

Rethinking The Governance Paradigm for Dealing with Climate Change in Pakistan

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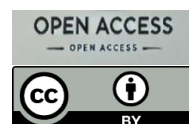
Abstract

This paper aims to explore the particular governance requirements dealing with the threat of climate change induced disaster given their as yet, essentially unpredictable nature. In this regard it will explore two inter-connected issues with regard to dealing with climate change. The first is the need for better national collaboration, between the ministries both at the federal and provincial level as well as between the center and the provinces, as climate requires a whole-of-government approach. Secondly, the need to rethink the social contract with a view to empowering the local government. Significant research has been done in this area which highlights that in case of disaster, the first and best responders are the local departments. Dealing with man-made climate change, requires a not just urgent reaction but out of the box solutions. This means that the current governance mechanism is not sufficiently equipped to deal with this challenge. The need to devolve power to the much-neglected local government level and given that Pakistan has a large and diverse terrain with multiple climatic zones, it is important to address the local concerns. This paper aims to explore how through anticipatory governance, Pakistan can deal with this essentially unpredictable phenomenon. This paper employs a descriptive qualitative methodology and consultation of secondary research. It offers possible outcomes/ implications to improve the governance structure with better collaboration between the different tiers of government, given that Pakistan is a federation where many of the subjects are devolved to the provinces, as well as the various ministries at federal/ provincial levels. It has also investigated the implications for better management of climate change induced disasters through empowering the local government.

Keywords: Sustainability, Local Government, Financing, Governance, Unpredictable Phenomenon

Introduction

The term "climate" refers to the overall environmental conditions observed globally, including factors like temperature, precipitation, atmospheric pressure, and humidity. "Climate change" denotes alterations in these conditions,



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resulting from either natural occurrences or human interventions. This shift contributes to phenomena such as rising sea levels, glacier melting, erratic weather patterns, global warming, and other atmospheric events worldwide (Sargani et al., 2023). Climate change impacts, evident in frequent natural disasters like hurricanes Irma, Harvey, and Maria, emphasize the urgent need for attention and proactive measures to adapt to these changes (Perkins et al. 2018). Greenhouse gas (GHG) emissions, including N_2O , CH_4 , CO_2 , and H_2O , play a pivotal role in climate changes, influencing the environment significantly. Despite natural factors like volcanic eruptions, seismic activities, and solar cycles contributing to environmental changes, human activities like vehicular usage, agriculture, deforestation, industrial development, and fossil fuel combustion have accelerated global GHG emissions. This rapid increase, excluding H_2O vaporization, has led to the "underestimation" of climate change impacts (Roy, 2018). The rise in anthropogenic CO_2 emissions, mainly from combustion of fossil fuel and land-use changes, has been a key factor in global warming since the mid-twentieth century, causing environmental degradation and disrupting the natural atmosphere, absent before the Industrial Revolution (Yousaf et al., 2017).

Pakistan is, of course, no exception, it is projected to experience a temperature increase ranging from 0.9 to 1.5 °C between 2020 and 2050 (Hussain & Mumtaz, 2014). The country previously encountered severe droughts, particularly in 1998 and 2004, with the province of Baluchistan, home to 84% of its population, being significantly affected, leading to a 76% loss of livestock (Hussain & Mumtaz, 2014). In addition, the entire nation faced extensive damage from massive floods, displacing numerous individuals in northern and central regions (Ullah et al., 2018). The persisting challenges of high temperatures, severe droughts, pest-related diseases, health issues, and lifestyle changes are anticipated to persist in the coming years (Hussain et al., 2018).

This represents an existential threat to Pakistan as climate change escalates the magnitude and frequency of extreme weather events. In the last two decades, Pakistan was consistently amongst the top 10 most vulnerable countries to climate-related disasters (Global Climate Risk Index, 2021). According to UNDP (2022), the floods of 2022 alone affected more than 33 million people, caused the displacement of 8 million, and resulted in economic losses of over USD 30 billion. The 2015 Karachi heatwave similarly claimed over 1,200 lives, revealing the country's weak disaster preparedness and governance mechanisms. In spite of these disturbing statistics, climate governance in Pakistan is fragmented and practically non-existent as an integrated system involving federal, provincial, and local disaster management frameworks.

