BALOCHISTAN CLIMATE CHANGE POLICY

JUNE 2024

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Acronyms and Glossary

B-PPRA	Balochistan Public Procurement Regulatory Authority
B4C	Balochistan Climate Change Coordination Committee
BCCF	Balochistan Climate Change Fund
BCCP	Balochistan Climate Change Policy
BCDGS	Balochistan Comprehensive Development and Growth Strategy 2021-2026
BoD	Board of Directors
BRI	[China's] Belt and Road Initiative
CBD	UN Convention on Biodiversity
CC&ED	Climate Change & Environment Department
ccGAP	Climate Change Gender Action Plan
CPEC	China-Pakistan Economic Corridor
CPEIR	Climate Public Expenditure and Institutional Review
DDMAs	District Disaster Management Authorities
DRM	disaster risk management
FWD	Forest & Wildlife Department
GBV	gender-based violence
GCF	Green Climate Fund
GDA	Gwadar Development Authority
GHG	Greenhouse Gas
GIEDA	Gwadar Industrial Estate Development Authority
GoB	Government of Balochistan
ICT	information and communication technology
IPCC	International Panel on Climate Change
IWRM	Integrated Water Resource Management
Khushkaba	Rainfed Farming
km	Kilometre
L&DDD	Livestock & Dairy Development Department
LG&RDD	Local Government & Rural Development Department

LT-LEDS	Long-Term Low Emissions Development Strategy
LUAWMS	Lasbela University of Agriculture, Water & Marine Sciences
M&E	Monitoring and Evaluation
MoCC&EC	Ministry of Climate Change and Environmental Coordination
$MtCO_2e$	Million Tonnes of Carbon Dioxide Equivalent
NAP	National Adaptation Plan
NbS	Nature-Based Solutions
NDCs	Nationally Determined Contributions
P&DD	Planning and Development Department
PBS	Pakistan Bureau of Statistics
PDMA	Provincial Disaster Management Authority [Balochistan]
PHED	Public Health Engineering Department
PMD	Pakistan Meteorological Department
PMSA	Pakistan Maritime Security Agency
REDD+	A process moderated by UNFCCC which supports countries' efforts to reduce emissions from deforestation and forest degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks.
Sailaba	Runoff Farming
SRHR	Sexual and Reproductive Health and Rights
UN	United Nations
UNCCD	UN Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WASH	Water, Sanitation, And Hygiene

Part - A

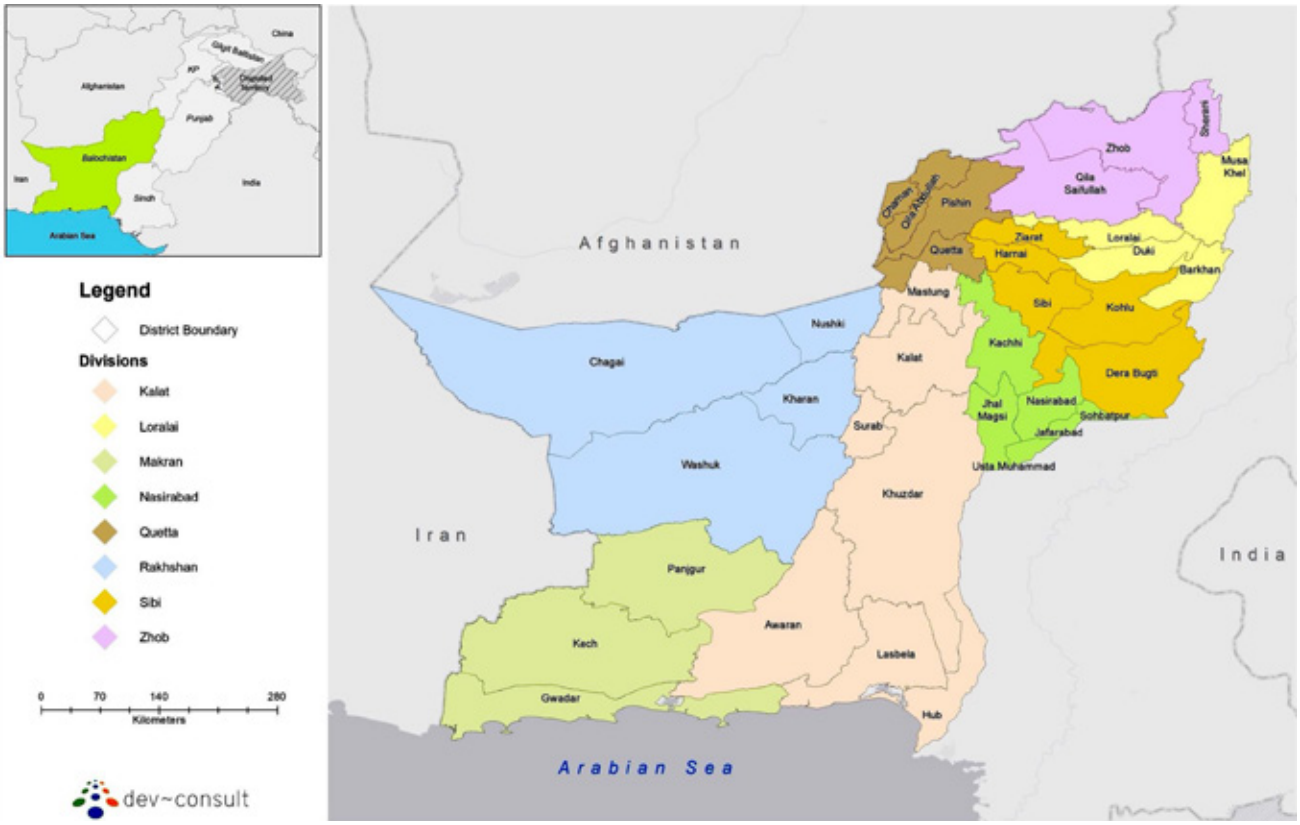
Balochistan
Climate Change Policy

1. Introduction

1.1. Geopolitical and Economic Context of Balochistan

The geopolitical context of Balochistan province in Pakistan is complex and multifaceted, shaped by a combination of historical, strategic, and ethnic factors. Balochistan, Pakistan's largest province in terms of land area, covers approximately 43.6 percent of Pakistan's total land area and is situated in the southwestern part of the country (Map 1). Conversely, it holds the distinction of being the least populous province, accounting for ≈6.2 percent of the nation's total population out of which ≈69 percent lives in rural areas.[1] It shares borders with Iran to the west and Afghanistan to the north. Its geostrategic significance stems from its proximity to the Arabian Sea and the Strait of Hormuz, a critical maritime chokepoint through which approximately 20-30 percent of the world's oil supply flows.[2] This geographical position has made Balochistan a focal point for regional and global powers, as control over the province offers leverage in shaping the dynamics of the broader region.

Map 1: Balochistan's Administrative Divisions and Districts

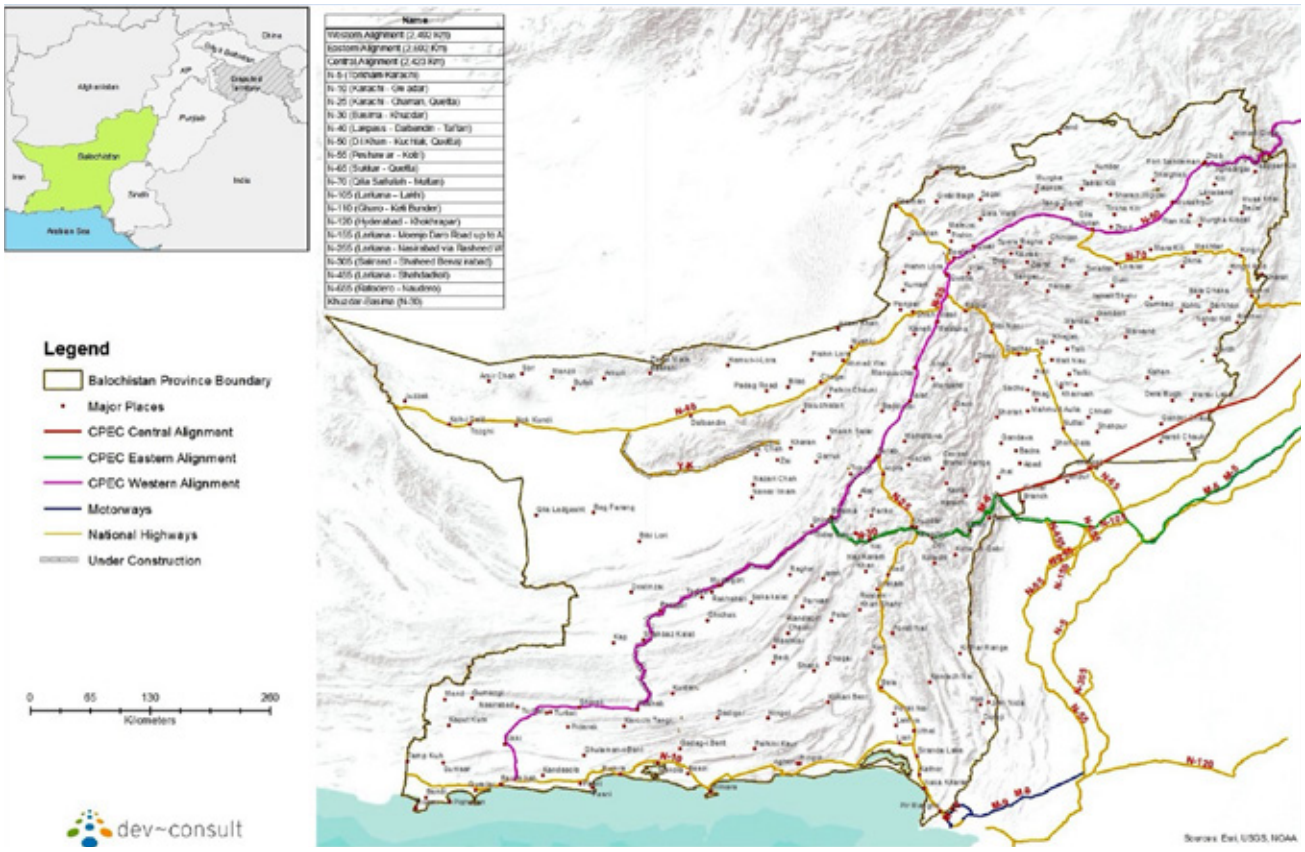


1. According to 2023 Population Census, total population of the province was 14,894,402 individuals living in 2,318,519 houses and growing at 3.2% per annum. Out of total population, 10,282,574 live in rural areas and 4,611,828 live in urban areas. Sex disaggregated data for the 2023 Census is not yet available. According to 2017 Census, women constituted 47.43% of the total population while only 780 transgenders were enumerated in Balochistan.
   Source: Pakistan Bureau of Statistics: Announcement of Results of 7th Population and Housing Census-2023 'The Digital Census' (https://www.pbs.gov.pk/sites/default/files/population/2023/Pakistan.pdf). Accessed: 5 Oct 2023.
2. Strauss Center: Strait of Hormuz (https://www.strausscenter.org/strait-of-hormuz-about-the-strait/#:~:text=The%20Strait%20is%20among%20the,such%20as%20pipelines%2C%20are%20limited). Accessed: 2 Oct 2023.

Connectivity assumes a paramount strategic significance in the context of Balochistan, given its geographical remoteness both from the vital artery of the river Indus, which serves as a lifeline for the nation, and the national trade and economic corridor that runs parallel to the Indus. As a result, Balochistan finds itself somewhat isolated from these two pivotal drivers of economic growth within the country. This isolation has historically hindered Balochistan from fully harnessing the potential benefits of its substantial hydrocarbon resources, primarily due to the considerable distances involved. This same challenge now looms large over the prospects of the Gwadar port's development and the exploitation of Balochistan's mineral wealth.[3]

Despite some limited expansions in the road network (Map 2) in the past, the overall road density in Balochistan remains markedly deficient, standing at a mere 0.09 kilometre (km) per km^2—significantly lower than national and provincial averages in Pakistan. Hence, Balochistan's strategic location has made it a focus of China's Belt and Road Initiative (BRI). The China-Pakistan Economic Corridor (CPEC), a flagship project of the BRI, passes through Balochistan, covering approximately 2,000 km and linking the southwestern Chinese province of Xinjiang to Pakistan's Gwadar Port on the Arabian Sea.

Map 2: Balochistan's Road Network



3. Government of Balochistan. 2023. Balochistan Comprehensive Development and Growth Strategy 2021-2026. Quetta: Planning & Development Department, GoB, and UNDP.

Economically, over the last two decades, the Balochistan's Gross Provincial Product (GPP) growth remained between 3.3-3.5 percent, primarily owing to dismal performance of the agriculture and commodity producing sectors. However, growth in the electricity, gas and transport sectors has been spectacular with an average growth of 32 percent in the same period.[4] The multidimensional poverty in Balochistan was highest with multidimensional poverty index (MPI) score of 71.2 percent in 2015 (with even higher scorer of 84.6 percent in the rural areas) compared to the national MPI score of 38.8 percent.[5] Politically, Balochistan suffers from underrepresentation at the national decision-making and receives lower development budget allocations despite higher cost of delivery due to low population density. Balochistan also ranks at the bottom in Pakistan in terms of women's social and economic inclusion, with women's employment at a meagre eight percent and financial inclusion at 13 percent. While Pakistan now has the fifth highest number of registered voters in the world, Balochistan remains the only region where the overall gender gap remains above 10 percent.[6] The province has the lowest overall literacy rates in Pakistan, with literacy rates for girls and women even lower. Only 19 percent of them have completed primary school,[7] which exacerbates their vulnerability to abuse, domestic violence, and child marriage. This further undermines the efforts to alleviate poverty in Balochistan.

Balochistan's geopolitical dynamics, therefore, involve a delicate balance between economic development, security concerns, and ethnic aspirations, making it a critical area to watch in South Asia's ever-evolving geopolitical landscape.

1.2. Current Climate Trends and Projections

Climate vulnerability in Balochistan is a pressing concern in the context of contemporary climate change. This vulnerability arises from a convergence of geographical, climatological, and socio-economic factors that heighten the region's susceptibility to adverse climate impacts. Balochistan's topographical layout and climatic conditions predispose it to water scarcity, with fluctuations in precipitation patterns and increased evaporation rates playing significant roles in exacerbating water stress. Elevated temperatures further compound this vulnerability, leading to more frequent and intense heatwaves that challenge the region's adaptive capacity. Climate change is widely characterised as a 'threat multiplier' denoting its multi-faceted adverse implications across key sectors and population segments.

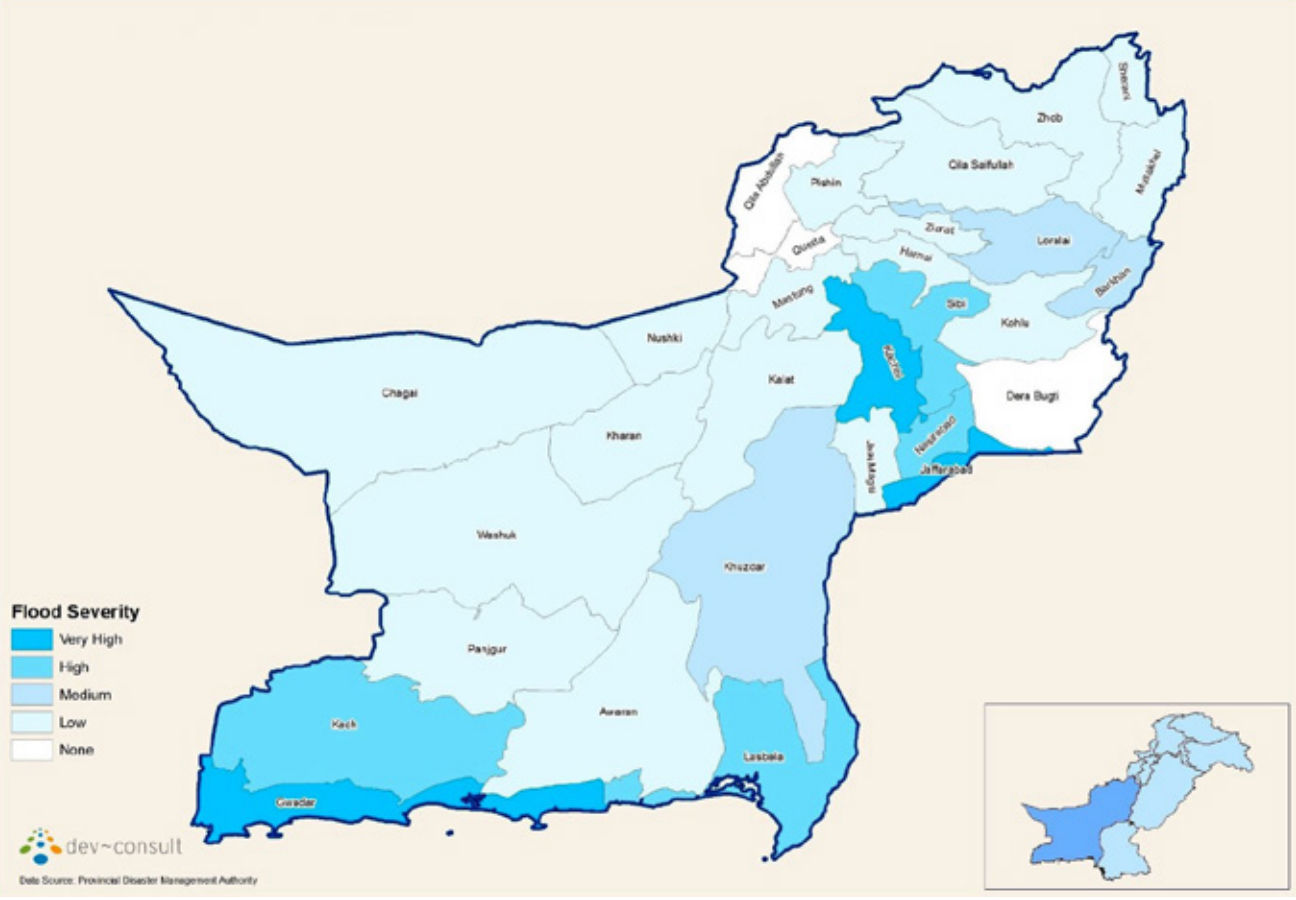
The agricultural sector, a cornerstone of Balochistan's economy, faces notable vulnerabilities. Climate change-induced shifts in rainfall patterns and temperature variations have substantial impacts on crop yields, disrupting established agricultural practices and posing threats to food security. Coastal regions, such as Gwadar, are particularly affected by sea-level rise and coastal erosion. Balochistan is also susceptible to extreme weather events, including cyclones, storms, and flash floods, which increase risks to human lives, disrupt infrastructure, and necessitate heightened preparedness and resilience strategies. These climatic shifts directly impact livelihoods, including herding, farming, and fishing, potentially resulting in adverse socio-economic consequences.

4. Government of Balochistan. 2023. Balochistan Comprehensive Development and Growth Strategy 2021-2026. Quetta: Planning & Development Department, GoB, and UNDP.
5. Government of Pakistan. 2016. Multidimensional Poverty in Pakistan. Islamabad: Ministry of Planning, Development & Reform, GoP, Oxford Poverty and Human Development Initiative and UNDP Pakistan.
6. Pakistan has fifth-highest number of registered voters in world: report. Dawn. https://epaper.dawn.com/DetailImage.php?StoryImage=01_02_2024_151_008. Accessed: 29 Jun 2024.
7. GIWPS: Consistently low rates of women's inclusion across Pakistan's provinces (https://giwps.georgetown.edu/index-story/consistently-low-rates-of-womens-inclusion-across-pakistans-provinces/). Accessed: 29 Jun 2024.

Droughts are a characteristic and recurrent climatic event in Balochistan. While the province has experienced several prolonged drought spells, the extended dry periods observed from 1995 to 2018 represent the most severe and protracted arid conditions. In January 2019, 1.8 million in Balochistan were impacted by moderate to severe droughts when annual precipitation dropped by 24.4 percent relative to the expected rainfall.[8] These droughts have led to a significant scarcity of water, profoundly affecting local livelihood activities and the environment. Regions notably impacted by recurring droughts include Kalat, Chagai, Naukundi, and Zhob within the province. Furthermore, the use of precipitation data to quantify meteorological droughts reveals that various areas of Balochistan experience short-term summer and winter droughts. North-western Balochistan frequently experiences moderate to severe winter droughts due to varying annual intensities of westerly disturbances, while summer droughts are linked to deficient monsoon precipitation, particularly common in north-eastern and eastern Balochistan.

The 2022 floods highlighted the deep climatic vulnerabilities in Balochistan (Map 3), with damages accounting for 15 percent of the recovery and reconstruction needs. Balochistan experienced unprecedented levels of rainfall, surpassing typical monthly averages by sevenfold. Research attributes these extreme precipitation events to climate warming of estimated 1.2°C, resulting in approximately 75 percent more intense five-day rainfall.

Map 3: Balochistan's Flood Vulnerability



8. WB. 2022. Pakistan: Country Climate and Development Report. Washington, DC: The World Bank Group.

Sea-level rise along the Balochistan coastline is a recognised phenomenon driven primarily by thermal expansion of seawater due to rising global temperatures and accelerated melting of polar ice caps and glaciers. The consequences include coastal erosion, increased estuarine salinity, and submersion of low-lying areas, posing significant threats to critical infrastructure like ports and coastal roads (Map 4). This necessitates strategic adaptation and mitigation measures to enhance resilience against this climatic impact.

Heatwaves are increasingly problematic in Balochistan, particularly during summers, with cities like Turbat and Sibi experiencing exceptionally high temperatures. The highest-ever recorded temperature in Pakistan, reaching 52°C, occurred in Turbat in 2017. An increase in the frequency of heatwave events is expected toward the end of the century, affecting multiple provinces, including Balochistan. In addition to the human health hazard, the heatwaves can also exacerbate incidence of forest fires, like the one in 2022 which engulfed millions (40%) of trees in the Koh-e-Sulaiman Range in Sherani District.

With global warming continuing, Balochistan's climatic threats are likely to intensify. High temperatures may exacerbate drought conditions and worsen heatwaves, while erratic rainfall patterns can influence hydrological extremes of droughts and floods. Urgent and targeted measures are needed to address the adverse effects of this increasingly challenging climate scenario.

Map 4: Sea Intrusion in Balochistan

1.3. Vulnerable Sectors and Communities

Climate change has brought about significant alterations in the environmental conditions of Balochistan, thereby posing substantial threats to critical sectors in the region. These sectors encompass agriculture, water resources, public health, infrastructure, and coastal areas. A comprehensive understanding of the vulnerabilities inherent in each sector is imperative for the formulation and execution of informed adaptation and resilience measures. These measures should align with sustainable development objectives and work towards bolstering the overall resilience of Balochistan in the face of a shifting climate. Furthermore, while disasters endanger everyone, they tend to have a disproportionate effect on the most vulnerable, especially women, youth, people with disabilities and other minorities. Statistics appear alarming as women and children are 14 times more likely to die than men.[9] This disparity in the vulnerability to disaster risks is rooted primarily in geographic, economic, social, educational/informational, and political power imbalances across all levels. For instance; women tend to live and work closely with natural resources and geographical features that are most affected by disasters and climatic shocks; socio-cultural norms may cause restrictions in mobility to escape disasters (particularly water-related hazards); women have lower levels of access to economic resources in general, and in particular, lower levels of education and information to access, read and act upon disaster warnings. These factors make women and girls more vulnerable and disproportionately affected by natural disasters, thereby diminishing security.

Analyses of climate data and agricultural production have unveiled a moderate variability in mean temperatures coupled with erratic changes in annual precipitation patterns. These climatic shifts exert considerable influence on agricultural yields, leading to a consistent decline in production over time. Over the past two decades, farmers have observed discernible alterations in rainfall patterns and temperature dynamics. The unpredictability of weather patterns disrupts their preparatory measures. Specifically, farmers have witnessed changes in traditional rainfall patterns characterised by shortened rainy periods, intermittent dry spells during rainy seasons, an early onset of rains, and an overall reduction in average rainfall. These erratic and constant shifts have rendered it increasingly challenging for farmers to accurately anticipate and forecast rainfall, thus complicating agricultural planning and management. Agriculture is the mainstay of Balochistan's economy and women actively participate in agricultural activities along with their family members. Hence, any impact of climate change on agriculture affects the women as well.

The recurrent droughts have not only negatively impacted crop yields but have also significantly hindered rangeland productivity. The persistent pressure stemming from overgrazing and fuelwood extraction in sparsely vegetated areas, combined with a shift in agricultural composition towards minor crops, has exacerbated the strain on the region's ecosystems. Balochistan's agricultural sector heavily relies on groundwater sourced through tube wells. However, this dependence has been significantly disrupted due to recurring droughts and excessive aquifer exploitation. An alarming 70 percent of Balochistan's farmers grapple with the severe issue of inadequate access to a consistent water supply, be it from canals or minor irrigation schemes. The decline in groundwater levels has rendered the karez system non-functional, profoundly affecting community livelihoods, especially in rural areas. Consequently, communities are left dependent either on erratic rainfall or the extraction of groundwater through tube wells. This predicament is further compounded by the absence of rainwater harvesting systems, inefficient irrigation practices, and a prevailing focus among farmers on cultivating water-intensive crops. Water scarcity in Balochistan is poised to intensify soon due to urbanisation and climate changes. This collective scenario underscores the urgent need for comprehensive water management strategies and the adoption of climate-smart technology.

