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Policy and Situational Analysis Report

**Enhancing Climate Resilience and Inclusion to Address Climate Challenges in Pakistan**

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December 2023

# Executive Summary

This policy brief presents and advocates for a comprehensive and inclusive approach to tackling the escalating environmental threats faced by Pakistan. The primary climatic challenges being faced by Pakistan include rising temperatures, altered precipitation patterns, and increased frequency of extreme weather events. The challenge demands policy and strategic interventions for immediate mitigation and sustainable development. Recognizing the diverse vulnerabilities of marginalized communities, including rural agriculture communities, women, indigenous communities, low-income groups, minorities, and refugees, the brief advocates policies prioritizing inclusivity to ensure equitable distribution of benefits across the socio-economic spectrum. Navigating the complexities of climate change, this brief aims to provide actionable recommendations empowering communities, enhancing adaptive capacities, and contributing to effective policies fostering climate resilience and inclusivity in Pakistan.

The initial policies suggested in the brief concentrate on fortifying infrastructure, agriculture, and early warning systems, emphasizing proactive measures to mitigate climate-related disasters. Concurrently, community-based adaptation programs and inclusive education initiatives stress local engagement and knowledge dissemination, tailoring strategies to diverse community needs. Gender-inclusive policies underscore the commitment to recognizing and addressing climate change impacts on women, fostering a more equitable and resilient society. Subsequent policies target sustainable water resource management, renewable energy adoption, and the creation of green jobs, signifying a transformative shift towards a low-carbon, sustainable economy. Social safety nets and biodiversity preservation reflect a commitment to safeguarding vulnerable populations and ecosystems. Emphasizing international cooperation and diplomacy, Pakistan positions itself as an active participant in global efforts to combat climate change. Collectively, these policies aim to fortify Pakistan's resilience and contribute to global climate action initiatives, paving the way for a resilient, inclusive, and sustainable future amid climate challenges.

# About Accountability Lab Pakistan

Accountability Lab (AL) is an Islamabad-based think tank registered in Pakistan under the Societies Act 1860 as a non-profit organization and certified by the Pakistan Center for Philanthropy (PCP). Accountability Lab works to make governance work for people by supporting active citizens, responsible leaders, and accountable institutions. We are reimagining how to build accountability to support a world where resources are used wisely, decisions benefit everyone fairly, and people lead secure lives.

AL is different from many other organizations in the accountability, rule of law, and anti-corruption space in that we see accountability as a value, not a theme, and work across issues such as governance, human rights, education, climate justice, and health by focusing on positive narratives around these issues; building “unlikely networks” to bring diverse voices into these efforts; and “insider-outsider” coalitions across government, civil society, media, and the private sector.

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# Introduction

Pakistan faces a myriad of climatic threats that intricately weave into the fabric of its sociopolitical and economic landscape. Rising temperatures, erratic precipitation patterns, and an increase in the frequency, duration and intensity of extreme weather events pose formidable challenges to every stratum of life in the country. The global challenge of climate change is not just an environmental issue but poses serious social and economic risks to different factions of the society. The recent Intergovernmental Panel on Climate Change (IPCC) report highlights that Pakistan is facing a severe climate crisis, with the melting of mountain glaciers posing a significant threat to the arid country's water supply. The report emphasizes that the consequences of current global warming are largely irreversible and warns that the melting of glaciers is likely to continue irreversibly for decades or centuries.[[1]](#footnote-1) Pakistan has more glaciers outside of the polar ice caps than anywhere on earth, and this poses a significant risk to the country's water supply, particularly for agriculture and human consumption.[[2]](#footnote-2) The country is witnessing an increased frequency of heatwaves, impacting human health and agricultural productivity. Changes in precipitation patterns contribute to floods and droughts, disrupting communities and exacerbating water scarcity[[3]](#footnote-3). As the country hosts a diverse range of ecosystems, from arid regions to fertile plains, sky-high snow-covered mountains, and glaciers stretching for miles to barren plateaus, any alterations in precipitation can disrupt the delicate balance necessary for the survival and sustenance of the local communities.

Effects of climate change on marginalized groups in Pakistan represent a critical and urgent challenge, demanding comprehensive examination and strategic intervention. Marginalized communities, characterized by limited access to resources and often residing in geographically isolated locations such as hilly areas of Khyber Pakhtunkhwa, Balochistan and Gilgit Baltistan and a disproportionally high lack of access to opportunities face a disproportionate brunt of the adverse impacts of environmental aberrations[[4]](#footnote-4). The intricate interplay of climate variables, including altered precipitation patterns, further compounds the vulnerabilities faced by these communities[[5]](#footnote-5). The escalating global temperatures contribute to heightened risks for these groups, impacting not only their immediate well-being but also perpetuating and exacerbating existing socio-economic and health disparities and hindering the prospects of their progress and future growth. Rather in many cases, their living standards are further degraded due to the adverse climatic anomalies.

This policy brief emphasizes the need for inclusive climate policies for marginalized communities in Pakistan. By addressing the unique challenges faced by rural agriculture communities, women, indigenous communities, low-income groups, minorities, and refugees, the proposed policy measures aim to ensure that climate response strategies prioritize equity, social justice, and sustainable development. The principal goal is to build a resilient and inclusive framework that protects the most vulnerable while fostering a sustainable and climate-resilient future.

