

Political Approaches to Climate Change and Water Security in Pakistan: A Comparative Study of PPP, PML-N, and PTI



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Abstract: *This study looked at the political approaches of the three main parties of Pakistan, namely Pakistan People's Party (PPP), Pakistan Muslim League-Nawaz (PML-N), and Pakistan Tehreek-e-Insaf (PTI), towards climate change and water security. An equally important factor in this regard is the role of political leadership in developing and implementing sound environmental policies, given that Pakistan has become increasingly vulnerable to disasters caused by climate change and water scarcity. The Central question of the study is that How have the three major political parties PPP, PML-N, and PTI addressed climate change and water security through their policies and actions? To answer the question, qualitative comparative methodology is used by analyzing party manifestos, policy documents, and legislative measures. It is found that despite all three parties accepting the challenges faced by the environment, the policy frameworks prescribed by them possess wide variations, which include scope, clarity, and implementation. The PPP has stated legislative reforms and international commitments and PML-N worked on renewable energy projects and infrastructures while PTI was known for proactive measures such as the Billion Tree Tsunami. Nonetheless, inconsistency of governments, weak coordination among federal and provincial governments, and limited participation of the public still remain major obstacles. This study concludes that a sustainable climate governance and water governance in Pakistan can only come from bipartisan political will, strong institutions, and inclusive policymaking.*

Keywords: PPP, PML-N, PTI, Climate, Pakistan

Introduction

Pakistan, similar to other South Asian nations, possesses a diverse range of water resources, predominantly consisting of surface water bodies such as rivers, lakes, coastal basins, and various reservoirs, both large and small, as well as subsurface groundwater sources. The primary sources of water include precipitation, particularly rainfall, and the accumulation of frozen water, which contributes to the formation and sustenance of glaciers (Arman Oliazadeh, 2022). The country currently maintains 143

water storage reservoirs of varying sizes, among which Tarbela, Mangla, and Chashma are the most prominent, collectively offering a storage capacity of 18.92 million acre-feet (M. Tehsin, 2019). The ecological balance, economic development, and societal well-being of Pakistan are closely tied to the diversity and sustainability of its water resource (Wescoat, 2021).

Additionally, the World Economic Forum has identified water scarcity as the most critical long-term threat, warning of its potentially

devastating societal impacts (Jafri, 2022). Similarly, Pakistan's water system serves as the country's lifeline, supplying essential energy and sustaining agricultural productivity. Current water availability stands at less than 1,000 m³ per capita annually. By 2025, the national water demand is projected to reach approximately 274 million acre-feet (3379.73 cubic meters), while supply is expected to be only 191 million acre-feet (2359.94 cubic meters) (Meribole, 2020). Since its independence, Pakistan has faced a range of developmental challenges, but among the most pressing is water scarcity. According to the International Monetary Fund (IMF), Pakistan could face extreme water stress potentially becoming arid and barren by 2025 if urgent conservation measures are not undertaken (Muhammad Safian Bajwa, 2023). Historically, the country has grappled with issues ranging from dam construction disputes to deteriorating water infrastructure. These persistent problems have also reshaped the national security discourse. In recent years, Pakistan has suffered from acute water shortages, recurrent flooding, and declining water quality. Addressing this escalating water crisis is imperative for ensuring the country's long-term stability and development (Maqbool, 2022).

Over the past decade, Pakistan has experienced severe electricity shortages, resulting in prolonged load-shedding ranging from 8 to 12 hours daily in urban centers and up to 18 hours in rural areas (Valasai, 2017). Climate change has further exacerbated these challenges. Rising temperatures and shifting weather patterns, influenced by broader social and environmental changes, have intensified the energy crisis. Additionally, environmental degradation and global warming have led to the retreat of glaciers, including the Utrar Glacier, which once provided essential freshwater for local agriculture and domestic use. Communities that once depended on this resource now face similar water deprivation as both rural and urban populations (Aiyar, 2022).