9. UNDP: Women are hit hardest in disasters, so why are responses too often gender-blind? (https://www.undp.org/blog/women-are-hit-hardest-disasters-so-why-are-responses-too-often-gender-blind). Accessed: 29 Jun 2024.

Given its high degree of sensitivity and notably low adaptive capacity to the impacts of climate change, Balochistan's healthcare sector faces a range of potential health repercussions. These include heightened risks of food insecurity and malnutrition due to adverse effects on agricultural productivity. Additionally, drought stress and floodwater contamination create breeding grounds for pathogens in water bodies. The quality of water in Balochistan, as assessed through physicochemical and microbiological parameters, falls below satisfactory levels. Across most districts, contamination by microorganisms has been identified, posing significant health risks. These contaminated water sources have been linked to the transmission of diseases such as gastroenteritis, Cryptosporidium infection, intestinal worms, giardiasis, and typhoid. The Cholera outbreak during the 2022 floods in Balochistan serves as a stark example of these challenges. The outbreak spread rapidly, claiming lives, as healthcare facilities remained inadequately equipped to respond effectively. This precarious situation necessitates urgent and comprehensive measures to ensure the provision of safe and clean drinking water to safeguard public health and mitigate the prevalence of waterborne diseases. Addressing these health challenges is paramount to ensure the well-being and resilience of the population in the face of a changing climate.

In the recent years, Balochistan has witnessed influx of climate migrants who were forced to leave their houses because of climate induced disasters, like floods and droughts. In 2022 alone, Pakistan experienced the highest absolute numbers of disaster displacements, i.e., approximately 8.2 million.[10] It gives some idea of the climate migrants in Balochistan. Their long-term migration gives rise to local conflicts over resource use. Earlier, around two million Afghan refugees were living in different parts of Balochistan including Quetta, Nushki, Sibi, and contiguous districts causing resource conflicts. Their resource use, and consequent contribution to climate challenges remains undocumented in most cases.

Furthermore, the rising sea levels pose a critical and escalating threat, exerting substantial pressure on coastal regions, and resulting in transformative impacts on their environmental dynamics. Flood events, particularly pronounced in coastal areas like Pasni, Gwadar, and Sonmiani, present significant risks to both the natural and built environment. This encompasses potential damage to agricultural yields, residential structures, and essential water delivery infrastructure, further stressing the overstretched social safety networks, and increasing the vulnerability of the most marginalised segments of society, particularly women, children, persons with disabilities and the elderly as well as a major segment of the poor population. In other words, the poor and the most vulnerable are likely to live under conditions that make them less capable to survive and recover from a disaster. Effectively addressing these challenges demands a scientifically informed, gender-responsive and proactive approach aimed at enhancing resilience and promoting sustainable development in vulnerable coastal zones.

10. IOM, 2024. World Migration Report 2024. Geneva: International Organisation for Migration.

2. PolicyFramework

The Balochistan Climate Change Policy (BCCP) provides broader contours of the commitment by the Government of Balochistan (GoB) towards a climate resilient Balochistan ensuring a dynamic approach toward adaptation and mitigation actions through active engagement of all relevant stakeholders.

2.1. Aim and Objectives of the Policy

The BCCP aims to address the unique challenges and vulnerabilities that Balochistan faces due to climate change in a gender responsive and socially inclusive manner while aligning with broader national and international climate goals. To be crafted through involvement of a wide range of stakeholders, the Policy will remain flexible and adaptable to harness the evolving opportunities in Balochistan.

The objectives of the Policy include:

- **Adaptation and Resilience Building:** Given Balochistan's vulnerability to climate change impacts such as water scarcity, droughts, and extreme weather events, the Policy prioritises building gender-sensitive resilience, including adopting ecosystem-based adaptation approach, developing climate-resilient infrastructure, improving water management systems, and enhancing disaster preparedness and response mechanisms.
- **Mitigating Greenhouse Gas (GHG) Emissions:** Balochistan should set targets for reducing its GHG emissions, particularly those associated with energy production, transportation, and industrial processes. The policy promotes the adoption of clean and renewable energy sources, energy-efficient technologies, and sustainable agricultural practices to mitigate emissions.
- **Natural Resource Management:** Balochistan is rich in natural resources, including minerals and fisheries. The Policy recognises and values women's contribution in the use and management of natural resources and focuses on sustainable resource management practices to ensure these assets are not depleted or harmed by climate change. This could involve stricter regulations on resource extraction and the promotion of sustainable marine and inland fishing practices.
- **Water Resource Management:** Balochistan faces acute water scarcity issues. The Policy outlines strategies for efficient water use, rainwater harvesting, and the rehabilitation of water storage infrastructure. It also addresses the equitable distribution of water resources among different sectors and communities, specifically the most vulnerable segments.
- **Waste Management:** Balochistan will invest in effective waste management infrastructure and promoting hygiene practices to improve both solid and liquid waste management and reduce GHG emissions from waste while improving human health as co-benefit.
- **Biodiversity Conservation:** Balochistan is home to diverse ecosystems and wildlife. The Policy includes measures to protect and conserve biodiversity, including the establishment of protected areas, wildlife corridors, and habitat restoration initiatives.
- **Climate Change Fund:** The Policy provides a framework for setting up an endowment—Balochistan Climate Change Fund (BCCF)—through international and local resources to support adaptation and mitigation actions in the province (Section 10.3).
- **Economic Viability:** The Policy promotes economic sustainability by fostering green and sustainable and inclusive economic growth, creating jobs in renewable energy and other climate-related sectors, and reducing the long-term economic costs of climate change.
- **Economic Diversification:** Balochistan's economy is heavily dependent on agriculture and natural resource-based industries. The Policy encourages

economic diversification by promoting sustainable, climate-resilient livelihoods and industries by prioritising women and vulnerable communities.

- **International Collaboration:** Balochistan's climate challenges are not limited to its borders, and the Policy encourages collaboration with neighbouring countries, international organisations, and donors to access financial and technical support for climate projects.
- **Private Sector Engagement:** The Policy encourages private sector participation in climate action by incentivising sustainable business practices, green investments, and the development of climate-friendly industries and technologies.
- **Green Procurement:**[11] The Policy encourages adoption of green procurement practices, especially in the public sector, for contributing to the Province's sustainable development goals by ensuring that procurement processes are environmentally responsible, economically viable and socially inclusive.
- **Gender Equality and Social Inclusivity:** The Policy prioritises the most vulnerable and marginalised communities[12] at the frontlines, especially women, children, transgender, youth and disabled, ensuring that climate adaptation and mitigation efforts are inclusive and do not exacerbate existing social disparities.
- **Capacity Building and Awareness:** To successfully implement climate change initiatives, the Policy emphasises capacity building at the local and provincial levels. It also promotes climate education and awareness programmes to engage communities and stakeholders, especially women, children, youth and persons with disabilities, in climate action.
- **Monitoring and Reporting:** Establishing a robust monitoring and reporting framework is crucial to track progress towards climate goals. Regular assessments of the Policy's implementation and its impact on climate resilience and mitigation will be conducted and shared with relevant stakeholders. There will be a special emphasis on differentiated impact of climate change on women, children and other marginalised groups.

2.2. Alignment with National and International Climate, and Environmental Justice Agenda

The BCCP is aligned with national and international climate goals, as reflected in polices, strategies and conventions to ensure that Balochistan's efforts contribute effectively to global climate action. Following are steps and strategies to achieve this alignment:

- The BCCP explicitly references and aligns with Pakistan's national climate agenda, including the National Climate Change Policy (NCCP) 2021,[13] the Nationally Determined Contributions (NDCs) 2021[14] and National Adaptation Plan (NAP) 2023,[15] and is strategically linked with Vision 2025[16] and the 5E Framework.[17] This ensures that provincial actions complement and support the country's climate objectives.

11. Purchasing products and services that cause minimal adverse environmental impacts, incorporating human health and environmental concerns into the search for high quality products and services at competitive prices.
12. Marginalised groups are those that are negatively perceived as socially and/or physically outside the larger community structure, and are prevented from, or are unable to, participate in, or interact with, the mainstream community groups. These groups are often disadvantaged and marginalised due to their identities, such as gender, age, disability, income, education, faith, race, ethnicity, sexual orientation, and migration status.

    Source: Law Insider: Marginalized groups (https://www.lawinsider.com/dictionary/marginalized-groups). Accessed: 20 Jan 2024.
13. Government of Pakistan. 2021. National Climate Change Policy. Islamabad: Ministry of Climate Change, GoP.
14. Government of Pakistan. 2021. Pakistan: Updated Nationally Determined Contributions 2021. Islamabad: Ministry of Climate Change, GoP.
15. Government of Pakistan. 2023. National Adaptation Plan: Pakistan 2023. Islamabad: Ministry of Climate Change & Environmental Coordination, GoP.
16. Government of Pakistan. 2022. Pakistan 2025: One Nation – One Vision. Islamabad: Ministry of Planning Development & Reform, GoP.
17. Government of Pakistan. 2023. 5Es Framework to Turnround Pakistan. Islamabad: Ministry of Planning Development & Special Initiatives, GoP.

- The BCCP is fully aligned with the SDG13: Climate Action (take urgent action to combat climate change and its impacts) and would in fact contribute to the achievement of the SDG13 through implementation of the ensuing action plan.
- As Pakistan has just prepared its Long-Term Vision (Annex 1)[18] towards developing Pakistan's Long-Term Low Emissions Development Strategy (LT-LEDS) in accordance with Article 4, paragraph 19 of the Paris Agreement (2015),[19] the BCCP proactively emphasises low GHG emission development so that the province can align with the net-zero transition by 2050 by maximum decarbonisation of the emitting sectors. As transitional measures, BCCP recommends treading a gradual path of GHG reductions in line with NDCs targets.
- The BCCP also takes into consideration the actions recommended by the Climate Change Gender Action Plan (ccGAP) 2022[20] to ensure meaningful participation of women in the climate adaptation and mitigation strategies and actions.
- All development projects will adhere to the principles and goals outlined in the UN Framework Convention on Climate Change (UNFCCC), the Paris Agreement and the relevant protocols ratified by Pakistan, aligning with the standards and objectives being actively pursued by international financial institutions.
- The BCCP identifies specific actions through its Action Plan (Part B) that directly contribute to achieving Pakistan's climate targets, such as reducing GHG emissions and enhancing climate resilience. The provincial targets are developed in line with or exceed national commitments where possible.
- The Balochistan government will collaborate closely with federal government agencies responsible for climate change, such as the Ministry of Climate Change and Environmental Coordination (MoCC&EC), to ensure harmonisation of policies, share best practices, and access national resources and expertise.
- The gender disaggregated data collection, reporting, and monitoring mechanisms at the provincial level will be aligned with national requirements and reporting frameworks to ensure that provincial progress can be aggregated at the national level for reporting on Pakistan's climate actions.
- The Balochistan government will work with national authorities to access climate finance opportunities, such as the Green Climate Fund (GCF) and the Adaptation Fund (AF), to fund climate projects and initiatives within Balochistan (Part C). It will develop project proposals that align with national priorities and criteria for funding.
- There will be collaboration with national institutions and organisations to build local capacity for gender-responsive climate action through sharing of knowledge, expertise, and best practices to enhance the effectiveness of climate initiatives in Balochistan.
- There will also be collaboration with other provinces and regions within Pakistan to share experiences and best practices in climate adaptation and mitigation, and interprovincial cooperation agreements to tackle shared climate challenges.
- The Balochistan government will engage with international organisations and donors involved in climate initiatives to access technical assistance, technology transfer, and financial support. It will forge partnerships with international stakeholders to leverage resources for climate projects in Balochistan.
- It will be ensured that Balochistan is represented at national and international climate forums and

18. Government of Pakistan. 2023. The Long-Term Vision 2050: Towards developing Pakistan's long term low emissions development strategy (LT-LEDS). Islamabad: Ministry of Climate Change & Environmental Coordination, GoP.
19. UN. 2015. Paris Agreement. Paris: United Nations Framework Convention on Climate Change.
20. IUCN. 2022. Climate Change Gender Action Plan of the Government and People of Pakistan. Islamabad: IUCN Pakistan

negotiations to advocate for Balochistan's specific climate needs and challenges while also contributing constructively to global climate discussions.

- As transparent reporting is crucial for demonstrating alignment with national and international climate goals, the provincial climate actions, progress, and achievements will be regularly reported to the federal government and international bodies.
- The BCCP will remain flexible and adaptable, allowing it to evolve alongside changes in national climate policies and international agreements.
- The Balochistan government will engage in climate diplomacy and communication efforts to raise awareness about Balochistan's climate challenges and Balochistan's commitment to climate action on the national and international stages.

2.3. Guiding Principles for Climate Action

Climate action in Balochistan, as guided by the BCCP, will be rooted in a set of fundamental principles to drive effective and meaningful efforts to address climate challenges in Balochistan. These guiding principles for climate action in Balochistan include:

- **Long-Term Commitment:** The climate actions will be driven by a long-term political ownership that extends beyond electoral cycles, recognising that climate change is a long-term challenge that requires sustained commitment and action.
- **Local Ownership:** The climate actions will be derived from the needs and priorities of local communities in Balochistan by engaging with and empowering residents, especially women, children, youth and disabled, to take an active role in climate initiatives and decision-making processes. The local communities, including indigenous and traditional knowledge holders, and environmental human rights defenders[21] will be engaged in the design and implementation of climate actions.
- **Do No Harm:** It will be ensured that the climate actions do not exacerbate existing vulnerabilities or inequalities and protect the rights and well-being of all community members, especially women and other marginalised groups.
- **Ecosystem-Based Approaches:** The protection and restoration of ecosystems, such as mangroves, forests, and watersheds, which play a critical role in climate resilience and mitigation will be emphasised by promoting sustainable land use practices that conserve biodiversity and natural resources.
- **Scientific Rigour:** The climate actions will be based on the best available scientific evidence and climate data about the local and regional climate challenges.
- **Transparency and Accountability:** There will be transparency in decision-making, policy implementation, and resource allocation to establish clear accountability mechanisms to track progress, report on results, and address any shortcomings. The Balochistan Public Procurement Rules, 2014 will be complied with in emergency response and climate related projects, and information about all climate and disaster response actions will be disclosed through a web-based dashboard and the GoB websites.
- **Interagency Collaboration:** There will be collaboration and coordination among different government agencies, departments, and levels of government to ensure a holistic and integrated approach to climate policy.
- **Cross-Sectoral Integration:** The climate considerations will be integrated across various sectors, such as agriculture, livestock and fisheries, water resources, forestry, industries, energy, and transportation, to maximise synergies and minimise conflicts in policy implementation.

21. UN defines environmental human rights defenders as individuals and groups who, in their personal or professional capacity and in a peaceful manner, strive to protect and promote human rights relating to the environment, including water, air, land, flora and fauna.

3. Adaptation Strategies

The provincial adaptation strategies are designed to build resilience of key economic sectors in Balochistan, which will directly contribute towards achieving the goals of NCCP (2021), NDCs (2021), NAP (2023), the Vision 2025 and the 5E Framework. Integration of climate change considerations into provincial sectoral policies and plans (e.g., water resources, agriculture, forestry, biodiversity, coastal management, fisheries, socio-economic development, mines and minerals and human health) is one of the major adaptation strategies to chieve the goals of BCCP.

The adaptation strategies under the BCCP are fully aligned with adaptation priorities identified by the NAP (2023):

1. The agriculture-water nexus
2. Natural capital (land, water, and air)
3. Urban resilience
4. Human capital
5. Disaster risk management
6. Gender, youth, and social inclusion

Accordingly, the GoB commits to a wide range of sector-specific adaptation strategies to address climate challenges faced by the province. These strategies have further been elaborated in terms of sectoral priorities and guidelines (Section 7.1) and priority actions (Section 8) in Part B.

3.1. Agriculture and Livestock

Because of the vulnerability to climate variability as well as the economic dependence on it, agriculture and livestock are a priority sector; also, because a large proportion of women are directly involved in this sector and vulnerable to direct and more severe impacts of climate change therein. Encouraging climate adaptative agricultural practices such as use of climate-resilient seed varieties and water efficient irrigation practices will not only ensure food security but also improve resilience and adaptive capacity of farmers. Similarly, to better adapt the livestock sector to climate change, it is imperative to encourage rotational grazing, efficient feed management, enhance pasture resilience, and introduce livestock insurance programmes to protect producers against climate change induced losses.

Facing water scarcity and land degradation, exacerbated by climate change, Balochistan holds immense potential for adopting regenerative practices. These practices can improve soil health, water retention, biodiversity, and crop yields, making agriculture more resilient and sustainable.

3.2. Water Resources

Balochistan faces a lot of challenges due to limited water resources and an arid climate. With changing precipitation patterns, extreme weather events such as droughts and flooding, and rising temperatures, these challenges are exacerbated. As with many other sectors, water scarcity affects women disproportionately. However, adaptation of water resources requires a multifaceted approach because they threaten livelihoods and the well-being of various communities differently in every ecological zone. Some key adaptation strategies to build resilience include improving water resource management and governance, especially in canal-command areas, groundwater management in arid areas along central, western, and northern Balochistan, and investing in climate adaptation in terms of watershed management and water infrastructure. These strategies also need to integrate the policy (such as Balochistan Integrated Water Resources Management Policy) and regulatory frameworks that promote water conservation and climate-resilient agriculture and encourage locally led adaptation.

3.3. Vulnerable Ecosystems

Vulnerable ecosystems such as forests, rangelands, mountains, and marine ecosystems will play a crucial role in Balochistan's climate change adaptation strategy. This

is largely because these ecosystems provide support in climate regulation as carbon sinks, act as natural defences against flooding, tsunamis, and erosion, and play a vital role as ecosystem service providers for local and indigenous communities. Various indigenous and local communities (ILCs) have lived in and managed these environments for generations in Balochistan. Their traditional knowledge, practices, and social structures have been honed and adapted over time to ensure the long-term sustainability of their land and resources. This deep understanding of local ecosystems and their vulnerability to climate change makes ILCs key partners in developing and implementing effective adaptation strategies. Indigenous communities are often at the forefront of efforts to adapt to climate change. Adaptation policies should support indigenous-led initiatives that are based on traditional knowledge and practices. Some of the key ecosystems to consider are:

3.3.1 Coastal and Marine Ecosystems

Balochistan's coastline (735 km) is at risk from sea level rise, ocean acidification, erosion, and storm surges among other extreme weather events. Several adaptation strategies can be implemented to reduce vulnerability and foster blue economy. Protecting coastal areas and ecosystems will safeguard communities and infrastructure from these hazards. This can be possible by managing fisheries sustainably, regulating illegal fishing practices, adapting to sea level rise through infrastructure, and protecting and restoring coastal habitats that serve as a protection for coastlines against erosion and storm surges. At the same time, the marine ecosystem offers enormous potential in terms of blue carbon, accruing significant financial resources for the province.

3.3.2 Forests, Rangelands, Biodiversity and Wildlife

Balochistan is home to a diverse array of forest ecosystems that are vital to its culture, economy, and environment. However, these ecosystems are under threat due to rising temperatures, erratic precipitation patterns, and need to be protected. Prioritising conservation and protection of biodiversity and incorporating biodiversity plans into provincial development strategies will mitigate adverse impacts on forests, and rangelands and help align with Pakistan's commitments towards the UN Convention on Biodiversity (CBD).

3.3.3 Mountains, Deserts, Arid and Semi-arid Areas

Due to Balochistan's largely arid and desert-like ecosystem, water resource management, livestock management, and sustainable land management are key to adaptation measures. Water security is a growing challenge in Balochistan that is being exacerbated by climate change with severe implications for women and girls. The adaptation strategy will include actively promoting and incentivising water conservation and management measures, especially with regards to groundwater extraction, and encouraging water efficient irrigation systems. Similarly, relevant departments will also work towards designing locally suitable adaptive measures such as for fragile and vulnerable ecosystems to thrive in a changing climate, aligned with Pakistan's commitments towards the UN Convention to Combat Desertification (UNCCD).

3.4. Disaster Risk Management

Because of Balochistan's vulnerability to climate-induced extreme weather events, gender-responsive disaster risk management is a key sector moving forward. To reduce risk and vulnerability, disaster risk management (DRM) plans can shift away from aid-reliant practices and encourage proactive, community-focused disaster management, based on local resources to improve existing adaptive capacities. The province will also need a robust climate-resilient housing and infrastructure framework to reduce disaster-related structural losses. Similarly, institutional collaboration needs to be strengthened to create linkages between all stakeholders and government actors on each level. In this regard, the local governments will be encouraged and strengthened to act as 'first responders' for disaster response. This will not only help implement adaptation strategies successfully and efficiently but will also build resilience at large.

3.5. Urban Planning and Development

Climate change is increasing the frequency and intensity of extreme weather events, such as flash floods,

and heatwaves. Using green and climate-resilient infrastructure, mixed-use development approach, and water-sensitive urban design are key to climate-responsive urban planning and will protect communities and essential services from these events. Adaptation in the urban landscape requires a climate-sensitive urban planning framework to comprehensively integrate climate change considerations into all aspects of urban planning and development. This includes building resilience to extreme weather events such as urban flooding, climate-proofing of existing and future housing and commercial developments, focusing on sustainable water management in drought and flood-prone cities and prioritising accessible mass transit. Moving forward, urban planning and development needs to be sustainable, resilient, and inclusive to support vulnerable and marginalised groups, as well as ensure successful adaptation.

3.5.1 Climate-Induced Migration

As a region experiencing frequent cross-border movement, triggered by conflict or climatic events, Balochistan needs to integrate solutions for climate-induced migration as a key performance indicator (KPI). Recognising the complex interplay of factors affecting different communities within Balochistan, there is need to consider strategies like planned relocation, effective integration in host communities, and mechanisms for cash assistance and livelihood support. Bolstering data collection on migration patterns and vulnerabilities will inform effective implementations of such strategies.

3.6. Human Health

Human health plays a vital role in strengthening adaptation due to the increasing impacts of climate change on Balochistan's already vulnerable populations. Changes in climate create favourable conditions for waterborne and vector borne diseases; this makes strengthening public health response and capacity especially important. This must include incorporating the health implications of climate change and disasters into health and education policies, establishing institutional collaboration mechanisms with provincial and national health service providers, ensuring effective preventive measures and the availability of resources, such as vaccines, medication, water, sanitation, and hygiene (WASH) facilities, and educational facilities (schools, colleges, universities) during climate-induced extreme events.

An analysis of 130 studies revealed that climate change has a disproportionate impact on women's and girls' health.[22] Women and girls are also at a higher risk of physical, sexual, and domestic violence in the aftermath of disasters. These impacts are amplified when women have a lower socioeconomic status.[23] Both findings perfectly depict the situation in Balochistan where the situation become even worse because of high cost of response and service delivery.

