as the increasing incidence of respiratory and water-borne diseases. Thus, this theory offers a helpful framework for examining how socioeconomic injustices and governance deficiencies compound environmental and public health injustices in Pakistan.

Research Methodology

This study examines the impact of environmental injustice on public health in Pakistan using a qualitative, case-based research methodology. The primary strategy includes a critical review of secondary data from academic literature, journalistic investigations, government policy documents, and NGO reports. Existing research that emphasises environmental neglect and its negative health impacts on vulnerable people serves as a

[29] Mehdi Hasan and Urooj Jabeen, "The Politics of Environmental Reporting in Pakistan's English Press," *Journal of South Asian Media Studies* 6, no. 1 (2018), p. 22–35.

[30] Farzana Parveen, "Grassroots Environmentalism in Dhaka: Slum Women as Agents of Change," *Environment and Urbanization Asia* 10, no. 2 (2019), p. 234–247.

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reference for the selection of examples, which include Karachi's industrial slums, Tharparkar's displacement zones, and Lahore's informal settlements.

Data from national health surveys, environmental impact assessments, and policy reviews published by organisations such as the United Nations Environment Programme (UNEP), the Human Rights Commission of Pakistan (HRCP), and the Sustainable Development Policy Institute (SDPI) are all included in the study. The study employs a thematic content analysis framework to examine recurring themes of environmental inequality and public health outcomes across selected data sources. The study systematically reveals the systemic dynamics of environmental injustice by grouping content under broad themes such as institutional neglect, minority exclusion, displacement, and infrastructure bias.

Analysis and Discussion

This section examines environmental injustice in Pakistan with critical analysis and discussion emphasizing how low-income, marginalized racial and ethnic groups are disproportionately exposed to environmental hazards such as contaminated water, poor waste management, and pollution. Vulnerable groups are more likely to suffer from respiratory illnesses, waterborne infections, and mental health problems as a result of this injustice, which is rooted in structural injustices and weak environmental regulations.

Unfair Environmental Hazard Exposure in Marginalised Communities

The placement of marginalised groups in high-risk environmental zones is the most blatant example of environmental injustice in Pakistan. Many low-income communities in Karachi, including the neighbourhoods of Korangi, Landhi, and SITE, are located near uncontrolled industrial corridors and are home to ethnic minorities, Bengali refugees, and Afghan refugees.[31] These communities are often exposed to untreated industrial waste, airborne particulate matter, and unmonitored chemical dumping. As a result, there is a high prevalence of skin disorders, respiratory infections, and chronic lung diseases, especially among the young and elderly.[32] Compared with affluent neighbourhoods, these communities have a much higher incidence of chronic obstructive pulmonary disease (COPD), which has alarmed the Pakistan Medical Association.[33]

However, these communities are rarely prioritised in environmental mitigation measures such as air quality monitoring and the creation of green infrastructure, which shows an apparent institutional apathy. Similar trends can be observed in Lahore, where steel mills, brick kilns, and major traffic routes are situated near informal communities, such as Shahdara and Badami Bagh. Industrial activities can flourish near housing clusters because there are no zoning laws or enforcement systems in place. Since industrial waste enters underground aquifers, it contaminates the water and contributes to extreme air pollution.[34]

In 2020, the Punjab Health Department reported a rise in typhoid and hepatitis cases in these areas, often caused by inadequate water and sanitation.[35] The procedural aspect of

[31] Arif Hasan, *Understanding Karachi: Planning and Reform for the Future* (Karachi: City Press, 2001), 56.
[32] Pakistan Medical Association (PMA), *Health Impacts of Environmental Pollution in Urban Pakistan*, Policy Brief (Karachi: PMA, 2020), 4.
[33] Ibid., p. 6.
[34] Sustainable Development Policy Institute (SDPI), *Environmental Governance in Pakistan*, 12.
[35] Punjab Department of Health, *Annual Disease Surveillance Report 2020* (Lahore: Government of Punjab, 2021), p. 19–20.