Glacier melting, excessive rainfall, and rugged mountainous terrain have contributed to recurring floods, devastating agricultural lands

and homes across the country. These floods also lead to significant water wastage. Sindh province, located in southeastern Pakistan, is traversed by the Indus River the country's longest river, stretching approximately 3,180 kilometers. Originating near Lake Mansarovar in the Tibetan Plateau, the river flows through Ladakh in Jammu and Kashmir, enters Gilgit-Baltistan, and continues its course southward through Pakistan before emptying into the Arabian Sea near Karachi. The Indus River is Pakistan's primary source of irrigation, supporting its fertile agricultural zones. With an estimated annual flow of 207 cubic kilometers, it ranks as the 21st largest river globally in terms of water volume. The climate across the Indus Basin is diverse ranging from subtropical arid and semi-arid conditions in the Sindh and Punjab plains to temperate sub-humid and alpine climates in the northern highlands. Annual precipitation varies significantly, from 100 to 500 mm in the lowlands to over 2,000 mm (water equivalent) on mountainous slopes (Irfan, 2019).

Furthermore, Pakistan remains highly vulnerable to the adverse impacts of climate change, making it increasingly susceptible to erratic weather patterns that pose strategic and environmental challenges (M. S. Bacha, 2021). Rising temperatures have accelerated the melting of glaciers in the northern regions, while abnormal monsoon patterns such as those witnessed recently have led to devastating floods. These events have been among the most severe in the past three decades. Highlighting the scale of the disaster, United Nations Secretary-General António Guterres remarked that Pakistan is enduring "the unrelenting effects of epochal levels of rains and flooding" (Guterres, 2022). The scale of human and material losses is immense, placing Pakistan at risk of a worsening water crisis, food insecurity, and broader threats to human security. Responding to the recent crisis, Finance Minister Miftah Ismail stated that "Pakistan is dealing with the worst effects of climate change, which has caused over US\$30 billion in economic losses and displaced 33 million people (Tan, 2022).

Not surprisingly, political will is paramount for

the formulation and enforcement of effective environmental policies. Sadly, any policy that lacks the genuine commitment of political leaders is bound to remain either unimplemented or underfunded. Political will directly affects issue prioritization in a country such as Pakistan, where climate change poses severe threats. Water security, deforestation, and disaster preparedness either gain priority or remain footnotes when political endorsement is present or absent. Political will pushes environmental concerns into the realm of national development discussions, where these concerns are shaped by laws, money, and technical assistance. In addition, it affects ways through which governments respond to international climate commitments and solicit public support for sustainability initiatives. Ultimately, environmental governance becomes less a technical matter and more a question of the political actors' willingness to take bold action for the long term actions.

Party manifestos and the discourse on environmental governance

Political party manifestos have been used as primary sources to assess their level of commitment to addressing environmental challenges. The manifestos of three of Pakistan's most influential political parties were analyzed, with each document being systematically reviewed for content related to environmental concerns. Given the growing severity of environmental problems in the country, despite various containment efforts, it has become a national imperative to address these challenges with urgency. Unfortunately, environmental protection remains a low priority for many political parties, highlighting the need for a comprehensive assessment of their orientation and initiatives concerning environmental sustainability in Pakistan.

Natural resources and environmental health form the foundation of a country's economic stability and development, supporting sectors such as industry, tourism, infrastructure, agriculture, and scientific advancement. According to the Housing and Environmental Census ([HEC] Housing and Environment Census, 2002), agriculture remains the backbone

of Pakistan's economy, contributing 41% to the Gross Domestic Product, accounting for 86% of exports, and employing over 81% of the national workforce. Notably, a significant portion of Pakistani agriculture relies on subsistence farming, which is highly dependent on favorable environmental conditions. The adverse impacts of climate change such as water scarcity, reduced rainfall, and prolonged droughts have directly contributed to the economic downturn. Most rural communities and small-scale farmers depend on predictable environmental patterns, including timely rainfall, snowfall, and seasonal changes. Environmental conditions also critically affect other sectors, including tourism, manufacturing, and various service industries. For instance, extreme summer heat drives up household electricity consumption, reducing the energy available for industrial and manufacturing activities

The 1973 constitution and its subsequent amendments established the nationalization of natural resource management in Pakistan, thereby placing the authority for legislation and policymaking in this domain under the jurisdiction of the Parliament (1973). Given Pakistan's heavy reliance on agriculture, the sustainable availability of natural resources is vital to national stability. As the depletion of these resources has reached critical levels, their conservation has become an urgent priority. Ineffective management has led not only to environmental degradation but also to human rights violations and recurring conflicts among provinces and subnational regions over control and access to key resources.