# The Ecological Challenge

Climate change is characterized by long-term changes in temperature and weather patterns by both natural and human-driven means. These changes can occur naturally as a result of solar activity or due to significant volcanic eruptions.[[6]](#footnote-6) However, since the 19th century, anthropogenic activities have been the primary cause of climate change due to the massive unchecked use of fossil fuels such as coal, oil, and gas.[[7]](#footnote-7) States with ecologically sensitive zones e.g., those with large numbers of glacier reserves are more affected by climate change events due to increased floods and by affecting freshwater resources and exacerbating water scarcity in arid regions.[[8]](#footnote-8) Rising sea levels threaten coastal communities and disrupt ecology. Climate change effects can be seen in the form of rising sea levels, increased floods, severe droughts, water scarcity, destructive wildfires, melting polar ice caps, and a surge in catastrophic storms which is contributing to biodiversity loss.[[9]](#footnote-9) A disproportionate impact of climate change is faced by small island nations and other developing countries. Sea-level rise and saltwater intrusion have reached a critical point where it is forcing entire communities to relocate. Prolonged droughts are increasing the chances of famine. According to a series of UN reports, scientists and government reviewers agreed on the need to restrict global temperature rise to no more than 1.5°C to protect people from the worst climate change consequences. Unfortunately, current policies put us on course for a 3°C temperature rise by the end of the century which would have an even worse impact.[[10]](#footnote-10)**Top of Form**

# Pakistan’s Climate Vulnerability

Over the last few decades, Pakistan has faced climate change issues from record-high temperatures to frequent droughts and floods, worse air quality, smog and melting of glaciers. Underlying societal inequalities have long been a prevalent issue, with cultural values and norms shaping gender and social roles affecting power distribution across various sections of society. Groups and communities with limited access to power and resources often face marginalization and exclusion from decision-making processes which is crucial to their well-being and environmental impact. Women, marginalized communities, children, refugees, people in poverty, ethnic minorities, internally displaced people and people from far-flung areas are most vulnerable to the impacts of climate change. Moreover, climate change events further increase the already existing economic and social inequalities of the vulnerable groups having a disproportionate effect on vulnerable sections of society. These communities have minimal contribution to greenhouse gas emissions but face severe threats to their survival, livelihoods and overall welfare due to climate change events.

Some areas may face increased aridity, while others may experience more intense and erratic rainfall, leading to issues such as soil erosion and flash floods. These changes pose a direct threat to food security and the livelihoods of those dependent on agriculture. Extreme weather events, including flood and cyclones, further compound the climate challenges.[[11]](#footnote-11) The sociopolitical implications of climate change are profound, as climate-induced displacement strains existing infrastructures and resources, triggering potential conflicts over access to essential services. Economically, the agricultural sector, a cornerstone of Pakistan's economy, faces uncertainties due to variable climate conditions, affecting food security and livelihoods. Addressing these challenges requires a nuanced understanding of the interconnectedness between climatic threats, societal vulnerabilities, and economic stability, emphasizing the urgency of comprehensive policies that navigate the intricate dynamics of climate change in the Pakistani context.

The monsoon season brings the risk of devastating floods, impacting communities, infrastructure, and agriculture. Conversely, periods of drought can lead to water shortages, affecting both urban and rural areas. The vulnerability of coastal regions to cyclones adds another layer of complexity, especially in areas like Karachi. These events not only result in immediate damage but also have long-term implications for the affected communities' resilience and recovery.

Global Climate Risk Index published by German Watch ranks Pakistan as the fifth highly vulnerable country to climate change.[[12]](#footnote-12) It further explains that Pakistan has lost 9,989 lives and suffered economic losses worth $3.8 billion in about 152 extreme weather events from 1999 to 2018.[[13]](#footnote-13) The data indicates an increase in climate change vulnerabilities although it does not include the catastrophic floods of 2022 and subsequent heatwaves breaking previous highest temperature records. Floods of 2010 affected 20 million people, killed around 1600 and caused a damage of $10 billion[[14]](#footnote-14) while floods of 2022 affected 33 million people, killed around 1750 and caused a damage worth $14.9 billion.[[15]](#footnote-15) The June 2015 heatwave in Karachi resulted in more than 1200 deaths[[16]](#footnote-16) and in 2015, the Karachi heatwave killed 65 people in just 3 days.[[17]](#footnote-17)

Pakistan’s increased vulnerability to climate change is due to its unique geography with deserts in Punjab, Sindh and Balochistan. The northern part of Pakistan has the third largest mass of ice and the three most famous mountain ranges Himalayas, Hindukush and Karakoram. Pakistan has roughly 5000 glaciers which melt in summer but increased temperature due to climate change has speeded up the natural process resulting in recurring floods.[[18]](#footnote-18) Pakistan has a warm climate and most of the land is arid and semi-arid. The rivers are filled by the melting of glaciers in the Hindu Kush, Himalayan and Karakoram ranges, the flow is disturbed by global warming and the agriculture-dependent economy is thus highly climate sensitive. Variable monsoon rains, floods and droughts cause threats to water security, food and energy security.[[19]](#footnote-19) Wildfires and pest infestations fueled by dry and hot conditions threaten the wildlife of plants and animals and consequently the ecology. The unique landscape and weather patterns of different parts of the country and a varied social structure affect people unequally.

# Diversity in Pakistan

Pakistan is home to multiple ethnic, religious and cultural communities. This diverse population comprised of numerous ethnic, religious and cultural groups possess both challenges and opportunities in addressing climate change. Within this diverse populations, there are various sections of society which are disproportionally affected. Marginalized communities, women, minorities, low-income groups, refugees, indigenous groups, significant population in Hunza and the Kalash communities face heightened vulnerability to climate-related risks. The reason for this could be limited resource access, discrimination, no say in decision making process and social marginalization. The financial impact faced by these communities as a result of climate change events has the potential to threaten their survival.

# Marginalized Communities of Pakistan and Climate Change

Several groups in Pakistan can be classified as marginalized communities based on gender, economic opportunities and status, religious association as well as nationality and residency status in the country. Using these indicators, this brief identifies six types of marginalized communities including rural-agriculture communities, women, low-income groups, indigenous communities of Hunza and Kalash, refugees, and minorities. The subsequent part of this sections is dedicated to analyzing the impact of climate change on these communities and thus establishing the rationale for inclusion-based in climate response strategies.