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environmental injustice has been highlighted by the failure to include these groups in public consultations and environmental impact assessments (EIAs). Not only does urban growth result in unequal pollution, but it is also often enabled by a conscious choice to prioritise elite and economic interests over public health. Decades of uncontrolled industrial waste dumping into waterways in Pakistan's textile capital, Faisalabad, have led to high levels of chemical pollution in the surrounding low-income communities, particularly in the Ghulam Muhammad Abad and Jhang Road areas.

With no environmental monitoring or local lobbying channels, residents who report persistent skin irritation, eye infections, and gastrointestinal distress have few options. According to data from WaterAid Pakistan, more than 70 percent of households in these communities rely on unofficial water vendors, who often charge exorbitant prices for untreated water.[36] In Islamabad, for example, despite being adjacent to affluent neighbourhoods, informal settlements like France Colony are vulnerable to open sewer lines and garbage dumping by private housing developments. Through rallies and legal complaints, residents have tried to resist, but they are often met with bureaucratic laziness or police intimidation.[37]

Effects of Climate-Driven Displacement and Neglect on Public Health

Rural and peri-urban communities are also affected by environmental injustice, particularly in areas vulnerable to climate change. It is not limited to metropolitan industrial zones. Coal mining as part of the China-Pakistan Economic Corridor (CPEC) has forced hundreds of families from Tharparkar, a predominantly Hindu region of Sindh, to relocate without adequate environmental or health protections.[38]

According to the Third Poll, many of those displaced now live in barren, dust-filled displacement camps that lack access to electricity, clean water, or local medical facilities.[39] According to local hospitals, maternal mortality and child malnutrition have increased as a direct result of institutional neglect and environmental degradation. Similarly, smallholder farmers, mainly from the Saraiki-speaking community, are forced to migrate seasonally in southern Punjab, where drought and groundwater depletion have been exacerbated by over-extraction and climate change.[40] These climate refugees often move into peri-urban slums with inadequate sanitation facilities, which lead to the emergence of fresh outbreaks of cholera and diarrheal diseases. The government's response is still limited to temporary relief. There is no comprehensive plan to address the health and environmental risks faced by internally displaced people. The systematic marginalisation inherent in these displacements is further obscured by the absence of caste- or ethnicity-based data.[41]

Religious and Gender Aspects of Environmental Injustice

Gender and religious identity also fuel environmental injustice in Pakistan. Because they provide care and collect water, women, mainly from minority communities, bear the brunt of damaged ecosystems. Women from Scheduled Caste Hindu groups in rural Sindh often travel long distances to fetch water from dirty streams. Exposure has led to an increase in

[36] Urban Resource Centre (URC). *Environmental Injustice in Urban Pakistan: Case Studies from Rawalpindi and Islamabad*. Karachi: URC, 2022.
[37] World Health Organization. *Ambient (Outdoor) Air Pollution Database, 2022 Update*. Geneva: WHO, 2022.
[38] Zofeen T. Ebrahim, "Thar's Coal Fields: A Blessing or a Curse?" *The Third Pole*, April 27, 2018.
[39] Ibid.
[40] Feisal Khan, "Water, Governance and Politics in Pakistan," *Water International* 45, no. 4 (2020), p. 388.
[41] IDMC, *Global Report on Internal Displacement 2023*, 59.

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congenital disabilities, miscarriages, and urinary tract infections.[42] However, Pakistan's public health programming, which is male-centred and urban-focused, rarely acknowledges these health risks. Despite appeals from foreign organisations such as UNDP to address the issue, the government's Clean Green Pakistan project still ignores the intersection of gender and environmental degradation.[43]

Environmental neglect also disproportionately affects religious minorities. Christian sanitation workers, who make up a large part of Pakistan's municipal waste sector, are routinely given dangerous jobs without the necessary protective equipment or medical care. Many live in crowded colonies with open sewers or garbage dumps, where gastrointestinal diseases, skin diseases, and asthma are common. Despite their important role in maintaining urban cleanliness, these neighbourhoods are neglected in national environmental policy and municipal planning. A glaring example of environmental injustice, this institutional exclusion has an immediate impact on human dignity and public health.[44]

Institutional Invisibility and Policy Blindness

The lack of representation of affected groups in environmental data, laws, and policy frameworks is a major obstacle to combating environmental injustice in Pakistan. The Pakistan Environmental Protection Act (1997) does not contain any provisions for environmental justice or separate data collection.[45] When environmental impacts are assessed, local communities are rarely consulted unless they are challenged in court, a luxury that marginalised communities can hardly afford.