One prominent example is the construction of water reservoirs, such as the Kalabagh Dam, which has become a deeply politicized issue. Debates surrounding it are often approached with bias its proponents label opponents as unpatriotic, while critics regard the project as an existential threat and accuse supporters of exploitation. Political parties have a crucial role to play in resolving such disputes through parliamentary debate and consensus-building. Their manifestos serve as vital tools for educating and mobilizing voters around these concerns.

The protection of communities vulnerable to environmental degradation depends on inter-party cooperation within parliament. Environmental rights such as equitable access to land, water, forests, and wildlife must be guaranteed as fundamental rights for all citizens. It is, therefore, essential to urge political parties to integrate the protection and promotion of these rights into their constitutions, manifestos, and strategic visions. Political parties that prioritize environmental issues and advocate for sustainable development are likely to be better prepared to address the complex challenges of governance when in power. Furthermore, growing public awareness suggests that environmental degradation will increasingly shape electoral behavior.

PPP and climate change policies

The PPP, founded in 1967 under the auspices of Zulfikar Ali Bhutto, that aimed to eradicate social evil, poverty, and inequalities from society. Down the line, the party shall present its manifesto and alter it to become the Pakistan People's Party Parliamentarians to include equality, employment, education, energy, and environment among the core objectives. Nevertheless, an analysis of its official documentation shows that even though the party expresses a commitment toward the environment and maintenance of the environment, not much weightage is given in comparison to other objectives. The PPP manifesto accepts that there are serious environmental problems, and it expresses its resolve to combat them; however, the space and clarity given to these are somewhat lesser in value. On a more recent note, after Bilawal Bhutto Zardari has assumed the office of Chairman, focus on environmental issues has been renewed. As a foreign-educated leader, Bilawal has vowed that in the next general elections, environmental issues will be the party's priority, as the preservation of the earth is a global responsibility (Asghar Khan, 2020). In his message for World Environment Day, he impressed upon the need for conservation of Pakistan's natural resources for current and future generations, demanding that this be achieved through sustainable development,

which entails a balance between economic growth and environmental protection.

Bilawal Bhutto accentuated the necessity to safeguard the country's wildlife and forests, deeming them national treasures in immediate need of protection. He stated a need to check deforestation while promoting afforestation, and the PPP shall take practical steps toward achieving this goal. Bilawal reiterated that this was the vision embraced by the PPP, which has consistently raised its voice on climate change as an overwhelming threat to the environment, economy, and general well-being of society in Pakistan. The party has continually pushed for the formulation and strict implementation of dedicated climate change policies and strategies and firmly believes that afforestation and conservation should be among the prime solutions to counter the adverse impacts of climate change. The PPP believes that forests are most important in soaking up carbon dioxide and holding biodiversity alive. Hence, having a vision for launching initiatives, such as the Ten Billion Tree Tsunami Program, towards increasing the forest cover and fighting against deforestation was created by the party.

It has further come under its wing for promoting climate resilience and adaptation. There is more accent on creating infrastructure that could be termed climate-resilient and strengthening disaster management systems. It will also enhance the capabilities of vulnerable communities in dealing with the woes of climatic hazards. The law was passed in 2017 by the PPP government to further punitive measures against climate detractors and enhance climate governance -Pakistan Climate Change Act. This was designed to provide a legal framework to tackle climate change by instituting institutional mechanisms such as the Climate Change Council and the Climate Change Authority charged with the mandate of overseeing Implementation and coordination of the policy. Also in 2016, the PPP advocated the ratification of the Paris Agreement and thus the commitment of Pakistan to international endeavors aimed at reducing greenhouse gas emissions, strengthening strategies of adaptation, and mobilizing financial resources

for climate change projects (Farooq Arshad, 2024).