Globally, climate change is projected to have dangerous consequences such as rising temperatures, frequent famines, changing rainfall patterns, and agricultural damage (Rosenzweig et al., 2014). Climate change is predicted to be disastrous for agricultural nations like Pakistan, where per capita income is already low and capacity building is lacking (Bhatti et al., 2018). With 80% of the country's exports reliant on agricultural activities and a significant portion of irrigable land dependent on northern snowfalls and melting glaciers, Pakistan faces vulnerabilities (World Bank, 2013). Northern snowfalls and melting glaciers provide water for two-thirds of Pakistan's irrigable land. Pakistan's agriculture industry employs over two-thirds of the population, and the country lacks the required infrastructure to prevent and adapt to the consequences of climate change (World Bank, 2013). Due to its geographic position, large reliance on agriculture, great dependency on water resources, and inadequate capacity to deal with climatic crises, Pakistan is on the verge of becoming a victim of climate change consequences (Bhatti et al., 2018; Malik et al., 2012).

Furthermore, climate change is unlikely to affect all locations in the same way (Malik et al., 2012). The worrying fear is that it would exacerbate the vulnerability of poor farmers in rural regions (Ali & Erenstein, 2017), the floods of 2010-2011 are an example of the climate change vulnerabilities experienced by farmers in rural areas (Gorst et al., 2015). As a result, climate change poses a significant threat to the national economy and rural livelihoods (Mukwada & Manatsa, 2018).

As far as climate change governance is concerned, it has developed into intricate polycentric framework that extends from international to regional and national levels, depending on policy channels and both the formal and informal networks (Jordan et al., 2015). State and non-state actors are designing and implementing climate policies and initiatives at multiple levels, including international, regional and local levels (Newell, 2000). This complex governance structure reflects the 'global' character of climate change, where its distinctive repercussions are felt worldwide and resolving it necessitates participation at different governance levels (Gupta et al., 2007). Despite growing studies on multi-level climate change governance, there remains a gap in our understanding of how local governments have helped the domestic and national issues of governance (Marquardt, 2017).

Pakistan is increasingly threatened by climate change-induced disasters, yet its current governance structure is not sufficiently coordinated and prepared to deal effectively with these unpredictable emergencies. While local governments have a pivotal role to play in disaster response, it is the centralised

form of governance that hinders local governments from being effective in their actions. Absence of strong inter-ministerial collaboration at both federal and provincial levels impedes the development of a comprehensive disaster management strategy. Given the diversity of climatic zones in Pakistan and the need for rapid and localised response, anticipatory governance capable of proactive decision-making and better coordination among the different levels of governance is urgently required. The study will take a closer look at these governance challenges and provide recommendations for improving disaster management by empowering local governments and promoting intergovernmental cooperation.

Good governance and better coordination between the government ministries is of pivotal importance to tackle these issues. In this regard, Pakistan needs a comprehensive framework to handle the governance issues in terms of collaborative governance. Second, the need of local governments to handle the climatic issues at the grass roots level is of great importance as well. Literature is mostly silent on these issues. Thus, taking the lead from these prevailing issues, the objective of this study is two-fold. First, this study aims to explore the significance of ‘whole-of-government’ approach through the improvement of inter and intra governmental relations. Second, to explore how local governments can be an effective tool in tackling climate change threats.

The research highlights the need for a whole-of-government approach through improving synergy between federal ministries, provincial departments, and sub-provincial government authorities. Developing such linkages will ensure that when there is a climate emergency, response becomes more coherent and streamlined. This research recognizes the strategic place of local governments in addressing climate threats. As the first line of disaster response, local governments need to be more empowered through institutional reforms, capacity building and better resource allocation.

