

Funding Proposal

SAP039: Integrated climate risk management for strengthened resilience to climate change in Buner and Shangla Districts of Khyber Pakhtunkhwa Province, Pakistan

Pakistan | World Food Programme | Decision B.39/06

14 August 2024



GREEN
CLIMATE
FUND

Contents

Section A PROJECT / PROGRAMME SUMMARY

This section highlights some of the project's or programme's information for ease of access and concise explanation of the funding proposal.

Section B PROJECT / PROGRAMME DETAILS

This section focuses on describing the context of the project/programme, providing details of the project/programme including components, outputs and activities, and implementation arrangements.

Section C FINANCING INFORMATION

This section explains the financial instrument(s) and amount of funding requested from the GCF as well as co-financing leveraged for the project/programme. It also includes justification for requesting GCF funding and exit strategy.

Section D EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section provides an overview of the expected alignment of the projects/programme with the GCF investment criteria: impact potential, paradigm shift, sustainable development, needs of recipients, country ownership, and efficiency and effectiveness.

Section E ANNEXES

This section provides a list of mandatory documents that should be submitted with the funding proposal as well as optional documents and references as deemed necessary to supplement the information provided in the funding proposal.

Notes to accredited entities on the use of the SAP funding proposal template

- The Simplified Approval Process Pilot Scheme (SAP) supports projects and programmes with a GCF contribution of up to USD 25 million with minimal to no environmental and social risks. Projects and programmes are eligible for SAP if they are ready for scaling up and have the potential for transformation, promoting a paradigm shift to low-emission and climate-resilient development.
- This template is for the SAP funding proposals and is different from the funding proposal template under the standard project and programme cycle. Distinctive features of the SAP funding proposal template are:
 - *Simpler documents*: key documents have been simplified, and presented in a single, up-front list;
 - *Fewer pages*: A shorter form with significantly fewer pages. The total length of funding proposals should **not exceed 20 pages**, annexes can be used to provide details as necessary;
 - *Easier form-filling*: fewer questions and clearer guidance allows more concise and succinct responses for each sub-section, avoiding duplication of information.
- Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other funding proposal documents such as project appraisal document, pre-feasibility studies, term sheet, legal due diligence report, etc.
- Submitted SAP Pilot Scheme funding proposals will be disclosed simultaneously with submission to the Board, subject to the redaction of any information which may not be disclosed pursuant to the [GCF Information Disclosure Policy](#).
- For more information on how to develop Funding Proposals under the SAP please refer to the [Simplified Approval Process \(SAP\) Funding proposal guidelines](#).

Please submit the completed form through the GCF Digital Proposal Submission Platform (DPS)¹

¹ See the [DPS user guide](#) for further information on how to access and submit proposals.

A. PROJECT/PROGRAMME SUMMARY					
A.1. Has this FP been submitted as a SAP CN before?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
A.2. Is the Environmental and Social Safeguards Category C or I-3?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
A.3. Project or programme	Indicate whether this FP refers to a combination of several projects (programme) or one project. <input checked="" type="checkbox"/> Project <input type="checkbox"/> Programme	A.4. Public or private sector	<input checked="" type="checkbox"/> Public sector <input type="checkbox"/> Private sector	A.5. RfP	Not applicable
A.6. Result area(s)	Check the applicable GCF result area(s) that the overall proposed project/programme targets. For each checked result area(s), indicate the estimated percentage of GCF and Co-financers' budget devoted to it. The total of the percentages when summed should be 100% for GCF and Co-financers' contribution respectively.				
				GCF Contribution	Co-financers' contribution²
	Mitigation total			Enter number %	Enter number %
	<input type="checkbox"/> Energy generation and access			Enter number %	Enter number %
	<input type="checkbox"/> Low emission transport			Enter number %	Enter number %
	<input type="checkbox"/> Buildings, cities and industries and appliances			Enter number %	Enter number %
	<input type="checkbox"/> Forestry and land use			Enter number %	Enter number %
	Adaptation total			Enter number %	Enter number %
	<input checked="" type="checkbox"/> Most vulnerable people and communities			70 %	70 %
	<input checked="" type="checkbox"/> Health and well-being, and food and water security			30 %	30 %
	<input type="checkbox"/> Infrastructure and built environment			Enter number %	Enter number %
	<input type="checkbox"/> Ecosystem and ecosystem services			Enter number %	Enter number %
A.7.1. Expected mitigation outcome (Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)	Indicate GHG emission reductions or removals in tCO ₂ e _q over total lifespan of the project/programme ³	A.7.2 Expected adaptation outcome (Core indicator 2: direct and indirect beneficiaries reached)	1,623,400 (direct and indirect) Direct beneficiaries: 146,737 (73,898 men, 72,839 women) Indirect beneficiaries: 1,478,663 (705,334 men, 771,329 women)		
			146,737	Indicate number of direct beneficiaries	
			0,06% of total population	Indicate % of direct beneficiaries vis-à-vis total population	
A.8.1. Total investment (GCF + co-finance⁴)	Amount: 9,845,341 USD	A.8.2 Total GCF funding requested (max USD 25M)	Amount: 8,777,141 USD		

A.9. Type of financial instrument requested for the GCF funding	<i>Mark all that apply.</i> <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Loan ⁵ <input type="checkbox"/> Equity <input type="checkbox"/> Guarantees <input type="checkbox"/> Others:		
A.10. Implementation period (months)	48 months (4 years)	A.11. Total project/ programme lifespan (years)	15-20 years ⁶
A.12. Expected date of internal approval	<i>The date that the Accredited Entity obtained/will obtain its own approval to implement the project/ programme, if available</i> 11/17/2023	A.13. Has Readiness or PPF support been used to prepare this FP?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
A.14. Is this FP included in the entity work programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.15. Is this FP included in the country programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.16. Executing Entity information	WFP will jointly execute the project with the Government of Khyber Pakhtunkhwa Province acting through the Planning and Development Department		
A.17. Scalability and potential for transformation (max. 100 words)			
<p>The proposed project has substantive scalability and transformation potential based on its synergy with several past and ongoing adaptation projects⁷ implemented by FAO⁸, UNDP⁹, and the World Bank¹⁰, respectively. There are five primary thematic synergies that support upscaling, including: i) climate-resilient agriculture (CRA); ii) public sector and civil society capacity development in disaster risk reduction; iii) monitoring and evaluation (M&E); iv) small-scale flood mitigation infrastructure; and v) delivery models of early-warnings to remote areas and the installation of hydrometeorological stations to support flash-flood warnings.</p>			
A.18. Project/Programme rationale, objectives and approach (max. 300 words)			
<p>Climate rationale The climate hazard addressed by the project is flash-flooding. In Khyber Pakhtunkhwa (KP) Province, more pre-monsoon rainfall has been observed between 1901 and 2007, consistent with shifting and increasing variable rainfall patterns¹¹, while projected trends¹² indicate an increase in both annual and summer monsoon precipitation, accompanied by intensifying interannual variability¹³. Climate change impacts on the beneficiary communities will exacerbate existing inequalities and will particularly affect vulnerable and marginalised groups such as women, children, and people with disabilities. These groups are likely to be especially severely affected by floods due to their current limited adaptive capacity, notable in their lack of adequate access to social protection and coping mechanisms.</p> <p>Project purpose and activities The project will catalyse a paradigm shift that: i) strengthens technical capacity for flood forecasting and anticipatory action within the public sector entities involved in early-warning systems (EWS) in KP province; and ii) enables vulnerable and food-insecure rural</p>			

² Co-financer's contribution means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF contribution (i.e. GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal.

⁴ Refer to the Policy on Co-financing of the GCF.

⁵ Senior loans and subordinated loans.

⁶ The total lifespan of the project/programme is defined as the maximum number of years over which the outcomes of the investment are expected to be effective. This is different from the project/programme implementation period.

⁷ A detailed analysis of the synergy and upscaling potential of the proposed project vis-à-vis the aforementioned past and ongoing projects is presented in Table 2 under Section B.1.

⁸ *Transforming the Indus Basin with Climate Resilient Agriculture and Water Management* (2019 – 2026). Implemented by FAO with funds from GCF. There is a **very high** level of upscaling potential between this project and the proposed project.

⁹ *Scaling-up of Glacial Lake Outburst Flood (GLOF) risk reduction in Northern Pakistan* (2015 – 2022). Implemented by UNDP with funds from GCF. There is a **high** level of upscaling potential between this project and the proposed project.

¹⁰ *Pakistan Hydromet and Climate Services Project* (2018 – 2024). Implemented and funded by The World Bank. There is a **medium** level of upscaling potential between this project and the proposed project.

¹¹ World Bank Group and Asian Development Bank. 2021. *Climate Risk Country Profile – Pakistan*. [Online]. Available: https://climateknowledgeportal.worldbank.org/sites/default/files/2021-05/15078-WB_Pakistan%20Country%20Profile-WEB.pdf

¹² Under RCP4.5 and RCP8.5.

¹³ Latif, M., Hannachi, A. and Syed, F.S. 2018. Analysis of rainfall trends over Indo-Pakistan summer monsoon and related dynamics based on CMIP5 climate model simulations. *International Journal of Climatology*, 38, pp. 577-595. [Online]. Available: <https://rmets.onlinelibrary.wiley.com/doi/epdf/10.1002/joc.5391>

households in the beneficiary communities to access a suite of climate-resilient strategies and tools to strengthen livelihoods. There are three components and three outputs proposed as shown in Table 1 below.