Some of the other expressions of support by the PPP would include the promotion of clean and renewable energy technologies as part of its wider environmental vision. Acknowledging the need to shift to sustainable energy sources, PPP-led governments started very significant renewable energy projects, with a concentration on wind and solar energy, to curb the use of fossil fuels and arrest emissions. These initiatives punctuate a growing realization on the part of the party that the context for sustainable development pathways relates to harmonizing economic growth with environmental conservation. Yet, notwithstanding these remarkable initiatives and commitments, the party's manifesto remains deficient in articulating a clear long-term approach for environmental protection. Given the absence of measurable benchmarks or specific policy outcomes, assessing whether their environmental strategies, upon coming into power, would have any significant worth is becoming a difficult task. The need for internal serious reflection, consultation with experts, and formulating structured, results-oriented environmental policies is underscored due to this lack of direction. The party also needs to engage with key stakeholders and members of the party to highlight the urgent demand for an environmental agenda in Pakistan, with well-defined, target- and action plan-based goals. This is the only way the PPP's professed dedication to the environment will translate into substantive and sustained progress on the ground.

Sustainability and Resilience Policies

Climate change has received limited attention in the campaigns of major political parties ahead of Pakistan's general elections scheduled for 8 February 2024. Beyond brief mentions, the issue is primarily confined to party manifestos, with little emphasis in broader political discourse. A comparative review of the PPP manifestos from 2018 and 2024 illustrates this trend. In the 2018 document, the PPP committed to implementing policies under the theme of "*Sustainability and Resilience*," prioritizing sectors such as water

management, agriculture, public health, and urban development. Within agriculture, the party outlined ambitious goals, including the expansion of drip and sprinkler irrigation systems across more than four million hectares by 2023, the promotion of drought-resistant and high-yield crop varieties over one million hectares nationwide, the mainstreaming of climate-smart agriculture in policy, planning, and research, and the enhancement of water governance through a balanced and integrated framework (Azam, 2024).

Impacts

To assess the implementation of the PPP's first pledge, reference can be made to a six-year World Bank initiative launched in 2015 and completed in 2021. The project supported the Sindh government in introducing drip irrigation; however, the outcomes were limited. Only 26 farms, covering 109 hectares, were equipped with the technology, falling significantly short of the original target of 14,300 hectares across the province. With regard to the second commitment, progress can be observed through a Green Climate Fund project operating in Punjab and Sindh. In Sindh, which had previously been governed by the PPP, the program aimed to build resilience among 80,000 farmers against floods and droughts by conducting field training sessions in districts such as Badin, Sanghar, and Umerkot. According to an official linked with the initiative, the long-term impact of the project would depend on whether the government replicated these measures in additional districts.

The third pledge was linked to the formulation of the Sindh Agriculture Policy 2018-2030, prepared under the World Bank's "Sindh Agriculture Project" in April 2018. The policy was designed to strengthen adaptation strategies, encourage climate-smart agricultural practices, enhance resilience to climate change, and establish early warning systems. Nonetheless, experts, speaking on condition of anonymity, observed that the policy was never comprehensively implemented. They argued that its proper execution could have mitigated some of the severe agricultural damage caused by the unprecedented floods of 2022.

Concerning the fourth promise, the 2018 manifesto proposed measures to improve water governance by promoting rational water use through legislation on pricing, bulk metering, conservation practices, and efficiency improvements across agricultural, industrial, commercial, and urban sectors. In practice, however, the main action taken was limited to the restructuring of the Karachi Water and Sewerage Board into the Karachi Water and Sewerage Corporation, along with an announcement regarding the planned introduction of bulk metering for the city's water supply (Azam, 2024).

PML-N and Climate Change Policies

The PML was the party that won the Muslims of the sub-continent their independent state, Pakistan. Subsequently, the party got split into quite a few factions on account of differences. The PML-N is one of these fractions. It has been headed by Mian Muhammad Nawaz Sharif since the 1990s. The party received almost 9.4% of the popular votes in the 2013 general elections. It is a right-of-center party, and being conservative, this party has auspiciously remained in the forefront of Pakistani politics. The PML-N has acknowledged climate change as a significant issue and recognized the need for policies to address its challenges. The party has emphasized the importance of developing comprehensive strategies and policies to mitigate greenhouse gas emissions, promote renewable energy, and enhance climate change adaptation. An analysis of the party's manifesto for evidence of the amount of importance it allots to environment-related matters shows that the party considers environmental issues to be grave matters. It is possible to extract the following points from the PML-N manifesto analysis. The party accepts the environment being an issue as important and promises to take measures to work for it upon coming to power. Further, the manifesto includes activities and policy initiatives that the party is expected to take, but it does not provide a strategy for achieving the stated objectives.