Based on the above discussion, following are the research questions of the study:

- i) What are the issues involved in addressing climate change-induced disasters in Pakistan?
- ii) How inter-governmental collaboration plays its role in disaster management at the federal, provincial and sub provincial levels?

Literature Review

The climate change triggered disasters pose unprecedented challenges to global governance structures, warranting innovative and adaptive responses. The

existing literature has engaged extensively in discussions on disaster management strategies (Goniewicz & Burkle, 2023), intergovernmental coordination (Kuhlmann & Franzke, 2022), and the role of local governance in climate risk mitigation (Zeemering, 2021). Despite these contributions, however, serious gaps remain in understanding how anticipatory governance could improve disaster preparedness, specifically in the decentralised governance systems such as that of Pakistan.

Most of the studies are concerned with reactive governance models, where post-disaster relief takes precedence over proactive and integrated approaches to disaster risk reduction (Alam & Ray-Bennett, 2021). Although the Whole-of-government approach has been recognised as critical, what is lacking is research to effectively operationalise it at the federal, provincial, and local level. Moreover, while local governments are viewed as key actors in disaster response, their lack of autonomy, resource constraints, and institutional limitations under the climate governance regime have seldom been explored. This study seeks to fill these gaps by examining how greater intergovernmental collaboration and empowerment of local governments can lead to a more anticipatory and resilient governance model for climate change induced disasters in Pakistan.

Although individual scientists had been raising concerns about the unusual climate change patterns and its effects, Pakistan, like the world, was slow to wake up to the threat of climate change and its nature. However, in the recent past the extreme weather patterns and particularly devastation caused by the floods of 2022 has woken governments as well as people to the extent of the danger of climate change (Otto et al., 2023). Resultantly Pakistan is still struggling with establishing an effective governance mechanism in place which is sufficiently robust and flexible to meet the challenges of climate change. Research on the topic shows that there is insufficient coordination and collaboration between the various ministries and government agencies working on the issues. This restricts the ability of the government to take effective mitigation and adaptation measures required for dealing with the threat of climate change. Secondly, it is not being able to curtail the extent of losses and damage caused due to climate change. In Pakistan many studies have looked at the importance of local government as a nursery of democracy and provider of local services (Mumtaz, 2021). However, none has explored the relationship between climate change related measures of mitigation and adaptation, therefore this paper will try to fill this gap. In addition, many papers have talked about the necessary cooperation between the various tiers of government but none has fully explored it with regard to climate change

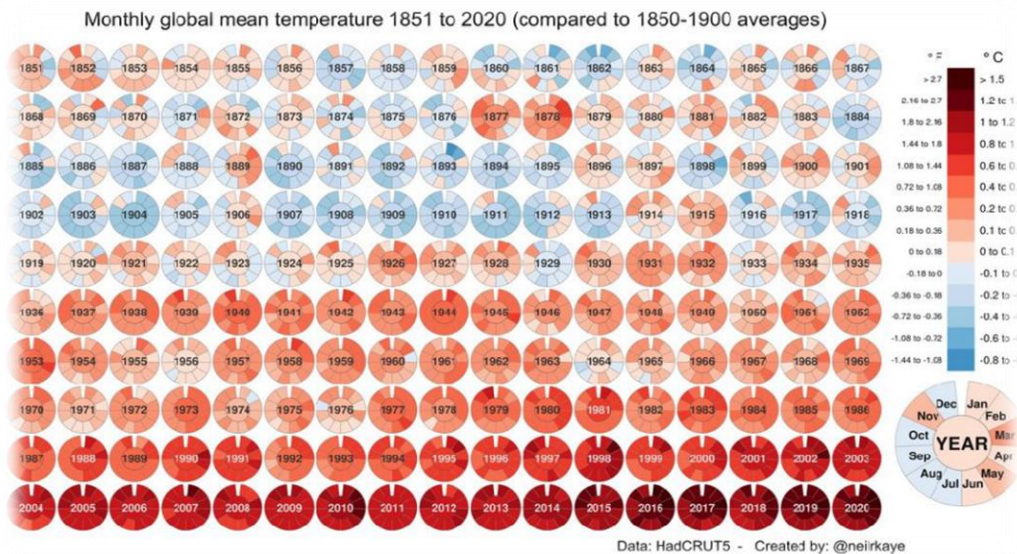
and the division of powers between the federal and the provincial government that this paper will try to explore.