Table 1. Summary of project components and outputs

Component	Output
1: Improved capacity for flood early warning systems and anticipatory action	Output 1.1 Early warning system strengthened including installation of AWS, dissemination of early warning and associated technical assistance to Govt Staff Output 1.2 Anticipatory Actions triggers and protocols developed and institutionalized by respective Govt departments
2: Increased climate resilience through local adaptation plans and diversified livelihoods	Output 2. Local adaptation plans co-developed and prioritized community adaptation actions implemented
3: Improved knowledge management and learning	Output 3. Knowledge and lessons learned captured and disseminated to facilitate replication and upscaling

Climate results

The project targets two Adaptation Results Areas (ARAs): i) increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions (A1); and ii) increased resilience of health and well-being, and food and water security (A2). Within the target districts of Buner and Shangla in Khyber Pakhtunkhwa (KP) province, the project will be implemented in four prioritised¹⁴ Union Councils (UCs, two in each district). The demographics of the proposed project's direct beneficiaries are shown in Table 5 in Annex 2. In addition, the project will indirectly benefit ~ 1.6 million people at the community level, as well as ~25 staff from PMD, P&D, etc.

Rationale for GCF funding and financial instrument justification

The proposal is requesting 100% grant funding from the GCF, as well as ~12% co-finance from WFP and the Government of Khyber Pakhtunkhwa, as the proposed project is a public sector adaptation initiative that will directly benefit ~146 737 disproportionately-vulnerable people (~22 227 households, ~72 839 women and ~73 898 men). No revenue-generating activities are proposed, and grant finance is therefore appropriate given Pakistan's negligible historical contribution to global warming (~0.66% between 1946 and 2021¹⁵) as well as loss and damage from the 2022 monsoon flood, estimated at USD 30.1 billion¹⁶ and affecting 33 million people¹⁷.

The project is aligned with the GCF Strategic Plan 2024-2027 (USP-2) by seeking to address an urgent adaptation need in a climate-critical area (resilience to the cross-cutting impacts of flash-floods in mountainous areas) in a particularly vulnerable country context. The project will not only expand coverage of climate information services and early-warning systems in Pakistan but will catalyse the shift towards more integrated flood risk management by including impact-based forecasting and anticipatory action alongside traditional forecasting and warnings. These expected results are supported by WFP local structures and partnerships that enable collaborations at federal and provincial levels, considering WFP's three-decade engagement in KP addressing emergencies, livelihoods, and resilience-building to climate change and other shocks, with initiatives targeting vulnerable communities, particularly women and disabled populations. The project will therefore contribute towards the 2024-2027 targeted result related to: a) T3: 50-60 developing countries protected by new or improved CIEWS; b) T4: support for developing countries that results in 190 to 280 million beneficiaries adopting low-emission climate-resilient agricultural and fisheries practices, securing livelihoods while reconfiguring food systems; and c) T9: 40-70 approved proposals for adaptation projects, including for locally-led adaptation action.

Furthermore, the project is aligned with GCF's commitment to the UN Secretary-General's Early Warnings for All Initiative. GCF is committed to mobilise resources, forge partnerships and harness innovation to ensure that every person on Earth is protected by early warning systems within five years, supporting UN'S EW4ALL, launched in 2022.

¹⁴ The beneficiary districts and prioritised Union Councils (UCs) were selected using multi-criteria spatial analysis and in consultation with the MoCC and the Provincial Government of KP. Refer to Section 8 of Annex 2: Pre-feasibility Study for a detailed methodology employed for the selection of the beneficiary districts and union councils.

¹⁵ Ritchie, H., Roser, M., and Rosado, P. 2020. *CO₂ and Greenhouse Gas Emissions*. [Online]. Available: <https://ourworldindata.org/co2-and-greenhouse-gas-emissions>

¹⁶ Comprises USD 14.9 billion in damage and USD 15.2 billion in loss. Total recovery needs are estimated at USD 16.3 billion.

¹⁷ The Government of Pakistan, Asian Development Bank, European Union, United Nations Development Programme, and the World Bank Group. 2022. *Pakistan Floods 2022 Post-disaster Needs Assessment*. [Online]. Available: <https://www.pc.gov.pk/uploads/downloads/PDNA-2022.pdf>

B. PROJECT/PROGRAMME DETAILS

B.1. Context and baseline (max. 500 words)

Socio-economic context

1. Pakistan is classified by the World Bank as a low-income developing country, with ~30% of the population living below the national poverty line in 2019¹⁸. Heavy reliance on degraded land resources, alongside food insecurity and water scarcity make sustainable livelihoods challenging, particularly given the high reliance on climate-sensitive land, water and forest resources for livelihoods and food security¹⁹. Formal employment can be tenuous in Pakistan as ~60% of the total population have low job security and limited access to social protection programmes²⁰.
2. Agriculture contributes ~22% to Pakistan's GDP²¹, while ~42% of people rely on agriculture as a primary source of livelihoods^{22,23}. Given agriculture's role as the backbone of Pakistan's economy, climate impacts and adaptation needs²⁴ are an extremely high priority for the government.

Climate vulnerability and impacts in Pakistan and Khyber Pakhtunkhwa

3. Pakistan is ranked as the 8th most climate-vulnerable country in the world. While a large proportion of historic mortality attributable to natural hazards has been the result of earthquakes, Pakistan is especially vulnerable to floods, and the economic impact of damage caused by flooding has increased significantly in recent decades (Figure 1).

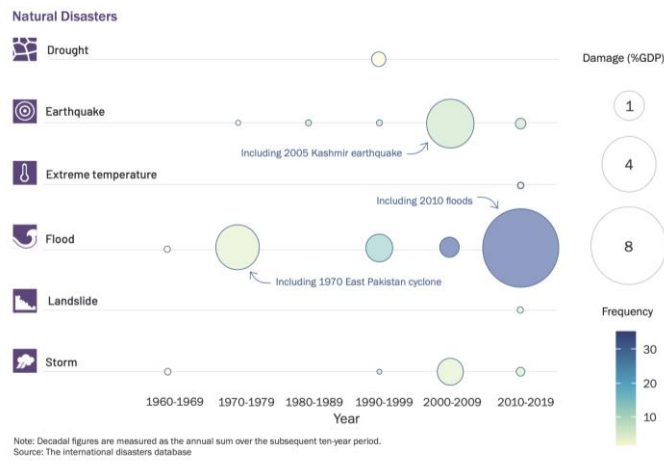


Figure 1. Economic damage (as % of GDP) from natural disasters in Pakistan between 1990 and 2020²⁵.

4. Even prior to the devastating floods of 2022, Pakistan was one of the top 10 countries with the highest exposure to flooding (riverine, coastal and flash-floods)²⁶. The extreme flooding event of 2022 far exceeded the economic impacts of the 2010 floods, with the costs for rehabilitation and recovery estimated at USD16.3 billion, not including much-needed new investments to adapt to climate change and build the resilience of the country to future climate shocks²⁷. These floods further exposed Pakistan's underlying challenges related to its institutions and systems, with poor urban planning and water resource management, inadequate maintenance of infrastructure and limited capacity for disaster risk reduction being some of the key shortcomings that have increased the impacts on vulnerable communities²⁸.
5. At the provincial level, flooding has occurred regularly in recent years throughout Khyber Pakhtunkhwa (KP) with devastating effects on human lives, agricultural land, crops, household food stocks, livestock, and livelihood assets. During the 2022 floods, Khyber Pakhtunkhwa suffered ~USD 935 million in damages, ~USD 658 million in losses, and has recovery needs of ~USD 780 million²⁹. Landslides, caused by torrential rains during the monsoon season and compounded by poor land management and deforestation, provoke severe devastation in mountainous parts of the province, including the beneficiary districts of Buner and Shangla. Simultaneously, increasingly erratic monsoon patterns develop, with heavy rainfall disproportionately affecting water flows in the nearby rivers, resulting in flash floods³⁰. The concurrent occurrence of riverine

¹⁸ Asian Development Bank. 2023. *Basic Statistics for Asia and the Pacific*. [Online]. Available: <https://dx.doi.org/10.22617/ARM230122-2>

¹⁹ National Institute of Population Studies. 2019. *Pakistan Demographic and Health Survey Key Findings*. [Online]. Available: <https://dhsprogram.com/pubs/pdf/SR257/SR257.pdf>

²⁰ ILO 2018

²¹ World Bank (2021) Pakistan Overview – Economy. Accessed 04/10/2021.

²² IFRC (2021) Climate Change Impacts on Health and Livelihoods: Pakistan Assessment.

²³ World Bank (2021) Climate Change Knowledge Portal - *Climate Change Profile Pakistan*. Available online: <https://climateknowledgeportal.worldbank.org/country/pakistan/climate-data-historical>

²⁴ Total adaptation needs for Pakistan are estimated at between USD 7 and USD 14 billion annually, according to its NDC.

²⁵ World Bank Group. 2022. *Pakistan Country Climate and Development Report*. [Online]. Available: <https://openknowledge.worldbank.org/entities/publication/614ddc2b-ca31-53c9-b59c-6bf12a56d336>

²⁶ World Bank (2021) Climate Change Country Profile Pakistan.