## Agriculture-rural Communities

Rural communities primarily being involved in agriculture are most affected by weather changes. Floods, droughts and unpredictable rains have a direct impact on crop yield leading to diverse socio-economic impacts. Rural agriculture communities of Sindh, Balochistan and Southern Punjab primarily form this community. In recent floods of 2022, Balochistan and Sindh were the most affected regions followed by the Southern Punjab in terms of devastation.[[20]](#footnote-20) According to the Post Disaster Need Assessment conducted jointly by the Government of Pakistan and the United Nations Development Program, the 2022 floods in Pakistan have affected almost 33 million people and displaced around 7.9 million majority of which is the rural population.[[21]](#footnote-21) Floods and droughts destroying crops make the rural population even poorer as after the 2010 floods in Sindh, some agricultural land became uncultivable.[[22]](#footnote-22) Ironically, apart from the monsoon season, very less rainfall occurs in Sindh, Balochistan and Southern Punjab which create the risks of drought due to water stress. Frequent heatwaves in Quetta, Balochistan has become a norm now and temperature above 40 is normal and still rising.[[23]](#footnote-23) Repetitive droughts effect water channels and agricultural activity in Balochistan causing food insecurity and intensification of socio-economic challenges in the most underdeveloped region of the country. While drought is not the only environmental issue faced by marginalized communities of Balochistan, earthquakes in southwest of Balochistan and landslides further exacerbates the problem for these communities.[[24]](#footnote-24)

A correlation exists between natural disasters and multidimensional vulnerability as seen in case of marginalized regions, in most of the cases in districts where natural disasters hit the vulnerability was already very high which means that the community resilience is low. Balochistan, Southern Punjab and some areas of KPK have the highest correlation in this regard.[[25]](#footnote-25) 2000 and 2002 droughts affected around 3 million people in Balochistan and Sindh resulting in a fall of economic growth from 6% to 2.6%.[[26]](#footnote-26)

Kashmiri society is highly impacted by natural disasters like earthquakes and by climate change events. The society in Azad Jammu and Kashmir (AJK) is largely agrarian with a noticeably high rural population ratio of 88.12. In recent years, climate change has taken a toll on the environment and these resources leaving many low-income Kashmiris without the natural wealth of their predecessors. AJK remains one of the most vulnerable regions to the impacts of climate change due to its reliance on the environment for energy resources, agricultural and livestock production, and subsistence farming. The biggest climate threats to the region as reported by AJK Ministry of Planning and Development include increasing temperature levels, soil erosion, land degradation, decreased river flow, frequent droughts, intense extreme rainfall events and climate change-induced floods.[[27]](#footnote-27) These threats have the potential to lead to a loss of life, property, infrastructure, and livelihood means, as well as an increased risk of natural disasters. Ultimately, it is the most impoverished and vulnerable members of society that face the most severe consequences of climate change.

There is also correlation between multidimensional vulnerability and natural disasters: most districts in which the former is high have experienced recent natural shocks, which mean poverty and food insecurity levels are already high, and community resilience low.

*The highest correlation is seen in Balochistan, Sindh, southern Punjab and parts of KP.*

## Women

Women are the most vulnerable and marginalized portion of society when it comes to facing climate change events. They have limited household power, say in decision making and at the same time have to face starvation, sexual assault and diseases. The Government of Pakistan estimated around 8.2 million women of reproductive age and a much higher ratio of affected women in recent floods.[[28]](#footnote-28) Women made up 49% of the 1.5 million internally displaced individuals in the province of Sindh at the time.[[29]](#footnote-29)

*In places hit by flooding, the rate of maternal death reached 381 per 100,000 live births.*

The Oxfam Consolidated Gender Analysis for Disaster Response in Pakistan highlights that during emergencies like floods there was less access to clean water. Men and women both had more difficulty getting clean water during such situations but women's access decreased more sharply.[[30]](#footnote-30) This in turn directly results in an increased risk of waterborne diseases among women in such areas. Apocalyptic floods have effects on all; men, women and children but women particularly rural women bear the brunt of the impact.

*According to data from a 2018 demographic and health census, 99.5% of women in rural Sindh, 96.7 % in rural Punjab, and 99.5% in rural Balochistan did not own land although they are major contributor in the agriculture.*

Since they do not own the property, they labor on and women farmers are not reimbursed for crop losses after a disaster. Another significant issue highlighted in Demographic and Health Survey Report that needs attention is the lack of financial education among rural women.

*In Punjab, Sindh, and Balochistan, the percentage of rural women who own and use a bank account is about 5.3%, 1.6%, and 0.9 percent, respectively.*

These women have very rarely gotten any formal loans since they have very little land to use as security.

During the 2022 Floods, the United Nations Population Fund gave estimates of around 650,000 pregnant women in flood-affected regions in dire need of maternal health services to guarantee a safe pregnancy and delivery.[[31]](#footnote-31) Access to medical services for women and girls has also been hampered by the damage to roads and bridges. Even in normal circumstances, women residing in rural areas of Pakistan have very less access to healthcare facilities and the situation is worsened tenfold in case of any humanitarian disaster. United Nations Population Fund (UNFPA) indicates that incidences of Gender-based violence increase in case of natural catastrophic events which result in the destruction of homes.[[32]](#footnote-32)

## Low-Income Groups

Low-income groups suffer in climate crises although they are not responsible for the activities causing the crisis at the first place. The estimated poverty rate of Pakistan is roughly $2 per day and 50% population faces purchasing power parity with significant provincial differences.[[33]](#footnote-33) Southern subregions of all provinces have high poverty ratio compared to the northern parts of the same provinces.[[34]](#footnote-34)

KPK is an exception in this regard as it has high poverty rate in both sub-regions. Pakistan is ranked 146 out of 187 countries in the low human development index making it one of the least developed countries in the world in the human development category. The reason for this is the high poverty rate, less access of resources by low-income groups and lack of effective strategies to overcome poverty. The presence of this high number of populations included in low-income groups further increases the burden on economy when this section of society is hit by climate catastrophic events. Their homes, livelihood, land and savings are lost in case of climate change events, causing forced migration and displacement making them climate refugees. Their ability to respond by recovering and adapting is the least due to limited resources. They usually have homes in low-lying areas and are not made of material which can bear heavy rainfall, floods or heatwaves. In 2014, many Children died of malnutrition in Tharparkar (Sindh) after rainfall decreased from March 2013 to Feb 2014.[[35]](#footnote-35) The already existing scarce resources are further drained due to these sudden episodes of droughts, floods or decreased rainfall making it a life-threatening situation challenging survival.