3.7. Mining and Mineral Resources

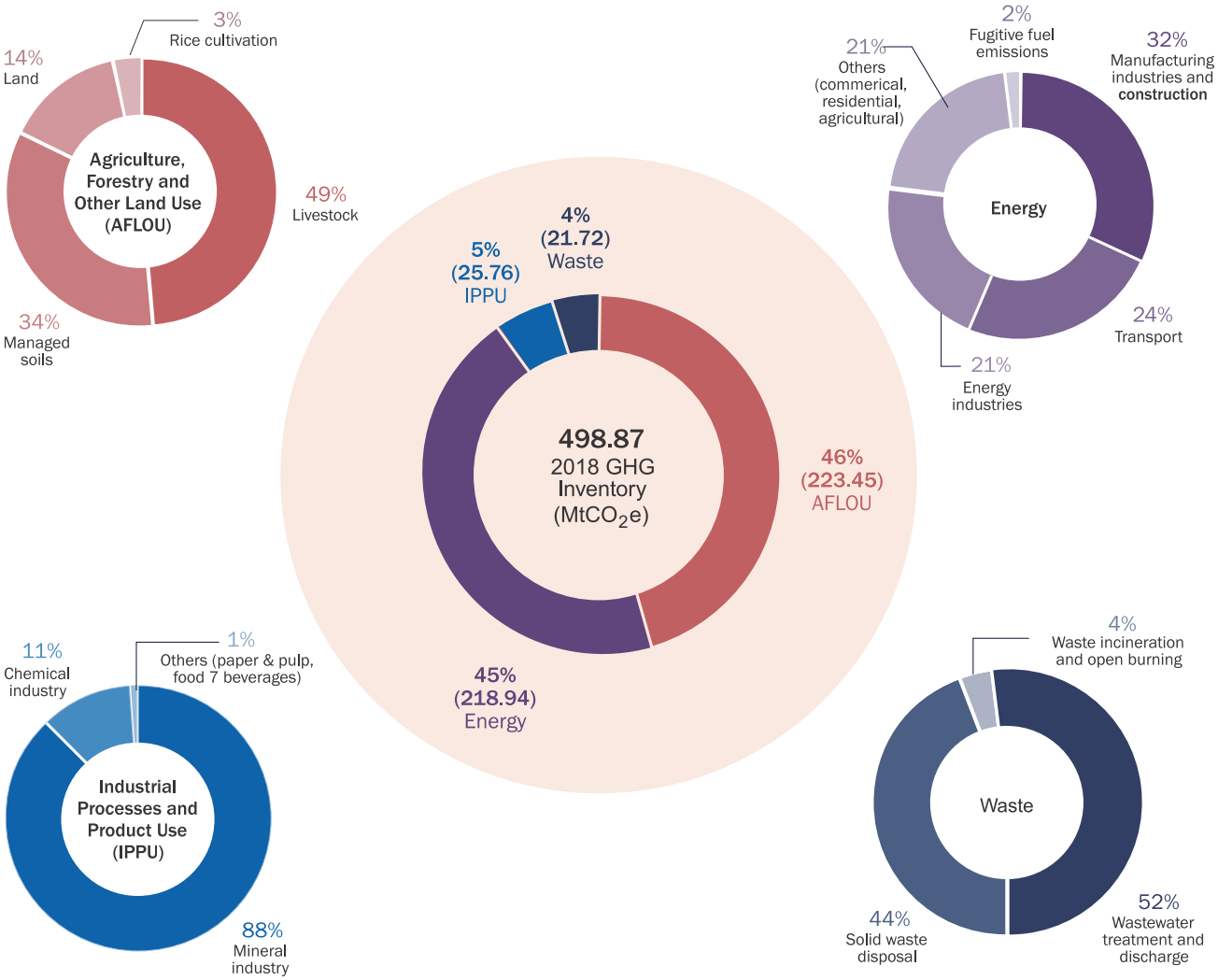
Because of the growing role of mining in Balochistan's economy, it is highly important to formulate policy measures and establish enforcement mechanisms for the sustainable management of water resources, including the treatment of wastewater during mining operations. However, given the growing impacts of climate change, sustainable mining practices need to be adopted to minimise environmental impacts, with active participation from local communities.

22. Dunne, D. 2020. Mapped: How climate change disproportionately affects women's health (https://www.carbonbrief.org/mapped-how-climate-change-disproportionately-affects-womens-health/). Accessed: 20 Jan 2024.
23. Sorensen, C., V. Murray, J. Lemery and J. Balbus. 2018. Climate change and women's health: Impacts and policy directions. PLoSMed, 15(7). https://doi.org/10.1371/journal.pmed.1002603. Accessed: 20 Jan 2024.

4. Mitigation Strategies

Climate change mitigation holds utmost significance in Balochistan, aiming to curtail GHG emissions and enhance Balochistan's capacity to withstand the repercussions of climate change. These strategies align with Pakistan's NCCP (2021) and the NDCs (2021), and strategically linked with Vision 2025 and the 5E Framework, which delineate the nation's commitments to mitigating GHG emissions (Figure 1) and fortifying its resilience against climate change impacts. Within the NDCs, several mitigation measures of relevance to Balochistan are outlined, including the promotion of renewable energy sources, the enhancement of energy efficiency, and the preservation of forested areas.

Figure 1: Pakistan's GHG Emissions (2018)



Source: WB. 2022. Pakistan: Country Climate and Development Report.

Climate change mitigation strategies are of paramount importance for Balochistan, driven by multiple compelling reasons. Firstly, they serve as a pivotal tool in curtailing Balochistan's GHG emissions, thus contributing significantly to global climate change mitigation endeavours. Secondly, they play a pivotal role in augmenting Balochistan's resilience against the impacts of climate change, bolstering its ability to withstand future challenges. Thirdly, these strategies have the potential to stimulate economic growth and job creation, providing a much-needed boost to the regional economy. Nonetheless, the development and execution of mitigation strategies pose substantial challenges for Balochistan, stemming from various factors, including:

- **Limited Provincial GHG Inventories:** To implement efficient GHG emissions mitigation strategies across various sectors, it is imperative to develop sector specific GHG inventories. These inventories serve the purpose of pinpointing the principal sources of emissions, quantifying the volume of emissions, and providing the essential gender disaggregated data needed for the formulation of mitigation plans. Presently, a conspicuous absence of GHG emission data exists for the sectors in Balochistan. For example, GHG emissions from seagoing vessels including harbour crafts and port operations is missing from the national inventory. To bridge this data gap, the GoB will provide necessary support to compile comprehensive GHG inventories, adhering to methodologies that align with the national GHG inventory standards and guidelines established by the Intergovernmental Panel on Climate Change (IPCC), for each sector in Balochistan. Such an approach will ensure the accuracy and uniformity of the data, thereby facilitating the implementation of effective GHG emissions mitigation strategies.
- **Financial Constraints:** Balochistan contends with financial constraints as Pakistan's most economically disadvantaged province. Limited financial resources impede significant investments in mitigation measures.
- **Technical Capacity Gaps:** Balochistan grapples with a shortage of technical capacity necessary for the formulation and implementation of mitigation strategies.
- Notwithstanding these hurdles, Balochistan will adopt and adapt several mitigation strategies to reduce GHG emissions, primarily aligned with the NDCs (2021). The Government of Balochistan commits to the following sector-specific mitigation strategies towards climate challenge.

4.1. Energy

The energy sector is the biggest source of GHG emissions in Pakistan, emitting 218.9 million tonnes of carbon dioxide equivalent ($MtCO_2e$) in 2018. Balochistan, the largest province of Pakistan, faces significant challenges in addressing climate change, particularly in the energy sector. The province's energy infrastructure is underdeveloped, and its reliance on fossil fuels for electricity generation contributes to GHG emissions. Balochistan boasts substantial potential for renewable energy sources, such as solar and wind power, which will also have co-benefit of women's health. Balochistan will actively promote and support the development and deployment of renewable energy technologies to reduce its reliance on fossil fuels. Enhancing energy efficiency in buildings and industrial processes will also be encouraged alongside providing a supportive regulatory regime.

4.2. Transportation

The transport sector in Pakistan is among the major energy demand sector contributing to GHG emissions of 51.3 $MtCO_2e$ in 2018. The transport sector plays a crucial role in Balochistan's economy, connecting communities and facilitating commerce. However, the sector's reliance on fossil fuels and inefficient practices contributes significantly to GHG emissions. Encouraging the use of public transportation, electric vehicles, and bicycles will significantly reduce emissions in the transportation sector. Infrastructure investments that support walking and biking in urban centres can further bolster emission reduction efforts.

Data on and control of GHG emissions from fishing and seagoing vessels is missing in the national GHG inventory.

The recently made estimates of GHG emissions from seagoing and fishing vessels from Balochistan and Sindh may be taken as a baseline reference.[24] Additionally, emissions from other harbour crafts, dredgers and port operations will also be taken into consideration for mitigation actions.

4.3. Industry

The industrial sector is the 3rd largest emitting sector in Pakistan which released 25.76 $MtCO_2e$ in 2018. The industrial sector in Balochistan is a diverse and growing sector that can play a significant role in the province's economy. The sector is comprised of a wide range of industries, including mining, manufacturing, construction, and utilities. These industries produce a variety of goods and services that are essential to the province's economy, such as minerals, metals, chemicals, food products.[25] The industrial sector in Balochistan is facing several challenges, including infrastructure constraints, energy shortages, and a lack of skilled labour. The academia will play a crucial role in conducting research on energy-efficient technologies, cleaner production practices, and effective mine closure and reclamation techniques. They will provide expertise in developing and implementing renewable energy solutions and establishing Special Economic Zones (SEZs) for low-carbon industries. The respective industrial chamber of commerce and industries will promote energy efficiency practices among its members, encourage the adoption of cleaner production technologies, advocate for responsible mine closure and reclamation practices, and facilitate collaboration between academia and industry for sustainable development.

The GoB will provide incentives for businesses to adopt GHG mitigation measures, invest in climate-resilient infrastructure development, support research and development, and implement policies that promote renewable energy and sustainable practices. Balochistan will advocate for energy efficiency measures and sustainable manufacturing practices within the industrial sector. Supporting the development and adoption of low-carbon industrial technologies is another avenue for emissions reduction.

4.4. Agriculture

The agriculture sector in Pakistan is the second highest emitting sector with 198.59 $MtCO_2e$ in 2018. The agriculture sector of Balochistan faces a critical challenge in balancing mitigation efforts with the preservation of food and water security. Groundwater extraction, a prevalent practice in the region, has placed immense strain on water resources, exacerbating the impacts of drought and contributing to GHG emissions. To address these concerns, a comprehensive mitigation strategy that prioritises sustainable groundwater management, promotes climate-smart agriculture practices, and revitalises the traditional karez system will be developed. Improving livestock management practices, such as optimising feed composition and introducing suitable livestock breeds, represents an effective approach to mitigating methane emissions originating from enteric fermentation within the agricultural sector. Balochistan can embrace sustainable, gender sensitive and climate-smart agricultural practices, encompassing methodologies like no-till farming, judicious fertiliser management, the promotion of manure composting to partially replace chemical fertilisers, agroforestry systems, and water-efficient rice cultivation. These practices will serve a dual purpose by reducing GHG emissions, enhancing carbon sequestration, fostering soil health, conserving water, and bolstering the livelihoods of farmers.

4.5. Land Use, Land-Use Change, and Forestry (LULUCF)

LULUCF activities play a critical role in climate change mitigation by influencing GHG emissions and sequestration. 24.86 $MtCO_2e$ GHG emissions were

24. Semab, B., K. M. J. Iqbal, S. Amir, and M. A. R. Tariq. 2022. Development of greenhouse gas emissions baseline and identification of carbon offset cost for maritime vessels of a developing country. Front. Environ. Sci., 10. https://doi.org/10.3389/fenvs.2022.1076585. Accessed: 15 Dec 2023.
25. Voice of Balochistan: Hub, the industrial backbone of Balochistan (https://voiceofbalochistan.pk/opinions-and-articles/economic-development/hub-the-industrial-backbone-of-balochistan/). Accessed: 6 Dec 2023.

calculated to be from the LULUCF in 2018. Integrating LULUCF considerations into provincial planning and policy frameworks is essential to promote sustainable land management and climate change mitigation in Balochistan. Balochistan possesses substantial potential for mitigating GHG emissions through well-planned forest conservation and expansion initiatives. Balochistan will pursue two primary strategies: (a) implementing stringent measures to prevent deforestation and degradation of existing forests through regulatory enforcement, the promotion of sustainable forest management practices, and active community engagement in conservation efforts, and (b) expanding afforestation and reforestation programmes with a focus on native and climate-resilient tree species.

To ensure effective and efficient land use in the province, the GoB is considering development of Balochistan Spatial Strategy (BSS) which will include (a) data development framework, and (b) decision support system. With a focus on transport and connectivity, health and education, and urban development, the BSS will set a strategic direction for sustainable development of Balochistan.[26]

4.6. Blue Carbon

Boasting the longest coastal belt in Pakistan, stretching over 735 km, Balochistan is rich in marine ecosystems, including extensive mangrove forests. This ecological wealth, particularly the mangroves, presents an exceptional opportunity for participation in carbon markets. Balochistan can harness its abundant coastal ecosystems not only to augment its carbon sequestration potential but also to tap into the growing carbon market. This endeavour can generate financial resources to further conservation efforts, enhance climate resilience, and improve the livelihoods of coastal communities.

4.7. Waste

The waste management infrastructure is almost non-existent in Balochistan. As Balochistan grapples with the multifaceted impacts of climate change, the province's waste sector stands at a crossroads. With burgeoning waste generation and unsustainable disposal practices, the sector contributes significantly to GHG emissions. Solid and liquid waste management remains a significant concern within the province in the absence of provincial sanitation and solid waste management policies impeding implementation of waste management mechanisms at local levels. To effectively address this challenge and foster a sustainable waste management system, a comprehensive Balochistan Sanitation Policy and Strategy has been developed, which is currently under the approval process, to prioritises waste reduction, resource recovery, and waste-to-energy solutions is essential alongside community-driven waste management practices.

4.8. Cross-Sectoral Approaches

In addition to these sector-specific strategies, Balochistan will implement cross-sectoral mitigation approaches, such as:

- **Carbon Pricing:** Balochistan will align itself with the nationally instituted carbon pricing mechanism to incentivise businesses and individuals to reduce their emissions, thereby aligning economic incentives with emission reduction goals.
- **Research and Development Investment:** Investing in research and development of innovative mitigation technologies and practices will foster the adoption of cutting-edge solutions.
- **Awareness Building and Capacity Development:** Balochistan will prioritise raising awareness about climate change and building the capacity to formulate and implement effective mitigation strategies. This will empower local stakeholders to actively engage in mitigation efforts.

By strategically addressing these challenges and proactively pursuing these mitigation strategies, Balochistan will make significant strides towards reducing its GHG emissions and enhancing its resilience in the face of climate change, while concurrently promoting sustainable development and economic growth.

26. Consortium for Development Policy Research. 2021. A Framework for Development of Balochistan Spatial Strategy. Lahore: Consortium for Development Policy Research

5. Cross-Cutting Themes

5.1. Mainstreaming Climate Change and Environmental Sustainability into Development Planning

It is essential to recognise that climate change impacts are already affecting key sectors and exacerbating existing development challenges within Balochistan. To address these issues and transition towards climate-compatible development, the integration of climate change considerations into development planning is imperative. The following steps will be undertaken to effectively mainstream climate change into the development planning process:

- **Mainstreaming Climate Change and Environmental Sustainability in Provincial Policy and Planning:** Climate change will be integrated into key provincial policy and planning processes, including the Five Years Plans, prospective plans, poverty reduction strategies and the Annual Development Programme (ADP)/Public Sector Development Programme (PSDP). This integration will be facilitated by a dedicated and well-resourced **BCCP Cell** within the Climate Change and Environment Department. This ensures that climate change considerations are incorporated into provincial development strategies, programmes, and projects.
- **Climate and Environmental Sustainability Screening Procedures:** Climate screening procedures will be established for project identification, appraisal, approval, monitoring, closing, and evaluation. It will be mandatory to conduct climate screening for all projects funded through the Provincial PSDP. Revisions to the "Planning and Project Manual" prepared by the Balochistan Planning and Development Department will be made to ensure this climate screening process. The mega development projects and programmes with critical implications for climate vulnerable zones and groups will have to be inclusive and incorporate social and environmental protection measures.
- **Institutional Mechanisms:** Institutional mechanisms for climate change integration will be created and strengthened, such as the establishment of a climate change unit within the Balochistan Planning and Development Department.
- **Sectoral Integration:** Climate change considerations will be integrated into key sectoral policies and strategies by developing sectoral climate change action plans.
- **Financial Integration:** Engagement with the Balochistan Finance Department will be pursued to incorporate climate change considerations, including the costing of climate actions, into the provincial annual budgetary framework. A Climate Finance Unit within the Balochistan Finance Department will ensure financial coordination, identify relevant grants and climate financing options, and regulate the aid flow.
- **Green Procurement:** The Balochistan Public Procurement Regulatory Authority (B-PPRA) will be encouraged to develop guidelines for and ensure adoption of green procurement practices. This will also include capacity building of the relevant officials and awareness raising of the relevant stakeholders to ensure that procurement process takes into consideration the climate and environmental safeguards minimising adverse environmental impacts and climate change triggers.
- **Education and Training:** Climate change and environmental sustainability courses and topics will be designed and incorporated into the primary, secondary, and higher education curriculum. This will be supported by technical assistance and targeted training programmes for the teachers and educational administrators.
- **Civil Servant Training:** A comprehensive module on climate change and environmental implications for development planning specific to Balochistan will

be designed and incorporated into the training of civil servants through the Balochistan Civil Services Academy.

- **Research Collaboration:** Coordination will be established with relevant provincial-level universities and research institutes to conduct research on climate change vulnerabilities and impacts on key sectors and geographical areas.
- **Capacity Enhancement Programme:** A comprehensive training and capacity enhancement programme will be designed to facilitate the integration of climate considerations into development planning. This programme will provide the necessary skills and knowledge to stakeholders involved in the planning and implementation of development projects in Balochistan.
- **Local-Level Capacity Building:** Technical capacity will be built within Divisional Coordination Committees (DCC) to enable the incorporation of climate change considerations into local-level project designs and plans. A robust system will be devised to identify and strengthen vulnerable communities and areas to reduce the impacts of climate change.
- **Working with Environmental Human Rights Defenders:** The GoB will establish mechanisms for meaningful engagement of human rights defenders to undertake advocacy, research, awareness raising, and contributing to planning, prevention, and response processes.

5.2. Public Sector's Roles and Responsibilities

The successful implementation of the recommended measures outlined in the earlier sections for adaptation and mitigation efforts requires the development of sector-specific implementation strategies and action plans (Part B). The effectiveness of the policy's execution in Balochistan is contingent on several critical factors, including:

- **Robust Governance:** The policy implementation process necessitates strong governance structures to oversee and coordinate activities effectively.
- **Meticulous Planning:** Careful planning is vital to ensure that the various measures and strategies are executed efficiently and with clear objectives.
- **Risk Management:** Identifying and managing potential risks and challenges is essential to avoid setbacks during implementation.
- **Resource Allocation:** Adequate resources, both financial and human, should be allocated to different departments and initiatives to ensure their success.
- **Efficient Communication:** Effective communication is critical to ensuring that all stakeholders are informed and aligned with the policy's goals and objectives.
- **Rigorous Monitoring:** A system for continuous monitoring and evaluation of the progress is necessary to assess the effectiveness of the policy.
- **Effective Accountability:** Transparency and expeditious follow ups through notified, mandated, and resourced mechanisms of effective accountability with respect to noncompliance, and individual/collective/organisational complaints and concerns regarding climate change and environmental sustainability.

Key elements crucial for the successful execution of the BCCP include:

- **Executive Support:** Securing unwavering support from the executive branch of the Balochistan government is fundamental to the policy's success.
- **Balochistan Climate Change Coordination Committee (B4C):** Establishing a dedicated province level high powered committee responsible for driving the policy's implementation, and horizontal and vertical coordination.
- **BCCP Cell:** Setting up a dedicated and well-resourced BCCP Cell within the Climate Change and Environment Department to ensure integration of climate change and environmental sustainability into sectoral policies, planning and implementation.
- **Climate Finance Unit:** Establishing a dedicated unit within the Balochistan Finance Department

for monitoring of funding and budget allocation implementation, and identification of relevant grants and aid.

- **Stakeholder Engagement:** Fostering comprehensive engagement and communication plans across all government departments and other stakeholders to ensure their active involvement and commitment.
- **Legal and Financial Support:** Providing the necessary legal and financial support to enable the policy's execution.
- **Implementation Roadmap:** Based on the BCCP action plans (Part B), developing a clear roadmap that delineates the roles and responsibilities of relevant departments and organisations involved in implementation.
- **Risk Assessments and Management:** Conducting comprehensive risk assessments and develop strategies for mitigating potential risks that could hinder policy execution.
- **Monitoring and Reporting:** Enabling effective monitoring and reporting mechanisms to track progress and make necessary adjustments.
- **Performance Evaluation:** Implementing a system for evaluating the performance of initiatives and projects under the policy.
- **Data Gap Analysis:** Conducting gap analyses to enhance the predictive accuracy of data, particularly in the context of weather data, which is crucial for climate change monitoring and adaptation.
- **Research and Innovation:** The academic and research institutions will be engaged for research and innovation in climate-related fields to inform policy adjustments and identify new opportunities for climate action.

5.3. Gender, Disability, Youth and Social Inclusion

To ensure that the BCCP implementation is cognisant of gender equality, disability, and social inclusion (GEDSI) dimensions, the following specific considerations will serve as crosscutting thread across all sectoral actions:

5.3.1 Gender Dimensions

The nexus between climate change and gender is complex, with women, girls and transgender bearing a significant burden due to increased exposure to heat stress, water scarcity, food insecurity, and infectious diseases undermining access to critical reproductive health services, exacerbating existing vulnerabilities. The changing climate increases the risk of unwanted pregnancies, unsafe abortions, maternal mortality, and mental health issues. The climate change also aggravates high risks of gender-based violence (GBV), thereby, impacting on the mental health and wellbeing of women, girls, and transgender, and also creating barriers to women's access to social and economic opportunities at large.

Additionally, climate induced disasters compounded with social norms, have significant barriers to women's access to healthcare services, for instance, medical supplies, healthcare infrastructure, skilled health workers, affordable transportation, and vital information usually face a dual challenge of being inadequately available and inaccessible due to climate change.

Seeking guidance from the gender-specific recommendations of the NCCP, elaboration by the ccGAP and aligning with the vision of the Government

27. "A peaceful, democratic, just and prosperous Balochistan where women and girls are equal citizens and participants in decision-making from the home to the national and international levels, women and girls able to lead a life free from violence and discrimination and enjoy the full gamut of their social, political and economic rights."
Source: Government of Balochistan. 2020. Gender Equality & Women's Empowerment Policy 2020-2024. Quetta: GoB and UN Women.

of Balochistan's Gender Equality and Women's Empowerment Policy 2020-2024,[27] the following policy directions will be followed:

- **Climate and Gender Research:** Generating robust provincial and district-specific evidence and a data system, with an intersectional lens, on the social and gender dimensions of climate change, including sexual and reproductive health and rights (SRHR) and GBV to inform provincial strategies and action plans on climate change, resilience building and health adaptation.
- **Gender-Responsive Actions:** Ensuring that all strategies, and action plans developed under the BCCP are gender-responsive. This includes considering the specific vulnerabilities and needs of women and addressing gender disparities.
- **Capacity Building:** Implementing capacity-building programmes focused on women's empowerment, leadership, and participation in climate-related decision-making processes.
- **Livelihood Opportunities:** Promote income-generating opportunities for women in climate-resilient sectors, such as sustainable agriculture, renewable energy, and climate-smart entrepreneurship.
- **Education and Awareness:** Conducting awareness campaigns and educational programmes to inform women about climate change impacts, adaptation measures, and their rights related to climate resilience.
- **Leave No One Behind:** Empowering women, youth, and marginalised groups as critical agents for inclusive and gender-sensitive climate action through training on green skills, green careers, ecotourism, and other green opportunities to ensure livelihood resilience and sustainable development.
- **Access to Resources:** Ensuring that women have equal access to resources, including land, credit, and technology, to participate in climate adaptation and mitigation activities.
- **Women's Health:** Address the health implications of climate change for women, such as the increased risk of waterborne diseases during floods or heat-related illnesses during heatwaves.

5.3.2 Disability Dimensions

The disability-specific consideration of the policy action will include:

- **Inclusive Planning:** Incorporating disability-inclusive planning into all aspects of the BCCP, including climate-resilient infrastructure development, disaster risk reduction, and capacity building.
- **Accessible Information:** Ensuring that climate-related information and early warning systems are accessible to persons with disabilities, including those with sensory impairments.
- **Accessible Infrastructure:** Investing in accessible infrastructure to enable the safe evacuation and transportation of persons with disabilities during extreme weather events.
- **Training and Employment:** Promoting training and employment opportunities for persons with disabilities in climate-resilient sectors, emphasising their inclusion in the workforce.
- **Healthcare Access:** Addressing the unique healthcare needs of persons with disabilities during climate-related emergencies and disasters.
- **Advocacy and Representation:** Facilitating the participation and representation of persons with disabilities in climate adaptation and mitigation decision-making processes.

28. Using UN definition of population between 15-24 years of age.

5.3.3 Youth Dimensions

Youth[28] constitutes around 20 percent of the province's population; hence, the BCCP underlines the following considerations:

- **Youth Engagement:** Engaging youth in climate action by creating youth-led initiatives, climate clubs, and educational programmes to raise awareness about climate change and its impacts.
- **Skill Development:** Providing opportunities for youth to develop skills in climate-resilient sectors, such as renewable energy, sustainable agriculture, and environmental conservation.
- **Youth Entrepreneurship:** Supporting youth entrepreneurship in climate-related industries, including start-up grants and mentorship programmes.
- **Education and Training:** Developing curricula that incorporate climate change education in schools and universities to ensure that the youth are well-informed about climate issues.
- **Youth Leadership:** Encouraging youth leadership in climate advocacy, community resilience, and innovative solutions to climate challenges.
- **Youth Inclusion:** Ensuring that youth are represented in climate decision-making bodies and that their perspectives are considered in policy development and implementation.
- **Mental Health and Well-being:** Addressing the mental health and well-being of youth in the context of climate change, as they may experience anxiety and stress related to climate impacts.

Including these considerations in the BCCP led adaptation and mitigation actions will help ensure that the policy is comprehensive, equitable, and responsive to the diverse needs and perspectives of the population, including women, children, persons with disabilities and youth.