Furthermore, there is a dangerous disconnect between assessment and root cause, as provincial and federal ministries of health rarely link environmental factors to health outcomes in their health statistics. Pakistan has been frequently pressured by international bodies, including the World Health Organisation (WHO) and the United Nations Environment Programme (UNEP), to implement an equity-based environmental policy. However, the majority of programmes, such as the Clean Green Pakistan Index and the Billion Tree Tsunami, do not target the areas most affected by environmental degradation. Real health outcomes in slums or rural areas are not significantly affected by this top-down, optics-driven strategy. In the absence of structural change, Pakistan's environmental governance is supported rather than challenged by environmental injustice. Partially due to fragmented governance, environmental injustice is not visible in Pakistan's policy discourse.

Although there are provincial Environmental Protection Agencies (EPAs), they sometimes lack the independence, funding, and political backing necessary to look into infractions in sectors that are politically sensitive or controlled by the elite. Several EPA offices in Balochistan and Khyber Pakhtunkhwa operated without environmental laboratories or qualified inspectors, rendering regular data collection nearly impossible, according to a 2022 audit conducted by the Auditor General of Pakistan.[46] The absence of a

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[42] Farzana Parveen, "Grassroots Environmentalism in Dhaka: Slum Women as Agents of Change," *Environment and Urbanization Asia* 10, no. 2 (2019), p. 234–237.

[43] UNEP, *Country Environmental Analysis Pakistan*, p. 17.

[44] Human Rights Commission of Pakistan (HRCP), *State of Human Rights in 2020*, p. 75.

[45] Pakistan Environmental Protection Act, 1997, Section 6.

[46] Auditor General of Pakistan, *Annual Audit Report on the Public Sector Environmental Institutions 2022–23* (Islamabad: Government of Pakistan, 2023).

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connection between environmental exposure and morbidity data in the nation's health information systems is another significant drawback. In areas like Kasur, where tanneries discharge heavy metals into the Sutlej River, hospital admissions are categorised by illness (such as liver disease or dermatitis) without providing information on the environmental sources.[47]

Due to this gap, public health experts are less able to identify environmental hotspots or clusters. As a result, reactions continue to be dispersed, with discrete environmental mitigation measures often lacking matching health interventions, or vice versa. Such compartmentalised approaches hinder a comprehensive understanding of how structural inequality impacts ecological health concerns. Furthermore, marginalised populations are not adequately protected by the legal recourse system.

Even though public interest litigation has led to some notable environmental rulings in Pakistan, such as the 2015 Lahore smog case, low-income individuals often cannot afford these legal actions due to high costs, language barriers, and a lack of legal literacy. The lack of environmental ombudspersons and community paralegals further diminishes access to justice for those affected by long-term ecological neglect. On the other hand, politically connected housing societies or corporate developers often find ways to circumvent laws or conceal violations from public view. Through institutional cooperation or inaction, this regulatory imbalance perpetuates environmental injustice.[48]

New Civil Society Responses to Environmental Justice

Despite institutional reluctance, civil society in Pakistan has begun to draw attention to the environmental injustices faced by vulnerable people. By advocating for comprehensive zoning and sanitation reforms, grassroots groups such as the Aurat Foundation in Lahore and the Urban Resource Centre (URC) in Karachi have drawn links between poor urban planning, pollution, and community health.[49] As seen in the Lahore High Court's Suo motu action on smog, journalists and legal activists occasionally take claims of environmental injustice to court. These successes are rarely translated into national policy, however, and they remain isolated.