According to the United Nations Framework Convention on Climate Change UNFCCC, climate change is defined as any change in climate attributed directly or indirectly to human activity that alters the composition of the global atmosphere in addition to natural climate variability over comparable time periods. This among many other factors has led to an increase in global average surface temperatures over land and ocean since the middle of the 19th century onward (IPCC, n.d.). By comparing data sets, the IPCC assessed that the average for the decade 2006-2015 was approximately 0.87°C (0.75°C to 0.99°C) above the average for the second half of the 19th century (which serves as a rough approximation for pre-industrial levels).

The 5th Assessment Report of IPCC, even though it used the period of 1850-1900 as the historical baseline, estimated an increase of temperature from such conditions to 1986-2005 at 0.61°C. The table below shows the global average surface temperature from 1851 to 2020 and we can see that the normal variations ceased to happen around 1920s onwards (IPCC, 2014).

Figure 1

Monthly Global mean temperature 1851 to 2020



The world is increasingly becoming interdependent and many issues require interstate cooperation. The nature of International Law is such that it is

based upon reciprocity and free will of states. In issues of contentious nature, the background in which international law works is that of Realpolitik, which is sometimes understood as ruthless self-interest of the state. Climate change impacts are felt across borders (Warraich, 2023). Therefore, the requirement of dealing with issues such as climate change are different from the framework within which international law normally operates. The issues like climate change require a paradigm of a cooperative and collaborative governance. In this kind of negotiation each state needs to not look at maximizing its benefits at the cost of others but trying to work together to reach a consensus which benefits all states. Pakistan is amongst the top ten most vulnerable countries effected by climate change (Mahmood & Hassan, 2022). So, there is a need for a paradigm shift of governance to deal with the aspect of climate change on emergency basis.

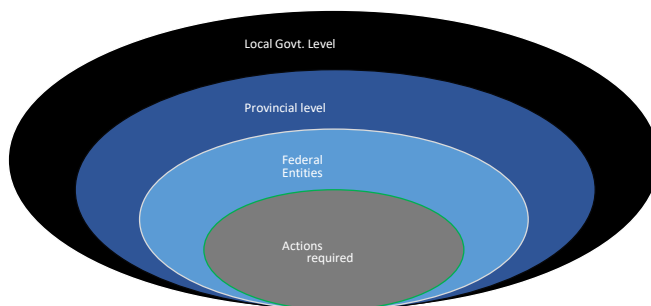
Under the Constitution of Pakistan, the Federal Legislative List in the fourth schedule, *Entry Number [32, international treaties, conventions and agreements and international arbitration]* fall under the purview of the federal government (1973 Constitution of Pakistan). This means that the policy and obligation under the applicable and relevant international instruments fall within the ambit of the Centre, however, most of the subjects that deal with issues related to climate change; both related to mitigation and adaptation fall with the purview of the provinces (Warraich, 2023).

Role of Local Government, Pakistan Climate Change Act, 2017, and Pakistan Climate Change Council

Effective local government is a prerequisite for efficient service delivery (Sher, 2022). A weak local government system leaves a gap in the governance paradigm to deal with any issue at that level. This includes many of the adaptation measures and response to disaster caused by climate change (Mahsud, 2023).