5.4. Just Transition and Green Jobs

Mainstreaming just transition—one that maximises economic and social gains from climate action, while minimising risks of social disruption—in Balochistan's extractive industry, particularly coal and gas extraction, and energy transition in the context of addressing climate change risks involves considering the needs and rights of workers, communities, and the environment. The transition to low-carbon and resource-efficient economy can lead to net jobs and income gains, helping to reduce poverty and inequality but such economic and social transformation requires sound knowledge, coherent policies, and strong social consensus. Additionally, it will involve implementing policies and practices that prioritise environmental protection and sustainable development, including measures to mitigate the environmental impacts of extractive activities and promote ecosystem restoration. Moreover, involving local communities in decision-making processes, ensuring equitable distribution of benefits, and addressing social inequalities are essential aspects of mainstreaming just transition toward low carbon economy. Decarbonisation through nature-based solutions (NbS) will also lead to green jobs creation, providing alternate livelihoods to the workers affected by the energy transition.

5.5. Capacity Building and Awareness-Raising

The GoB commits to a comprehensive set of capacity building and awareness-raising actions to compliment effective implementation of the BCCP. These actions aim to strengthen Balochistan's ability to address the complex challenges of climate change effectively and ensure that stakeholders at all levels are well-informed and actively engaged in climate-resilient practices. The key commitments include:

- **Capacity Building for the Public Sector Organisation:** Development and implementation of training programmes for government officials, particularly in relevant departments such as agriculture, environment, and disaster management, to enhance their understanding of climate change impacts, adaptation, and mitigation strategies. This particularly includes capacity building of the provincial line departments, Environmental Protection Tribunal, the Environmental Protection

Agency, and the human rights institutions to strengthen their ability to review environmental assessment reports and undertake social audits of the climate related projects to promote transparency and adherence to social responsibility standards.

- **Local Government Training:** Provision of capacity-building initiatives to strengthen the capabilities of local government bodies, enabling them to integrate climate considerations into their development plans and actions and engage local communities in design and implementation of the initiatives.
- **Educational Institutions and Curriculum Integration:** Collaboration with educational institutions to incorporate climate change topics and awareness campaigns into the school and college curriculum, fostering a climate-resilient mindset in future generations.
- **Training for Health and Education Sector:** Development of specialised training programmes for healthcare professionals and educators to understand and address the health and educational implications of climate change and disasters.
- **Public Awareness Campaigns:** Development and execution of public awareness campaigns aimed at educating the general population about climate change impacts, mitigation measures, and the role individuals can play in addressing climate change.
- **Community-Based Training:** Support to training sessions in vulnerable communities, empowering them to better understand climate change risks, adaptation strategies, and sustainable practices.
- **Climate Information Dissemination:** Establishment of an effective mechanism for the timely and relevant dissemination of climate information, including weather forecasts and disaster alerts, to keep communities informed and prepared.
- **Engagement with Civil Society:** Partnerships with civil society organisations, non-governmental entities, environmental human rights defenders and community leaders to create and support climate resilience and advocacy programmes.
- **Workshops and Seminars:** Organisation of workshops and seminars on climate change impacts and strategies, inviting experts to share their knowledge and experiences.
- **Technical Training for Agriculture and Livestock Sectors:** Support for specialised training programmes for farmers and herders to adopt climate-resilient practices in agriculture and livestock management.
- **Women and Youth Engagement:** Development of tailored training programmes for women and youth to ensure their active participation in climate change adaptation and mitigation initiatives.

6. Policy Implementation

Effective implementation of the BCCP requires multi-stakeholder coordination and collaboration given the multifaceted and intricate challenges presented by climate change in the region. Hence, it is imperative to meaningfully engage government departments, public sector institutions, non-governmental organisations, academic institutions, and private sectors. Furthermore, the active inclusion of local communities, particularly those vulnerable to the direct consequences of climate change, such as coastal and fishermen communities, is crucial in the policy's implementation.

This collaborative approach brings together diverse expertise, perspectives, and resources that are essential for the development of effective climate action plans. Each stakeholder group will contribute unique insights and knowledge, thereby ensuring a well-rounded and comprehensive approach to climate change adaptation and mitigation actions. This approach will allow the BCCP and sectoral policies to be aligned with the specific realities and needs of Balochistan.

To be led by the Government of Balochistan, an inclusive and participatory implementation process will ensure harnessing collective wisdom and fostering a shared sense of responsibility. This will promote a unity of purpose and a stronger resolve to combat the impacts of climate change, leading to a more sustainable and resilient future for the people of Balochistan.

6.1. Policy Governance

In alignment with the National Climate Change Policy (2021), the effective implementation of the BCCP mandates the formation of the **Balochistan Climate Change Coordination Committee** (B4C). This committee will be responsible for overseeing policy implementation and reporting progress to the National Climate Change Policy Implementation Committee (NCCPIC). The B4C will be supported by the **BCCP Cell** and the **Climate Finance Unit** thorough their respective mandates. The B4C will convene biannually to review strategic implementation plans across the sectors and provide progress updates to the NCCPIC.

6.1.1 B4C Composition

The B4C will comprise of the following, and may co-opt more members as and when needed:

- Additional Chief Secretary (Development), Planning and Development Department (Chair)
- Secretary, Climate Change and Environment Department
- Secretary, Agriculture & Cooperative Department
- Secretary, Communication Works, Physical Planning & Housing Department
- Secretary, Energy Department
- Secretary, Finance Department
- Secretary, Fisheries Department
- Secretary, Forest & Wildlife Department
- Secretary, Health Department
- Secretary, Industries & Commerce Department
- Secretary, Irrigation Department
- Secretary, Livestock & Dairy Development Department
- Secretary, Local Government & Rural Development
- Secretary, Mines & Minerals Development Department
- Secretary, Public Health Engineering Department
- Secretary, Transport Department
- Secretary, Urban Planning & Development Department
- Secretary, Women Development Department
- Director General, Balochistan Environmental Protection Agency
- Director General, Provincial Disaster Management Authority, Balochistan
- Director, Climate Finance Unit
- At least one representative from each of academia,

media, Balochistan Chamber of Commerce & Industry and civil society

- An eminent climate change expert
- Director, BCCP Cell (Secretary)

6.1.2 B4C Mandate

Assisted by the BCCP Cell, the B4C will have the following mandate, which may be amended by the GoB on recommendation of the B4C:

- **Implementation Roadmap:** Prepare a comprehensive and inclusive roadmap that outlines the key actions, timelines, responsibilities, and resource requirements for the successful execution of the Policy directions.
- **Coordination and Monitoring:** Facilitate and coordinate the implementation of BCCP priority actions across relevant government departments, and agencies. Monitor progress, identify risks and challenges, and propose necessary mitigation measures to ensure effective implementation.
- **Public Disclosure:** Establish a Climate Change Dashboard to provide access to information regarding BCCP targets and progress, climate finance, revenue and expenditures, aid flows, budget allocations, procurement, and distribution processes to ensure transparency in BCCP implementation. Both the BCCP Cell and the Climate Finance Unit should provide the necessary information and data for the populating the dashboard. The Climate Change and Environment Department will also designate a Public Information Officer under the Balochistan Right to Information Act, 2021.[29]
- **NDCs and LT-LEDS Implementation:** Take lead on operationalisation, and coordinate implementation, of NDCs and the Long-Term Low Emission Development Strategy across Balochistan.
- **BCCF Governance:** Provide guidance for setting up and managing the Balochistan Climate Change Fund (Section 10.3) to support climate change adaptation and mitigation actions in the province.
- **Stakeholder Engagement:** Foster collaboration and engagement with key stakeholders, including civil society organisations, private sector entities, academia, and international partners. Encourage their active participation and support in BCCP implementation efforts.
- **Capacity Building:** Identify capacity gaps and recommend capacity-building initiatives for relevant stakeholders involved in BCCP implementation. Support the development of training programs and knowledge-sharing platforms to enhance technical expertise and understanding of climate change issues.
- **Reporting and Communication:** Apprise relevant authorities, such as Balochistan Environmental Protection Council, of the progress of BCCP implementation. Develop a communication strategy to raise awareness about BCCP goals, achievements, and challenges among the public and media. Organise quarterly progress meetings to provide the sharing platform to all relevant partners.
- **Funding and Resource Mobilisation:** Assisted by the Climate Finance Unit, identify potential sources of funding and support mechanisms, including public sector funds, to ensure the availability of necessary financial resources for BCCP implementation. Collaborate and engage with relevant institutions and the private sector to explore and access climate finance opportunities. Receive and review proposals from relevant partners before submission to donors.
- **Policy Integration and Regulatory Coordination:** Work closely with relevant government entities to align/adjust existing policies, regulations, and laws with the objectives and targets outlined in the BCCP. Identify areas where new policies or regulations may be required to facilitate effective implementation.

29. Balochistan Right to Information Act, 2021. Government of Balochistan. Enacted 16 Feb 2021.

Facilitate the approval of policy recommendations from relevant government authorities.

- **Review and Update:** Periodically review and update the BCCP implementation plan based on changing circumstances and climate trends, emerging priorities, lessons learned, and evolving international commitments. It should stay abreast of scientific findings and policy developments related to climate change to inform decision-making processes.
- **Grievance Redressal Mechanism:** Establish a complaint hotline at the Chief Minister's Secretariat where complaints can be made through telephone, email, website or in writing to prevent corruption and make climate action more effective and transparent increasing citizens' trust. This will also help reducing the possibility of conflict-of-interest situation.

6.2. Monitoring, Evaluation and Reporting

The resilience building will depend largely upon an effective implementation of the BCCP, to be monitored regularly and reported to the B4C as well as other decision-making forums for course correction. This would require a robust implementation and impact tracking framework and a set of specific, measurable, achievable, relevant, and time-bound (SMART) indicators.

6.2.1 Framework for Tracking Policy Implementation and Impact

A comprehensive framework will enable the tracking of BCCP implementation and its impact, ensuring that the policy remains effective and responsive to the evolving climate challenges faced by Balochistan. Such a framework will encompass the following elements to ensure its effectiveness:

- **Key Performance Indicators (KPIs):** A set of specific and measurable KPIs for each policy objective and action will be developed. These KPIs will align with the broader goals of the BCCP, covering both mitigation and adaptation measures. A few KPIs are mentioned in Section 6.2.3.
- **Climate Finance Taxonomy:** The province will collaborate and integrate with the national efforts in developing a robust climate finance taxonomy while addressing specific local needs. Establishing complementary provincial taxonomies aligned with the national framework yet tailored to unique circumstances and priorities of the province will attract additional investors and streamline project evaluations.
- **Data Collection and Baseline Assessment:** A baseline assessment of relevant data, such as current emission levels, vulnerability to climate impacts, and available resources will be made. The data will regularly be collected and updated to track progress over time. The BCCP Cell will collaborate with relevant government departments and research institutions for data collection.
- **Reporting Mechanism:** A regular reporting mechanism, with designated reporting entities within each relevant department, will be implemented. These reports will include updates on the status of policy actions, expenditures, and achieved milestones. Reports will be submitted by the BCCP Cell to the B4C and made publicly available.
- **Monitoring and Evaluation (M&E):** An M&E system to continuously assess the effectiveness of policy actions will be instituted. This system will include regular reviews and both internal evaluations and external third-party assessments to identify strengths and weaknesses in the policy's implementation and adapt accordingly, addressing challenges and seizing new opportunities. The M&E system will also integrate participatory monitoring through community engagement.
- **Budget Allocation and Expenditure:** The B4C will ensure that budget allocations for climate actions are adequately disbursed, and a financial tracking mechanism is implemented to monitor the actual expenditure against the allocated budgets. Any budget shortfalls or surpluses will be reported to and addressed by the B4C.
- **Multisectoral Approach:** Climate change, being a crosscutting phenomenon, requires multisectoral engagements of private sector and academia, alongside international partners, in technical working

groups. Integrating climate considerations across all sectors is essential; hence, this approach will ensure integration of climate change considerations across all sectors.

- **Stakeholder Engagement:** There will be regular engagement with the relevant stakeholders, including the government departments, local communities, NGOs, academia, environmental human rights defenders, human rights institutions, and the private sector, to gather feedback on policy implementation and its impact. Their insights will provide valuable information for making necessary adjustments.
- **Climate Resilience and Impact Assessments:** The periodic climate resilience and long-term impact assessments will be conducted to evaluate the vulnerability of various sectors and geographical areas in Balochistan. These assessments will help identify emerging challenges and adapt policy actions accordingly. These may include multi-year impact assessments and research studies engaging the research institutions.
- **Capacity Building:** The training and capacity-building programmes for government officials and other stakeholders involved in policy implementation will be designed and delivered to ensures that they have the necessary skills and knowledge to carry out their roles effectively.
- **Risk Assessment and Management:** The BCCP Cell will regularly assess climate-related risks to policy implementation and develop risk management strategies to address potential obstacles or unforeseen challenges.
- **Communication and Public Awareness:** The GoB will implement a communication strategy to keep the public informed about policy progress and encourage climate action, and promote climate awareness and education at all levels, including through schools and media.
- **Adaptive Management:** Embracing an adaptive management approach, where policies and actions are adjusted in response to changing circumstances, emerging risks, and new data, the B4C will steer the policy governance and implementation process.

6.2.2 Progress Reporting Mechanism

Monitoring and reporting the progress are critical strategies to ensure effectiveness of the BCCP. These will include:

- **Annual BCCP Progress Report:** An annual report that outlines the progress made in implementing the BCCP will be prepared to document updates on each policy action and its impact, financial expenditure, and any challenges encountered.
- **Quarterly Updates:** The quarterly updates on key developments and milestones achieved will be shared with the B4C and the public to maintain transparency.
- **Project-Level Reporting:** For major projects or initiatives, a project-level reporting system will be implemented that will include regular progress reports, financial reports, and completion status.
- **Public Dashboard:** The BCCP Cell will create an online dashboard accessible to the public, which tracks key performance indicators and provides real-time updates on the BCCP's progress. This will promote transparency and accountability.
- **Stakeholder Feedback Mechanism:** A feedback mechanism for stakeholders, including local communities and civil society organisations, will be established to report concerns, provide feedback, and suggest improvements.

However, a robust M&E system will have to be built upon the provincial baseline of GHG emissions established through a provincial and sectoral GHG inventory.

6.2.3 Performance Indicators

The performance indicators will help in tracking the BCCP progress across various dimensions and ensuring that the policy is achieving its intended goals while addressing the unique challenges faced by Balochistan. To be refined and put in practice by the BCCP Cell under the guidance of the B4C, following is an indicative list of performance indicator to measure the policy implementation:

- **GHG Emissions Reduction:** To measure the reduction in GHG emissions within Balochistan compared to baseline levels, the specific indicators may include annual emissions reductions and progress toward long-term reduction targets.
- **Climate-Resilient Infrastructure Projects:** A count of the completed projects that enhance gender responsiveness climate resilience, such as resilient transportation systems, climate-adaptive buildings, and flood protection infrastructure.
- **Climate Literacy and Awareness:** Assessing the increase in climate literacy among the population through surveys, educational programmes, and awareness campaigns, the indicators may include the percentage of the population with improved climate awareness.
- **Financial Expenditure:** Tracking the allocation and expenditure of financial resources for climate actions, the actual expenditure will be calculated as percentage of the budget allocations.
- **Ecosystem Resilience:** To be monitored in terms of the progress in restoring and enhancing ecosystem resilience, including the planting of mangroves, afforestation, and habitat restoration projects.
- **Local Community Engagement:** Measured through the level of local community engagement in climate and environmental initiatives, including the participation of women and vulnerable communities in climate adaptation and mitigation projects.
- **Project Timelines and Milestones:** Assessing whether projects are completed within the specified timelines achieving key milestones.
- **Climate-Resilient Agriculture Adoption:** Determining the adoption rate of climate-resilient agricultural practices and technologies, such as drought-resistant crops and efficient irrigation systems.
- **Economic Resilience:** Evaluating the economic impact of climate actions, including job creation, economic diversification, and private sector engagement in climate-resilient practices.
- **Health Resilience:** Evaluating the capacity of the healthcare system to respond to climate-induced health challenges, including the availability of vaccines, disaster preparedness, and the reduction of climate-sensitive diseases.
- **Climate Adaptation at Local Levels:** Measuring the integration of climate adaptation into local-level project designs and plans, particularly in vulnerable areas.
- **Educational Curriculum Inclusion:** Tracking the inclusion of climate change topics in the education curriculum at primary, secondary, and higher education levels.
- **Public Sector Capacity Building:** Assessing the effectiveness of training programmes and capacity-building efforts for government officials involved in policy implementation.
- **Research and Innovation:** Monitoring the progress in research and innovation initiatives related to climate change vulnerabilities and impacts.
- **Gender and Social Inclusion:** Measuring the participation of women, youth, and marginalised groups in climate action and their representation in decision-making processes.

Part - B

BCCP
Action Plan

7. Priority Sectors and Guidelines for Climate Resilient Development

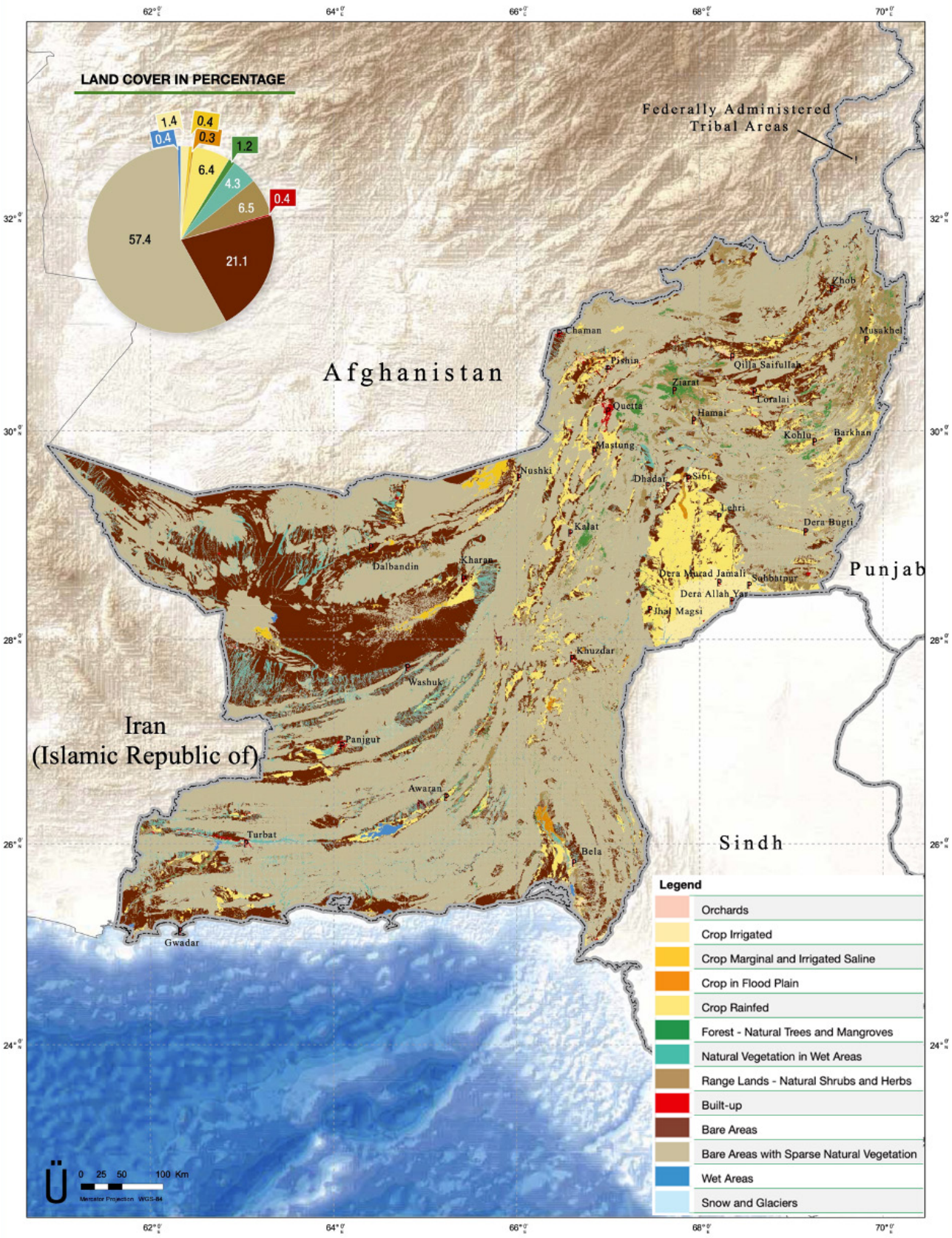
7.1. Adaptation

7.1.1 Agriculture, Livestock and Fisheries

Recognising the agriculture and livestock as backbone of Balochistan's economy, the GoB will

- Formulate policy initiatives and strategies to foster climate-resilient agriculture, tailored to the agroecological zones (Map 5).
- Encourage sustainable horticulture practices that prioritise climate-resilient crop varieties while emphasising the goals of sustainable groundwater conservation and judicious usage.
- Establish a robust and efficient climate-adaptive crop advisory service, ensuring farmer access to seasonal and short-term weather forecasts based on climate and weather data, with consideration for the seven agroecological zones and cropping patterns.
- Promote and incentivise the mechanisation of farming operations to enhance farming efficiency, ensure timely completion of tasks, reduce climate-related risks, increase yields, and minimise harvest losses.
- Foster the development of locally suitable climate-resilient seed varieties through research facilitated by public-private partnerships and collaboration with other provinces and national-level agricultural research institutes.
- Offer incentives for the enhancement of irrigation water use efficiency through the adoption of modern technologies, including high-efficiency irrigation systems, for on-farm water management and the implementation of an ICT-based pest surveillance system.
- Periodically evaluate the suitability of crop species for each agroecological zone within Balochistan, guided by climate and vulnerability assessments.
- Improve climate-adaptive agricultural practices through the creation of district-level drought management plans specifically tailored for deserts, arid regions, and semi-arid areas of Balochistan.
- Incentivise sustainable land management discouraging harmful practices.
- Streamline regulations for the farmers selling directly to consumers or local markets.
- Integrate regenerative agriculture principles into agricultural development plans. By creating an enabling environment, the widespread adoption of regenerative agriculture can be fostered leading to a more sustainable, resilient, and productive agricultural sector that benefits both farmers and the environment.
- Develop strategies to support the growth of value chains and facilitate eco-labelling and packaging of horticultural produce, such as apples, grapes, apricots, cherries, pomegranates, almonds, and dates.
- Design and reinforce policies that promote the integration of rainwater harvesting into agricultural methods, including practices like *sailaba* and *khushkaba*, through the encouragement of crop diversification and locally suited water conservation practices.
- Strengthen Agriculture Department's Crop Reporting Services (CRS) by transitioning from manual data collection in field to real-time crop monitoring using remote sensing methods.
- Engage with the banking and financial sector to craft financial products and insurance mechanisms that encourage the adoption of climate-adaptive technologies.
- Promote climate-adaptive high-production livestock breeds suited to the various zones of Balochistan.
- Promote aquaculture to support farmer livelihoods and a much-needed source of protein.

Map 5: Balochistan's Landcover



Source: FAO. 2017. Land Cover Atlas of Pakistan: The Balochistan Province.

- Support research and advisory services aimed at promoting high-nutrition feeds and climate-adaptive disease management in the livestock sector.
- Promote new climate compatible technologies in fisheries such as fish cage-culture (either inland or marine), recirculating aquaculture system, in-pond raceway aquaculture system and Biofloc technology.[30]
- Develop initiatives to support small farm holders and marginalised communities ensuring equitable access to resources and technologies.
- Develop clear guidelines on integrating indigenous farming knowledge with modern practices to enhance local acceptance and sustainability.

7.1.2 Forests, Rangelands, Biodiversity and Wildlife

To ensure environmental sustainability, protect the ecosystem and reverse the environmental degradation in Balochistan, the GoB will:

- Ensure the conservation and protection of biodiversity and incorporate biodiversity plans into provincial development strategies to mitigate adverse impacts on forests, marine environments, and rangelands.
- Formulate provincial adaptation strategies founded on 'Ecosystem-based Adaptation' and 'Nature-based Solutions' approaches to enhance the resilience of fragile ecosystems and bolster adaptation to the adverse effects of climate change.
- Update the Balochistan Conservation Strategy and foster the sustainable utilisation of biodiversity with active participation from local communities.
- Develop research programmes focused on biodiversity and conservation practices in collaboration with provincial universities and other organisations. These programmes will be based on the integration of indigenous ecological knowledge and scientific research to comprehensively comprehend and monitor the impacts of climate change on biodiversity.
- Enhance the institutional and legal capacities of the Balochistan Forests and Wildlife Department to elevate biodiversity conservation practices.
- Decrease deforestation by offering alternative domestic fuel sources and increasing forest cover through the promotion of native species and agroforestry programmes, including agroforestry.
- Formulate locally suitable rotational grazing practices in designated zones, providing incentives to pastoralists and local communities to rehabilitate depleted rangelands through rain harvesting and re-vegetation initiatives.
- Promote and introduce locally led payments for ecosystem services for biodiversity conservation programmes, such as community-based trophy hunting schemes, in suitable areas of Balochistan.
- Establish and manage protected areas for wildlife that exhibit resilience to climate change. This will involve the restoration of degraded habitats, afforestation efforts, and the creation of corridors between protected areas to enable animal movement in response to the changing climate and weather conditions.
- Design targeted awareness campaigns and gender mainstreaming initiatives aimed at fostering community ownership, with a particular focus on emphasising the significance of wildlife conservation, the impacts of climate change on wildlife, and the pivotal role of local communities in these efforts.
- Strengthen the enforcement framework and build capacity of local institutions and communities responsible for biodiversity and forest conservation.