## Indigenous Communities

Kalasha people who live in the northwestern region of Pakistan is a unique cultural and religious minority community. For years tourists come to visit them and observe their way of life and at the same time community is struggling to preserve its unique culture. Monsoon season brings flooding in the region damaging homes, crops and loss of livelihood, threatening food and life security of the community.[[36]](#footnote-36) Unusual Melting of glacier located in northern Pakistan is one of the main reasons causing flooding very often. Glacial floods have disrupted the natural landscape and has posed serious threats of soil erosion, food insecurity, cultural loss and species migration. 2011 and 2015 floods due to glacial out bursting caused huge loss of livelihood to the Kalasha people.[[37]](#footnote-37)

33 out of 2,044 glacial lakes located in the northern region are at higher bursting risk.[[38]](#footnote-38) Glacial Outburst Flooding (GLOF) has become frequent causing a decreased crop yield and low agricultural income. GLOF is not only disastrous for people living in Hunza but also for those living close to rivers due to the role of glaciers melting on south Asian rivers.[[39]](#footnote-39) 70% Annual flow in the Indus River comes from melting snow and glaciers and any disruption in the usual water supply causes damage to the agrarian economy downstream. Hunza Basin located in western Karakoram has 31% area covered with glaciers and is thus very vulnerable to climate change and rising temperatures.[[40]](#footnote-40) Melting of glaciers and resulting floods are causing migrations in the upper Indus basin and people usually use self-help strategies to sustain in these situations. People are displaced due to continuous land sliding events followed by the famous Attabad landslide. These massive displacements directly result from climate change events and target the Hunza people in particular.

## Refugees

According to recent stats, Pakistan’s refugee population has reached the number of 1.74 million.[[41]](#footnote-41) Most of this refugee population is composed of Afghan refugees with a number of 1.3 million registered Afghan Citizen Card Holders (ACC) and about 400,000 or more undocumented Afghans. Non-Afghan refugees and asylum seekers from Somalia, Iran, Iraq and Palestine also compose a percentage of Pakistan’s refugee population.[[42]](#footnote-42) A major portion of this refugee population belongs to lower-class income groups with less access to resources and no say in decision-making processes. They live in areas and communities which are not very adaptive to climate change and are thus more vulnerable. Heavy monsoon rains, floods and droughts impact these communities directly further worsening the already worsened situation.

Climate change has also led to the emergence of the Climate Refugees. These are the people who are forced to move due to climate change events such as floods, droughts, famines, heatwaves and other events. The recent flooding in Pakistan has displaced about 8 million people as their homes and livestock were destroyed completely by the monsoon rains and floods.[[43]](#footnote-43) About 600,000 people[[44]](#footnote-44) from affected communities in Sindh and Balochistan took shelter in relief camps and about 50,000 moved to Karachi resulting in unplanned urbanization.[[45]](#footnote-45) They lose their savings to these catastrophic events to survive on nothing and eventually have to take a new start with no savings or home available.

## Minorities

Pakistan has multiple ethnic and religious minorities. The Hindu population is 2.1 % Christians are the second largest population with a percentage of 1.6%, while the Ahmadi community stands at 0.22% and the remaining minority communities form the last 0.07%.[[46]](#footnote-46) Parsis and Sikhs also live in Pakistan. The majority of the Christian population resides in Punjab and a significant portion of them do low-income jobs. Hindus and scheduled castes live in Sindh province. Ahmadi community is evenly distributed throughout the country with a prominent number residing in Islamabad. Ethnic minorities include Baloch people, Kalash community, Siddis, Barhuis, Hazaras and Nuristanis. Minority communities be it religious or ethnic suffer due to sociocultural practices, racism and hatred. There have been incidents reported during relief campaigns in the floods of 2022 where in Punjab people denied donations to these minorities just because of religious differences. Their burden increases in cases of events which threaten communities as a whole due to lack of inclusive policies and strategies.

# Climate Change and Vulnerable Groups in Pakistan

Agricultural communities in arid regions face increased challenges due to changing precipitation patterns, leading to disruptions in crop cycles and threatening food security[[47]](#footnote-47). Low-income populations residing in urban areas may experience heat-related health issues, highlighting the intersectionality of environmental and public health concerns[[48]](#footnote-48). The increased frequency of extreme weather events amplifies the vulnerability of marginalized groups. Flood-prone regions, such as those along the Indus River, witness recurrent inundations, displacing communities and disrupting livelihoods[[49]](#footnote-49). Conversely, drought-prone areas face water scarcity, impacting agricultural productivity and exacerbating poverty[[50]](#footnote-50). The susceptibility of coastal communities to cyclones, as exemplified by the impact of Cyclone Phet in 2010, underscores the urgency of addressing climate-induced disasters in vulnerable areas[[51]](#footnote-51). As global temperatures continue to rise, the imperative to formulate inclusive and effective policies becomes paramount. Tailored interventions should consider the specific challenges faced by vulnerable groups, emphasizing community-based adaptation strategies, equitable resource allocation, and proactive measures to enhance resilience and sustainable development[[52]](#footnote-52).

Climate change casts a looming shadow over vulnerable groups, with urban populations and infrastructure in Pakistan standing at the forefront of its impacts.[[53]](#footnote-53) As temperatures rise and extreme weather events become more frequent, urban areas face multifaceted challenges. Heatwaves, intensified by climate change, pose immediate threats to the health and well-being of urban dwellers.[[54]](#footnote-54) Furthermore, altered precipitation patterns contribute to flooding in some areas and water scarcity in others, straining urban infrastructure and exacerbating vulnerabilities.[[55]](#footnote-55) Informal settlements, often housing marginalized communities, are particularly susceptible to climate-induced disasters, with limited resources for adaptation and recovery.[[56]](#footnote-56) The strain on urban infrastructure, including water and sanitation systems, adds layers of complexity to the socio-economic fabric, with potential consequences for public health, social cohesion, and economic stability[[57]](#footnote-57). Addressing the impact of climate change on urban populations necessitates a holistic approach that integrates climate-resilient urban planning, community engagement, and equitable resource allocation to enhance the adaptive capacity of vulnerable groups.