In addition, the manifesto analysis of PML-N calls for the urgent need of making aware the political representatives of the party towards environment so that they can learn as well as be

able to work on environment-related issues. Further, the party requires both verbal and written advocacy tools for creating awareness on the issue among dominant circles whereby the party ensures it will focus more on the issue. In addition, the analysis of the PML-N shows that the party needs to define and focus on environment-related issues according to international standards. The party hopes to establish once it assumes office: "Environmental protection shall be promoted" (PML-N, 2018). Like other political parties, the shortcomings in the PML-N manifesto are the lack of detailed strategy and policy on how the party would look for environmental protection and related issues once it comes into power. Also, the manifesto lacks details of proposed activities that would preclude environmental pollution from increasing, and owing to this, their target setting seems too arbitrary. To sum up, it is maintained that the environment as an independent topic has not been markedly developed in PML-N's manifesto.

During its tenure, the PML-N led government ratified the Paris Agreement on climate change in 2016 (Senz, 2010). Pakistan, therefore, pledged to limit greenhouse gas emissions, improve adaptation to climate change, and access international climate finance. On the implementation of international climate commitments through active participation in global climate change forums, PML-N has also cited afforestation and conservation measures for combating climate change. The significance of afforestation initiatives to increase forest cover, combat deforestation, and preserve biodiversity has been recognized and acknowledged.

Additionally, PML-N has focused on sustainable forest management practices and the importance of forests in the sequestration of carbon dioxide. It has also highlighted disaster management and resilience-building measures to help cope with climate change risks. It is unfortunate, but the party has announced the upgradation of early warning systems, infrastructure resilience, and community preparedness in coping with extreme weather conditions and natural disasters. More recently,

PML-N-founded governments have undertaken several renewable energy projects in Pakistan. The larger projects have established solar and wind powers that aim to increase the renewable energy share in the overall energy mix of the country. As a result of reduced greenhouse gas emissions, these projects contribute to promoting sustainable energy practices. PML-N has further highlighted energy efficiency as a means of offsetting climate change and moderating the country's carbon footprint. The energy efficiency standards were also emphasized and included conservation practices such as using design elements used in energy-efficient infrastructure projects.

PTI and Climate Change Policies

PTI as its name indicates, is a revolutionary party that works for justice and fair play. The very aim of the party establishment was to bring drastic reforms in the existing socio-economic and political structure of the society and to make accountability. The party gained popularity very soon due to its appealing objectives. Thus, in a very short time, it became Pakistan's third-largest party in parliamentary majority. As it has found the slogan of reform, justice, and accountability for corruption to be a leading magnet for public attraction, it has expanded these ideals into all realms where the party thinks Pakistan can develop and improve. The manifesto of PTI envisages the creation of a modern, democratic, Islamic republic country. It has always advocated the completion of political processes, religious freedom, and economic development and has unleashed hope for changing the status quo in Pakistan. The PTI has focused on reforms in almost every sector of society. About the environment, in its manifesto, it has one section entitled "Environmental issues," which provides an elaborate plan for handling issues related to environmental protection. Thus, it started a nationwide plantation program and planted billions of trees during the Tsunami (PTI, 2018).

The PTI launched an environmental policy for Khyber Pakhtunkhwa province of Pakistan during the PTI government tenure and thus planted a billion trees. And at the national level, it has plans to launch a comprehensive National

Climate Change Policy. Furthermore, it will start the "Green Development Agenda" that combines actual environmental costs in economic decision-making and promises the protection of natural resources, reducing pollution, and emphasizing green energy projects. It promises smart storage of rainwater and usage of organic fertilizers and pest control. Also, it aims for a 100% increase in forest-covered areas. Additionally, it aims to constitute national parks to preserve the flora and fauna of Pakistan and to increase awareness about environmental issues and solutions by incorporating such aspects in education at the primary and secondary levels.