30. Biofloc technology is a system of aquaculture that uses "microbial biotechnology to increase the efficacy and utilisation of fish feeds, where toxic materials, such as nitrogen components, are treated and converted to a useful product, like proteins, for use as supplementary feeds for the fish and crustaceans."

    Source: Jamal et al. 2020. Biofloc Technology: Emerging Microbial Biotechnology for the Improvement of Aquaculture Productivity. Polish Journal of Microbiology. 69 (4): 401–409. doi:10.33073/pjm-2020-049.

7.1.3 Water Resources

Overexploitation of groundwater, in the backdrop of water scarcity in the province, has become a pressing issue in Balochistan's agriculture sector. Unsustainable extraction practices have led to depletion of aquifers, reduced water availability, and increased salinity, jeopardising both agricultural productivity and water security. To mitigate these impacts, a shift towards sustainable groundwater management practices is imperative through following measures:

- **Regulating groundwater extraction:** Implementing stringent regulations on groundwater extraction will curb excessive pumping and promote responsible water usage. This includes monitoring groundwater levels, establishing quotas, enforcing licensing requirements, and rationalising tube well solarisation.
- **Promoting water conservation technologies:** Encouraging the adoption of water-efficient irrigation techniques, such as drip and sprinkler irrigation, will significantly reduce groundwater consumption. These technologies provide precise water application, minimising wastage and optimising water use. This will lower energy consumption associated with groundwater pumping and will lead to the reduction of the GHG emissions from electricity generation, which is often heavily reliant on fossil fuels when peter engines are used.
- **Recharging aquifers:** Implementing artificial recharge techniques, such as rainwater harvesting and groundwater recharge wells, will replenish depleted aquifers and restore water balance. This strategy will help mitigate the effects of overexploitation and enhance water availability. By preserving groundwater resources and preventing aquifer depletion, sustainable groundwater management practices can indirectly support wetland conservation and carbon sequestration. The GoB will stress upon alignment of the GCF-funded Recharge Pakistan Programme[31] with BCCP objectives and will upscale its successful approaches across the province.

To conserve and protect the precious water resources of Balochistan, the GoB will:

- Finalise the Balochistan Water Policy based on Integrated Water Resource Management (IWRM) approaches.
- Establish and empower the Balochistan Groundwater Management Authority to ensure the sustainable management of groundwater resources.
- Actively promote the sustainable use of groundwater by implementing and strengthening basin-specific groundwater management and monitoring systems. This includes the development of the Balochistan Groundwater Atlas and the adoption of technical measures such as artificial recharge and integrated watershed management, particularly for depleted and threatened aquifers, with the aim of conserving water resources and alleviating stress on groundwater.
- Revitalise, rehabilitate, and enhance the sustainable governance of the karez water management system. Additionally, will encourage the cultivation of low-delta crops in karez-irrigated zones.
- Promote high-efficiency irrigation systems to enhance agricultural water use efficiency, including methods such as drip irrigation and rainwater harvesting. This will be facilitated through targeted subsidies and the active involvement of the private sector.
- Enhance water conservation efforts by improving and constructing water storage and recharge methods, such as delay action dams, multi-purpose dams, leaky dams, and check dams. These endeavours will be informed by scientific water assessments based

31. GCF: Recharge Pakistan (https://www.greenclimate.fund/project/fp207). Accessed: 21 Dec 2023.

on precipitation levels and water flows in various climatic zones across Balochistan.

- Develop a climate-resilient water resource management framework grounded in basin-specific climate assessments for the seven agroecological zones identified in the Balochistan Agriculture Policy and Strategy of 2014.
- Establish a policy and institutional framework and bolster capacities for water licensing and pricing mechanisms, ensuring judicious water use and the conservation of groundwater resources.
- Strengthen the existing spate irrigation systems, such as *sailaba* and *khushkaba*, in targeted areas to enhance water efficiency and mitigate flood risks.
- Improve canal irrigation system infrastructure and governance to increase water productivity in irrigated crops, particularly in rice production areas.
- Actively promote household-level rainwater harvesting by revising building regulations, introducing water-efficient technologies, and conducting awareness creation programmes.

7.1.4 Coastal and Marine Ecosystems

Realising great potential of ≈735 km long coast, and associated ecosystem, the GoB will:

- Undertake periodic marine fisheries stock assessment for integrated management of marine ecosystem.
- Ensure sustainable fishing practices by prohibiting destructive and illegal fishing practices, such as illegal trawling along the Balochistan coast, the use of illicit fishing gear and nets, and adjusting fishing seasons and quotas to mitigate harm to marine life. Illegal fishing also adds unaccounted carbon footprint to the marine crafts' GHG emissions.
- Encourage and offer incentives for locally and environmentally suitable aquaculture practices as a climate adaptation measure to support sustainable coastal livelihoods in the major coastal populations along the Balochistan coast.
- Preserve and rehabilitate degraded fish habitats to create sanctuaries for fish populations. This will be achieved through marine conservation plans, the cultivation of riparian vegetation and appropriate mangrove species, the removal of barriers to fish migration, and the reduction of marine pollution.
- Establish, expand, and reinforce the integrated management of marine protected areas along the Balochistan coast, guided by locally suitable ecological management plans and robust enforcement mechanisms.
- Ensure that development initiatives in coastal areas, including projects such as the Gwadar Port, Gadani Shipbreaking Yard, and energy development projects, incorporate the active participation of the local population to safeguard local livelihoods and marine ecosystems.
- Embark on efforts to restore and rehabilitate degraded marine ecosystems, encompassing the conservation and afforestation of locally appropriate mangrove species.
- Institute and expand coastal early warning systems while enhancing the adaptive capacities of coastal communities including the fisherfolk to effectively respond to extreme weather events, such as recurring cyclones.
- Implement measures to curtail coastal erosion and sea intrusion along the 735 km coastline, particularly in areas like Dam Bander, Pasni, Sur Bander, Pishukan, Jiwani, and others. These efforts are vital for the preservation and protection of arable and productive land.
- Work towards the reduction of marine and coastal pollution and actively promote the sustainable use of marine resources. This includes sustainable and climate-adaptive aquaculture and responsible tourism development.
- Ensure that strategies for coastal tourism development encompass mandatory environmental protection plans and the construction of climate-resilient infrastructure, thus contributing to

pollution reduction and the safeguarding of coastal infrastructure.

- Climate proof the industrial development policies to include environmental impact assessments and mitigation strategies.
- Provide support mechanisms for fishing communities, such as alternative livelihood options and skills training, to adapt to new fishing regulations.

7.1.5 Mountains, Deserts, Arid and Semi-Arid Areas

In the backdrop of diverse topographic expanse of the province, the GoB commits to:

- Actively promote and incentivise water conservation and management measures, such as rainwater harvesting, guided by periodic climate and water assessments in the desert zones of Balochistan, including Nushki, Chagai, Kharan and Washuk.
- Establish and enhance the capacity of a robust drought monitoring system in desert zones and arid areas. This will be done in coordination with Provincial and District Disaster Management Authorities, agriculture and irrigation departments, and other relevant organisations.
- Encourage and provide incentives for the cultivation of drought-resistant crops and the adoption of livestock breeds as climate adaptation measures to sustain subsistence livelihoods.
- Undertake climate change assessments in mountain area ecosystems and agriculture systems, leading to the design of locally suitable adaptive measures for fragile and vulnerable sectors.
- Foster coordination among pertinent departments, including forests and wildlife, water resources and irrigation, and agriculture and livestock departments, to facilitate the efficient management of ecosystems, including rangelands, wetlands, and other resources. This coordination aims to combat desertification, stabilise sand dunes, and maintain soil and sub-soil moisture and vegetative cover.
- Discourage the cultivation of high delta crops and water-intensive plant species in identified desert zones, arid areas, and semi-arid zones.
- Promote research and incentivise the development of drought-resistant shrubs, fodder crops, and grasses for pastures and oases to benefit livestock in arid and mountain areas.
- Actively promote the adoption of local and hybrid livestock species suitable for arid and desert ecosystems, thus contributing to sustainable livelihoods.
- Proactively engage women, transgender, and youth in spatial and NRM planning and implementation.

7.1.6 Mining and Mineral Resources

Being rich in mineral resources, through mainly unexploited, the GoB will:

- Formulate policy measures and establish enforcement mechanisms for the sustainable management of water resources, including the treatment of wastewater during mining operations.
- Enhance the capacities of the provincial Mines and Minerals Department to effectively enforce provincial environmental regulations, in collaboration with the Balochistan Environmental Protection Agency (EPA).
- Ensure the comprehensive restoration of mine sites upon the completion of mining operations, with the aim of mitigating erosion and sedimentation, enhancing water quality, and creating new habitats for wildlife.
- Incorporate climate change considerations into the Balochistan Mines and Minerals Policy of 2019, thus mitigating adverse consequences on fragile ecosystems and habitats.
- Encourage sustainable mining practices by advocating for the utilisation of technologies and methods that minimise environmental impacts, with active participation from local communities.
- Develop a climate change action plan specifically for the mining sector. This plan will identify the sector's GHG emissions and other climate impacts while proposing measures to enhance water management, restore mine sites, and foster sustainable mining practices.

7.1.7 Urban Planning and Development

Though trailing behind on urbanisation, the GoB will:

- Develop a climate-sensitive urban planning framework to comprehensively integrate climate change considerations into all aspects of urban planning and development.
- Conduct climate change impact and vulnerability assessments for all major urban centres and towns in Balochistan to identify areas most susceptible to climate change impacts, including issues like urban flash flooding, air pollution, and extreme heat and cold events.
- Invest in climate-resilient urban infrastructure to mitigate climate risks, such as urban flooding, energy conservation, green building development, and creation of urban green spaces.
- Collaborate with regional and international sustainable cities platforms and other urban networks to engage in joint efforts related to climate-resilient urban planning.
- Review urban policies and planning strategies and revise building regulations to enhance water and energy efficiency within urban areas.
- Formulate urban municipal policies aimed at transitioning urban services and processes, particularly those related to solid waste and wastewater treatment, toward climate-resilience and carbon neutrality through integrated waste management, treatment, and disposal systems, with a focus on reusing and recycling.
- Foster urban forestry and plantation initiatives through partnerships with the Balochistan Forest and Wildlife Department and other relevant stakeholders, including civil society organisations.
- Implement measures to make public services carbon-neutral, green, and climate-resilient by incorporating energy efficiency, renewable energy usage, urban tree planting, sustainable transportation methods, paperless operations, and water efficiency initiatives.
- Develop inclusive policies and infrastructure for effective groundwater recharge through rainwater harvesting systems.
- Document the informal settlements and develop climate-resilient housing solutions for these unregulated but vulnerable populations.

7.1.8 Human Health

Cognisant of the burden of disease in the province, the GoB commits to:

- Integrate climate adaptation measures into Balochistan's health and education policies, and MNCH plans.
- Identify and systematically document the impacts of climate change on human health, encompassing factors such as heat and cold waves, air and water pollution, droughts, flooding, and water quality.
- Incorporate the health implications of climate change and disasters, such as vector-borne diseases like malaria and dengue fever, into preparedness and response strategies of both Balochistan Provincial and District-level Disaster Management Authorities. This includes providing psychological support where needed.
- Design and implement programmes in collaboration with the Balochistan Health Department to sensitise, educate, and train health personnel and the public regarding climate change-related health issues and mitigation measures.
- Establish institutional collaboration mechanisms with provincial and national health service providers to ensure effective preventive measures and the availability of resources, such as vaccines, medication, WASH facilities, and educational facilities (schools, colleges, universities) during climate-induced extreme events. Particular attention will be given to the needs of women and other vulnerable populations.
- Conduct assessments and collect data about climate-sensitive diseases at both the provincial and district-level health service delivery systems. This data will inform the development of plans for addressing seasonal and other disease outbreaks effectively.

7.1.9 Disaster Risk Management

On the frontline of the natural and climate induced disasters' vulnerability, the GoB will:

- Strengthen institutional coordination mechanisms for DRM with the goal of minimising the impacts of climate-induced extreme events, including droughts, floods, heat and cold waves, and cyclones, in the coastal areas of Balochistan.
- Actively promote and prioritise NbS within DRM strategies. This includes the plantation of mangroves to mitigate the impacts of cyclones in coastal areas.
- Enhance institutional-level mechanisms for flood management, the development of drainage systems, and readiness in canal command areas of southern Balochistan, with the aim of reducing flood risk.
- Conduct regular district-level climate change vulnerability and natural hazards vulnerability assessments that inform the formulation of climate-resilient DRM action plans to mitigate risks and ensure safety of citizens and establish a natural hazard early warning system through engagement with the local civil society organisations.
- Develop and regularly update comprehensive emergency and evacuation preparedness plans at district levels to outline response strategies for different types of climate related disasters to save human lives and mitigate loss of property.
- Design and reinforce community-based and inclusive disaster preparedness response and risk management systems based on identified climate-induced disasters. These systems will be tailored to address specific events, such as cyclones in coastal areas, droughts in arid and semi-arid zones, flash and riverine floods in plains and mountain areas, and heat and cold waves. This design will be informed by historical data and future climate projections for Balochistan.
- Operationalise District Disaster Management Committees to ensure implementation of the BCCP at grassroot levels.

7.2. Mitigation

7.2.1 Energy

As per updated NDCs (2021), "Pakistan has an average theoretical solar photovoltaic (solar PV) potential of 5.341 kWh/m^2 Global Horizontal Irradiation (GHI) requiring only 0.071 percent of Pakistan's total land area, mainly in the Balochistan province. If this potential is utilised, all of Pakistan's current energy needs can be met with solar power alone."[32] To effectively mitigate climate change and transition towards a sustainable energy future, GoB has prioritised the following interventions:

- **Harness Balochistan's abundant renewable energy potential:** Balochistan boasts vast untapped renewable energy resources, including solar, wind, and geothermal power. Following the 18th amendment, the provinces have the right to generate their own electricity and export the surplus energy to the national grid. The GoB will focus on the development of these resources by establishing renewable energy zones, providing attractive incentives for renewable energy projects, and streamlining the regulatory process for renewable energy installations and infrastructure security. The least-cost electrification options for at least 50 percent of the unelectrified population are solar-based mini-grids and stand-alone solar home systems.[33] However, given generalised groundwater scarcity across the province, introduction of solar powered tube wells will be carefully researched and promoted in the suitable regions only.

32. Government of Pakistan. 2021. Pakistan: Updated Nationally Determined Contributions 2021. Islamabad: Ministry of Climate Change, GoP.
33. WB. 2022. Pakistan: Country Climate and Development Report. Washington, DC: The World Bank Group.

- **Enhance energy efficiency in electricity generation:** There are currently six conventional fuel-based power plants in Balochistan. The main power producers for Balochistan are CPHGC, Uche 1 and 2 while the remaining have had to stay offline due to high import prices of fuels. Most of the power generated is transmitted out of the province since the demand for the province is so low which could also be attributed to the grid capability and the bills recovery factor. These power plants are relatively inefficient, leading to higher fuel consumption and emissions. The GoB will implement measures to improve the efficiency of existing power plants and will make sure that all such power plants even which are being utilised as small captive units during loadshedding time intervals will operate at the best efficiency points.
- **Upgrade and expand the electricity transmission and distribution network:** Balochistan's electricity transmission and distribution network is outdated and inadequate, resulting in transmission losses and hindering the integration of renewable energy sources. Due to the vast distances between load centres, distribution lines are spread across above-rated lengths. The province has five 220 kV distribution stations located in Quetta, Sibi, Loralai, Dera Murad Jamali and Khuzdar. There are no 500 kV grid stations, and most of the lines are 132 kV lines. The GoB will invest in upgrading the existing grid infrastructure (such as Nukundi-Muzaffargarh transmission line) and expanding the network to reach remote areas through micro/mini grid renewable energy technologies and accommodate the growing demand for electricity. The GoB will stream effective working of the Balochistan Energy Department with QESCO and NTDC to address the grid efficiency issues.
- **Promote distributed energy resources (DERs) for rural electrification:** Balochistan has a large rural population with limited access to grid electricity. DERs, such as solar mini-grids and microgrids, can provide reliable and sustainable electricity access to these communities, reducing reliance on fossil fuels and improving energy security. The GoB will prioritise DER projects for rural electrification.
- **Develop and implement comprehensive energy policies and plans:** A strengthened Energy Department of Balochistan can play a crucial role in implementing climate change mitigation strategies in the energy sector. With strengthened oversight and regulatory capabilities, the GoB through the Energy Department will ensure that energy projects comply with environmental standards and contribute to GHG reduction targets. For energy efficiency, the Provincial Designated Agency will be established as per the provisions of the National Energy Efficiency and Conservation Act of 2016.
- **Empower communities through energy literacy and capacity building:** The consumer profile in Balochistan is very different than that of the rest of the country. Agriculture customers make up less than 4 percent of the number of consumers but use 73 percent of the electricity in the province. Industrial and commercial activities use less than 6 percent of the electricity. Educating communities about climate change and sustainable energy practices is crucial for fostering behavioural change and encouraging participation in energy conservation efforts. The GoB will invest in clean energy literacy programmes including clean cooking stoves initiatives and provide training opportunities for local communities to develop skills in renewable energy technologies and energy management practices.
- **Establish renewable energy targets:** To reduce the dependency on fossil fuels for energy needs, renewable energy targets and greenhouse gas reduction goals will be established. Further innovation and research into the use and promotion of renewable energy will be undertaken for the development of favourable regulatory frameworks and incentives for renewable energy projects to be introduced to promote green energy.

7.2.2 Transportation

The GoB has prioritised the following interventions prioritised by keeping in view the balance between environmental sustainability and socioeconomic imperatives:

- **Expanding public transportation and road network expansion**: Investing in efficient, gender sensitive and accessible public transportation systems, including buses and trains, can significantly reduce private vehicle usage and associated emissions. Successful initiatives such as the Green Bus Service operating in Quetta,[34] along with feeder routes and women-dedicated pink buses operational in Karachi, will be scaled up by the GoB to other cities in the province.
- **Greening the CPEC**: While the connectivity under CPEC is expected to provide economic dividends for the province, the GoB, through EPA and other relevant agencies, will ensure that low carbon technologies are employed in development of CPEC infrastructure as well as the industrial processes thereof.
- **Effective Vehicle Inspection Centres:** In the vast and diverse province of Balochistan, where road safety and environmental protection are of paramount importance, vehicle inspection centres stand as crucial checkpoints for ensuring that vehicles meet emission standards and are roadworthy, safeguarding both human lives and the environment. Equipping vehicle inspection centres across Balochistan with modern equipment and technology is essential to accurately assess vehicle emissions and safety. Advanced emission testing equipment can effectively detect harmful pollutants, while sophisticated diagnostic tools can identify potential safety hazards. The GoB will invest in these technological advancements, inspection centres can effectively address vehicle-related environmental and safety concerns, ensuring a safer and cleaner transportation system for the province.
- **Enhancing non-motorised transport:** The GoB will introduce schemes which will lead towards creating a conducive environment for cycling and walking by improving infrastructure, such as dedicated lanes and pedestrian-friendly sidewalks, can encourage healthier and more sustainable travel options.
- **Integrating renewable energy sources**: The GoB will play its role in meeting the NDC target related to the EVs penetration in Pakistan by incorporating renewable energy sources, such as solar and wind power, into the transportation sector, particularly for public transportation and electric vehicle charging infrastructure, can reduce the sector's carbon footprint.
- **Discouraging the use of substandard cheap fuel and promoting use of biofuels**: To effectively combat the issue of substandard fuel utilisation and mitigate its associated GHG emissions and promote use of biofuels, the GoB will formulate a comprehensive approach, encompassing regulatory measures, technological advancements, and public awareness initiatives.
- **Circular railway feasibility studies:** Conducting thorough feasibility studies is crucial for the successful implementation of circular railways in Balochistan. The GoB will carry out such studies as they play a pivotal role in assessing the viability, economic feasibility, and potential impact of such projects. They evaluate technical feasibility, estimate passenger demand, assess financial viability, identify potential routes, analyse environmental impact, identify funding sources, assess social impact, provide decision-making support, and inform future planning.
- **Low-carbon marine vessels:** The GOB will promote and support low-carbon alternate fuel-based fishing and seagoing vessels, and harbour crafts with improved engine technology, such as 4 stroke (instead of 2 stroke) engines for the fishing boats.

34. Car Base: Quetta to Get New Bus Service Next Week (https://propakistani.pk/2023/07/10/quetta-to-get-new-bus-service-next-week/). Accessed: 5 Dec 2023.

7.2.3 Agriculture

The GoB has prioritised the following interventions in the agriculture sector:

- **Promoting climate-smart agriculture practices:** The GoB will focus on embracing climate-smart agriculture practices which is crucial for reducing GHG emissions from the agriculture sector while ensuring food security. Introducing drought-tolerant crop varieties will significantly reduce water consumption and enhance crop productivity in drought-prone areas. Further, implementing practices that enhance soil health, such as organic matter management and reduced tillage, will increase soil carbon sequestration, improve soil structure, and enhance water retention capacity. Optimising fertiliser application through precision agriculture techniques will further reduce excessive nutrient inputs, minimising nitrous oxide (N_2O) emissions, a potent GHG associated with nitrogen fertiliser production and application. Community sensitisation and exposure to the sustainable and low-carbon practices will be pivotal in this regard.
- **Expanding agroforestry practices:** The GoB will expand and promote the agroforestry practices due to multiple benefits for climate change mitigation and adaptation. Planting trees on farms will provide shade, reduce wind erosion, improve soil fertility, and enhance carbon sequestration.
- **Economic incentives:** Introduce economic incentives and support mechanisms for the farmers to adopt climate-smart and water-efficient practices. This may also be in terms of transfer of advanced agricultural technologies, such as precision farming and digital tools, to support climate-smart agriculture.

7.2.4 Industrial Processes

The GoB has prioritised the following interventions which are essential to be considered under the policy ambit:

- **Renewable energy and energy efficiency interventions:** The GoB will develop and facilitate projects for improving energy efficiency through adopting energy-efficient technologies under the appliance replacement programme, implementing energy management systems, and promoting renewable energy sources which will significantly reduce the industrial sector's carbon footprint. The GoB will give special emphasis on these interventions in the Special Economic Zones, Industrial Parks and specifically in the Mines and Mineral Sector value chain.[35]
- **Adoption of cleaner production technologies:** The GoB will promote cleaner production practices which production practices involve process optimisation, minimising the use of hazardous chemicals and waste, improving waste management, and recycling and reusing materials. These practices will not only reduce environmental impact but also will enhance resource efficiency and cost saving.
- **Incentives for decarbonisation:** The GoB will consider giving financial incentives, such as tax breaks, subsidies, or grants, to businesses that adopt decarbonisation measures in line with Pakistan's Long-Term Vision and upcoming LT-LEDS. These incentives will help to offset the upfront costs of implementing energy-efficient technologies, renewable energy systems, or carbon capture and storage (CCS) technologies.
- **Promoting Renewable Energy Certificates (RECs), Carbon Markets and Science Based Targets Initiative (SBTi):** The GoB will facilitate the industrial sector in enhancing their understanding about the Renewable Energy Certificates (RECs), Carbon Markets and Science Based Targets Initiative (SBTi). This will include workshops, training programmes, and access to expert resources and experts. Besides this, there is a need to develop Provincial GHG inventory to track the progress

35. Balochistan to establish four industrial zones. The Express Tribune, 17 May 2022 (https://tribune.com.pk/story/2356933/balochistan-to-establish-four-industrial-zones). Accessed: 5 Dec 2023.

towards the anticipated Provincial NDC targets and connectivity with the respective carbon registry for the corresponding adjustments.

7.2.5 Land Use, Land-Use Change, and Forestry (LULUCF)

In line with NCCP 2021, the GoB will take the following mitigation measures on priority:

- Ensure full scale feasibility and due diligence, spearhead by the Board of Revenue, before allowing change of land use especially in case of agricultural and forest lands and protected landscapes. The same measure will be adopted for coastal areas.
- The Board of Revenue should identify public lands to be allocated for public-private partnership projects for renewable energy, value added agriculture, and commercial forestry.
- Enhance the capacity of Forest Department and other stakeholders for the effective development and implementation of innovative mechanisms aimed at preventing deforestation and increasing forest carbon stocks.
- Develop and implement strategies to prevent deforestation, reduce carbon emissions and improve forests' ability to sequester more emissions from the atmosphere.
- Launch projects and programmes to provide alternative fuel and livelihood options for forest-dependent communities to compensate avoiding deforestation.
- Promote farm forestry and agro-forestry practices through the plantation of multipurpose and fast-growing tree species to meet the local population's demand for fuel, timber, and livestock feed.
- Integrate carbon offsetting options into the provincial projects through nature-based solutions.
- Ensure effective harnessing of the carbon financing mechanisms through development of the provincial carbon market regulations, MRV system, GHG inventory and institutional mechanisms.
- Introduce economic incentives for forest conservation, such as payment for ecosystem services, access-benefit sharing regime and REDD+ strategies.
- Integrate LULUCF strategies with other sectoral policies, such as agriculture, energy and urban development, through climate proofing of these policies and making requisite amendments.