The impact of climate change reverberates acutely among vulnerable groups, notably affecting indigenous communities and biodiversity in Pakistan.[[58]](#footnote-58) Indigenous populations, often deeply connected to their local ecosystems, face escalating challenges as climate change disrupts traditional patterns and places strain on their sustainable practices.[[59]](#footnote-59) Shifts in temperature and precipitation alter habitats, affecting the flora and fauna upon which indigenous communities depend for sustenance and cultural practices.[[60]](#footnote-60) Biodiversity loss, compounded by climate-induced changes, threatens the delicate balance that indigenous communities have maintained for generations, jeopardizing their resilience and way of life.[[61]](#footnote-61) The traditional knowledge held by these communities becomes crucial for adaptation, yet climate change undermines their ability to predict and respond to environmental changes. Urgent action is imperative to safeguard the rich biodiversity intertwined with indigenous cultures, recognizing the invaluable role these communities play as stewards of unique ecosystems. Collaborative efforts that incorporate indigenous knowledge, address their specific vulnerabilities, and promote sustainable conservation practices are pivotal in mitigating the adverse effects of climate change on both these communities and the biodiversity they nurture.

# The Inclusion Imperative

Inclusivity in Climate action is an imperative to reducing climate change impacts on the communities most vulnerable to it and at the same time guaranteeing that climate action burdens are distributed equitably. It not only addresses socioeconomic inequalities but also strengthens the economy by creating more opportunities, better natural resource management and improved health and well-being. Inclusive Climate action paves a way forward towards the sustainable future and a future in which no one is left behind. Inclusion provides the marginalized and disproportionally affected sections of society the right to participate and decide on matters concerning their future. Increased poverty and climate-induced migrations decrease economic growth and inhibit sustainability. Equity should be the base of our climate action plans, ensuring that the benefits and burdens of climate change are shared equitably. Climate justice demands equal access to resources, clean energy, sustainable livelihoods and specially the resilient infrastructure independent of their socioeconomic standing. By dismantling systemic inequalities, bridging the gap between the rich and poor, privileged and underprivileged communities and embracing inclusive policies, we can pave the way for a more just, resilient and prosperous future for all.

Adaptation and mitigation efforts are of no use until all sections of societies and all communities are involved in the decision-making process and policies are designed in a way to alleviate the position of the most vulnerable communities. Inclusive climate action takes place by including stakeholders from various sections of society in the decision-making process and recognizing the need for representation of the communities significantly affected by climate change. Non-Government Organizations working at the grassroots level could be consulted as they have first-hand accounts of ground realities, issues and can propose potential solutions.

# Inclusion and Existing Climate & Environment Policies in Pakistan

National Climate Change Policy, Climate change policies of all provinces, AJK and Gilgit Baltistan recognize the marginalized and disproportionally affected sections of society. These policies provide a framework for disaster preparedness and risk reduction, adaptation and mitigation efforts with a focus on climate-responsive infrastructure. All these policies are very comprehensive highlighting the climate change events faced by each province and the corresponding adaptive policies needed. However, one main thing these policies lack is that the institutional duties are quite blurred and overlapping, and a proper enforcement mechanism and issue-focused strategy are missing. The need for inclusivity and the existence of marginalized communities although recognized in all but grassroot level accounts including all communities is missing. Balochistan government’s climate response is lagging far behind the rest as Balochistan does not have a Climate Change Policy despite being the most affected province by Climate change; repetitive droughts, floods, heatwaves and agriculture loss. We are analyzing Balochistan Environment Protection Act 2012 here. The Balochistan Environment Protection Agency was supposed to draft the Balochistan Climate Change Policy based on National Climate Change Policy but no progress has been seen so far.

Women as the most vulnerable section of society were recognized in all policies. The gendered roles and societally influenced division of labor put women at risk in climate change events. National Climate Change Policy serves as the baseline to mainstream gender perspective at both national and regional levels when it comes to Climate change efforts and highlights the vulnerabilities of rural women as well. National Climate Change Gender Action Plan (CCGAP) is under development which will provide gender-responsive strategies and enhance institutional coordination in gendered approach to Climate Change issues. Punjab, Sindh, KPK and AJK policies and strategies provide a focus on rural women and the disproportional effect faced by them. Punjab Climate Change policy talks about making rural women aware of the latest technologies and is focused on their education in hazard awareness which is not considered in other policies and strategies. Sindh and KPK Policies show strong women-centric approaches to climate change by establishing separate enforcing units for the purpose. The provincial Sindh Government collaborates with the Sindh Rural Support Organization to ensure gender-sensitive interventions to incorporate women's role in community organizations. KPK Government established the Provincial Commission on the Status of Women to conduct an inclusive approach in all domains, particularly disaster management.

The inclusion of rural communities has been a prime focus in all province’s climate change policies, particularly through agriculture and livestock protection. The National Climate Change Policy, AJK, Sindh and KPK climate change policies call for the need for flood-resilient housing structures in rural areas and the use of modern technology in crop’s increased output is put into focus. KPK and Sindh Climate change policies focused on rural development include rural populations among poor communities and provide poverty reduction strategies. Sindh Climate change policy analyzes land holding size as well. The provision of better health facilities to rural areas has been targeted in all major policies. GB's climate change strategy was however slightly different as it talks about the development of a particular vulnerability index for cities, towns and rural areas to make it public knowledge and include them in the decision-making process which is suggested by all other policies as well. All policies talk about the disproportional effect of climate change particularly on rural women but they are apparently helped by better agricultural practices while they do not receive the income mostly generated by these lands due to lack of land ownership. None of the policies mentions any special post-disaster management strategy or preference when it comes to rural women.