²⁷ World Bank Group. 2022. *Pakistan Country Climate and Development Report*. [Online]. Available: <https://openknowledge.worldbank.org/entities/publication/614ddc2b-ca31-53c9-b59c-6bf12a56d336>

²⁸ World Bank Group. 2022. *Pakistan Country Climate and Development Report*. [Online]. Available: <https://openknowledge.worldbank.org/entities/publication/614ddc2b-ca31-53c9-b59c-6bf12a56d336>

²⁹ Government of Pakistan Ministry of Planning, Development, and Special Initiatives. 2022. *Resilient Recovery, Rehabilitation, and Reconstruction Framework Pakistan (4RF)*. [Online]. Available: <https://www.undp.org/pakistan/publications/pakistan-floods-2022-resilient-recovery-rehabilitation-and-reconstruction-framework-4rf>

³⁰ Sometimes referred to locally as 'hill torrents'.

and flash floods, melting of snow, heavy precipitation and occasional cloud bursts have severely impacted vulnerable communities in the KP province in recent years³¹.

Historical climate trends³²

6. During the 20th century, warming in Pakistan was estimated at 0.57°C, slightly less than the average for the South Asian region of 0.75°C. Warming has accelerated more recently, with 0.47°C of warming measured between 1961 and 2007³³. Warming is strongly biased towards the winter and post-monsoon months (November–February). Data from the Pakistan Meteorological Department (PMD) indicate that annual average temperatures have increased by 1.16°C in the period 1967-2017. This increase is even more pronounced in some months; average temperatures in May, for example, have increased 2°C during the same period³⁴. Another study found that with a 1.2°C, 5-day maximum and 60-day precipitation have become 75 and 50 percent more intense, respectively. Regarding precipitation, Pakistan has a complex historical profile. While the mean rainfall in the arid plains of Pakistan and the coastal belt has decreased by 10%–15% since 1960, the number of heavy rainfall events has increased since 1960, and the nine heaviest rains in 24 hours were recorded in 2010³⁵. KP Province has received more rainfall comparatively than the rest of the provinces during the monsoon season. Overall, pre-monsoon rainfall has been observed, consistent with the increasing variability of rainfall patterns, resulting in increased occurrence of flash floods, particularly damaging in vulnerable semi-mountainous and mountainous areas of the Province. Figure 2 presents the observed climatological trends for mean temperature and average annual precipitation from 1901 – 2021. The observed change in mean temperature distribution in Pakistan shows a clear shift towards higher values (Figure 2b). Average annual precipitation (Figure 2c) demonstrates a considerable variance in particular between 2011 - 2021. **Error! Reference source not found.** and Figure 4 overleaf show the observed temperature and precipitation trends for the period 1951 – 2020, including WFP’s flood risk map done in 2017, that shows the target districts with medium to high risk of flooding. Further details of this can be found in Annex 2.

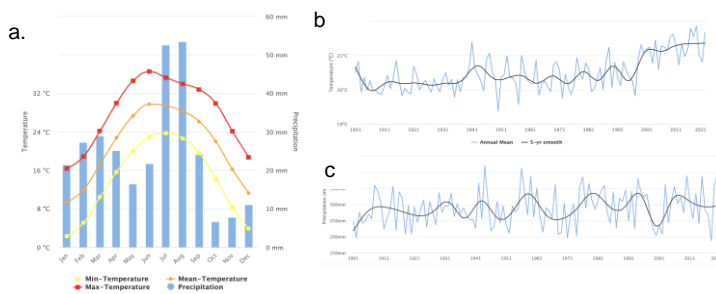


Figure 2. Observed climatology of the period 1901-2020 of a) monthly min-temperature, mean-temperature, max-temperature and average precipitation, b) average annual mean-temperature, c) average annual precipitation³⁶

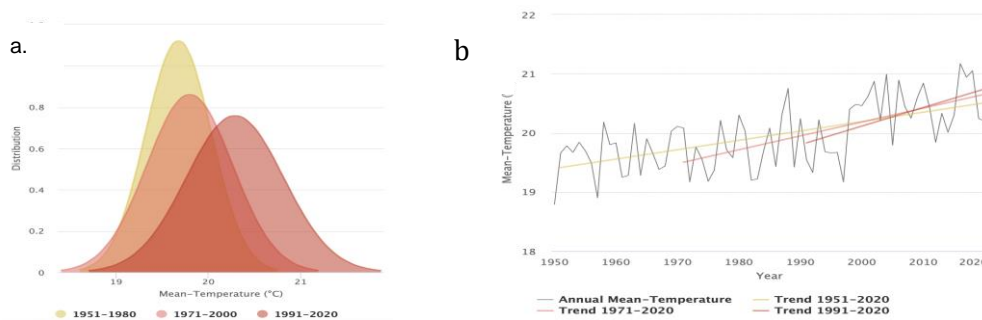


Figure 3. Observed temperature variability and trends: a) mean-temperature distribution changes, and b) annual mean-temperature trends; every 3 decades: 1951-1980, 1971-2000, 1991-2020

³¹ PDMA (2021) Monsoon Contingency Plan.

³² For detailed information on the climate rationale and analysis, see Section 2 of Annex 2 - Pre-feasibility Study.

³³ World Bank, 2021. Climate Change Knowledge Portal - Climate Change Profile Pakistan. Available online: <https://climateknowledgeportal.worldbank.org/country/pakistan/climate-data-historical>

³⁴ Climatic Research Unit (CRU), 2018. Country File: Pakistan. [Online]. Available: https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.02/crucy.1811161208.v4.02/new_countries/tmp/crucy.v4.02.1901.2017.Pakistan.tmp.per

³⁵ World Bank, 2021. Climate Change Knowledge Portal - Climate Change Profile Pakistan. Available online: <https://climateknowledgeportal.worldbank.org/country/pakistan/climate-data-historical>

³⁶ Ibid.

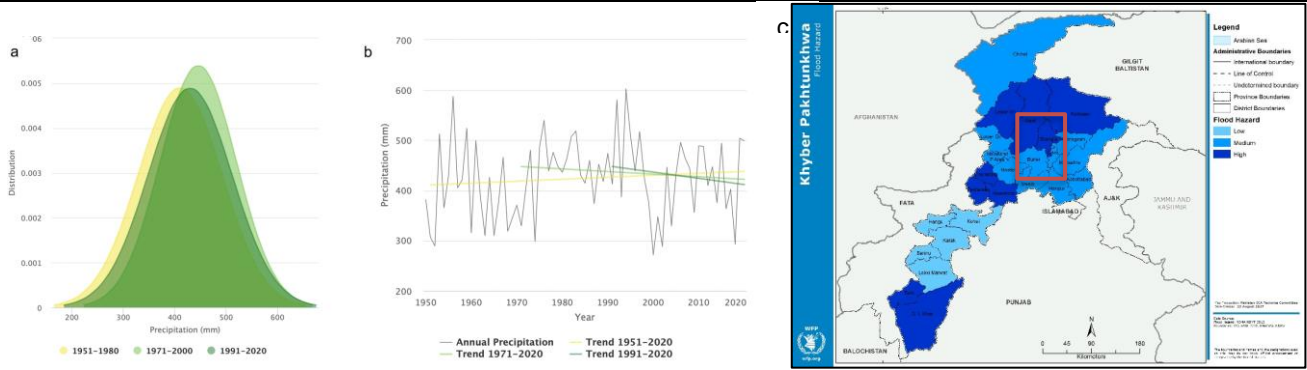


Figure 4. Observed precipitation variability and trends: a) average precipitation distribution changes, and b) annual precipitation trends; every 3 decades: 1951-1980, 1971-2000, 1991-2020³⁷ c) Flood hazard Map for KP Province sourced from Integrated Context analysis (data from NDMA, 1950-2015), Pakistan.

Climate change projections

7. The observed trends are projected to continue, resulting in more frequent climate-related disasters, particularly flooding associated with heavy monsoon rains and retreating glaciers, with severe implications for human lives, agricultural productivity, and food security. Climate change projections indicate an expected increase in temperatures between 1.4°C and 3.7°C by the end of the 2060s. Evidence presented in Pakistan's Second National Communication to the UNFCCC shows that there could be small increases in precipitation over the Greater Himalaya and Sub-Himalayan Mountain regions, which would combine with continued, rapid glacial melt and higher snowlines to cause more frequent and more severe flooding.³⁸ Data obtained from the Pakistan Meteorological Department and analysed by WFP indicates an increasing trend in rainfall. In Buner District, rainfall increased almost 16% in the 1960-2010 period, against the 1910-1959 base period, while in Besham City, in Shangla District, the increase was 15% over the same period. An analysis³⁹ was conducted across six sub-regions of Pakistan including North Pakistan (NP), Monsoon Region (MR), Khyber Pakhtunkhwa (KP), Southern Punjab (SP), Baluchistan and Sindh for which Coupled Model Intercomparison Project Phase 5 (CMIP5) and General Circulation Models (GCMs) under RCP4.5 and RCP8.5 were downscaled, and bias corrected by three statistical downscaling methods. The results of the study confirm that there will be significantly larger increases in temperature for some regions, including northern, snow-covered areas, including Khyber Pakhtunkhwa, where the rise is projected to be up to 10-12°C by 2100 under RCP8.5. Annex 2, Figure 21 presents the CIMP5 models.
8. Climate change projections for northern Khyber Pakhtunkhwa, which includes Buner and Shangla Districts, show a linear warming trend of 1.6-1.7°C by the 2030s and 3.2-3.3°C by the 2060s. Furthermore, studies show that surface temperature in Pakistan during May have been linked to heightened rainfall in the upcoming monsoon season⁴⁰, notable with the increased surface temperatures in May 2022 that later intensify the monsoon in October 2022⁴¹. This localized behaviour becomes more threatening as the World Weather Attribution in 2022 highlighted that climate change significantly increased the likelihood of such heat waves, making them 30 times more probable than in the pre-industrial era. Some projections indicate that rainfall will remain at about present levels with no positive or negative trend⁴². Others, however, such as those cited in the Second National Communication to the UNFCCC, show a slight increasing trend. There is also some evidence to suggest that, while overall rainfall is constant, rainfall events are becoming more difficult to predict and delivering more rainfall in shorter, more intense periods⁴³.
9. By the end of the century (2071–2100), the glacial extent is expected to have decreased, reducing the contribution of glacial melt, and therefore total water availability across the Indus Basin. Projections of changes in water availability by the end of the 21st century range from -15 percent to +60 percent with respect to a baseline of 1971–2000. This extremely high uncertainty is mainly due to the variability in projected precipitation change throughout the 21st century. Projected increases in the intensity and frequency of extreme seasonal discharge in the Upper Indus Basin are predicted under most scenarios and models considered, suggesting future increases in flooding events in the region. Uncertainty in timing and the extent of water availability makes adaptation in the region essential for the future.⁴⁴ Further details of this can be found in Annex 2.