7.2.6 Waste

The GoB has prioritised the following mitigation interventions in the waste sector:

- **Prioritising waste reduction by minimising the waste stream at source:** Waste reduction at its source is the cornerstone of sustainable waste management. The GoB will promote and implement different waste minimisation strategies, such as promoting reusable products, encouraging eco-friendly packaging, and advocating for sustainable consumption habits, which will significantly reduce the amount of waste generated in the first place. This approach will not only minimise the GHG emissions but also will conserve resources and will reduce the burden on waste management infrastructure.
- **Promoting resource recovery by turning waste into resources:** By establishing robust recycling infrastructure, including efficient collection systems, sorting facilities, and recycling markets, the GoB will effectively recover valuable materials like paper, plastic, metal, and organic waste. This approach will not only mitigate GHG emissions but also will promote circular economy principles.
- **Exploring waste-to-energy solutions:** Waste-to-energy technologies offer a promising solution for converting non-recyclable waste into usable energy.[35] The GoB by promoting investments in waste-to-energy facilities, such as incinerators with

36. NEPRA. 2018. NEPRA grants generation licence to Pakistan first waste to energy project (https://nepra.org.pk/Admission%20Notices/2018/July/PRESS%20RELEASE-%20Solid%20Waste.pdf): Press Release. Accessed: 5 Dec 2023.

energy recovery systems, will harness the energy content of waste at appropriate sites, reducing landfill reliance and generating electricity or heat.

- **Fostering collaboration and innovation:** Effective climate change mitigation in Balochistan's waste sector requires a collaborative approach that brings together government agencies, non-governmental organisations, businesses, and communities. By working together, stakeholders can develop innovative waste management solutions, share best practices, and promote sustainable waste disposal practices across the province.
- **Regulatory Framework:** Develop a robust regulatory framework to support and enforce sustainable waste management practices across the province.
- **Public awareness and participation:** Prepare comprehensive and effective public awareness and participation plan regarding waste management practices and deploy the same for public engagement on waste management.
- **Infrastructure Development:** Design and develop climate resilient and culturally acceptable waste management infrastructure, particularly in rural and underdeveloped areas, with active engagement of communities and the private sector.

7.2.7 Urban Planning

Balochistan's urban centres, rapidly expanding and facing the impacts of climate change, demand a transformative approach to urban planning. Conventional urban planning practices, often prioritising growth over sustainability, have contributed to increased GHG emissions, intensified resource depletion, and accelerated the impacts of climate extremes. To address these challenges and foster sustainable and resilient cities, the GoB will focus on the following interventions:

- **Investing in public transportation and active mobility:** The GoB will develop efficient and accessible public transportation systems, including buses, trains, and rapid transit networks which is crucial for reducing reliance on private vehicles and associated GHG emissions. Additionally, the GoB will promote active mobility infrastructure, such as dedicated cycling lanes and pedestrian-friendly sidewalks and other forms of non-motorised transportation. This will not only mitigate emissions but will also promote healthier lifestyles with the reduction in traffic congestion.
- **Prioritising green infrastructure and urban greenery:** The GoB will incorporate green infrastructure, such as parks, green roofs, and green construction codes, into urban planning which will significantly enhance cities' resilience to climate change. Green infrastructure will absorb rainwater, reduce the urban heat island effect, improve air quality, and enhance biodiversity. Additionally, expanding urban greenery, including trees, shrubs, and vegetation will provide shade, reduce heat stress, and improve the overall liveability of the urban spaces.
- **Embracing energy efficiency and renewable energy integration:** Promoting energy-efficient buildings and infrastructure is essential for reducing GHG emissions in Balochistan's urban areas. The GoB will promote and implement the energy-efficient building codes through the Balochistan Building Control and Town Planning Rules, 2021, encourage sustainable construction practices, bulk energy in-efficient appliance replacement programme and retrofits in the existing buildings which will significantly lower energy consumption and subsequently the associated GHG emissions.

8. BCCP Priority Action Plan

To honour the BCCP commitments (Part A) and materialise the sectoral priorities and guidelines (Section 7), the following short-term (1-3 years), medium-term (4-6 years) and long-term (7-10 years) priority actions will be undertaken by the respective stakeholders. The same will be monitored and reported as delineated in Section 6.

Sector	Priority Action	Institutional Responsibility	Timeframe
Agriculture, Livestock, and Fisheries	• Promote climate-adaptive agriculture and livestock through extension services. • Promote sustainable horticulture with prioritising resilient crops and managing groundwater wisely. • Under the crop advisory service, provide farmers with zone-specific weather forecasts. • Encourage farm mechanisation to enhance efficiency, reduce risks, and increase yields. • Introduce climate-resilient seeds and develop locally suited varieties through partnerships. • Incentivise water efficiency with efficient irrigation systems financing. • Regularly undertake. cropping suitability assessment based on climate and vulnerability. • Prepare drought management plans, tailored for deserts, arid and semi-arid zones. • Support growth, eco-labelling, and packaging of fruits to develop horticulture value chains: • Introduce modern crop monitoring through real-time data via remote sensing, replacing manual surveys. • Boost farmer adoption of climate-adaptive technology by partnering with banks to offer financing and insurance. • Incentivise sustainable land management discouraging harmful practices. • Streamline regulations for the farmers selling directly to consumers or local markets. • Integrate regenerative agriculture principles into agricultural development plans. By creating an enabling environment, the widespread adoption of regenerative agriculture can be fostered leading to a more sustainable, resilient, and productive agricultural sector that benefits both farmers and the environment.	• Academia • Agriculture & Cooperatives Department • Balochistan Coastal Development Authority (BCDA) • Balochistan EPA • Board of Investment (BOI) • Climate Change & Environment Department (CC&ED) • Fisheries & Coastal Development Department • Food Department • Forest & Wildlife Department (FWD) • Irrigation Department • Livestock & Dairy Development Department (L&DDD) • Local Government & Rural Development Department (LG&RDD) • On Farm Water Management (OFWM) Directorate • Pakistan Bureau of Statistics (PBS) • PDMA Balochistan • Planning & Development Department (P&DD) • Pakistan Meteorological Department (PMD) • Private sector banks and micro-finance providers • Social Welfare Department • Women Development Department	Medium-term

Sector	Priority Action	Institutional Responsibility	Timeframe
	• Raise livestock productivity by introducing climate-resilient breeds for different zones. • Promote aquaculture for livelihoods and protein. • Nurture livestock health by research on nutritious feeds and adaptive disease management. • Implement community-based extension services for agriculture and livestock for ready adoption of modern practices. • Improve agricultural practices and land management practices with use of low-carbon technology. • Encourage better water management with high efficiency irrigation systems. • Establish Agromet Centers for Improving farmers access to localised information. • Introduce high yield and high value crops. • Encourage better crop value management industry. • Introduce soil regeneration, agroforestry, and permaculture. • Utilise renewable energy resources for agricultural operations. • Encourage climate-smart agriculture practices like hydroponic and advance techniques covering value chain of different crops. • Prepare projects leading to promotion and wide scale adoption of low on-farm energy consumption. • Develop canal infrastructure for water conservation (i.e. Kachhi Canal project) • Undertake soil fertility study and develop a GIS portal. • Provide flood relief and support programme for agriculture development in flood-hit areas. • Support and capacitate local governments in implementing adaptation strategies at local level. • Proactively engage women, transgender and youth in design, implementation, and monitoring of NRM initiatives.		

Sector	Priority Action	Institutional Responsibility	Timeframe
Coastal and Marine Ecosystems	• The fragile coastal and marine ecosystems can be protected through the following actions for adapting to climate change impacts: • Sustainable Fishing: Ban harmful practices and stop illegal trawling, nets, and adjust seasons/quotas. • Aquaculture and Habitat: Promote eco-friendly aquaculture to support coastal livelihoods with climate-adapted practices. • Restore fish habitats: Create sanctuaries with marine conservation plans and mangrove restoration. • Marine Protected Areas: Expand and manage MPAs and implement local management plans through strong enforcement mechanisms. • Community Engagement: Involve local communities to ensure their participation in coastal development projects. • Ecosystem Restoration: Restore degraded ecosystems through conservation and afforestation of mangroves. • Resilience and Preparedness: Design and operationalise early warning systems to improve response to extreme weather like cyclones. • Coastal protection: Reduce erosion and sea intrusion and protect arable land. • Reduce marine and coastal pollution by promoting sustainable aquaculture and tourism, protect freshwater streams to release unpolluted water into the sea. • Promote climate-resilient and inclusive tourism by incorporating mandatory environmental plans and resilient infrastructure.	• Balochistan EPA • CC&ED • BCDA • Community Support Organisations • Culture, Tourism & Archives Department • Fisheries Department • FWD • Gwadar Development Authority (GDA) • Gwadar Industrial Estate Development Authority (GIEDA) • Lasbela University of Agriculture, Water & Marine Sciences (LUAWMS) • LG&RDD • Pakistan Coast Guards • Pakistan Maritime Security Agency (PMSA) • Women Development Department	Long-term
Disaster Risk Management	Better disaster preparedness through: • Installing enhanced early warning system. • Installing digital advanced telemetry with hydro-meteorological monitoring system. • Installing early warning and post flood mitigation systems. • Better and gender responsive disaster management programme. • Capacity building and awareness raising.	• Academia • ACD • Balochistan Development Authority • Balochistan EPA • Balochistan PDMA • BCDA • CC&ED • DDMAs and District Management • Education Department • Fisheries & Coastal Development Department	Short-term

Sector	Priority Action	Institutional Responsibility	Timeframe
	• Rehabilitation of natural water courses. • Development of check-dams, ponds, and underground water recharge facilities to manage water flooding. • Development of comprehensive and inclusive emergency and evacuation preparedness plans. • Active engagement of women, transgender, youth, communities at large, civil society organisations, environmental human rights defenders, and human rights institutions.	• Food Department • FWD • Gwadar Development Authority • Health Department • Irrigation Department • L&DDD • LG&RDD • OFWM Directorate • P&DD • P&DD • PBS • PDMA Balochistan • PMD • Private Sector • Private sector banks and micro-finance providers • Public Health Engineering Department (PHED) • Quetta Development Authority • Social Welfare Department • Women Development Department	
	Climate-induced disaster risk management can be enhanced by the following action areas: • Improve coordination across institutions to manage climate disasters like droughts, floods, heatwaves, and cyclones in a gender sensitive manner by prioritising the needs of women and other vulnerable groups. • Prioritise Nature-based Solutions: Utilise nature-based solutions like mangrove planting to buffer coastal areas from cyclones and watershed management. • Flood Management: Enhance institutions for flood control, drainage systems, and preparedness in flood-prone areas. • Local Risk Assessments: Regularly assess climate vulnerabilities at the district level to inform local disaster plans. • Design and empower community-based response systems tailored to specific climate risks like cyclones, floods, droughts, and extreme temperatures. • Data-driven Plans: Use historical data and climate projections to ensure disaster plans are future-proofed. • Devise Local Adaptation Plans of Actions (LAPAs) and WASH Adaptation Plans at district level involving DDMAs and District Administration • Engage communities and build their capacity to protect forest fires.		Medium-term

Sector	Priority Action	Institutional Responsibility	Timeframe
Energy (generation, transmission, distribution)	Improving energy access and capitalising indigenous resources by: • Utilising RE (wind, solar, waste/ biomass, etc.) potential for district-wise access of reliable electricity in Balochistan • Development and implementation of micro grids • Private sector participation • Promoting green technologies for meeting energy needs and development of pilot project • Enabling fuel switching and biofuels • Improving capacity and awareness raising • Introducing policy intervention where required • Enforcement and technological interventions to reduce GHG emissions. • Strengthening of Energy Department of Balochistan • Establishment of Designated Agencies to supplement Energy Efficiency Interventions. • Net-metering program for single phase consumers • Localised R&D projects • Inclusion of Balochistan Clean/ Renewable Energy projects in the Indicative Generation Capacity Expansion Plan (IGCEP) • Aligning all present/future Energy Plan and Policies of Balochistan with the provisions of the NCCP 2021 and NDC of Pakistan	• Academia • Balochistan EPA • Development Authorities • Energy Department • Finance Department • Forest Department • NTDC • P&DD • PPIB • QESCO • SEZs • SNGPL	Long-term
Forests, Rangelands, Biodiversity, Wildlife, and other Vulnerable Ecosystems	Conservation of forests, biodiversity, and wildlife protection through the following action areas while adapting to the challenges of climate change: • Integrate biodiversity plans into provincial development, mitigating harm to forests, coasts, and rangelands. • Build ecosystem resilience through “Nature-based Solutions” and “Ecosystem-based Adaptation” approaches. • Update Balochistan Conservation Strategy with local community participation • Develop research programs on biodiversity and conservation, combining indigenous knowledge with scientific research.	• Academia • Balochistan EPA • CC&ED • District Management • Finance Department • FWD • Livestock Department	Long-term

Sector	Priority Action	Institutional Responsibility	Timeframe
	• Strengthen the Balochistan Forests and Wildlife Department's capabilities. • Offer alternative fuel sources and promote native species/agroforestry to increase forest cover. • Implement rotational grazing, incentivise restoration with rain harvesting and re-vegetation. • Financial Incentives: Introduce locally led payments for ecosystem services like community-based trophy hunting. • Establish and manage protected areas for climate-resilient wildlife. • Restore degraded habitats, plant trees, and create wildlife corridors. • Raise Awareness: Conduct targeted campaigns to promote community ownership of conservation efforts, establish Botanical Gardens and promote fuel-efficient cook stoves. Afforestation, land-use improvement, preserving biodiversity, conserving ecosystem, and development of REDD+ project through: • Forest management; • Forest fire management; • Cultivation of medicinal herbs; • Torrent flood management; • Livelihood improvement and poverty alleviation through introduction of value chain management for the medicinal herbs and herbal organic products; • Promotion of ecotourism; • Wildlife preservation; • Engagement of women, transgender, and youth; and • Introducing trophy hunting for socio-economic development.	• Local and International Conservation Organisations (e.g. IUCN, WWF-Pakistan) • LG&RDD • P&DD • PMD • Public and Private Sector Research Universities • Revenue Department • Women Development Department	
Human Health	• Climate-proofing of health systems in Balochistan. • Policy linkages by incorporating climate adaptation into health and education policies. • Document and disseminate risks by identifying and tracking climate impacts on human health such as heatwaves, air pollution, water quality, disease outbreaks.	• Colleges, Higher & Technical Education Department • Health Department • Local Government • PDMA Balochistan • PPHI • Public Health Engineering • School Education Department	Medium-term

Sector	Priority Action	Institutional Responsibility	Timeframe
	• Train and educate health personnel and communities about climate-related health issues and mitigation measures. • Strengthen response by integrating climate risks into disaster response plans, including support for vector-borne diseases and mental health. • Institutional collaboration and resource sharing to ensure access to vaccines, medication, and WASH facilities during extreme weather events, and prioritising women and vulnerable group. • Monitor and track disease outbreaks at provincial and district levels to inform response plans. • Sustainable and holistic health management programme under PPP mode to manage the disasters.		
Industrial Processes and Production	• Renewable energy and energy efficiency interventions through Energy Service Companies (ESCOs) model • Adoption of cleaner production technologies • Incentives for decarbonisation, cleaner production technologies including carbon capture and storage (CCS) and pilot projects be implemented in HUB industrial area. • Promoting Renewable Energy Certificates (RECs), Carbon Markets and Science Based Targets Initiative (SBTi) • Facilitating development of GHG inventories • Making EIA/IEEs more effective specifically for Mines and Minerals projects and establishing continuous monitoring mechanism. • Developing provisions, projects and facilitation for the carbon offsetting projects • Aligning all present/future Industrial Plan and Policies of Balochistan with the provisions of the NCCP 2021 and NDC of Pakistan. • Training of labour the use and maintenance of modern lean green Industrial machinery	• Authorities having Jurisdiction (AHJs) • Balochistan EPA • Chamber of Commerce & Industries • Finance Department • GCISC • Industrial Department • MoCC&EC • P&DD • Revenue Department • SEZs • Transport Department	Long-term

Sector	Priority Action	Institutional Responsibility	Timeframe
	• Exploring schemes like Just Energy Transition Partnership (JET-Ps) to persuade the emissions Intensive Industrial units/cluster for phasing out use of conventional fuel-based energy generating units/processes and considering mining of such fuel from their respective sources. • Facilitation to SMEs like brick kilns for their conversion to energy efficient kilns and energising process operations by uninterrupted supply of clean and green energy. • Conduct of energy and environment assessments for promotion, facilitation, and implementation of different standards management systems • Carbon-proof the shipbreaking and boat-building industry in the coastal areas.		
Infrastructure Develop-ment	• Adoption, promulgation, and dissemination of green buildings codes through: • Announcement of standards • Enforcement of codes or cost effective economical prescriptive parameters focusing on insulation and other measures such as green roofs, traditional house insulation concepts. • Private sector participation • Training of technical manpower and skilled labour • Supply chain of local material • Providing concessional financing • Bulk procurement of standardised super-efficient devices • Establishment of Appliance Testing labs • Develop clean cooking, heating, and cooling projects preferably focusing on Article 6 of the Paris Agreement to benefit from carbon markets. • Effective awareness campaigns for energy and water conservation.	• Academia • Balochistan EPA • CBOs • Development Authorities • Development Partners • Energy Department • Finance Department • Forest Department • Irrigation Department • NGOs • PCATP, PEC • P&DD • Works Department	Long-term

Sector	Priority Action	Institutional Responsibility	Timeframe
Mining and Mineral Resources	• Policy design and enforcement by developing regulations and enforce mechanisms for sustainable water management and wastewater treatment in mining. • Improve the Mines and Minerals Department's capabilities to enforce environmental laws, together with the EPA. • Ensure complete restoration of mine sites to prevent erosion, improve water quality, and create new wildlife habitats. • Update policies by integrating climate change considerations into the 2019 Mining Policy to protect fragile ecosystems and habitats. • Promote technologies and methods that minimise environmental impacts with active community involvement. • Develop a sector-specific plan by identifying the mining sector's GHG emissions and climate impacts, proposing measures like water management, mine site restoration, and sustainable practices	• Balochistan EPA • CC&ED • Industries & Commerce Department • Mines & Minerals Department	Medium-term
Mountains, Deserts, Arid & Semi-Arid Areas	• Promote rainwater harvesting in desert zones (such as Nushki, Chagai, Kharan, Washuk) guided by climate and water assessments. • Enhance robust drought monitoring systems in deserts and arid areas. • Climate-proofing of livelihoods by encouraging drought-resistant crops and resilient livestock breeds for subsistence. • Conduct climate assessments and design local adaptation measures for mountain ecosystems and agriculture • Forest, water, agriculture, and livestock departments to work together to manage ecosystems, prevent desertification, and maintain soil moisture and vegetation. • Discourage water-intensive crops in deserts, arid, and semi-arid zones. • Research and incentivise drought-resistant fodder and grasses for livestock in arid and mountain areas. • Promote local and hybrid livestock species suitable for arid and desert ecosystems	• Agriculture & Cooperatives Department • Balochistan Agricultural Research & Development Centre (BARDC), Quetta • CC&ED • Culture, Tourism & Archive Department • FWD • Irrigation Department • L&DDD • LG&RDD • National Drought Monitoring & Early Warning Centre, Islamabad • PMD	Medium-term

Sector	Priority Action	Institutional Responsibility	Timeframe
Procurement	• Incorporate green procurement principles into the Balochistan Public Procurement Rules and develop relevant guidelines for the implementers. • Establish and enforce environmental standards in procurement process, such as ISO 14001 certification. • Implement lifecycle and supply chain assessment into procurement process to assess the carbon footprint of the goods and services being procured and to encourage procurement of low carbon and waste products. • Provide transparent guidelines for preferred treatment to procure ecofriendly and energy-efficient products. • Provide training to procurement officials across entire public sector and raise awareness of relevant stakeholders on green procurement principles and practice.	• B-PPRA • Finance Department • Relevant Line Departments	Medium-term
Transport	• Development and expansion of electric/hybrid buses-based mass-transit system infrastructure with feeder routes connecting all main areas with dedicated female transport service having female drivers. • Easing bank leasing for Hybrid/ Electric Vehicles • Enhancing effectiveness of Vehicle Inspection Centres and bringing private vehicles under Its ambit. • Feasibility studies for circular railway In Pakistan • Adoption of e-mobility through: • Awareness • Waiver of provincial taxes and registration fees • Conversion of public transport to electric • Development of EV charging infrastructure • Announcement of concessional financing scheme for easier and smoother implementation of the EV policy and faster integration of EVs in the transport system • Trainings for maintenance and troubleshooting of Hybrid/Electric vehicles and allied machinery/ Infrastructure.	• Academia • Balochistan EPA • Commercial Banks and SBP • Energy Department • Finance Department • Irrigation Department • Pakistan Railways • P&DD • Revenue Department • TEVTA • Transport Department	Long-term

Sector	Priority Action	Institutional Responsibility	Timeframe
Urban Planning and Development	• Design climate-sensitive frameworks by integrating climate considerations into all urban planning and development. • Identify susceptible areas to flooding, air pollution, and extreme weather in major cities/towns. • Invest in climate-resilient infrastructure for urban flood mitigation, energy-efficient buildings, green spaces, and sponge city approaches. • Share knowledge and best practices for sustainable urban planning. • Review and revise urban policies and building codes to promote water and energy efficiency. • Transition urban services like waste management towards recycling and renewable energy • Robust participatory monitoring and reporting system using information technology. • Ban single use of plastic and introduce e-waste disposal and management. • Encourage urban forestry by partnering with Forest Department and NGOs to plant trees. • Promote and encourage carbon-neutral public services through green offices, electric buses, rainwater harvesting. • Devise Local Adaptation Plan of Actions (LAPAs) at district level involving DDMAs and District Administration. • Incorporating SDGs and the sustainability aspects in the urban planning for expansion of cities/new cities.	• Balochistan EPA • Balochistan PDMA • CC&ED • Communication Works, Physical Planning & Housing Department • Energy Department • FWD • LG&RDD • Local Government and Municipal Authorities • P&DD • Transport Department	Short-term

Sector	Priority Action	Institutional Responsibility	Timeframe
Waste	• Awareness raising and capacity building. • Adoption of better waste management techniques • Development of scientific landfill sites at selected districts • Development and facilitation for Waste to Energy Projects. • Development of climate sensitive Sanitation and Solid Waste Management Policy. • Recognition of the role of communities in solid waste management.	• Academia • Authorities having Jurisdiction (AHJs) • CC&ED • Development Authorities • District Management • EPA-Balochistan • Finance Department • LG&RDD • Municipal Corporations • P&DD • PHED • Religious institutions • Revenue Department	Long-term
Water Resource Management	• Develop an IWRM-based Water Policy to manage water resources holistically across sectors. • Empower the Groundwater Authority to ensure sustainable groundwater use. • Monitor and Manage Groundwater by implementing basin-specific systems, and developing a Groundwater Atlas • Revitalise karez system by promoting low-water crops in karez-irrigated areas. • Encourage high-efficiency systems like drip irrigation and rainwater harvesting. • Construct dams and recharge structures based on climate assessments. • Develop basin-specific frameworks to tailor water management to agroecological zones. • Implement water licensing and pricing: promote judicious use and conservation. • Improve sailaba and khushkaba systems for efficiency and flood mitigation. • Upgrade canal infrastructure to enhance water productivity for irrigated crops like rice. • Revise building codes to improve accessibility and energy conservation, introduce water-efficient technologies, and raise awareness to promote household rainwater harvesting.	• Board of Revenue Balochistan • CC&ED • Inter-Provincial Coordination Department • Irrigation Department • LG&RDD • Municipal Authorities • National Drought Monitoring & Early Warning Centre • PMD • P&DD • Private and Public Sector Research Universities • PHED	Medium-term

Part - C

BCCP
Financing Strategy

9. Balochistan's Climate Finance Requirements

Among other dimensions of human life and livelihoods, the climate change has also impacted the governance domain and financial space for adaptation and mitigation actions. The UN Financing for Sustainable Development Report 2024[37] has estimated a very large gap of USD 2.5-4 trillion per annum in the need and resources available to deliver the SDGs agenda in the developing countries. It also concludes that while climate finance has grown over time, the commitment of USD 100 billion climate finance per annum by 2020 could not be met while the climate finance architecture has also become increasingly complex and fragmented, making coordination and access to finance more difficult for developing countries.