The PTI is very focused on addressing environmental issues and thus promises legislation through relevant ministries regarding "Environmental rights" and making them part of the constitution as a fundamental human right (Syed, 2022). Climate change has been recognized as a serious issue impacting Pakistan, and therefore prioritized within the political agenda of the PTI. The party recognizes the need to actively combat greenhouse gas emissions, renewable energy, and adaptation to climate change. Therefore, its flagship program, "Clean and Green Pakistan," aims to address environmental issues, including climate change. The campaign encompasses tree planting drives, solid waste management, and cleanliness operations, all aimed at cleaning and making the environment sustainable.

Along with this, the party PTI has much emphasized on renewable energy as a means of combating climate change and promoting sustainable development. The party supports the extension of renewable energy sources, especially solar and wind energy sources, while encouraging clean energy investments. It highlighted the importance of forests against the onslaught of climate change and biodiversity loss. Programs like the Billion Tree Tsunami and the Ten Billion Tree Tsunami Program emphasize tree planting increase in forest cover and reduction of deforestation and carbon dioxide sequestration. Moreover, the PTI fully acknowledges the need to promote climate resilience and adaptation measures with regard

to the impacts of climate change. The party has called for the design and implementation of measures for disaster management, improving early warning systems, and encouraging sustainable practices in vulnerable sectors. In 2016, the PTI-led government endorsed international climate action by supporting the Paris Agreement. The PTI insists that, to access climate finance, transfer knowledge, and work with others, Pakistan has vigorously pursued its agenda of involvement in climate change at international platforms and cooperating with other countries.

Climate Change, Tree Plantation and Pakistan

Pakistan is regarded as one of the most climate-vulnerable countries globally. Over the past decade, it has experienced a series of extreme weather events, including devastating floods, unusually intense monsoon rainfall, and recurring heatwaves, despite contributing relatively little to global greenhouse gas emissions, the primary anthropogenic driver of climate change. These conditions have already triggered climate-induced migration in several regions of the country. According to the Global Climate Risk Index 2020, published by the think tank German watch, Pakistan ranked fifth among nations most severely affected by the impacts of global warming over the preceding two decades. In response, successive governments have initiated a range of projects to mitigate the looming crisis (Ebrahim, 2023). The PTI government, in particular, placed significant emphasis on large-scale tree plantation programs as a core countermeasure. Pakistan has also pledged to transition 60 percent of its energy mix to renewable sources by 2030, alongside cancelling coal-based projects in favor of hydroelectric power development. Complementing these energy reforms, the government reported the creation of more than 85,000 green jobs across sectors ranging from plant care to forest protection, while training approximately 5,000 young people as “nature guardians.” Investments have also been channeled into the expansion of green spaces, including the establishment of 15 new national parks through \$180 million in

international funding. Further, the launch of a \$500 million “green Eurobond” and the initiative to monetarily value national green assets reflect the state’s efforts to ensure both economic recognition and environmental protection of its natural resources (PTI’s environment policies being recognised globally: PM Imran, 2021).

Discussion and Analysis

A comprehensive analysis of the manifestos and policies of PPP, PML-N, and PTI on climate change and water security shows both the similarities and differences in their approaches in addition to several systemic weaknesses that may undermine the continuity and effectiveness of policies. This acknowledgment from all three parties on climate change and water shortage being pressing national issues is perhaps a common theme from among them. Each has recognized afforestation, renewable energy, and disaster management as important elements of their policy agenda. However, while there are rhetorical commitments, the depth, clarity, and mechanisms for implementation differ significantly. The PPP exhibits, rather, progressive inclination toward climate change, especially under Bilawal Bhutto, where environmental protection is increasingly articulated within global sustainability discourses. Initiatives such as endorsing the Paris Accord and the Pakistan Climate Change Act (2017) confirm a PPP interested in institutionalizing environmental governance. PPP policies, however, tend to be declaratory, with few measurable benchmarks and weak follow-up mechanisms. Suggest this to be a gap between what is politically desired and the reality of operational capacities. PML-N has in fact always looked at environmental issues through a development lens i.e., linking climate change adaptation with energy-efficient, renewable energy projects and disaster preparedness. The actual steps it undertook were ratification of the Paris Agreement and launching solar and wind projects. The party’s manifestos have, however, shown inadequate detail on how they intend to integrate environmental concerns into other governance structures. Most of the programming initiatives

are limited in their sustainability by the absence of long-term results-based frameworks.