Marginalized communities are highlighted in all policies as the ones facing the brunt of climate change events but generalized suggestive measures are mentioned without any proper plan or allocation of that task to any particular institution. National Climate Change policy talks about Glacier Lake Outburst Floods (GLOFs) risk reduction project in Northern Pakistan by the government of Pakistan but such particular projects are missing in provincial policies. It also aims to assist farmers in Balochistan with modern technological agricultural practices in order to lift them from poverty. GB Climate Change Policy recognizes the vulnerabilities of Hunza community promotes and encourages the use of glacier grafting techniques and discourages resettlement of the population in areas prone to floods such as riverbeds. Punjab Climate Change Policy provides disaster risk reduction strategies to prevent these climate change events from happening at the first plan but does not take a community-centered approach.

Low-income groups are mentioned in all policies but they are mostly targeted at the rural population except in Punjab and Sindh policies and poverty alleviation strategies are provided in the form of improved agricultural practices etc. The low-income groups are however not only the rural population, many urban communities and far-flung areas are also part of this group. The national Climate change Policy is the only one which takes a more inclusive approach and suggests the integration of poverty-climate change nexus in economic policies. KPK's climate change policy talks about climate change migrations in terms of low-income groups and investigates plans for them, which is a very inclusive approach. Punjab Climate change policy shifts its focus to the provision of quality and quantity of employment opportunities which is a more sustainable way to lift up these groups. It further proposes increasing skilled labour. Sindh identifies multidimensional poor populations in rural and urban areas at 75.5% and 10.6% respectively. Adaptation and mitigation strategies are suggested to help this population access to health care is also suggested but no proper plan is given to lift up this section of society from poverty.

There is no mention of refugees and minority groups in any climate change policy probably due to its generalized inclusion in low-income or vulnerable sections of society. The government policies avoid acquiring a religious or politically complex structure is also one possible explanation in this regard. Internally displaced populations, the climate-induced internal migrations are although considered in GB and Sindh Climate change policies and adaptation measures are suggested, their resettlement in areas prone to floods is suggestively restricted. Vulnerabilities of Kalash community are not highlighted in NCCP and KPK climate change policy and are thus entirely ignored. This shows a very non-inclusive approach with regard to a culturally significant yet threatened community in these climate change policies.

GB Climate change policy is the only one which emphasizes regular monitoring and follow-up implementation of devised strategies but no other policy takes into account this factor. Sindh and KPK policies take a youth-inclusive approach making youth an important part of decision-making of adaptation and mitigation strategies. Balochistan faces a legislative and policy gap with respect to climate change. It needs to adopt a proper climate change policy or strategy, the Balochistan Environment Protection Act (2012) focuses on waste reduction and no focus is being given to climate change events and inclusivity. Community-targeted inclusivity is lacking in all climate change policies, refugees, ethnic and religious minorities are completely ignored. Moreover, inclusivity in policies is in a suggestive form, very less focus is being made on implementing institutional strategies or assigning one institution a certain task. Collaborations in mainstreaming gender are a good step. These policies still need to be made more inclusive and formulation of targeted plans are needed in order to ensure a uniformed and equitable inclusion.

# Policy Options

## Data-driven Approaches

*Implement data-driven approaches to identify vulnerable areas and groups, utilizing advanced analytics and* *geographical information systems (GIS) for precise mapping and targeted interventions.*

The strategic use of data-driven approaches to identify vulnerable areas, employing advanced analytics and geographical information systems (GIS) for precise mapping and targeted interventions should be the top priority. By harnessing the power of data, the government can gain a comprehensive understanding of the specific vulnerabilities of the communities. This involves analyzing historical climate data, socio-economic indicators, and environmental factors to identify regions and people most at risk. Advanced analytics can facilitate predictive modeling, help to anticipate future vulnerabilities and plan proactive intervention mechanisms. GIS technology enables precise mapping, allowing for the identification of vulnerable populations, critical infrastructure, and areas prone to climate-related disasters. This information is instrumental in designing and implementing effective tailored interventions, ensuring that resources are allocated efficiently to address the unique challenges faced by different regions and people. Moreover, a data-driven approach enhances transparency and accountability in climate resilience efforts, fostering evidence-based decision-making for sustainable and inclusive interventions across Pakistan.

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## Climate-Resilient Infrastructure

*Introduce regulations and incentives for the development of climate-resilient infrastructure, focusing on areas prone to climate-related disasters like GLOFS, floods and cyclones.*

Developing and implementing climate-resilient infrastructure is a critical step toward addressing the challenges posed by climate change, particularly in regions susceptible to disasters such as GLOFs, floods and cyclones. By introducing comprehensive and inclusive regulations, the government can set clear standards for infrastructure projects, ensuring the incorporation of climate resilient design principles. These regulations should encompass a range of sectors, including buildings, transportation, and water management, to enhance the overall adaptability of the country's infrastructure. Concurrently, the provision of incentives, such as tax breaks and subsidies, can encourage both public and private entities to invest in climate-resilient practices. This policy not only aims to strengthen infrastructure against the increasing frequency of climate disasters but also seeks to promote sustainable development practices aligned with country’s broader climate resilience goals.

## Sustainable Agriculture Practices

*Implement and incentivize sustainable agricultural practices that enhance resilience of the agriculture communities to changing climatic conditions, including the promotion of drought-resistant crops, efficient water management, and organic farming practices.*

The promotion of sustainable agriculture practices is a crucial policy option for strengthening climate resilience and inclusivity in Pakistan's agricultural sector. By implementing and incentivizing sustainable farming, the government can address severe impacts of climate change on agriculture. The adoption of drought-resistant crops must be prioritized, emphasizing the need for crop varieties that are able to withstand erratic precipitation patterns, water scarcity, and temperature aberrations. Incentivizing efficient water management techniques will also contribute to the conservation of this vital resource, crucial for sustaining agricultural productivity. Organic farming practices, another policy suggestion, is pivotal to enhancing soil health and reducing reliance on chemical inputs and also aligns with SGDs targets. Through these measures, the policy not only leads to mitigating the adverse effects of climate change on agriculture but also supports the livelihoods of farmers, promoting a resilient and inclusive agricultural sector capable of adapting to the challenges posed by changing climate.