Climate impacts

³⁷ World Bank, 2021. Climate Change Knowledge Portal - Climate Change Profile Pakistan. Available online:

<https://climateknowledgeportal.worldbank.org/country/pakistan/climate-data-historical>

³⁸ Ministry of Climate Change and Environmental Coordination, Government of Pakistan, 2018. Pakistan's Second National Communication to the UNFCCC, p.55

³⁹ Shaukat Ali, Hyung-II Eum, Jaepil Cho, Li Dan, Firdos Khan, K. Dairaku, Madan Lal Shrestha, Seywoon Hwang, Wajid Nasim, Imtiaz Ali Khan, Shah Fahad, 2019. *Assessment of climate extremes in future projections downscaled by multiple statistical downscaling methods over Pakistan*. Atmospheric Research, vol. 222, pp. 114-133.

⁴⁰ Bansod, S.D., Singh, S.V. Pre-monsoon surface pressure and summer monsoon rainfall over India. Theor Appl Climatol 51, 59–66 (1995). <https://doi.org/10.1007/BF00865540>

⁴¹ Friederike E L Otto et al 2023 Environ. Res.: Climate 2 02500. Available online: <https://iopscience.iop.org/article/10.1088/2752-5295/acbf45>

⁴² WFP 2018 Climate Risks and Food Security Analysis for Pakistan

⁴³ Environmental Protection Agency, 2016. Khyber Pakhtunkhwa Climate Change Policy, p.19

⁴⁴ Lutz et al., 2016

10. The impacts of climate change on food productivity pose a very serious challenge in a country where 60% of the population is food insecure and almost half of the women and children are malnourished⁴⁵. Livelihoods in rural Pakistan are largely determined by local factors such as the climate, arable land and access to markets. Poor rural households which depend on small-scale, rainfed agriculture – often with low levels of livelihood diversification – are the most vulnerable to climate risks. Livelihoods are particularly vulnerable in the country’s mountainous northern regions, given their exposure to flood risks – in Khyber Pakhtunkhwa (KP), Gilgit-Baltistan (GB), and Azad Jammu and Kashmir (AJK)⁴⁶. The major floods that have hit Pakistan in the past decade have shown the vulnerability of houses, workplaces, and infrastructure⁴⁷. Events in 1995 – 2013 have caused average annual losses of almost 4 billion US dollars; 197,230 villages damaged or destroyed; 3.45 million houses damaged; and over ten million acres of crops destroyed^{48,49}. With population growth, development, and climate change, it is likely that damages per disaster will increase⁵⁰. The urban poor are especially vulnerable, as informal settlements and temporary shelters are often constructed in unoccupied floodplains. The 2010 “mega flood” impacted the lives of nearly 20 million people, or 10% of the country’s population. The 2010 floods alone are estimated to have caused losses worth 10.5 billion USD, representing 6% of the 2010 GDP in lost productivity and damages to infrastructure, crops, livestock, and ecosystem services. In the following five years, a major flood event occurred at least once a year, affecting at least 1 million people annually⁵¹. The inaccessibility of disaster affected areas further adds to the complexity of relief and response work.
11. More than half of the households in Pakistan derive their principal income from informal, insecure, low earning livelihoods, such as wage labour and activities related to agriculture. Low incomes, coupled with high unemployment rates, negatively impact people’s access to food. Climate change is likely to exacerbate the already precarious conditions of people leaving in the rural areas. For the most vulnerable people, lower agricultural output means lower incomes. Under these conditions, the poorest people -who already use most of their income on food – sacrifice additional income and other assets to meet their nutritional requirements, or resort to poor coping strategies. Climate-related risks affect calorie intake, particularly in areas where chronic food insecurity is already a significant problem, such as the newly merged areas in Khyber Pakhtunkhwa. Changing climatic conditions could also create a vicious cycle of disease and hunger. Nutrition is likely to be affected by climate change through related impacts on food security, dietary diversity, care practices and health. Table 2 provides an overview of the climate change impacts of floods and related events on livelihoods. Further details of this can be found in Annex 2.

Table 2. Summary of identified climate change impacts on livelihoods⁵²

Climate change drivers	Impacts	Impacts on rural livelihoods	Impacts on urban livelihoods
Temperature rise	Glacial melt shift – change in river flows	Riverine floods and drought because of the unpredictable timing of meltwaters	Flooding in urban areas; food price shocks as crops are damaged
	Proliferation of water-borne diseases	Higher prevalence of water-borne diseases; negatively impacts water storage and sanitation	
Unpredictable monsoon rains	Flash flooding in hilly regions	Damage to crops, infrastructure and basic services	Impact on the transportation of agricultural products affects urban food security and prices; risk of urban flash flooding
	Landslides in mountainous regions	Damage to crops, infrastructure and basic services	Impact on the transportation of agricultural products affects urban food security and prices

12. Climatic shocks particularly affect women’s livelihoods. Whilst women take care of farming work when men migrate for better employment opportunities, they very seldom own or have decision-making rights over the productive assets⁵³. A study revealed that only 44% of women reported being able to make decisions about major household purchases⁵⁴– thereby limiting their ability to respond to crisis situations. Women rarely own property (either houses or land), which limits their ability to rely on their asset base in times of emergencies or receive Government compensation if there are damages. Additionally, women also have limited access to information compared to men⁵⁵.
13. In 2022, Pakistan ranked 145th out of 146 countries in the World Economic Forum’s Global Gender Gap Index⁵⁶. This report found that there are particularly severe equality problems in economic participation and opportunity, educational attainment and health and survival⁵⁷. In the target districts, socio-economic development indicators for women remain disproportionately low. The Shangla Disaster Risk Management Plan highlights that women’s literacy in the district is just 3.7%, compared to

⁴⁵ MoPDR, 2018. Pakistan Vision 2025: One National – One Vision. Ministry of Planning, Development & Reform.

⁴⁶ WFP, 2018. Climate Risks and Food Security Analysis: A Special Report for Pakistan.

⁴⁷ ILO, 2017. Pakistan Employment and Environmental Sustainability Fact Sheets

⁴⁸ *Ibid.*

⁴⁹ GoP, 2016. Pakistan’s Intended Nationally Determined Contribution.

⁵⁰ ILO, 2017. Pakistan Employment and Environmental Sustainability Fact Sheets

⁵¹ Provincial Disaster Management Authority, Government of Khyber Pakhtunkhwa (2020) Monsoon Contingency Plan under the shadow of COVID-19.

⁵² IFRC, 2021. Climate Change Impacts on Health and Livelihoods: Pakistan Assessment.

⁵³ WFP, 2020. WFP & Gender: Contributing towards gender equality and women’s empowerment in Pakistan.

⁵⁴ NIPS, 2019. Demographic and Health Survey. Available at: <https://dhsprogram.com/pubs/pdf/SR257/SR257.pdf>

⁵⁵ MOHR 2020. Gendered Impact and Implications of COVID-19 in Pakistan. Available at: <https://mohr.gov.pk/SiteImage/Misc/files/GenderedImpact.pdf>

⁵⁶ The World Economic Forum, 2022. Global Gender Gap Report 2022. [Online]. Available: <https://www.weforum.org/reports/global-gender-gap-report-2022/>

⁵⁷ *Ibid.*

25.2% for men (which is low in itself). Buner’s literacy rate is 7.7 per cent for women, compared to 38.1 per cent for men⁵⁸. Household sizes are relatively large at 8.1 persons per household in Shangla and 9.1 in Buner, indicating that women tend to have high levels of domestic workload and responsibility. District-level economic data is not available, but national level data indicates that though women make up almost 50 per cent of the population, they are only 25 per cent of the workforce in the formal labour market. The low literacy baseline limits the ability of the government and other organizations to use print media to reach remote and vulnerable communities⁵⁹.