PTI, however, brings a much clearer focus on climate in its political discourse as compared to its predecessors. The centerpiece capturing its national public profile and international attention has become flagship initiatives such as the Billion and Ten Billion Tree Tsunami projects as well as the ongoing "Clean and Green Pakistan" campaign. Constitutionalization of environmental rights and building climate resilience show the whole agenda pursued by PTI as lofty. But the critics say that although these may be groundbreaking initiatives, they generally lack good monitoring frameworks, and face challenges of transparency and coordination at provincial and federal levels.

While the degree of impact may differ, all three face systemic hurdles against viable climate and water governance. Policy discontinuity, a major source of concern, arises when successive governments either scrap or rename yet another predecessor's program, thereby thwarting long-term progress. Political instability, hence, poses more hindrances, as frequent changes in top leadership keep distracting the political class from sustained environmental reform. In addition, the widespread fragmentation of power as a result of the 18th Amendment has accentuated coordination problems between federal and provincial levels of government, thus resulting in overlapping mandates with uneven enforcement.

There is still another fundamental weakness in political parties-the very poor infusion of public participation into stakeholder engagements in policy making. Top-down approaches have often failed to account for local realities not only for rural but even for climate vulnerable communities as well. Well-intentioned initiatives are likely to risk remaining largely symbolic than transformative without stronger climate literacy and grassroots involvement.

Comparatively, PTI's policies seem more expansive and visible with regard to the environment, PPP's initiatives are more legally grounded, and PML-N's agenda focuses more on development pragmatism. However, thus far, no

party has shown any political will or institutional innovation sufficient to transform environmental governance into a long-term priority of consensus across party lines. Therefore, rather visionary party manifestos on the part of Pakistan should be backed by a permanent cross-party consensus, stronger institutional frameworks, and active civil society engagement for Pakistan to be capable of dealing with climate change.

Challenges

In Pakistan, the landscape of environmental governance and policy implementation is marked by complexity and persistent challenges. Despite a growing awareness of environmental degradation, ranging from pollution to the intensifying impacts of climate change, the country continues to struggle with effective management of its natural resources. The governance framework encompasses a wide array of institutions, legal instruments, and regulatory mechanisms designed to address environmental concerns and promote sustainable development. A cornerstone of this framework is the Pakistan Environmental Protection Act of 1997, which provides a legislative basis for environmental conservation and regulatory enforcement. Multiple governmental bodies spanning federal, provincial, and local levels are tasked with the execution of environmental policies and programs (Lau, 2018). However, despite this institutional infrastructure, policy implementation remains weak due to issues such as bureaucratic fragmentation, limited capacity, and lack of coordination across different levels of governance.

In addition to this, Policy discontinuity among successive political administrations is a core issue obstructing effective administration of climate change and water security in Pakistan. Each political party namely, the PPP, PML-N, and PTI has come up with its own environmental and water policies and, in many instances, has disregarded or discontinued the programs initiated by its predecessors. Such discontinuity compromises long-term planning and the establishment of environmental reforms. Thus, even initiatives with good intentions do not yield

sustainable results because of erratic changes in priorities, leadership, and bureaucratic alignment. The lack of a cross-party consensus on environmental and water policies weakens the very implementation of those policies requiring arduous and consistent multi-year efforts to make any visible impact.

Furthermore, political instability in Pakistan has drastically affected the formulation and implementation of reasonably coherent climate change and water management policies. Frequent governmental changes cause deviations from long-term environmental planning owing to civil-military tensions, civil demonstrations, and disruptions in good governance. In such a politically turbulent environment, issues of climate and water often take the backseat to issues of immediate political survival and power consolidation. Furthermore, any administrative uncertainty creates brief tenures for governments, thus reducing ministries and departments' capacity to implement and preserve any policy initiative. The net result is fragmented policymaking, poor institutional memory, and an environmental governance style that is reactive rather than proactive. Consequently, this instability does not only delay overdue reforms; it also destroys public trust and donor confidence in climate and water-related initiatives.