## Early Warning Systems

*Strengthen early warning systems for extreme weather events ensuring timely alerts to vulnerable communities and enabling proactive disaster preparedness and response.*

Strengthening early warning systems is a crucial step towards enhancing climate resilience and ensuring the inclusion of vulnerable communities in disaster preparedness and response. By investing in and augmenting early warning systems, the government can significantly reduce the impacts of extreme weather events, such as floods and heatwaves. Timely and accurate alerts provide communities with the vital information to undertake proactive measures e.g., evacuation preparedness for effective response to potential disasters. This not only safeguards lives and property but also plays a pivotal role in promoting inclusivity by ensuring that vulnerable populations are not disproportionately affected by the adverse impacts of climate change. Effective early warning systems are indispensable for fostering a climate-resilient society where individuals, particularly those in high-risk areas, can make informed decisions in the face of impending climate disasters. Therefore, this policy serves as a cornerstone for comprehensive climate adaptation strategies.

## Community-Based Adaptation Programs

*Design and implement community-based adaptation programs that empower local communities to develop and implement strategies to cope with climate change impacts, considering their specific needs and vulnerabilities.*

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Implement community-based adaptation programs is important for enhancing climate resilience and promoting inclusivity. By designing and implementing community level programs tailored to the specific needs and vulnerabilities of local populations, the communities can be empowered to take proactive measures in adapting to climate change. There is a need to recognize the unique challenges faced by different regions and communities for developing a targeted and context-specific approach. Individuals become active contributors to their own resilience through community engagement and participation thus fostering a sense of ownership and sustainability in adaptation efforts. Such programs can address the socioeconomic inequalities that often exacerbate the impacts of climate change on marginalized groups. Ensuring inclusivity in the decision-making processes and recognizing the role of local communities not only builds resilience but also promotes a more equitable and sustainable response to climate change.

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## Inclusive Education on Climate Change

*Integrate climate change education into curriculum, emphasizing the importance of sustainable practices and the impacts of climate change. Ensure the inclusion of diverse perspectives and indigenous knowledge.*

Inclusive education on climate change characterizes a fundamental step towards enhancing climate resilience and fostering inclusivity. By integrating climate change education into curriculum at all levels, the government can empower the younger generations with knowledge and awareness about the environmental challenges. This will not only promote the importance of sustainable practices but also cultivate a sense of environmental stewardship among future generations. The inclusion of diverse perspectives and indigenous knowledge will also lead to recognition of the rich tapestry of Pakistan's cultural and ecological diversity leading to strengthened national unity. Inclusive education equips students with the tools to understand and address climate change, nurturing a generation that will not only be resilient in the face of environmental challenges but will also be appreciative of the unique and valuable contributions different communities make to sustainable development. Through this, Pakistan can lay the foundation for a more informed and environmentally conscious populace capable of actively participating in climate action and adaptation initiatives.

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## Gender-Inclusive Climate Action

*Develop and enforce gender-inclusive climate action policies that recognize and address the unique vulnerabilities and contributions of women to climate resilience. Ensure women's participation in decision-making processes related to climate change.*

Developing and enforcing gender-inclusive climate policies is instrumental in enhancing climate resilience and fostering inclusivity. Recognizing the unique vulnerabilities women face due to climate change and acknowledging their crucial role as agents of resilience, this policy seeks to address gender disparities and promote equitable climate action. By ensuring the active participation of women in climate-related decision-making process, the government can harness a diversity of perspectives and experiences, leading to more effective and inclusive policies. Moreover, gender-inclusive climate policies can empower women economically, socially, and environmentally, contributing to the overall resilience of communities. This approach not only acknowledges the differential and disproportional impacts of climate change on women but also acknowledges them as key players in climate adaptation and mitigation pursuits. Through the implementation of gender-inclusive policies, Pakistan can forge a path towards a more equitable and resilient future, where the unique contributions of all genders are recognized and leveraged in the face of climate challenges.

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## Climate-Resilient Water Resource Management

*Implement sustainable water resource management practices resilient to climate change, including efficient irrigation systems, rainwater harvesting, & conservation, to address the intensifying climate-induced water scarcity.*

Efficient and climate resilient water resource management is key to bolster climate resilience and promote inclusivity, given the intensifying climate-induced water scarcity in Pakistan. Through sustainable water resource management practices, such as efficient irrigation systems, rainwater harvesting, and conservation measures, the government can mitigate the adverse effects of changing precipitation patterns and increasing temperatures on water availability. This approach addresses the immediate challenges posed by climate-induced water scarcity and ensures the sustained access to this critical resource for agricultural, industrial, and domestic needs particularly for the marginalized communities. Moreover, the implementation of efficient irrigation systems and rainwater harvesting techniques empowers local communities to actively participate in water conservation efforts. By incorporating inclusive practices, such as involving marginalized communities and considering their specific water needs, this policy contributes to a more equitable and just distribution of water resources. The improvement of water resource management emerges as a holistic approach that adapts to climate challenges and bolsters inclusivity and sustainable development.

## Renewable Energy Adoption

*Promote the transition to renewable energy sources, such as solar and wind power, through incentives, subsidies, and regulatory frameworks for reducing reliance on fossil fuels and mitigating climate change impacts.*

Renewable energy adoption stands as a cornerstone strategy for enhancing climate resilience and enhancing inclusivity. The promotion of and transitioning to renewable energy sources, including solar and wind power, through a combination of incentives, subsidies, and robust regulatory frameworks, can contribute to the government’s climate mitigation efforts. This policy option addresses the urgent need to reduce the nation's reliance on fossil fuels and also contributes to a more sustainable and resilient energy infrastructure. The incentives and subsidies provided for transition to renewables is essential to stimulate investments in green energy, promote economic growth and create new job. A clear regulatory framework is needed to ensure a smooth transition to and creation of a conducive environment for the renewable energy sector to thrive. The adoption of renewable energy technologies not only aids in climate mitigation but also contributes to provide energy accessibility for marginalized communities, thereby promoting inclusivity in the country's sustainable development. This policy options also aligns with global efforts to combat climate change while simultaneously propelling Pakistan towards a greener and more inclusive energy future.