Project location

14. Khyber Pakhtunkhwa Provincial Environmental Protection Agency has divided the province into four agro-ecological zones, with the target districts Buner and Shangla placed in Zone A, the higher northern mountains⁶⁰. Because of the hilly and mountainous topography of Buner and Shangla Districts, these areas are not productive, which contributes to the food insecurity situation. An analysis of Malakhand Division, which includes Buner and Shangla Districts, showed that 60% of agricultural land is rain-fed, sub-1 acre small holding. Families that cultivate this land can typically only cover 4 months’ cereal requirements per year, while only one in 10 households are cereal self-sufficient⁶¹.
15. Within KP, districts were rated and ranked according to pre-defined criteria to identify and prioritise the most vulnerable districts and union councils within them – those most exposed to climate change risks in terms of the extent of the physical area and numbers of households affected by floods, those most sensitive or prone to climate change risk, and those where the capacity of rural people to adapt is most limited. The indicators used to discern these characteristics were: flood hazard; food production and availability; drinking water availability; poverty levels; socio-economic impact of Covid 19; as well as remoteness and accessibility⁶². Based on the multi-criteria assessment, Buner and Shangla were selected as the project beneficiary districts, in consultation with the MoCC and the Provincial Government. Both Shangla and Buner Districts are particularly vulnerable to floods and landslides (Table 3) that over the past decades have been triggered by episodes of intense rainfall⁶³, linked also to changing rainfall patterns and irregular onset of rainfall in the season. Coupled with increasing temperatures, intense rainfall episodes are increasing communities’ vulnerability to the risk of floods in Shangla district. Increasing temperatures and changing rainfall patterns (intensity and timeliness) have been recorded across Northern Pakistan⁶⁴. Buner and Shangla Districts are located in one of the wettest parts of the country and, resulting from the combination of increasing temperatures and decreasing snow cover, one of the most flood-prone. Even prior to the 2022 flood event, severe or very severe flash floods have occurred in July and August between 2017 and 2020 in Buner and Shangla Districts⁶⁵. These floods are exacerbated by medium or high severity landslides, while secondary impacts, such as water-borne disease outbreaks and loss of crops such as rice and maize have also occurred in both districts.

Table 3. Monsoon hazards vulnerability matrix for Buner and Shangla districts⁶⁶

District	Riverine flood	Flash-flood	Urban flood	Landslide	Heatwave	GLOF
Buner	No	Yes	No	Yes	Yes	No
Shangla	Yes	Yes	No	Yes	No	No

16. In terms of the district-wide multi-dimensional poverty index (MPI⁶⁷) from the 2022 Monsoon Contingency Plan for KP, 72% and 80% of people in Buner and Shangla were classified as multidimensionally poor, respectively

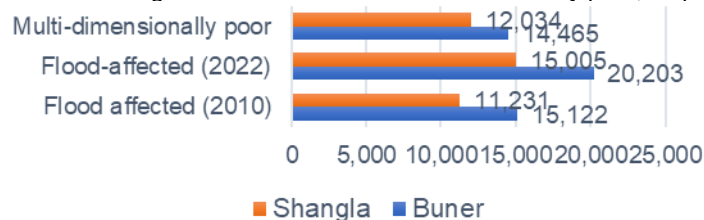


Figure 5. Flood-affected and vulnerable populations in Buner and Shangla districts in 2022⁶⁸

⁵⁸ <https://www.pbs.gov.pk/sites/default/files/tables/District%20at%20a%20glance%20Buner.pdf>
⁵⁹ The project will therefore make the assumption that all beneficiaries have limited levels of literacy.
⁶⁰ Environmental Protection Agency, 2016. Khyber Pakhtunkhwa Climate Change Policy, p4. Zone A is defined in the Khyber Pakhtunkhwa Climate Policy as high mountains forests and mountain valley areas.
⁶¹ World Food Programme, 2010. Food Security and Market Assessment, p.30
⁶² For detailed maps, a description of the data sets used and the process for the selection of districts, see Section 1.2 of the Pre-Feasibility Study (Annex 2)
⁶³ NDMA 2007 to 2018 (information present in several reports), <http://cms.ndma.gov.pk/publications#>
⁶⁴ Chaudry and Qamar UZ, 2017. Climate Change Profile of Pakistan, Asian Development Bank <https://www.adb.org/sites/default/files/publication/357876/climate-change-profile-pakistan.pdf>; Hussain MS, Lee S. The regional and the seasonal variability of extreme precipitation trends in Pakistan. Asia-Pacific Journal of Atmospheric Sciences. 2013 Aug 1;49(4):421-41.
⁶⁵ PDMA (2020) Monsoon Contingency Plan District Shangla and Monsoon Contingency Plan District Buner
⁶⁶ Adapted from: Provincial Disaster Management Authority, Khyber Pakhtunkhwa Province. 2022. Monsoon Contingency Plan 2022. [Online]. Available: <https://www.pdma.gov.pk/sub/uploads/Monsoon%20Contingency%20Plan%202022.pdf>
⁶⁷ The MPI assessment for KP was undertaken in 2014/15, so these numbers are likely to have increased given the heavy toll of the 2022 flood event.
⁶⁸ Adapted from: Provincial Disaster Management Authority, Khyber Pakhtunkhwa Province. 2022. Monsoon Contingency Plan 2022. [Online]. Available: <https://www.pdma.gov.pk/sub/uploads/Monsoon%20Contingency%20Plan%202022.pdf>

17. Within the beneficiary districts, four Union Councils (UCs) were identified to be at highest risk of flood impacts and were consequently selected as project locations. For Buner, the UCs of Batara and Makhranai have been prioritised (shaded in red below Figure 6), while for Shangla, the prioritised UCs are Mian Kalay and Pir Khana (shaded in red below).

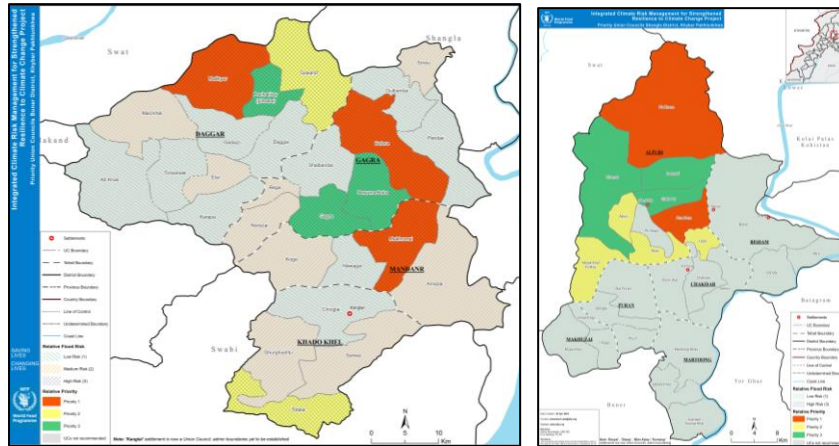


Figure 6. Prioritisation of Union Councils in Buner District, Khyber Pakhtunkhwa Figure 7. Prioritisation of Union Councils in Shangla District, Khyber Pakhtunkhwa

Baseline

18. In Pakistan, disaster management was based on a reactive approach until 2005. The Hyogo Framework of Action provided the paradigm shift from reactive to a more proactive approach. Considering this, the National Disaster Management Authority (NDMA), Pakistan developed a national disaster management plan in 2012 for the next 10 years, a sub-section of which includes a national multi-hazard EWS plan⁶⁹. The multi-hazard EWS plan seeks vulnerability reduction through strengthening EWS's capacity, at national, provincial and district governments, along with local community organisations, NGOs, local businesses, and stakeholder involved in the DRR. The plan provides the institutional framework for hazard forecasting and dissemination of warning at the federal, provincial and local levels. The main player in EWS is supposed to be the Pakistan Meteorological Department (PMD), which directly communicates warnings to the District Disaster Management Unit (DDMU).
19. The PMD is responsible for weather forecasting, hydro-meteorological and agro-meteorological monitoring including monitoring of extreme weather events, the forecasting of water availability and climate research. PMD also operates and maintains a hydrometeorological observation network. For Khyber Pakhtunkhwa Province there are only 13 automated weather-stations for an area of over 100,000 km², with a population of 35 million. This limits the ability to monitor real time weather-variables and provide emergency flood-warnings to communities downstream⁷⁰. There are no hydrometeorological monitoring stations in Buner and Shangla Districts. Further, the PMD Khyber Pakhtunkhwa office and the Flood Forecasting Division have limited capacity in providing short-range and seasonal flood-forecasts in support of delivering flood early-warnings days, weeks and months before a flood occurs. While daily 7-day rainfall forecasts are available at the district level, seasonal and sub-seasonal weather forecasts are not, and there is little evidence that the existing forecasts are communicated effectively to highly vulnerable communities and especially in remote areas. Lack of a centralised communication and coordination mechanism - among different institutions and different layers, national, provincial and district - poses challenges in terms of timely communication and leads to delays in communication and coordination.
20. At the district level, capacities are very low to interpret and communicate information effectively to highly vulnerable communities so that they can take actions in preparation for a forecasted extreme weather event. During consultations, it has appeared that early warnings may not be accurate or are not communicated effectively, which has resulted in lack of trust among community members. Early warning information is currently communicated through mosque announcements, government officials in the district and social media. However, given the low literacy rates, especially among women and girls, the efficacy of print, digital and social media is likely to be very limited.
21. Capacities to use the limited available information for planning purposes are also limited. For example, the Shangla District Disaster Risk Management Plan highlights that the existing early-warning system for floods is inadequate and needs to be adapted to the needs of communities, non-government organizations and local government.⁷¹ Moreover, Shangla Districts' DRM plan was last updated in 2007, while Buner doesn't have such a plan at all. Both districts have a document called a 'Monsoon Contingency Plan', however, these plans provide an overview of extreme weather events and provide a basic inventory of hardware resources and contact persons. During consultations that took place in the preparation of this Funding

⁶⁹ National Disaster Management Authority NDMA, 2012

⁷⁰ Note that there is no optimal number of hydrometeorological monitoring stations *per se*, but considering the highly varied geography of Khyber Pakhtunkhwa Province, which varies from high mountains with valleys, glaciers to fertile river areas and extreme dry areas, clearly 13 is insufficient. Temperature can show substantial variation across a distance of 30km, for example. As a minimum, automated weather stations should monitor temperature (max and min), precipitation, wind speed and direction, humidity, sunlight hours. Other local parameters may be necessary, depending on the location.