As well as coordination between the federal and provincial governments in Pakistan is an important barrier to climate and water governance. With greater autonomy at the provincial level with regard to environmental and water-related matters since the 18th Amendment, a fragmented policy scenario has developed due to the lack of clear mechanisms for intergovernmental collaboration. This has resulted in overlapping mandates where federal ministries and other stakeholders sometimes fail to involve provincial entities and administrations in the design of their frameworks; thus, at times it happens that provinces do not have the capacity or the political will to implement those frameworks as national strategies. This disconnect hinders the common agendas for climate and water, delays project implementations, and minimizes the

efficiency of resource allocation. Variable data-sharing, disparate planning paradigms, and institutional rivalry across governmental tiers serve to undermine a synergistic approach to climate-and-water security concerns.

Lastly, public awareness and stakeholder engagement in Pakistan are still limited as far as climate change and water security issues are concerned. Instead, even as the threats of their environment worsen, there is little comprehension about the causes, consequences, and potential responses of climate and water threats among the general masses. Such ignorance hampers the effectiveness and adoptability of sustainable practices within the communities, as well as the public pressure it exerts on political actors to regularly address matters of environmental governance. In addition, the participation of key stakeholders-time civil society, local communities, academic institutions, and the private sector-is unimportant or symbolic in policymaking processes. In such a way, policies are generally top-down and dissociated from local realities and the support these policies need for effective implementation. Making the participatory approaches and climate literacy increase shall be crucial toward building inclusive resilient policy frameworks.

Conclusion

Climate change and water security are perhaps the most critical challenges presently facing Pakistan. The three main political parties the PPP, the PML-N, and the PTI have acknowledged these issues and taken some action, but their approaches have been inconsistent, fragmented, and frequently politically motivated rather than strategic. Each party has a tree plantation drive, renewable energy projects, and environment protection laws; however, deprivation of continuity amongst successive governments has really diminished it to a very long time. This, along with intergovernmental coordination that is weak, an institutional capacity that is limited, and inadequate public awareness, results in climate governance being less effective. Environmental commitments in party manifestos are often devoid of quantified targets and actionable plans

that expose disillusionment between political rhetoric and conforming action. Addressing these challenges requires a robust political will on a bipartisan level to develop and sustain strong climate and water policies throughout political cycles. Building institutional capacity, facilitating interprovincial cooperation, and increasing public awareness are essential for achieving environmental resilience. Without cohesive and inclusive endeavors, water scarcity, environmental degradation, and socio-economic instability will further aggravate in Pakistan. Therefore, environmental governance must be seen not as a second-rank agenda but a core national priority embedded in sustainable development, interparty consensus, and long-term strategic planning.

Recommendations

Strengthening inter-party consensus on climate and water policy

To ensure the continuity and impact of policies over the long haul, inter-party convergence on climate change and water security must be cultivated. This can be achieved in the establishment of bipartisan or multiparty parliamentary committees for the alignment of priorities across political cycles. Such collaboration would enable a continuous, stable, and coordinated policy implementation without regard to government changes.

Institutional capacity building

Also, enhancing the technical and administrative capacity of institutions in both federal and provincial levels is an imperative for best governance arrangements for climate and water. This involves training personnel, improving the data systems and equipping agencies with adequate financial and technological resources. Institutions that are stronger are better able to design, implement, and monitor resilient environmental policies.

Transparent and accountable policy implementation

Letting the public know what environmental and water policies are doing may build public trust and facilitate policy implementation. To this end, monitoring of projects should be conducted

regularly, progress should be made publicly available, and all projects should be subject to independent audits. Strengthening oversight mechanisms could prevent resource misuse and ensure that the intended outcomes are achieved.

Greater public and civil society participation

The inclusive approach to policymaking means that the public and civil society must be involved in planning, implementing, and monitoring things about climate and water programs. Involving the community, NGOs, and local stakeholder's builds ownership, relevance to policy, and strengthens accountability at the community level.

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