## Green Jobs and Entrepreneurship

*Develop and implement programs to support the creation of green jobs and entrepreneurial opportunities in sustainable industries, promoting economic growth while contributing to climate resilience.*

Creation of green jobs and entrepreneurship opportunities represents a crucial economic avenue for enhancing climate resilience and enhancing inclusivity. By developing programs that specifically support the establishment of green jobs and entrepreneurial ventures in sustainable industries, the government can simultaneously address climate challenges and stimulate economic growth. This policy option recognizes the interdependence of environmental sustainability and economic development. By focusing on sectors such as renewable energy, energy efficiency, sustainable agriculture, and eco-tourism, green job creation can pave the way for a more resilient and low-carbon economy. Moreover, these programs can play a significant role in inclusivity enhancement by targeting marginalized communities and providing them opportunities to actively participate in the green economy. A culture of innovation and entrepreneurship in sustainable practices will contribute to climate resilience and positions Pakistan at the forefront of the global green transition. The creation of green jobs and entrepreneurship opportunities emerges as a holistic strategy that aligns economic prosperity with environmental sustainability.

## Social Safety Nets for Vulnerable Populations

*Establish social safety nets for vulnerable populations affected by climate change, ensuring they have access to essential services, healthcare, and financial assistance during climate-related emergencies.*

Establishment of social safety nets for vulnerable populations emerges as a compassionate and strategic approach to enhancing climate resilience and promoting inclusivity. By instituting robust social safety nets, the government can ensure that vulnerable communities affected by climate change have access to essential services, healthcare, and financial assistance during climate-induced disaster. This policy option acknowledges the disproportional vulnerability of the marginalized populations by environmental challenges which require targeted support to cope with the multifaceted consequences of climate change. Social safety nets provide a vital cushion, offering a lifeline to those in need during emergencies such as floods, droughts, or extreme weather events. By securing access to healthcare services and providing financial assistance, this policy not only addresses the immediate impacts of climate change on vulnerable populations but also contributes to long-term resilience and sustainable development. Through this approach, Pakistan can demonstrate a commitment to social equity, ensuring that no community is left behind in the face of climate-related challenges.

## Biodiversity Preservation

*Implement conservation and restoration programs for ecosystems and biodiversity.*

Implementing conservation and restoration programs for ecosystems and biodiversity is fundamental in enhancing climate resilience and inclusivity. By recognizing the intricate connection between biodiversity, climate resilience, and sustainable development, this policy suggestion underscores the importance of preserving and restoring ecosystems. Safeguarding biodiversity is also critical in mitigation actions as diverse ecosystems are more resilient in the face of environmental stressors thus saving carbon sinks. This policy contributes aims to ensure the protection of unique flora and fauna and maintain essential ecosystem services, such as water purification, pollination, and climate regulation, which are vital for the well-being of communities. The implementation of conservation programs can also create opportunities for local communities, including indigenous groups, to actively participate in ecosystem protection, promoting inclusivity and sustainable resource management. Overall, this policy aligns with global conservation goals, emphasizing the integral role of biodiversity in building resilience to climate change and fostering a balanced and sustainable environment.

## International Cooperation and Diplomacy

*Engage in international collaborations to address transboundary climate issues, sharing knowledge, technology, and resources to collectively combat climate change. Climate negotiations are also vital in obtaining climate finance proportional to the magnitude of needs of the nation.*

International cooperation and diplomacy constitute a strategic and collaborative approach to enhance climate resilience and inclusivity in Pakistan. Recognizing that climate change transcends national borders, this policy advocates for active engagement in international collaborations to address transboundary climate issues and obtain climate financing. By forging partnerships, sharing knowledge, technology, and resources with the global community, Pakistan can tap into a collective pool of expertise and support to effectively combat climate change. International climate activism positions the country as a responsible global actor and facilitates access to crucial resources and innovations necessary for comprehensive climate resilience. Given the unsatisfactory performance by Pakistan in obtaining its due share in global climate financing, the need for effective climate diplomacy is intensified. Moreover, international collaboration fosters inclusivity by providing a platform for Pakistan to contribute its unique perspectives, challenges, and solutions to the global discourse on climate change. By actively participating in diplomatic efforts, Pakistan can ensure that its specific vulnerabilities and the needs of its diverse populations are considered in the global climate agenda. This policy measure underscores the interconnected nature of climate challenges and highlights the importance of a unified, international effort in building resilience and addressing climate change impacts.Top of Form

# Conclusion

The policy options outlined in this brief collectively form a comprehensive and integrated approach to enhance climate resilience and promote inclusivity in Pakistan. The imperative to address climate challenges is underscored by the recognition of the multifaceted impacts of climate change on vulnerable populations and ecosystems. The proposed policies not only prioritize immediate adaptations to climate-induced threats but also envision a sustainable and inclusive future for Pakistan.

The first set of policies focuses on fortifying the country's infrastructure, agriculture, and early warning systems, acknowledging the need for proactive measures to mitigate the impacts of climate-related disasters. Simultaneously, community-based adaptation programs and inclusive education initiatives emphasize the importance of local engagement and knowledge dissemination, ensuring that climate resilience strategies are tailored to the unique needs of diverse communities. The gender-inclusive policies further underscore the commitment to recognizing and addressing the differential impacts of climate change on women, fostering a more equitable and resilient society.

The second set of policies targets the sustainable management of water resources, the adoption of renewable energy, and the creation of green jobs, signaling a transformative shift toward a low-carbon and environmentally sustainable economy. Social safety nets and biodiversity preservation initiatives reflect a commitment to safeguarding vulnerable populations and the vital ecosystems that underpin climate resilience.

Finally, the emphasis on international cooperation and diplomacy recognizes the interconnected nature of climate challenges and positions Pakistan as an active participant in global efforts to combat climate change. Through these policies, Pakistan has the opportunity to not only build its own resilience but also contribute to global initiatives, ensuring a collective and coordinated response to the shared challenge of climate change. Overall, these policy options lay the groundwork for a resilient, inclusive, and sustainable future for Pakistan in the face of climate challenges.

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