A recent GCA/CPI report[38] concludes that the "developing countries currently need about USD 212 billion per year in adaptation finance up to 2030... Between now and 2035, developing countries will need USD 3.3 trillion. However, at current levels of financing, only USD 840 billion will flow." It also finds that South Asia could get hardly 10 percent of the global flows for adaptation in 2021-2022 (USD 56 billion).

The World Bank[39] has estimated that Pakistan needs an investment of around USD 348 billion between 2023 and 2030 (≈50 billion USD per annum) for a comprehensive response to its climate and development challenges (USD 152 billion for adaptation and USD 196 billion for decarbonisation). It also estimates that the financing available over the next decade will be around USD 39 billion from public finance (including MDB financing) and USD 9 billion from public-private partnerships for infrastructure projects. Based on the assessment, it suggests three financial measures:

1. Optimising the utilisation of domestic resources;
2. Mobilising additional financial resources through revenue enhancement measures and innovative financing mechanisms; and
3. Strengthening the capacity to access international climate finance and bolster private sector investments.

Applying the 7th National Finance Commission (NFC) Award[40] formula, the provincial annual climate finance requirement is estimated at PKR 1.3 trillion (9.09% of the national requirement, ≈USD 50 billion), which is a tall order for the resource scarce province. Also, given the geographical and demographic context of the province, it will need more resources for adaptation actions as compared to the decarbonisation efforts.

According to the Pakistan Climate Public Expenditure and Institutional Review (2017), the climate-relevant spending in Balochistan was PKR 22.6 billion in 2015. This constituted around 11.3 percent of the total provincial budget (PKR 199. 7 billion) and around 37 percent of the provincial development budget (PKR 61.2 billion). It also concluded that climate-related projects make up 76–82 percent of development expenditure lines, with over half the projects at several government institutions deemed climate-relevant.[41]

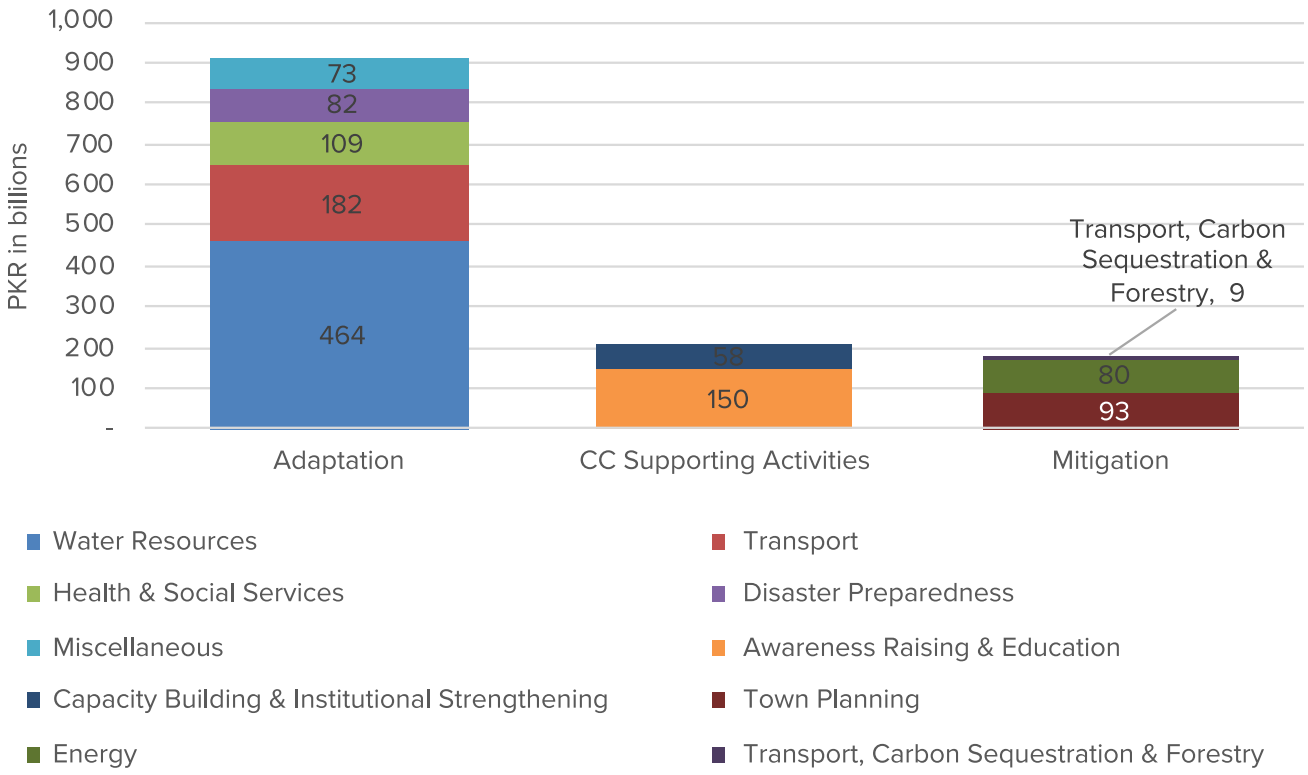
37. UN. 2024. Financing for Sustainable Development Report 2024: Financing for Development at a Crossroads. New York: UN Inter-agency Task Force on Financing for Development. Available from: https://developmentfinance.un.org/fsdr2024.
38. GCA. 2024. State and Trends in Climate Adaptation Finance 2024. Rotterdam: Global Center on Adaptation and Climate Policy Initiative.
39. WB. 2022. Pakistan: Country Climate and Development Report. Washington, DC: The World Bank Group.
40. Government of Pakistan. 2023. Federal Budget 2023-24: Budget in Brief. Islamabad: Finance Division, GoP.
41. Government of Pakistan. 2017. Pakistan – Climate Public Expenditure and Institutional Review: Working towards a more efficient and effective allocation and use of climate change related finance. Islamabad: GoP and UNDP.

Taking this assessment as a benchmark, a comparison can be drawn for the current allocations. Given that the provincial development budget was estimated at PKR 313.3 billion for the financial year 2023-24, it can be assumed that the current spending for adaptation and mitigation actions is approximately PKR 116 billion (37% of the development budget). This presents a significantly wide gap of PKR 1,184 billion which cannot be met through the public resources only. This would require due contribution by the private sector as well as bilateral and multilateral climate finance windows.

The CPEIR (2017) also suggested that climate-relevant projects and investments are common and widely spread across the provincial government's portfolio. The climate-related allocation in 2014-2015 was primarily for water resources (35%), transport (15%), awareness raising & education (12%), health and social services (8%), disaster preparedness and town planning (7% each), and energy (6%), while the remaining 10% was deployed for other sectors. It also concluded that 'adaptation' was the dominant theme in Balochistan's CC budget, making-up 70 percent of the total climate-relevant investment, followed by 'CC supporting activities' (16%) and then by 'mitigation' (14%).

The CPEIR (2017) provides a clear guidance to determine the financing needs for the BCCP implementation in different sectors (Figure 2) which amounts to PKR 1.3 trillion per annum using the NFC formula.

Figure 2: Sectoral Requirement for BCCP Implementation (PKR in billions)

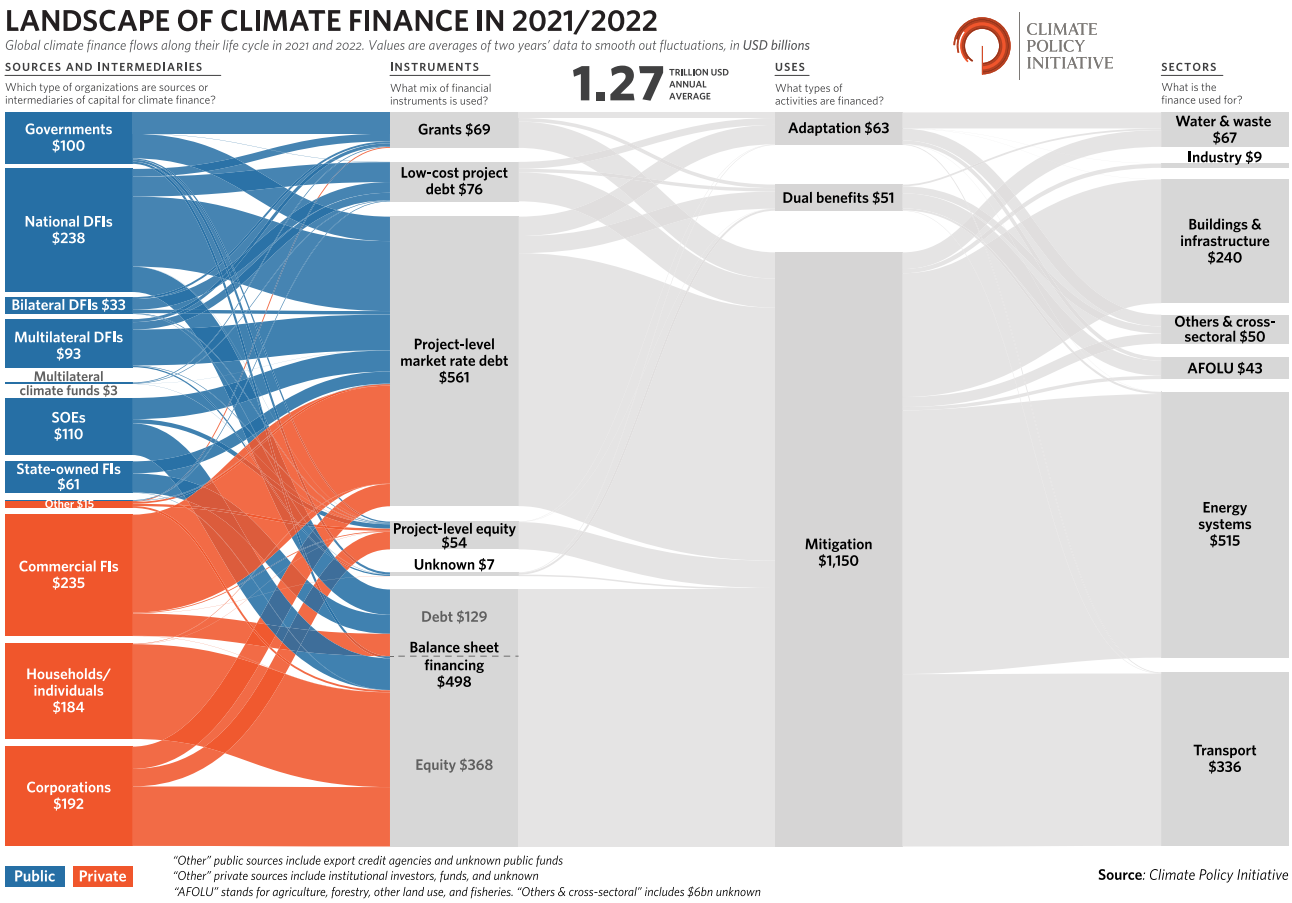


This estimation flags the need for extraordinary efforts to meet the climate change challenge in Balochistan through contribution by all relevant sources and adopting innovative approaches.

10. Climate Finance Opportunities for Balochistan

According to the CPI's climate finance landscape report,[42] the global climate financial flow reached almost USD 1.3 trillion in 2021-2022, primarily driven by a significant acceleration in mitigation finance. However, adaptation finance (USD 63 billion) still falls far short of estimated needs of USD 212 billion per year by 2030 for developing countries alone. AFOLU, a critical sector for Balochistan, received only USD 7 billion. The ten countries most affected by climate change between 2000 and 2019, including Pakistan, received just USD 23 billion, less than 2 percent of total climate finance (Figure 3). This report just underlines the climate finance challenge faced by Pakistan, and Balochistan in particular.

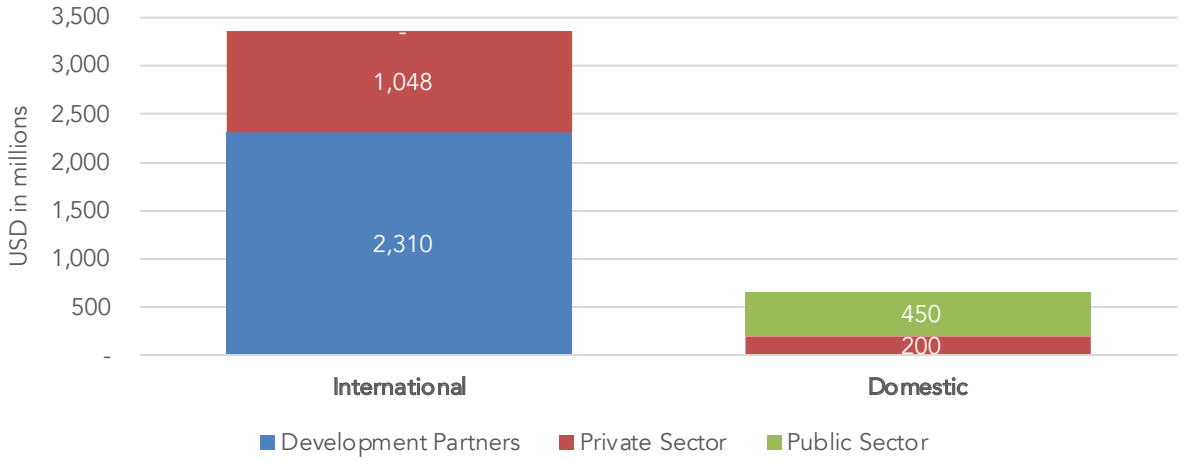
Figure 3: Global Climate Finance Flows 2021-2022



42. Climate Policy Initiative. 2023. Global Landscape of Climate Finance 2023. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/11/Global-Landscape-of-Climate-Finance-2023.pdf.

In 2021, the total capital invested in Pakistan for climate change related activities is estimated to be around USD 4 billion out of which 86 percent was sourced from international sources (Figure 4). Over the last 10 years, Pakistan collectively received USD 1.4-2.0 billion per annum, primarily in the form of loans, contributing to the existing debt crisis. With the 78 percent debt to GDP ratio, there is little room in the national budget to fund climate action.[43] As per ADB[44] estimate, Pakistan received USD 5.6 billion in two years period (2018–2019); however, it is still far lower than the annual requirement estimated by the World Bank.

Figure 4: Pakistan's Climate Finance Sourcing (2021)



Source: Salman, A., and M. Ayub. 2024. Climate Finance for Pakistan: What and How?

In the backdrop of a wide gap in the requirement and availability of climate finance internationally, addressing the 4th International Conference on Financing for Development, the IMF Director General stressed upon the need to have in placed a well-designed carbon pricing in the form of a tax or emissions trading scheme (ETS) to share the resulting revenue with poor households. She also emphasised that the financial sector policies should be refocused towards creating climate impact while designing climate financing and mitigation and adaptation strategies in a gender-responsive manner, to ensure that women and girls are part of the solution.[45]

In view of the above scenario, following are the possible sources of climate finance for Balochistan:

1. International and domestic financing through bilateral and multilateral climate finance windows.
2. Public sector investments through revenue streams of the Government of Pakistan and Government of Balochistan.
3. Private sector investments in direct as well as public-private partnership modes.

43. Salman, A., and M. Ayub. 2024. Climate Finance for Pakistan: What and How? Islamabad: Islamabad Policy Research Institute.
44. ADB. 2023. Climate Finance Landscape of Asia and the Pacific. Manila: Asian Development Bank. Available from: https://www.adb.org/sites/default/files/publication/901611/climate-finance-landscape-asia-pacific.pdf.
45. UN. 2024. Financing for Sustainable Development Report 2024: Financing for Development at a Crossroads. New York: UN Inter-agency Task Force on Financing for Development. Available from: https://developmentfinance.un.org/fsdr2024.

10.1. Bilateral and Multilateral Climate Finance Windows

Balochistan has always been benefitting from the bilateral and multilateral development assistance in irrigation, agriculture, livestock, forest, watershed management, education, health, and rural development from a range of international development partners. However, there have been very few projects directly aimed at climate change adaptation or mitigation. In 2023-2024, the Foreign Project Assistance (FPA) is estimated at PKR 55.894 billion, of which PKR. 39.343 billion will be provided to the GoB (Figure 6) while the remaining will be disbursed to various projects directly through the donor agencies.

The key multilateral climate financing windows are briefly mentioned in the following sections; however, the GoB will develop the requisite capacity to tap these resources meaningfully.

10.1.1 Green Climate Fund[46]

GCF is a global financial mechanism established under UNFCCC to support developing countries in their efforts to address climate change by paradigm shift towards low-emission and climate-resilient development pathways. So far, Pakistan's GCF portfolio is limited to four adaptation and two mitigation projects (with a total outlay of ≈USD 221 m), and seven readiness activities (≈US$4.6 m). This constitutes hardly 1.6 percent of the total GCF disbursement of USD 13.9 billion so far for 253 projects across the globe.

To date, Balochistan has not been able to tap this resource meaningfully, owing primarily to lack of capacity and active perusal with the federal government for its inclusion in the national projects. The following GCF approved projects include activities to be implemented in Balochistan:

- Community Resilience Partnership Program (multi-country, including Pakistan)
- Recharge Pakistan
- Pakistan Distributed Solar Project
- Transforming the Indus Basin with Climate Resilient Agriculture and Water Management

The GoB will approach the MoCC&EC and other relevant organisations for support in getting accredited for GCF funding.

10.1.2 Adaptation Fund[47]

The Adaptation Fund is a financial mechanism established under UNFCCC to help vulnerable communities and countries adapt to the impacts of climate change. The Adaptation Fund supports activities such as building climate resilience, implementing climate adaptation measures, and enhancing the capacity of communities to cope with climate-related challenges. So far, it has committed USD one billion for 175 projects across the globe but Pakistan could get only one project, that too for Punjab and Khyber Pakhtunkhwa.

10.1.3 Global Environment Facility (GEF)[48]

The GEF is a group of funds that focuses on tackling issues such as biodiversity loss, climate change, pollution, and the degradation of land and oceans. It provides grants, blended financing, and policy assistance to help developing countries address their most significant environmental challenges and comply with international environmental agreements. So far, Pakistan has obtained funds for 19 projects from GEF; however, Balochistan has been included in only some of these projects.

10.1.4 Climate Investment Funds (CIFs)[49]

The Climate Investment Funds (CIF) are a set of funding mechanisms established by the World Bank Group to support developing countries in their efforts to mitigate and adapt to climate change. The CIF consist of four distinct funding programmes: the Clean Technology Fund (CTF), the Strategic Climate Fund (SCF), the Forest

46. Green Climate Fund (https://www.greenclimate.fund/). Accessed: 6 May 2024.
47. Adaptation Fund (https://www.adaptation-fund.org). Accessed: 6 May 2024.
48. Global Environment Facility. (https://www.thegef.org/). Accessed: 3 May 2024.
49. Climate Investment Funds (https://www.cif.org/). Accessed: 3 May 2024.

Investment Programme (FIP), and the Pilot Programme for Climate Resilience (PPCR). The CIF provide financial resources and technical assistance to support developing countries in implementing climate change mitigation and adaptation projects. However, Pakistan has not benefitted from this facility so far.

10.1.5 Bilateral and Other Sources of Climate Financing

Pakistan has signed several memorandums of understanding (MOUs) with both national governments and international financing institutions (IFIs) to support climate action. It is important that Balochistan is included in these initiatives and takes full advantage of these opportunities. Some of the recent MOUs/institutions include:

- ADB is working with the GoP to develop an **Energy Transition Mechanism** in line with its plans to increase its climate portfolio in Pakistan.
- ADB's **Innovative Finance Facility for Climate in Asia and the Pacific** (IF-CAP) will also be available to Pakistan being uniquely vulnerable to the impacts of climate change, such as droughts, heat waves, floods, and sea-level rises. IF-CAP will use guarantees from partners for leverage to accelerate much-needed climate change investment.
- In May 2023, Germany's Federal Ministry for Economic Cooperation and Development (BMZ) committed Euro 163.3 million to Pakistan under the **Climate and Energy Partnership**. Of this sum, Euro 108.5 million has been earmarked for Financial Cooperation and Euro 54.8 million for Technical Cooperation.
- Pakistan is signatory to the **Global Methane Pledge**—launched in 2021 by the United States (US) and the European Union (EU) during the Leaders' Summit on Climate. However, the facility is still to discern how to help the developing countries like Pakistan.
- In January 2023, the **Islamic Development Bank** (IsDB) committed a USD 4.2 billion support for Pakistan's climate resilience efforts and development agenda and the country vision 2025 over the next three years including USD 600 ordinary capital resources from IsDB Group.
- **Kingdom of Saudi Arabia** (KSA) and Pakistan have signed a wide-ranging MoU to cooperate in nine important environmental areas to control pollution and protect nature.
- In 2021, **United Kingdom** (UK) had UK pledged over GBP 55 million for Pakistan to fight climate change, manage water more sustainably and unlock climate investment. It has now decided to double its investment in Pakistan to mitigate the impact of climate change.
- Under WB's **Forest Carbon Partnership Facility**, Pakistan has accessed USD 7.8 million in support of its country-led readiness work.

The GoB will work closely with the federal government to benefit from these opportunities. There are numerous other bilateral and multilateral windows with diverse range of thematic interest in Balochistan. While the actual quantum of financing depends upon projectisation of ideas and financial space within the country programmes of these partners, Table 1 provides a snapshot of thematic focus of such opportunities for Balochistan. The climate change related themes have been highlighted in Table 1.

Table 1: Thematic Focus of Bilateral and Multilateral Development Partners in Balochistan

	Acted	AKU	ARC	ADB	AusAid	BMGF	BMZ	Canadian HC	Care Intl.	CIDA	Concern	ECW	EU	FAO	GIZ	IHHN	ILO	IOM	IFAD	IRC	Islamic Relief	JICA	Nutrition Intl.	OXFAM	PATRIP	PPAF	Qatar Charity	Save the Children	UN Women	UNDC	UNDP	UNFPA	UNHCR	UNICEF	UNOCHA	USAID	VSO	WFP	WHO	WB
Advocacy & Gender Sensitisation																													●											
Agriculture							●							●										●																	
Bordering Districts Development																									●															
Community Engagement																														●										
Conflict Prevention																														●										
Disaster Risk Reduction																															●									
Economic Development													●																											
Economic Growth																																			●					
Education	●			●		●						●	●		●					●		●			●	●	●					●	●		●	●				●
Emergency Relief	●								●																	●												●		
Energy				●																																				
Gender Based Violence																		●														●	●							
Governance													●																	●						●				
Health		●	●					●							●	●		●		●			●			●					●	●		●	●			●	●
Human Rights													●																											
Humanitarian Aid & Disaster Response																					●																		
Immunisation						●																																	
Infrastructure				●																																			●

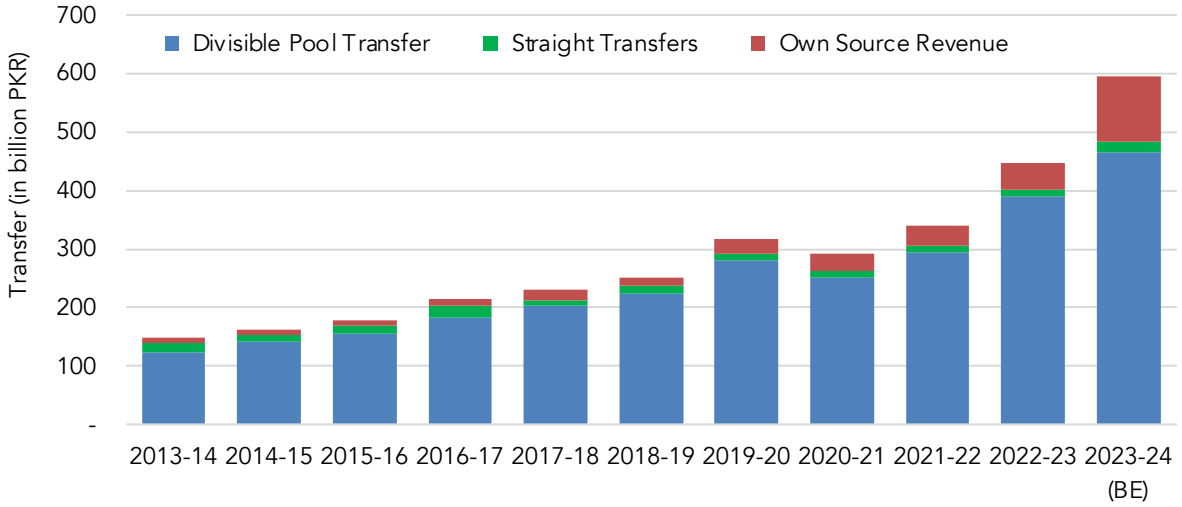
	Acted	AKU	ARC	ADB	AusAid	BMGF	BMZ	Canadian HC	Care Intl.	CIDA	Concern	ECW	EU	FAO	GIZ	IHHN	ILO	IOM	IFAD	IRC	Islamic Relief	JICA	Nutrition Intl.	OXFAM	PATRIP	PPAF	Qatar Charity	Save the Children	UN Women	UNDC	UNDP	UNFPA	UNHCR	UNICEF	UNOCHA	USAID	VSO	WFP	WHO	WB
Livelihood & Enterprise Development			●		●		●		●	●	●				●		●	●	●					●	●	●		●	●				●		●			●		
Malaria Control																●																								
Nutrition																							●																	
Poverty Reduction																										●					●								●
Refugees																																	●						
Renewable Energy																									●														
Rural Development													●						●						●														
Sustainable Development																															●								
WASH	●		●												●										●		●							●						
Water Resource Management				●									●	●																									●

Notes: Acted = Agency for Technical Cooperation and Development; ADB = Asia Development Bank; AKU = Aga Khan University; ARC = American Refugee Committee; AusAid = Australian Aid; BMGF = Bill and Melinda Gates Foundation; BMZ = [German] Federal Ministry of Economic Cooperation & Development; Canadian HC = Canadian High Commission; CIDA = Canadian International Development Agency; ECW = Education Cannot Wait; EU = European Union; FAO = Food & Agriculture Organisation; GIZ = Deutsche Gesellschaft für Internationale Zusammenarbeit [German Society for International Cooperation]; IHHN = Indus Hospital & Health Network; ILO = International Labour Organisation; IOM = [UN] International Organisation for Migration; IFAD = [UN} International Fund for Agriculture & Development; IRC = International Rescue Committee; JICA = Japan International Cooperation Agency; PATRIP = PATRIP Foundation; PPAF = Pakistan Poverty Alleviation Fund; UNOCHA = United Nations Office for the Coordination of Humanitarian Affairs; UNDC = United Nations Development Corporation; UNDP = United Nations Development Programme; UNFPA = United Nations Population Fund; UNHCR = United Nations High Commissioner for Refugees; UNICEF = United Nations Children's Fund; USAID = United States Agency for International Development; VSO = Voluntary Service Overseas; WFP = [UN] World Food Programme; WHO = [UN] World Health Organisation; WB = The World Bank.