A notable trend is the growing involvement of affected communities in environmental discussions. For example, Christian sanitation workers' unions in Faisalabad have begun recording work-related illnesses and are pressuring municipal authorities to provide health insurance. Hindu women in Tharparkar have participated in community-led, NGO-supported water purification projects. While these efforts represent a movement from passive victimisation to active resistance, long-term reform will require institutional acceptance and legislative support.[50] Community-led environmental justice initiatives, supported by regional NGOs or academic research teams, are growing slowly but steadily. In Gilgit-Baltistan, student-led projects have begun to record the risks of river

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[47] Imran Ali, "Pollution in Kasur's Leather Industry: A Case Study of Environmental Governance Failure," *Pakistan Journal of Social Sciences* 37, no. 2 (2020), p. 198–215.

[48] Zia Ur Rehman, "Pakistan's Judiciary and the Environment: A Review of the Lahore Smog Case," *Dawn*, November 2021.

[49] Urban Resource Centre (URC), *Karachi's Informal Settlements and Environmental Risks*, Policy Note (Karachi: URC, 2019), p. 4.

[50] Aurat Foundation, *Health and Sanitation: The Plight of Women Sanitation Workers*, Report (Lahore: AF, 2020), p. 7.

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pollution and landslides that affect small mountain settlements, where hydropower development has raised environmental concerns among local groups.[51]

Third-party observers have produced environmental assessments of these communities' documented efforts, which have been shared with international funders and reported in national sources despite limited access to mainstream political platforms. Similarly, in urban areas, a growing number of youth-led digital platforms such as Karachi Urban Lab and Urban-CBE are mapping urban injustices through geospatial tools and participatory surveys. By highlighting indicators of poverty, health infrastructure, and generation, in addition to pollution data, these projects help reveal patterns of environmental neglect.[52]

Policy Recommendations

The study's analysis reveals a depressing reality: Pakistan's environmental degradation is not dispersed equally but is instead systematically concentrated in areas that are inhabited by the socially and economically downtrodden. The burden of air, water, and soil pollution disproportionately falls on communities residing in peri-urban slums, informal settlements, and areas near industrial corridors. Asthma, skin infections, gastrointestinal disorders, and respiratory tract disorders are among the chronic ailments that are more common in these places, which are frequently inhabited by ethnic and religious minorities. According to the data, economic segregation, historical marginalisation, and urban planning patterns have shaped this geographical concentration of environmental dangers rather than making it random. Particularly in places like Karachi, Lahore, and Faisalabad, these trends are exacerbated by a lack of basic infrastructure, including drainage systems, safe water access, and air quality regulation, as well as inadequate healthcare services.

The growing public health emergency caused by climate change-induced displacement is one of the key findings of this study. Communities in southern Punjab, Balochistan, and Sindh are being displaced to temporary or peripheral areas with no official status as a result of increasing forced displacement due to floods, droughts, and salinization of water. As a result, these internally displaced groups are still not included in emergency services, environmental planning, or health care provision. Because they are "invisible citizens," institutional neglect can continue unchallenged. Climate displacement in recently settled areas creates public health gaps, which are sometimes addressed as an informal phenomenon rather than comprehensive adaptation planning.

Malnutrition, the spread of vector-borne diseases, and contaminated water are the primary causes of increased mortality and morbidity among many of these displaced people. The institutional failure to disaggregate environmental and health data along sociodemographic lines further reinforces this inequality. The population most affected by ecological hazards is statistically invisible in Pakistan because public health reporting typically ignores factors including class, ethnicity, religion, gender, and geographic vulnerability.

Without this disaggregated data, policymakers cannot accurately assess exposure pathways, identify environmental health clusters, or develop targeted policies. As a result, broad, often citizen-centric techniques that do nothing to address underlying inequalities

[51] Shabina Hashmi, "Youth-Led Environmental Monitoring in Gilgit-Baltistan: The Case of Hunza River Watch," *Himal Southasian*, May 2022.

[52] Karachi Urban Lab (KUL), *Environmental Mapping and Urban Inequality in Karachi: Orangi and Lyari Case Studies* (Karachi: KUL, 2022).