⁷¹ UNDP (2007) Shangla District Disaster Management Plan, p.3

Proposal, Khyber Pakhtunkhwa PDMA highlighted that there is a lack of financial and human resource capacity to develop, enhance and update Disaster Risk Management plans at the provincial and district level.

Related projects and synergy analysis

22. There are several projects directly relevant to this proposal and a summary of the projects and the synergies and upscale potentials with this GCF project is in pre-FS, section 1.5. In particular, this GCF project will address remaining gaps in the efficiency of hydro-meteorological observation network by introducing automatic data feeds and expanding coverage of the hydro-meteorological monitoring system, as well as building the capacity to model hazards, combine with information on vulnerability and exposure, and analyse risks as part of an integrated monitoring, forecasting and dissemination system.
23. This GCF project proposal will build on the experience of a UNDP/GCF project to continue installing/upgrading automatic meteorological stations in Khyber Pakhtunkhwa Province. As a result of the modernization and improved efficiency of meteorological information transfer, PMD is expected to see a number of direct and indirect economic benefits. For further details on the analysis on synergies and upscaling potential based on past and current projects in Pakistan please refer to Annex 2, section 4: Past and Ongoing projects.

Barriers to a more effective generation and use of climate information for climate risk management and resilience building

Information barriers

24. Insufficient technical capacity in advanced forecasting and MHVRAs at district level: District Disaster Management Units (DDMUs) are the first responders to any disaster event in the area. However, their capacity to conduct Multi-Hazard Vulnerability Risk Assessments (MHVRAs), which are a commonly used tool for the climate-aware construction of buildings and infrastructure, is limited. Further, there is insufficient capacity in the collection and management of vulnerability data to inform future planning. With regards to urban settings, adequate town planning, hazard mapping, de-watering pumps and the implementation of a sewerage water disposal system are all deficient or lacking at the local level, which poses a serious flood risk caused by intense rain episodes coupled with encroachment issues. Lastly, there is a limited expertise in the development and operation of advanced numerical forecasting models at local level, and in the interpretation of high-resolution imagery and forecast model outputs.
25. Absent or outdated local-level DRM plans: Flood preparedness is initiated at the provincial and district levels to identify vulnerable areas and devise a response plan in line with identified vulnerabilities. However, the institutions responsible for disaster management response lack sufficient technical capacity and equipment. Moreover, Shangla Districts' DRM plan was last updated in 2007, while Buner doesn't have such a plan at all. Both districts have a document called a 'Monsoon Contingency Plan', however, in reality these plans provide an overview of extreme weather events and provide a basic inventory of hardware resources and contact persons.
26. Inadequate dissemination of warnings: Early warning information is currently communicated through mosque announcements, government officials in the district and social media. However, given the low literacy rates, especially among women and girls, the efficacy of print, digital and social media is likely to be very limited.

Technical barriers

27. Insufficient, outdated, and sparse meteorological grid cover: There are 16 met stations in the KP Province, several of which require a technology upgrade to allow for adequate coverage as per the WMO guidelines. Some longer-range radars located in higher elevations would cover the majority of the land area of the Province, while automatic weather stations in hilly areas would be sufficient to enhance the weather forecasting capacity of Pak Met Department⁷². The PMD has no hydrometeorological monitoring-stations in Buner and Shangla Districts, and only 13 automated weather-stations throughout Khyber Pakhtunkhwa Province – an area of over 100,000km, with a population of 35 million - which limits the ability to monitor real time weather-variables and provide emergency flood-warnings to communities downstream⁷³.
28. Insufficient and outdated early-warning system arrangements: Existing arrangements rely on river gauges through WAPDA's telemetry system and the Irrigation Department of Khyber Pakhtunkhwa. Due to the limited forecasting capacity, existing arrangements do not enable sufficient time to prepare for floods. Although real time telemetric devices and automatic hydrometeorological telemetric devices have been deployed at existing irrigation gauging points by PDMA, these only cover 7 out of more than 100 sites required for the provision of real-time, accurate weather information to adequately respond to flood risk in the Province.
29. Insufficient water storage and regulation capacity: Water storage facilities have drastically reduced in Khyber Pakhtunkhwa over the years, ranging from 30% to 70% in different storage reservoirs, mainly due to silting. This has reduced the flood mitigation capacity of these structures, where upstream catchment areas are found insufficient to regulate the flow of water into and from dams. Damming authorities have not been able to address the issue of silting of water reservoirs so far.

⁷² PDMA (2021) Monsoon Contingency Plan. Available [here](#).

⁷³ Note that there is no optimal number of hydrometeorological monitoring stations *per se*, but considering the highly varied geography of Khyber Pakhtunkhwa Province, which varies from high mountains with valleys, glaciers to fertile river areas and extreme dry areas, clearly 13 is insufficient. Temperature can show substantial variation across a distance of 30km, for example. As a minimum, automated weather stations should monitor temperature (max and min), precipitation, wind speed and direction, humidity, sunlight hours. Other local parameters may be necessary, depending on the location.

Financial barriers

30. Limited financial allocation to local governments and perception of water storage structure as public goods: The development, operation and maintenance of water storage structure remain in the public sector domain. However, it has been proven difficult to access finance due to insufficient resources and low program budgets compared to the high costs of feasibility studies, cost-benefit analysis, and environmental assessment for a sound decision-making process. Additionally, reconstruction of water conveyance structures after each flood also adds to the challenge of keeping the management budget low.

Policy and institutional barriers

31. Lack of sound comprehensive cross-sectoral policies for resource protection, development, and management: due to the limited interinstitutional collaboration and lack of integrated approach to DRM and EWS, there is a lack of comprehensive policies and plans to address climate change adaptation needs encompassing food security, agriculture, and water storage and management.
32. Limited cooperation and data exchange among relevant government agencies: such as meteorology department, disaster management, agriculture, irrigation and water management authorities at federal and provincial level. As Early Warning is considered a multidisciplinary sector, information and responsibilities are currently split among different departments such as PDMA, Rescue 1122, Civil Defence, District administration, Irrigation, WAPDA, Communication & Works, Tehsil administration, Meteorological Department/Office etc. The emergency response mechanism is activated on need basis and there is no regular resource or core group of experts allocated to this. Lack of a centralised communication and coordination mechanism – among different institutions and different layers, national, provincial and district – poses challenges in terms of timely communication and leads to delays in communication and coordination.

Table 4. Identified barriers and GCF project approach to address them

Barriers to adaptation	How the GCF project will address the barriers
Information barriers	
Insufficient technical capacity in advanced forecasting and MHVRAs at district level	Under Output 1.1, the project will provide capacity building support to the PDMA, PMD, Regional Pakistan Meteorological Department (R-PMD), and the FFC to enhance their flood forecasting capability. To ensure that the proposed capacity building activities are aligned with the existing baseline, a full gap assessment will be carried out through the analysis of institutional and human resource capacity in those local and national departments, along with a mapping of hydrometeorological station needs.
Absent or outdated local-level DRM plans	Under Output 1.2, the proposed project will support the DDMA to constitute disaster management committees as well as developing procedures and protocols to enhance EWS implementation. This new formal mandate and operational guidelines will contribute to the development of sound DRM plans at the local level for the districts of Shangla and Buner. Further, Output 2 will support the development of local adaptation plans encompassing livelihoods, food security, nutrition and agriculture in light of expected climate change impacts.
Inadequate dissemination of warnings	Outputs 1.1 and 1.2, based on the review conducted in the first activity, a communication strategy and dissemination protocol will be developed to enhance the dissemination of early warnings to vulnerable communities. Further, as part of Output 2, communities will be presented with information on the expected climate change impacts on their livelihoods prior to initiating the development of local adaptation plans. During the workshops, communities will be asked to share their preferences in terms of warning dissemination tools (SMS, Mosque, local officials, other). This information will be shared with local and national authorities to be taken into account in the revision or development of DRM plans and procedures.
Technical barriers	
Limited flood protection arrangements	Output 2 will support the implementation of prioritized adaptation interventions such as flood protection infrastructure like dams and / or walls (small community infrastructure and rehabilitation of existing communal structures).
Insufficient, outdated and sparse meteorological grid cover	Under Output 1.1 and based on the assessment of hydrometeorological station needs, the proposed project will procure and install a number of hydrometeorological stations in Buner and Shangla.
Insufficient and outdated Early Warning System arrangements	Output 1.1 will pertain to the identification of hydrometeorological needs and procurement and installation of stations in the target districts. The project will carry out a review of the EWS baseline in Shangla and Buner districts to define areas for strengthening and improving the capacity of local government authorities to implement improvements to the EWS and develop a