10.2. Public Sector Investments

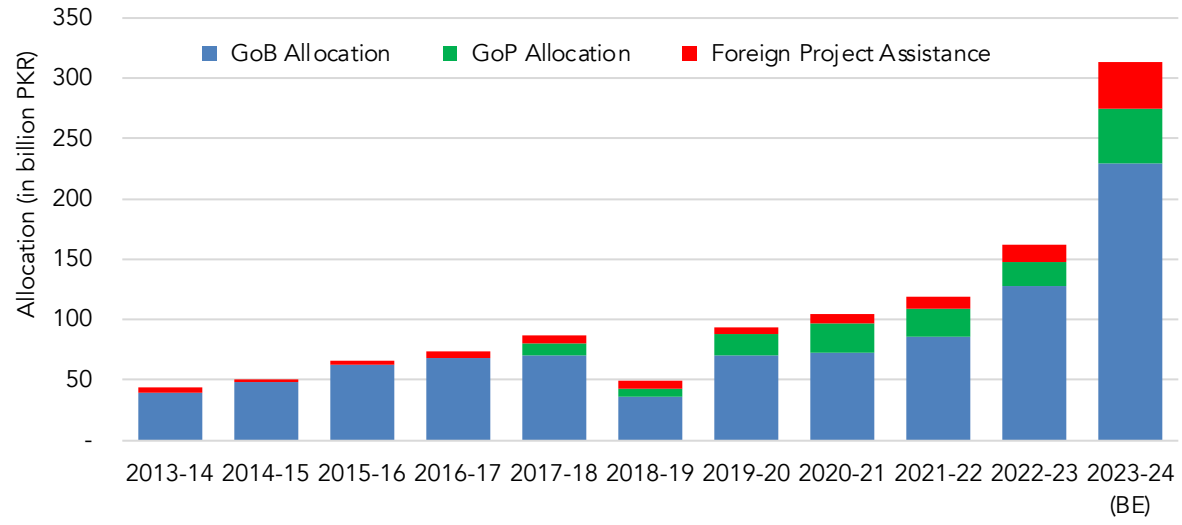
Balochistan, in general, is a resource scarce province of Pakistan. Its receipts envelop is comprised of the federal transfers, own resources revenue and the FPA. The 18th Constitutional Amendment and the 7th NFC Award have played a pivotal role in improving the province's fiscal balance sheet. Whereas the 18th Amendment enabled the provincial government to have direct access to the bilateral and multilateral donor agencies, the 7th NFC Award widened the much needed fiscal space for the provincial public sector resources by substantially raising Balochistan's share in divisible pool—from 5.11 to 9.09 percent. As a result, Balochistan's share in the federal Divisible Pool has reached to PKR billion in 2023-24 from PKR 83.12 billion in 2010-11. Additionally, the province gets Straight Transfers in terms of royalty on natural gas and crude oil, gas development surcharge and federal excise duty on natural gas. Balochistan's own source revenue collection has not been significant part of the provincial portfolio. Nevertheless, it has improved significantly over the last decade (Figure 5).

Figure 5: Balochistan's Share in Federal Divisible Pool and Straight Transfers



Source: Government of Balochistan. 2023. White Paper on Budget 2023-24.
Notes: BE = Budget Estimate.

Figure 6: Public Sector Development Programme



Source: Government of Balochistan. Annual Budget Statements from 2013-14 to 2023-24.
Notes: BE = Budget Estimate.

There has also been a consistent increase in public sector development programme (PSDP) in terms of allocations by the GoB and the FPA (Figure 6). The PSDP for 2023-24 (PKR 313.4 billion) is highest in the history of Balochistan and constitutes 41.8 percent of the total budget outlay (PKR 750.6 billion). The foreign project assistance is ≈7 percent of the PSDP with a total outlay of PKR 108.133 billion. In the absence of appropriate budget coding for climate change related spending, it is difficult to report exact spending on climate change adaptation and mitigation. However, it can be assumed that the climate change related expenditure (37% of PSDP based on CPEIR) has also increased proportionately through short of the required allocation (PKR 1,300 billion).

10.3. Balochistan Climate Change Fund

Encouraged by the Pakistan Climate Change Fund,[50] the GoB will set up a ringfenced endowment fund as a special purpose vehicle under the Companies Act, 2017 through allocating seed funds from the provincial sources. The federal government and the international development partners will also be requested to beef it up with additional funds. The BCCF will be governed an independent Board of Directors (BoD) and will be guided by the B4C during its inception phase. The Fund will receive revenues from carbon credits and voluntary market mechanisms, taxes, cess, fines and penalties, and any other sources identified by the GoB, B4C or the BoD. The Fund will make allocations for priority actions to address climate change adaptation and mitigation needs of the province.

10.4. Private Sector Investments

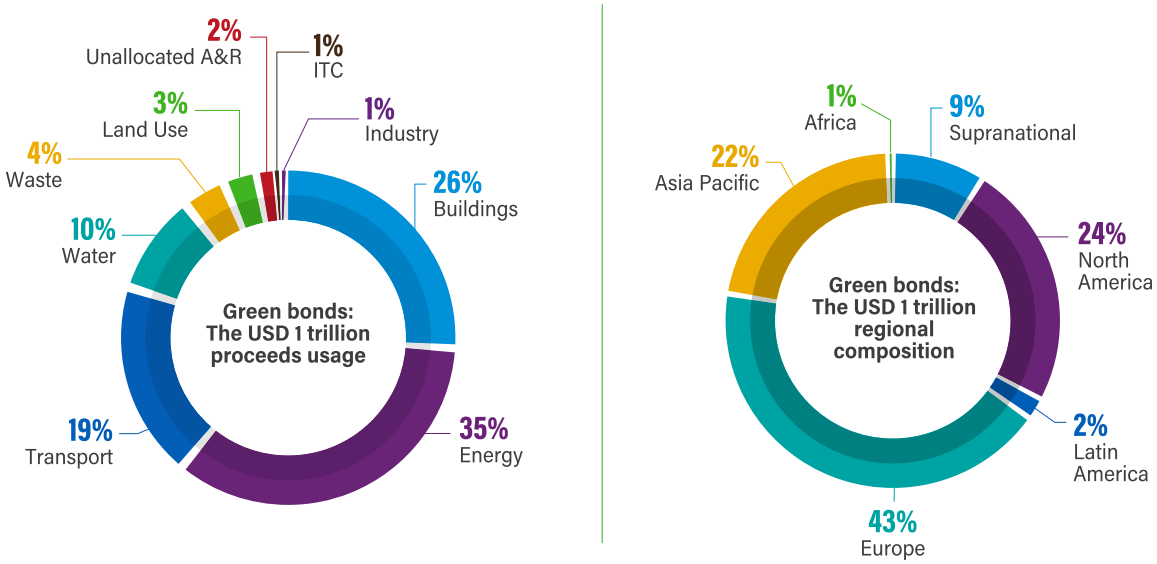
With limited public sector resources, it is important to develop and support privates sector based instruments of green and climate financing, such as green and blue bonds, sustainability bonds and green loans. Over the last decade, several financial instruments focused on private sector involvement have emerged to spur financing for renewable energy, energy efficiency, and conservation. Some possible avenues are mentioned in the following sections.

10.4.1 Green Bonds

Green bonds have become a significant financial instrument for funding climate and environment-friendly projects. Green bond issuance has grown rapidly in the past decade from USD 807 million in 2007 to more than USD one trillion in 2020. Energy sector, followed by buildings are the biggest users of these bonds (Figure 7). Pakistan's WAPDA has successfully launched 10-year Indus Eurobond raising USD 500 million for a hydro-energy project, receiving a positive response from the market as the bonds were oversubscribed by six times and the offering process was supported by Goldman Sachs, Blackrock, BlueBay, Fidelity, Ashmore, Amundi and USB. GoP has also completed its initial assessment of blue bonds to support ocean ecology, fisheries, and tourism projects.[51]

50. Pakistan Climate Change Act, 2017. Government of Pakistan. Enacted 31 Mar 2017.
51. Karandaaz. 2022. Green Financing, Renewable Energy, and Energy Efficiency in Pakistan: Opportunities and Challenges. Islamabad: Karandaaz Pakistan.

Figure 7: Green Bonds Usage and Composition



Source: Karandaaz. 2022. Green Financing, Renewable Energy, and Energy Efficiency in Pakistan: Opportunities and Challenges.

10.4.2 Blue Bonds

Presently, Pakistan possesses mangrove coverage spanning around 157,000 ha. These existing mangrove forests and tidal marshes have the capacity to store roughly 21.8 million tonnes of organic carbon (76.4 $MtCO_2e$). According to a report from the World Bank, utilising a terrestrial forest carbon credit price of USD 3 and aiming for higher blue carbon prices of USD 12-15, there is a potential to generate revenues ranging from USD 300-500 million. The Sindh province has already secured USD 14.77 million from carbon trading in the voluntary carbon market. Although further research is required to validate this initial assessment, a combination of market-based and non-market-based approaches such as Blue Bonds could assist in achieving Balochistan's mitigation and adaptation objectives for mangrove forests as it harbours the longest coast line of Pakistan. Additionally, these approaches have the potential to yield co-benefits in terms of livelihood enhancement and biodiversity protection.

10.4.3 Sustainability Bonds

Sustainability Bonds are financial instruments whose proceeds are solely used to finance or re-finance a mix of green and social projects, with environmental and socio-economic benefits. The first Sustainability Bond (GBP 250 million) was issued by Unilever in 2014. Since then, many governments and private sector companies have issued Sustainability Bonds to finance environmental projects with social benefits.

10.4.4 Nature Performance Bonds

Nature Performance Bonds (NBP) aims to include biodiversity in financial decision-making through debt-for-nature swaps and accelerate finance for development. Pakistan is working with various development partners to utilise outstanding payments for conservation and climate-related investments through NPBs. If successful in implementing the first pilot project, Balochistan can also benefit from its performance in recent years through flagship projects. and nature performance bonds to be arranged through bilateral creditors.[52]

52. Karandaaz. 2022. Green Financing, Renewable Energy, and Energy Efficiency in Pakistan: Opportunities and Challenges. Islamabad: Karandaaz Pakistan.

10.4.5 Green Banking Instruments

Green banking involves banks encouraging environment-friendly investments and prioritising lending to industries that are green or trying to go green to restore the natural environment. Green banking is a new concept in Pakistan, with some commercial banks incorporating green financing into their operations, and microfinance banks playing a significant role in widening the scope of green financing. To align with international standards, the State Bank of Pakistan (SBP) issued Green Banking Guidelines[53] in October 2017, emphasising the role of financial institutions in financing the transition to a climate-resilient and resource-efficient economy through environmental risk management, green business facilitation and own impact reduction. The SBP and IFC have signed an advisory agreement in August 2018 to promote and support green banking practices in Pakistan. The SBP has also introduced concessional financing (at 6% markup) for renewable energy projects up to 50 MW.

10.5. Innovative Climate Financing

In addition to the above climate financing mechanisms, some new and alternative approaches for mobilising and channelling financial resources to support climate change mitigation and adaptation efforts are being developed. These mechanisms aim to overcome traditional funding limitations and provide additional sources of financing for climate action. Though to be explored and developed further in the coming years, some examples of innovative climate financing mechanisms include:

- **Carbon Pricing:** Carbon pricing mechanisms, such as carbon taxes and emissions trading systems, create a financial incentive for reducing greenhouse gas emissions. By putting a price on carbon emissions, these mechanisms generate revenue that can be used to finance climate mitigation and adaptation projects. However, in Balochistan, it may discourage industrial growth given the fact that so far Pakistan's contribution to the global GHG emission is less than one percent. Hence, this mechanism may need to be introduced after due diligence.
- **Climate Venture Capital:** Climate venture capital involves investments in innovative technologies and start-ups that have the potential to address climate challenges. This form of financing supports the development and commercialisation of climate-friendly solutions, such as clean energy technologies and sustainable agriculture practices.
- **Risk Insurance Mechanisms:** Risk insurance mechanisms, such as weather-based insurance and catastrophe bonds, provide financial protection against climate-related risks. These mechanisms help vulnerable communities and sectors recover from climate-related disasters and build resilience.
- **Crowdfunding:** Crowdfunding platforms enable individuals and organisations to contribute small amounts of money to finance specific climate projects or initiatives. This approach allows for broad public participation in climate financing and can support grassroots initiatives and community-led projects.
- **Public-Private Partnerships:** Public-private partnerships bring together government entities, private companies, and other stakeholders to jointly finance and implement climate projects. These partnerships leverage the expertise and resources of both sectors to accelerate the deployment of climate solutions.

These innovative climate financing mechanisms play a crucial role in bridging the financial gap for climate action and unlocking new sources of funding. They promote the mobilisation of private capital, encourage investment in sustainable technologies, and support the transition to a low-carbon and climate-resilient future.

10.6. Windfall Opportunities

In the backdrop of financial scarcity, Balochistan has some windfall opportunities which can be tapped to finance

53. Government of Pakistan. 2017. Green Banking Guidelines. Islamabad: State Bank of Pakistan, GoP.

climate change adaptation and mitigation actions. Some of these are mentioned in the following sections.

10.6.1 China Pakistan Economic Corridor

CPEC is a growth axis and a development belt featuring complementary advantages, collaboration, mutual benefits, and common prosperity. With the comprehensive transportation corridor and industrial cooperation between China and Pakistan as the main axis, and with concrete economic and trade cooperation, and people-to-people exchange and cultural communications as the engine, CPEC is based on major collaborative projects for transport and communication, infrastructure construction, energy and industrial development, sustainable agriculture and water resource management, health and livelihood improvement, and tourism development aimed at socioeconomic development, prosperity, and security in regions along it.

Balochistan lies in the southern coastal logistics business zone of CPEC and links the Gwadar Port to the Chinese province of Xinjiang. Within Balochistan, the areas influenced by CPEC are varied and diverse. Initiating from Pishukan in southmost Gwadar, moving across Khuzdar and Kalat further north, and finally extending towards Zhob and Musakhel in the northmost of the province, the road network under CPEC is going to significantly enhance the province's connectivity. This will be further augmented by the extension of the current railways network. Due to its wide geographic span, the consequences and implications of the corridor will be for the entre province. CPEC can accrue its real benefits to the people of Balochistan through access to income generating and climate resilience opportunities, if a portion of funds is directed towards connecting people and enhancing their capabilities, skills, and education.

Balochistan has strong potential for economic development, and resultant climate resilience, through improved infrastructure under CPEC (e.g., the Gwadar East Bay Expressway and the Gwadar International Airport), foreign direct investment, trading opportunities and improved livelihood. The province will also see improved contribution to the GDP, which currently stands at around 3 percent.

Within Balochistan, Gwadar being strategically located port, is considered the 'lynchpin for the overall success of the CPEC'.[54] As Gwadar is the originating point of the CPEC in Balochistan, the opportunities here will stem off to the rest of the province, thus creating a domino effect in favour of the province. The economic zones that have also been planned such as, the 'Gwadar Free Zone', will create an environment exceptionally conducive to economic activity. For a province with the worst poverty figures in the country, this can indeed be a game changer for the economy,[55] and resultant private sector investment in climate change adaptation and mitigation actions.

10.6.2 TAPI Gas Pipeline

The Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline is an 1,814 km trans-country natural gas pipeline running between the four countries; 826 km of this will run through Pakistan. The pipeline will enter into Pakistan at Chaman border and pass through Killa Abdullah, Pishin, Ziarat, Loralai and Musakhel in Balochistan. It was committed that the project will plant at least 100 million trees on the route of gas pipeline as a gift for the people of Balochistan. The project is expected to bring numerous employment opportunities for the local people in terms of skilled and unskilled labour. However, it is important that the employable population is equipped with necessary skill sets and the project helps the GoB in developing climate resilience in the province.

10.6.3 Extractive Industry

Balochistan alone has an estimated USD 3 trillion in mineral resources.[56] Apart from the Saindak and Reko Diq copper and gold mines in the Chagai district, most of the

54. "CPEC success hinges on Gwadar port: navy chief." The Express Tribune, 2 Jul 2016.
55. Deloitte. n.d. "How will CPEC boost Pakistan economy?" Accessible at https://www2.deloitte.com/content/dam/Deloitte/pk/Documents/risk/pak-china-eco-corridor-deloittepk-noexp.pdf.
56. World Bank. 2014. Country Partnership Strategy for the Islamic Republic of Pakistan for the Period FY2015–19. Islamabad: The World Bank Group.

minerals potential of the province remains unexplored. While there is huge potential for development of the extractive industry, there is also risk of environmental degradation which can further exacerbate the climate change risks. The GoB will create an enabling environment to attract and retain private investments through investor-friendly regulations, good governance, and transparency but will also ensure that poor people benefit from extractive industry, the environmental and social risks are mitigated, and the extractive industry follows global best practices to mitigate climate change risks.

10.7. Way Forward on BCCP Financing

To ensure that the BCCP implementation is adequately resourced and the public as well as private sector investments towards climate change adaptation and mitigation are correctly accounted for, the following measures will be taken:

- Public sector budget lines with a climate change adaptation, mitigation or supporting components will be tagged for an automated accounting process. The Climate Finance Unit (CFU) will be responsible for tagging of budget lines and rolling out of the process of climate accounting.
- The Finance Department, through CFU, will establish a database and data warehouse for this purpose connecting the planning data with the financial data to keep account of climate related allocations and expenditure.
- The private investments into climate change adaptation, mitigation or supporting actions will be added to the climate financing database to prepare a wholistic climate accounts.
- Following the global portfolio management practices, the GoB will adopt 'systems approach'57 to harness the synergetic effectiveness and efficiency of climate finance.

The GoB will actively seek opportunities and partnerships for accessing bilateral and multilateral climate finance windows, especially GCF, Adaptation Fund, GEF and CIFs.

57. OECD. 2017. Systems Approaches to Public Sector Challenges: Working with Change. Paris: OECD Publishing. Available at https://doi.org/10.1787/9789264279865-en.

Annex 1. Pakistan Long-Term Vision[58]

By 2050/2060/2070, Pakistan will be a low-carbon, green, resilient, and prosperous society, with a thriving economy, a healthy, empowered and climate resilient population, living in a safe and secure environment through a combination of innovative technologies, responsible policies, and strong partnerships between government, business, and civil society in an inclusive and gender-responsive manner.

Aligned with Pakistan's updated NDCs (2021), the vision and aspirations for Pakistan's GHG emitting sectors are as following:

Energy

Pakistan envisions "to be energy secure by prioritising the development and integration of renewable energy sources into its energy mix while also improving energy efficiency, applying people centric approach, adopting integrated energy planning, improving coordination among actors and eradicating energy poverty."

- By mid-century, 50% decarbonisation based on 2018/22 baselines.
- Create green jobs for women and youth through a just energy transition mechanism.
- Improve energy efficiency as a cost saving measure.
- Incentivisation and penalties to achieve decarbonisation targets.
- Ensure affordability and energy access for masses.
- Adopt energy security through RE

Agriculture, Forestry and Other Land Use (AFOLU)

Pakistan envisions "working to conserve its rich biodiversity, improve forest cover, and promote sustainable land use practices that enhance natural resource-base, promote food security and sustain eco-system services to support livelihoods."

- At least 50% irrigation through renewables sources like solar tube wells compared to today.
- At least 20% to be forest cover/green land.
- Rainwater harvesting from at least 30% of the households.
- Ban the burning of rice residue Increase drip irrigation and reduce flood irrigation.
- Use increase in drip irrigation and increase in forest cover as a key metric for measurement.
- Become a food secure country using efficient technologies.
- At least 30% increase in energy efficient agriculture technologies (CSA) across Pakistan

Transport

Pakistan envisions "shifting towards clean, efficient, and accessible modes of transportation that reduce carbon emissions and improve mobility for all citizens."

- Proper public transport established across the country.
- At least 50% are electric vehicles by mid-century.
- Traffic congestions reduced in the urban centres.
- Public transport shift to EVs (15-20% annually)

Industrial Processes and Product Use (IPPU)

Pakistan envisions "accelerating action on achieving circular economy by piloting carbon neutral value chains in industries and scaling up solutions through collaborations, particularly those that are energy-intensive and emit high levels of pollutants."

58. Government of Pakistan. 2023. The Long-Term Vision 2050: Towards developing Pakistan's long term low emissions development strategy (LT-LEDS). Islamabad: Ministry of Climate Change & Environmental Coordination, GoP.

- All industries to be operated on renewable sources.
- Industries properly regulated, and emission reduction is monitored.
- N_2O abatement from Nitric and fertiliser productions plants
- Enabling environment for businesses to become ESG compliant.
- Green product standards and labels
- R&D and finance for demonstration/pilots

Waste

Pakistan envisions "implementing integrated waste management strategies that prioritise waste reduction, reuse, and recycling, and minimise the environmental and health impacts of waste disposal, on its journey towards a circular economy."

- Integrated waste management plans are needed.
- The country should be clean with no landfills or garbage in the streets.
- By mid-century there should be a robust process for waste management and waste recycling in urban and rural areas

Urban Development

Pakistan envisions "promoting compact, green, and liveable cities that ensures prosperity and quality.

of life for all citizens and reduce the environmental footprint of urbanisation."

- Designated policies and strategies on urban development
- Short- or medium-term targets for urban development to achieve long-term goals.
- Consistent urban planning across the country by mid-century
- Creating green spaces and pathways for walking and cycling across the cities

Air Pollution

Pakistan envisions "to achieve both air quality standards and climate goals that protects and enhances public health, welfare, and the environment through planned and coordinated efforts towards technology and fuel advances, enhanced technical, human, and monitoring capacity and behaviour change."

- Every province has its own established priorities and targets in every sector contributing to air pollution.
- To reduce the sources of emissions our pollution from every sector after thorough capacity building and introduction of innovative technologies
- Covert old brick kilns into zigzag technology
- No indoor pollution through burning of biofuels so that women and children are protected.
- Achieving the goals requires consistently working towards the established goal within the next seven years, procurement, and diversion of funds, developing baselines, and monitoring progress.
- Major goals are to procure resources/funding and the introduction of innovative technologies.
- Inclusion of women and youth, implementing indoor air quality monitoring, and promotion of clean energy options

Just Transition and Human Capital

Pakistan will "prioritise cross-cutting areas such as education, gender, youth and community equality, empowerment and engagement, and ensure that achieving national vision is a fair process and enables just transition."

- Women and youth are empowered and have access to equal economic opportunities.
- Every Pakistani has access to education.
- Women participation in labour force
- Increase quality green jobs increased by 50%
- Key measurement metrics can include youth employment rate, women labour force participation rate, literacy rate.

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UNDP in **Pakistan**

UNDP works with the Government and people of Pakistan to develop local solutions to development challenges. In an evolving development context, we support Pakistan's efforts to build a more equitable, prosperous, peaceful and resilient society, and to achieve its SDGs and COP26 targets. UNDP promotes transformational change by fostering strategic partnerships with national counterparts in the federal, provincial and regional governments, civil society, the private sector and the local and international community. UNDP supports transformational change by providing technical assistance focusing on developing capacity within national and local authorities, providing solutions with strong monitoring and evaluation tools, and delivering programmes with maximum efficiency, transparency and accountability.

UNDP's ultimate goal is to improve the lives of the people of Pakistan through keeping people out of poverty; governance for peaceful, just and inclusive societies; crisis prevention and increased resilience; nature-based solutions for development; clean affordable energy; and women's empowerment and gender equality.

UNDP

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