Figure 2

Whole-of-government approach (Author's own work)



With a view to create the necessary legislative framework and statutory bodies an act was passed in 2017, called Pakistan Climate Change Act. This Act among other things provides for two bodies namely Pakistan Climate Change Council (Climate Council is functional but only met once last year) and Pakistan Climate Change Authority. The purpose of these bodies amongst other things is to provide a platform for cooperative and collaborative efforts with regard to measure needed for climate change related adaptation and mitigation measures (Pakistan Climate Change Act, 2017).

The Functions and powers of the Pakistan Climate Change Council include:

“The Council shall— co-ordinate and supervise enforcement of the provisions of this Act; monitor implementation of international agreements relating to climate change ... coordinate, supervise and guide mainstreaming of climate change concerns into decision-making by Federal and Provincial Government's ministries, divisions, departments and agencies so as to create enabling conditions for integrated climate-compatible and climate-resilient development processes in various sectors of the economy”.

In addition, the Council is entrusted with monitoring implementation of the National Adaptation Plan and its constituent provincial and local adaptation action plans (Pakistan Climate Change Act, 2017).

Establishment of the Pakistan Climate Change Authority

The functions of the authority are inter alia to, *“formulate, comprehensive adaptation and mitigation policies, plans, programmes, projects and measures designed to address the effects of climate change and meet Pakistan's obligations under international conventions and agreements relating to climate change and within the framework of a national climate change policy as may be approved by the Federal Government from time to time; establish institutional and policy mechanisms for implementation of Federal and provincial adaptation and mitigation policies, plans, programmes, projects and measures, prepare suitable adaptation and mitigation projects...”*, etc. (Pakistan Climate Change Act, 2017). However, the authority has not yet been established, and this is viewed as unfortunate because of the important functions it can perform with regard to collaborative actions for climate change mitigation and adaptation.

Three Different Tiers of Governance

Climate does not respect borders; it is one of those issues that have cross border impacts. International law is based on the axiom of “there are no permanent enemies and no permanent friends, there are only permanent interests (Warraich, 2022). It is because of this that international law is traditionally more suitable to negotiating with a view to protect state’s self-interest, rather than working for collective good of humanity. It is in this background that the community of states has still not been able to respond in a manner required by the level of threat (The Economist, 23 September, 2023).

In the case of Pakistan, local governments system has been historically weak and had never taken root in the country. One effect of this is the inability of the local government to take measures with regard to both adaptation as well as mitigation regarding negative climate change impacts. Discussion with experts and literature shows that local government authorities/institutions are amongst the first respondents in case of a disaster including those induced by climate change (Mahsud, 2023).

Anticipatory governance which takes account of regional and social peculiarities is necessary as Pakistan is not geographically or socio-economically homogenous. The diverse topography of Pakistan makes Pakistan vulnerable in a number of ways. The possible outcomes/ implications of this paper are to improve the governance structure with better collaboration between the different tiers of government given that Pakistan is a federation where many of the subjects are devolved to the provinces as well as between the various ministries at federal/provincial levels. It will also highlight the implications for better management of climate change induced disasters through empowering the local government. (Mumtaz, 2023) Encourage cross-sectoral coordination amongst various stakeholders involved in the process of climate adaptation and mitigation. Strengthen coordination between relevant ministries, departments and line departments. An effective governance framework is the need of the hour so as to better prepare the governance structure to deal with any disasters.

Whole-of-government approach

There is a need for integration of sustainable practices and principles in governance. Tackling climate change requires international/global/regional cooperation, smooth working relationship between ministries and also between the centre and provinces. Policy implementation and actions at all levels of governance are necessary for successfully addressing the climate change challenges. Strengthening institutional governance by establishing an effective system of communication and coordination among relevant agencies is required.

Methodology

This paper adopts a qualitative approach to address the research objectives through a descriptive qualitative methodology. The rationale for selecting a qualitative approach lies in its alignment with the nature of the research. The study employs both secondary and primary data collection techniques. The former involves consulting government documents to extract the latest figures from published resources, facilitating the acquisition of up-to-date information on climate change and its associated threats.