	communication strategy and dissemination protocol for the adequate dissemination of early warning messages.
Insufficient water storage and regulation capacity	Indicative adaptation interventions will pertain to the establishment of small-scale water storage structures and flood protection infrastructure such as dams or walls.
Policy and institutional barriers	
Lack of sound comprehensive cross-sectoral policies and data sharing among government agencies for climate change adaptation	Under Components 1.1 and 1.2, the proposed project will work with district, provincial and national authorities and institutions to improve their capacity to effectively plan, implement and maintain DRM and EWS mechanisms and assets. Further, under Output 3, the project will disseminate and transfer knowledge through provincial and national level workshops, as well as developing a set of policy recommendations for consideration by government authorities. Output 3 will pertain to the collection and dissemination of data and case studies by creating linkages back into national level policy and decision-making to facilitate the replication of project results in other flood-prone areas.
Social barriers	
Insufficient awareness of severity of flood risk by the vulnerable population	Through the development of community-led local adaptation plans under Output 2, vulnerable communities will be sensitized to the risks associated with climate change and floods. Improvements to the dissemination of early warning messages will also contribute to addressing this barrier.

B.2.1. Project/Programme description (max. 1,000 words)

Theory of change

IF institutional capacity is strengthened in national and subnational government entities to forecast floods and improve early warning, and they have established anticipatory action protocols, and local adaptation plans are implemented, and systems are developed for knowledge management including lessons learned towards climate resilient initiatives.

THEN people in the beneficiary areas will be able to cope with flood risks in the short term and adapt to more frequent and more severe flooding in the long term.

BECAUSE they'll be able to develop and adopt short-term responses through anticipatory action and long-term adaptation strategies that strengthens the resilience of local livelihoods and communal infrastructure, and improved knowledge management to guide informed decision making/programming under climate resilient initiatives.

The project is structured in three components. Under Component 1, the project will improve forecasting and early warning capacity and implement prioritized anticipatory actions that are designed to mitigate the impacts of flooding. Under Component 2, the project will support communities to develop adaptation plans and implement priority adaptation actions, as well as have access to sustainable sources of financial and technical support. Activities under Component 1 will deliver benefits in terms of reduced impacts from floods in the shorter term, while activities under Component 2 will support vulnerable people to adapt to projected changes in flooding frequency and severity in the longer term. Component 3 will then bring together knowledge and co-learning from the project to support replication and integration with financing mechanisms at the provincial and national level.

Project objective

33. The project's overarching objective is twofold: i) to improve flood early-warning systems (EWSs) by strengthening technical capacity and governance within the climate information services (CIS) sector; and ii) to support vulnerable to the impacts of flash-floods⁷⁴ to prepare for and adapt through improved flood risk information and strengthened local adaptation planning for climate-resilient livelihoods and infrastructure. The project will achieve this objective through the implementation of three interrelated components: improved capacity for flood early warning systems and anticipatory action (Component 1); increased climate resilience through local adaptation plans and diversified livelihoods (Component 2); and improved knowledge management and learning (Component 3).

Selection of project beneficiaries

34. The project will prioritize households that are particularly vulnerable to climate change and other external shocks, such as households headed by women, households in which there are people living with disabilities, households with pregnant and breastfeeding women, households with children under two years (see Annex 2 [PFS], Section 7 for details on selection criteria).

⁷⁴ Refer to sections 2.2 and 2.3 of Annex 2: Pre-feasibility Study for further detail on flash floods in Pakistan.

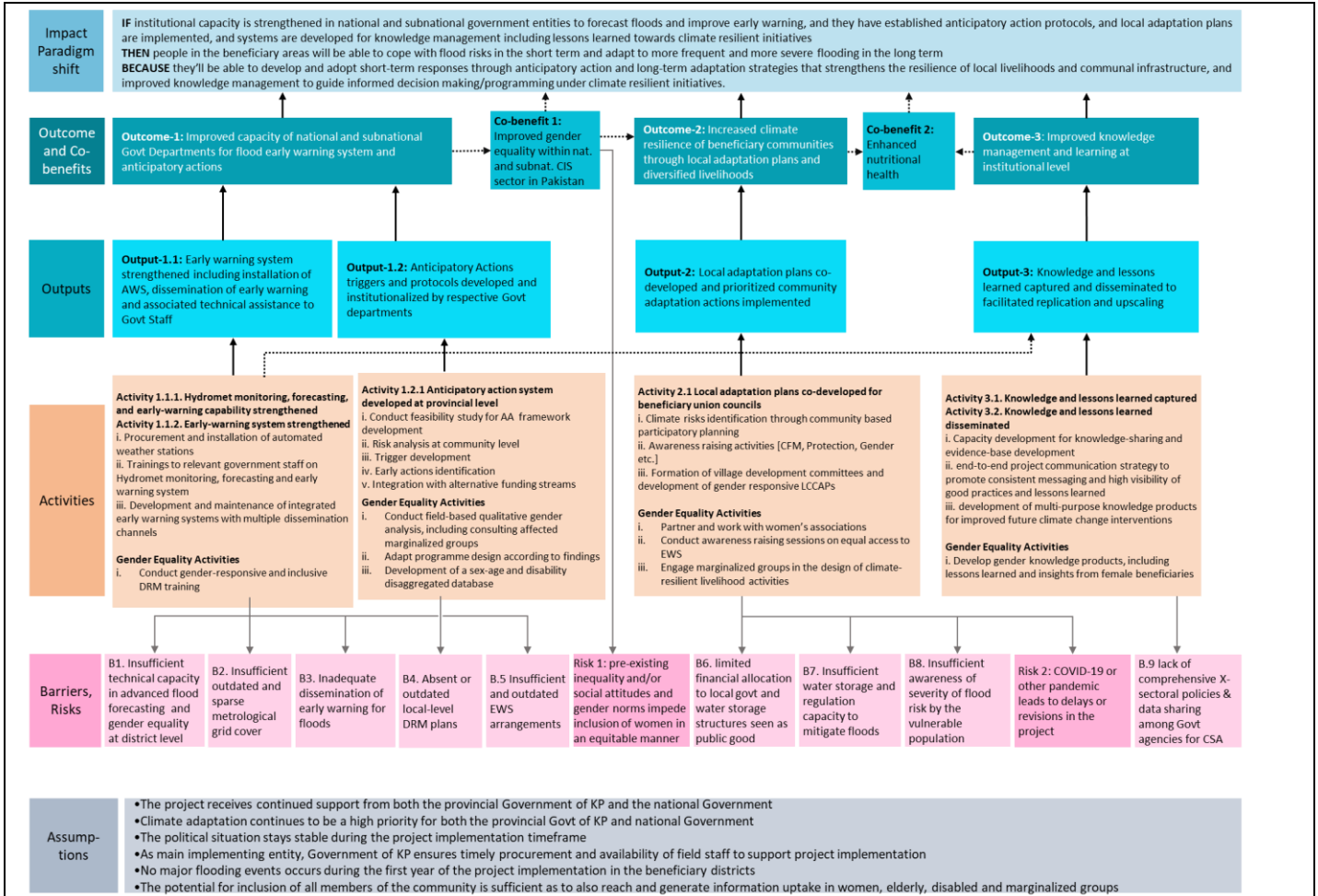


Figure 8. Theory of Change

Component 1: Improved capacity for flood early warning systems and anticipatory action

35. Project funds under Component 1 will be used to strengthen the value chain and dissemination of climate information services and early-warning systems (EWS) in KP and the beneficiary districts of Buner and Shangla. The value chain in this context refers to governance structures, technical capacity, and hydrometeorological coverage for flood EWS. The project will improve the availability of observed hydrometeorological (hydromet) and flood early warning information, sharing this information through enhanced vertical and horizontal coordination to design and implement anticipatory action to minimize the Impacts of flood in the beneficiary districts. Output 1.1 of the project's first component is focused on improving technical capacity of flood EWS within the PMD and FFC (i.e., the national project stakeholders), as well as the Regional Meteorological Centre Peshawar (RMCP, a subnational stakeholder). Technical capacity development will comprise training on short-range weather and flood forecasting, as well as impact-based flood forecasting. Capacity development under this component will adopt a 'training of trainers' (ToT) approach to ensure sustainability of skills transfer beyond the project lifespan, ensuring women's equal access to capacity development within the beneficiary organisations. Under this component, technical capacity development will be undertaken alongside training on gender-responsive and inclusive disaster risk management (DRM) and natural resource management (interlinked with Output 1.2).
36. The procurement and installation of a flood EWS (Automatic Weather Stations, Automatic River Gauges, Automatic Water Level Stations) in the beneficiary districts under Output 1.1 will address the identified gap of inadequate coverage of the Buner and Shangla districts and will be complemented by high-resolution flood risk modelling to assess the flood inundation depths over the beneficiary districts. Following the improvements to the quality of the EWS information being generated, improvements to the dissemination of and access to flood early-warning information and advisories will be undertaken. This results in Output 1.2, which includes a focus on anticipatory action (AA) that complements the preceding activities by developing and institutionalizing climate-resilient AA triggers and protocols for the beneficiary districts both at community and District Disaster Management Committee levels. The activities under Component 1 will be carefully documented and collated for potential inclusion under Component 3 as knowledge products and/or as part of the project communication strategy.