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are prioritised for treatment. This lack of information undermines scholarly and civil society analyses, as well as limiting legal and political accountability systems.Gendered and religious manifestations of environmental injustice in Pakistan are another aspect of the problem. Due to their involvement in water collection, cooking, maintenance, and sanitation, women are particularly vulnerable to the effects of environmental degradation in rural and underserved urban settings. Women and girls are disproportionately affected by health problems such as chronic fatigue, delivery problems, urinary tract infections, and indoor air pollution from biomass stoves. The risks to their occupational health are ignored in mainstream medical and municipal discourse, despite the fact that religious minorities, particularly Christian sanitation workers are often exposed to hazardous waste and sewage gases without protective gear. The external dynamics that define environmental governance in Pakistan are exacerbated by these intersections of gender, class, caste, and religious identity.

Equally worrisome is the lack of political will and institutional capacity to confront these systemic problems. Environmental impact assessments (EIAs) are rarely conducted using participatory methods or language accessible to affected populations, and environmental regulations such as the Pakistan Environmental Protection Act do not include provisions on equity or social vulnerability. Budgetary resources for monitoring disadvantaged areas remain scarce, and provincial environmental protection agencies often lack the necessary technical staff and field inspection capabilities to fulfil their duties. Although there have been some successes in the legal arena due to public interest litigation, vulnerable groups still lack the finances, literacy, and institutional support necessary to pursue legal action against environmental injustice. This structural flaw gives polluters, especially those with political connections, the confidence to operate with impunity.

The study recommends a fundamental shift in environmental governance, based on equity and inclusiveness, in light of these findings. To allocate resources and implement targeted policy responses, first, environmental and public health data systems should be reorganised to include demographic and geographic disparities. Second, equity should be explicitly incorporated into legislative and administrative frameworks as a guiding concept for environmental planning and implementation. This includes requiring community involvement in EIAs, prioritising clean water and sanitation facilities in informal settlements, and creating occupational health protections for underrepresented workers. Third, protections for displaced communities, such as access to safe housing, healthcare, and environmental protection in new settlement areas, should be incorporated into climate adaptation plans. Finally, community-based and civil society organisations should be provided with funding and institutional space so that they can lead local environmental advocacy, monitoring, and policy feedback.

Pakistan's most marginalised citizens cannot be ignored on the path to sustainable development. Even the most ambitious national environmental policies will not result in equitable or lasting change if they do not address entrenched patterns of environmental injustice. The future of democratic governance in Pakistan depends on redefining environmental justice as a moral obligation, a human rights concern, and a public health imperative.

Conclusion

The study reveals a deeply entrenched system of environmental injustice in Pakistan, which disproportionately affects marginalized economic, ethnic, and religious groups.

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These injustices are not incidental but stem from historical exclusion, institutional neglect, and structural inequalities. Vulnerable communities—from the urban slums of Karachi to climate-displaced populations in Tharparkar and Balochistan—bear the brunt of their limited political and social power to demand change.

Systemic failures in environmental governance and urban planning force poor communities to live in close proximity to hazardous locations such as waste dumps, industrial zones, and polluted water bodies. The lack of health infrastructure in these areas further increases their vulnerability to disease, with minimal access to treatment or preventive care. Natural disasters such as droughts and floods often exacerbate these vulnerabilities, especially when government responses are weak or biased. Climate change acts as a multiplier, exacerbating these risks and pushing already vulnerable groups such as women, religious minorities, and internally displaced persons (IDPs) into even more precarious situations. Gender impacts, such as difficulties in accessing clean water and sanitation, are often ignored in policymaking, while sanitation workers face unsafe working conditions.

The study also identifies institutional erasure and policy blindness as key contributors to environmental injustice in Pakistan. Environmental laws fail to address equity concerns, and data collection often excludes important markers of identity such as caste, ethnicity, class, and religion. This deliberate omission obscures health crises in marginalized areas, perpetuating systemic inequalities.

Despite these challenges, emerging grassroots movements, youth-led advocacy, and community-based initiatives offer hope. Despite the lack of support from the official state, these efforts are reshaping the discourse around environmental justice. However, without integration into formal policies, reforms will remain superficial and elitist. This study calls for a fundamental rethinking of environmental governance – one that places public health, justice, and inclusion at the center – to address the lived realities of Pakistan's most vulnerable populations and build a sustainable and equitable future.