For primary data collection, the research utilises semi-structured interviews conducted with academicians, social scientists, social activists, and state functionaries. A total of 08 interviews were conducted, each lasting between 30 to 45 minutes. A purposive sampling strategy was used in this regard. The choice of purposive sampling strategy was deliberate, as this method proves instrumental in extracting key insights from a purposefully selected sample of participants.

The analysis of the collected data was conducted through thematic analysis, with the aid of NVivo software to systematically organize the identified themes. Initially, the raw data were imported into NVivo, and the open coding was applied to interview transcripts, policy documents, and reports, with special emphasis on the identification of core phrases, concepts, and recurrent themes on governance challenges regarding climate change-induced disaster management. The next step was axial coding, in which thematic linkages were made to develop broader analytical categories, such as intergovernmental coordination, local government autonomy, and anticipatory governance mechanisms. This comprehensive approach ensures a thorough exploration of the research objectives and a nuanced understanding of the subject matter.

Findings and Discussion

Climate change poses one of the greatest threats to human rights for our generation: it threatens the fundamental rights of life, health, food, and proper standards of living of individuals and communities everywhere (UNEP, 2015). In Pakistan, climate induced disasters have caused floods, droughts, and heatwaves, all of these disasters have severely impacted some vulnerable communities, increasing food insecurity, water crises, and displacements. This strongly supports the argument that climatology is not just an environmental issue but also

a human rights issue and thus demands immediate policy interventions on different fronts.

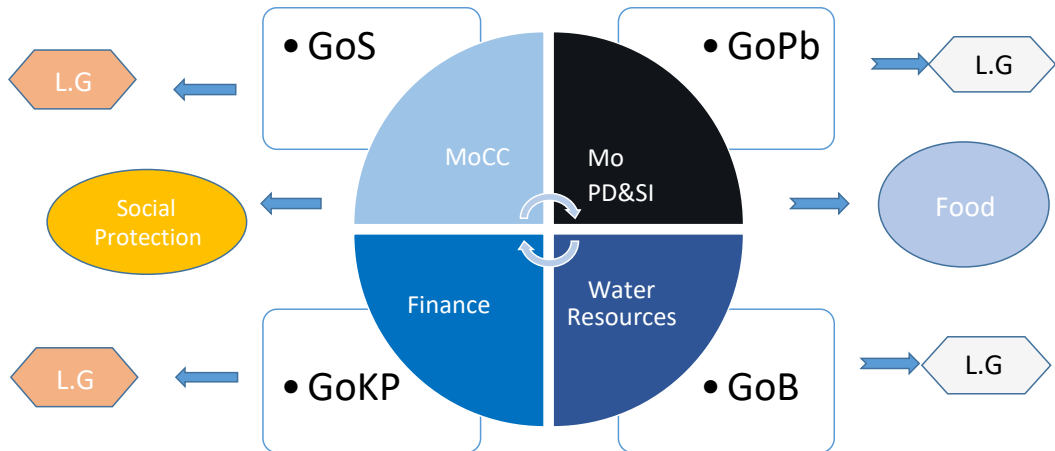
Pakistan's vulnerability to calamities due to climate disasters is perceived to be not merely climactic but rather a result of multiple governance problems such as bureaucratic inertia and corruption. Weak institutional mechanisms and delays in implementing policies, as well as mismanagement of resources, have traditionally hindered disaster preparedness and response activities. Moreover, inefficiencies in governance often result in delayed decision-making as well as lack of resource allocation and failure of disaster risk reduction strategies, only exacerbate the impacts caused by climate disasters. Repairing these governance gaps will be essential for future resilience building in Pakistan with regard to climate challenges.

The floods of 2022 in Pakistan starkly showed how climate disasters disrupt livelihoods and impoverish millions. The deficiency in institutional preparedness, early warning systems, and relief interventions lays bare the glaring gaps in governance (Otto et al., 2023).

Pakistan is a developing country with a struggling economy and multiple climatic zones. In addition, it is a federation where many times the Centre and the federating units have disputes as to their mutual obligation and rights including on fiscal issues. Being a federation many of the subjects are devolved to the provinces, thus most of the subjects which impact climate adaptation and mitigation at the operational level fall within the domain of the provinces, therefore there is a strong need for a unified stand, policy and action plan for an effective governance response to the climate change policies. In addition, climate change is a cross-cutting phenomena which requires coordinated action between ministries/departments.

Figure 3

Intergovernmental Coordination (Author's own work)

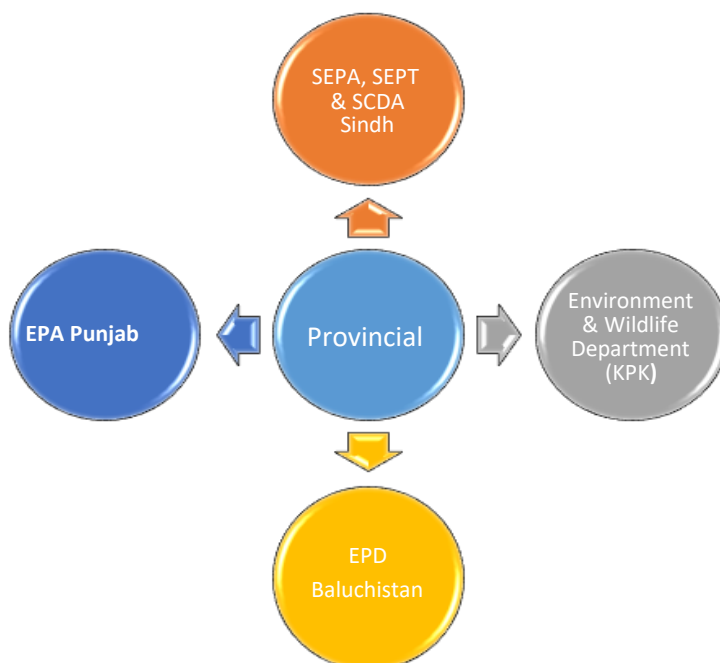


The present study aims to explore an important governance gap regarding climate change induced disasters in Pakistan. Although climate change is a universal phenomenon, it has the most effects at the local level and thus requires a multi-tiered governance response involving local, provincial, and national efforts. Pakistan has a chequered history with regard to local government. Most of the service delivery is done at this level and governance is close to people's doorsteps.

Climate requires a Whole-of-government approach this is particularly true for a federation like Pakistan where the subjects related to climate regarding its policy, commitments, implementation are divided between the various tiers of government. The figures below show the relationship between the various tiers of government with regard to any particular area of consequence for required climate change adaptation or mitigation measures.

Figure 4

Interprovincial coordination (Author's own work)



Empowering Local Government

Policy formulation, planning and implementation are best done while adopting a two-way vertical process of top down and bottom up. Climate change impacts are always felt locally although the planning and policy required to deal with it may require national and provincial and even international cooperation and coordination. Therefore, for any effective climate change management measures the role of local government has to be factored in. Yet, the history of neglect displayed by the state of Pakistan toward local governance has created institutional weaknesses (Rafique et al., 2023). With local bodies being dissolved frequently and restricted in their financial means and decision-making arena, these bodies have little power or ability to respond to climate crises in an effective manner. This study reconfirms that a bottom-up process, where local governments are directly involved in the formulation, planning, and effectuating of policy, is crucial to climate resilience.

In addition, disaster management and risk assessment are best done at the local level both with regard to the measures needed in the immediate aftermath of a disaster as well as risk assessment information. Both are essential for planning at the provincial and national level with regard to disaster risk management. In addition, data has to be collected with the help of the local government. In addition, to the local government, the local community and civil society also need to be involved in the process.

National Level Coordination

The lack of synchronisation between the different levels of governments, especially federal and provincial governments, has the potential to create problems for disaster management. For instance, in 2010, flood disasters were followed by reported inefficiencies in relief operations because of poor communications and overlapping jurisdictional responsibilities among different levels of government. Similar is the case of the heatwave of Karachi in 2015, where reportedly the absence of interdepartmental coordination led to more severe damage, some of which might have been preventable.

Another major aspect of climate governance is a disconnect between federal, provincial and local governments that hinders efforts at climate adaptation. Local governments are seen as primary first responders in disaster situations, yet institutionally, their roles are weak because they tend to have limited fiscal autonomy, face political interference, and lack policy continuity. In many cases, centralised decision-making made at the level of the federal government or provincial government has sidelined local disaster management authorities in terms of emergency response and inefficient distribution of resources. Empowerment of local governments through decentralisation, increased funding and institutional capacity building is essential for an effective climate governance model.

As discussed above literature review and the interviews conducted showed the importance of constant communication and coordination at the level of the Centre between the various ministries, departments, agencies working at that level as well as between the Centre and the provincial governments and the governments of GB and AJ&K, for better tackling the adverse impact of climate change and taking the required mitigation and adaptation measures for the same. In this regard, the climate council and the proposed climate authority need to be made fully functional to help fulfill this role. The purpose of these bodies is to make coordination regular and meaningful. This would help deal with cutting through the bureaucratic red tape and hurdles involved in normal government

functioning. Due to lack of structured coordination mechanisms, climate policies remain fragmented and ineffective. Evidence based decision making in policy responses would also require the relevant institutions to serve as data-sharing platforms among provinces, thus ensuring access to accurate and up to date information. Harmonisation of climate policies by such institutions should also be done across all administrative units to overcome inconsistencies that complicate effective implementation. Finally, such institutions will ensure durability of policies from one political regime to the next as the political transition often leads to disruption of long-term strategies focused on climate action.

Conclusions and Policy Recommendations

The research shows that the causes of climate change and its impacts do not respect borders. However, the impact in the form of climate induced disasters happen locally. Therefore, the central government, the provincial government and the sub provincial governments all need to be involved to deal with this as yet unpredictable and evolving phenomenon. This requires an “anticipatory, agile and adaptive” governance paradigm. This requires a governance paradigm where the governmental structure in the country is not primarily geared towards reactive mode but rather towards a proactive way of operating. In addition, the threat of climate change requires the typical governance paradigm of working within silos and protecting one’s turf to be changed radically and replaced by a cooperative and coordinated governance mechanism.

Pakistan is as yet an evolving democracy where the local government has never really taken root therefore, there is a need to strengthen not just the democratic institutions but also develop and encourage the local governments so as to better deal and cope with such almost existential threats. This is particularly pertinent as many in the private sector see some of the efforts against climate change as detrimental to the economy. Therefore, as part of the effort to address climate induced disasters a linkage has to be established that such measures are good for the economy.

Pakistan is also prone to externalities such as lack of institutional capacity and poor disaster preparedness. Therefore, formulation and streamlining of disaster response frameworks and setting up mechanisms to allocate financial resources for climate adaptation are key steps that need to be undertaken. In this way empowered local governments would become the first responders as communities implement resilience systems.

This paper also proposes amongst other initiatives, an Integrated Climate Governance Framework (ICGF) for Pakistan aimed at strengthening the climate governance of the nation, under which inter and intra governmental collaboration, data information sharing, and decentralised decision making become the foremost important components within the framework. The entire set-up will require a digital platform for centralised online real time data sharing, among federal, provincial, and local governing bodies for appropriate timely response to disasters. Inter-ministerial coordination committees would have to be established to streamline policy and allocate resources across various tiers of the government. This shall further strengthen disaster preparedness and climate adaptation measures by integrating relevant NGOs, private, and international organizations into a common governance structure.

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