Output 1.1 – Early warning system strengthened including installation of AWS, dissemination of early warning and associated technical assistance to Govt Staff

37. This output addresses the identified barriers and challenges defined by PMD and FFC with regard to early-warning system infrastructure and technical capacity to undertake flood forecasting. Specifically, the two activities under this output will address the following issues in the beneficiary districts: i) inadequate coverage in terms of weather stations, rain gauges, and discharge measuring stations as per the World Meteorological Organisation (WMO) guidance; ii) the lack of access to detailed observed and projected flood risk modelling, as well as the limited technical capacity to undertake quantitative flood modelling; and iii) gaps in the flood early-warning system.

Activity 1.1.1 Hydromet monitoring, forecasting, and early-warning capability strengthened

38. Building on the high-level capacity assessment of the PMD, FFC, and RMCP in 2021 and the follow-up consultations in 2023, Activity 1.1.1 will establish the technical capacity baseline at the PMD, FFC, and RMCP and identify gaps in technical expertise related to flood forecasting, and early-warnings. The outcomes of the baseline capacity assessment will be disaggregated by sex to identify areas where women are underrepresented at the respective organizations. The identified gaps in technical capacity and potentially skewed representation will form the entry points for the training and capacity development aspect of this activity. The capacity needs assessment will include an assessment of the required hardware, software, and licensing requirements to support the installation and operationalisation of new hydromet observation stations, the short-range quantitative rainfall forecasts as well as the flood risk modelling. The outcomes of the capacity needs assessment will be carefully documented and considered for inclusion as part of the knowledge products and project communication strategy under Component 3.
39. The identified capacity gaps on flood forecasting will be addressed under this activity with a focus on strengthening existing technical capacity within PMD, FFC, and the RCMP. In addition to closing any gender gap in the workplace as identified in the baseline assessment, the thematic focus of the capacity strengthening will be improving in-house technical capacity to generate short-range flood forecasts and improve the accuracy of the flood forecasts using the data and models established in Activity 1.1.2. Capacity development under this activity will adopt a 'training of trainers' (ToT) approach to ensure sustainability of skills transfer beyond the project lifespan. The outcomes of the training/capacity development will be carefully documented and considered for inclusion as part of the knowledge products and project communication strategy under Component 3.
40. This activity will also develop training material and guidelines, as well as conducting training on gender-responsive⁷⁵ and inclusive disaster risk management (DRM) for stakeholders. Targeted participants for this training include but are not limited to employees and trainers in the Pakistan Meteorological Department (PMD), Federal Flood Commission (FFC), Regional Meteorological Centre in Peshawar (RMCP), and Disaster Management Committees (DMCs) in Buner and Shangla Districts. Equally important will be to ensure that women from these institutions actively participate as well.

Activity 1.1.2 Early-warning system strengthened

41. To address the inadequate hydrometeorological coverage in the beneficiary districts, this activity will focus on the procurement and installation of adequate hydrometeorological instrumentation to facilitate the development of a flood early warning system. The system will comprise automatic weather stations (one per district as per the WMO guidance⁷⁶), rain gauges (a minimum of five per district as per the WMO guidance⁷⁷), and discharge measuring stations (a minimum of five per district as per the WMO guidance⁷⁸) and will be installed at strategic locations within Buner and Shangla districts based on a technical feasibility assessment to determine the optimal positioning of the equipment and infrastructure. The installation process will be documented/recorded for potential use as a knowledge product under Component 3 as a short documentary or component of a larger documentary to raise awareness regarding flood risk and the benefits of improved hydromet coverage to contextualize observed and future flood risk within the beneficiary communities.
42. This activity will also improve the accuracy of quantitative rainfall forecasts by validating the forecasts with the observation data generated by the hydromet stations, and/or making use of satellite observed rainfall products. Training will be provided to technical staff of PMD and RMCP on forecast validation, bias correction, and data assimilation, ensuring equal access of women and men to capacity development, whilst promoting a gender balance in hiring practices. This approach will allow for: i) improved short-range quantitative rainfall forecasts; ii) quantitative validation of forecasting accuracy following extreme rainfall events; and iii) further calibration/refinement of future extreme event forecasts to inform the flood forecasting models. Capacity development under this activity will adopt a 'training of trainers' (ToT) approach to ensure sustainability of skills transfer beyond the project lifespan.
43. Under this activity, remotely sensed data will be used to develop a high-resolution flood inundation map through a risk modelling approach that includes observed flood frequency (i.e., from historical flood events) as well as projected flood risk based on anticipated future climate changes under three warming/emissions scenarios (SSP5-8.5, SSP3-7.0, and SSP2-

⁷⁵ Refer to Activity 1.3 and 1.4 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

⁷⁶ World Meteorological Organisation. 2020. *Guide to Hydrological Practice Volume I Hydrology – From Measurement to Hydrological Information*. [Online]. Available: https://library.wmo.int/doc_num.php?explnum_id=10473

⁷⁷ Ibid.

⁷⁸ Ibid.

- 4.5). The flood frequency model will include an analysis of the anticipated impacts on thematic sectors such as agriculture, transport, infrastructure, or health. The most relevant thematic sectors for the two beneficiary districts will be confirmed as part of the community-based participatory planning (CBPP) exercise under Activity 2.1.
44. Along with the preceding activities, Activity 1.1.2 lays the foundation for impact-based forecasting (IBF) and ultimately, anticipatory action (AA) in the beneficiary districts, i.e., Activity 1.2.1. An IBF approach is important to promote a people-centred and end-to-end flood EWS since the emphasis is on saving lives, managing risks, and protecting livelihoods. An EWS rooted in IBF is also the first step towards developing and implementing an AA approach to managing flood risk and protecting climate-sensitive livelihoods and exposed communities. The project activity under this output will focus more on translating the weather and flood forecast products into impact-based forecast by utilizing all the risk information products and stakeholder consultations. Furthermore, tailored IBF advisories will be made generate for use by various stakeholders at local level for AA. Lessons learned regarding IBF and AA will be carefully documented and considered for inclusion as part of the knowledge products and project communication strategy under Component 3.
45. Furthermore, this activity will develop a risk matrix for impact-based forecasting (IBF) through consultations with national and subnational project stakeholders, cross-referenced with the flood inundation and risk maps and flood impact database from the preceding sub-activities. There will be emphasis on the generation of simple, user-friendly, and actionable advisories that provide the impacts of the forecasted weather and flood hazard. This will strengthen the capacity of stakeholders at subnational and local level to interpret IBF products that potential guides them in managing the risk associated with the floods.
46. This activity will also improve risk communication (access to and the reach of EWS information) in the beneficiary districts. The first sub activity aims to intervene from a governance perspective to improve coordination of disaster management at the district level, while the second activity is focused on the 'last-mile' aspect of the flood EWS, i.e., ensuring that EW information and advisories are communicated to beneficiary communities in an appropriate and coordinated manner, with due regard to the differentiated communication needs of men, women, and key vulnerable groups (e.g., persons living with disability). Awareness-raising sessions on access to EWS will also be undertaken under Activity 1.2.1, including social and behaviour change (SBCC) communication in the selected villages in Buner and Shangla Districts to address discriminatory gender norms relative to women's access to EWS⁷⁹. Project outcomes and lessons learned regarding strengthening governance and dissemination for EW will be carefully documented and considered for inclusion as part of the knowledge products and project communication strategy under Component 3. By reinforcing the existing structures within two District Disaster Management Committees (DDMCs) in Buner and Shangla, respectively, the emphasis of this activity is to improve vertical (i.e., with federal and provincial levels of government) as well as horizontal (i.e., with other sectors or entities at district level) coordination in the development and dissemination of flood EWs and disaster management efforts.
47. Lastly, the improved forecasting capability and mechanisms developed under Activity 1.1.1 will be used along with the flood impact database established under Activity 1.2.1 to focus the dissemination of flood EW information and advisories to different beneficiary groups, particularly those that are disproportionately vulnerable. The emphasis is on identifying the most vulnerable communities and ensuring the flood EWS information/advisories reach the targeted locations/groups and are actionable for them. This will entail the development of a standardized operating procedure (SOP) for the dissemination and communication of flood early warning information/advisories. The SOP will also be linked to the anticipatory action (AA) protocols developed under Activity 1.2.1.

Output 1.2 – Anticipatory Actions triggers and protocols developed and institutionalized by respective Govt departments

48. Building on the achievement under Output 1.1, this output addresses the identified barriers and challenges on institutional processes of anticipating events. Specifically, the activity under this output will address the following issues in the beneficiary districts: i) limited institutional capacity on impact-based flood forecasting; and ii) the lack of climate-sensitive anticipatory action.

Activity 1.2.1 Anticipatory action system developed at provincial level

49. The core foci of this activity are: i) to develop, strengthen, and institutionalize anticipatory action protocols; ii) subnational government capacity development with regard to AA implementation; iii) to inform socio-economic impact-based flood forecasting efforts by addressing sex-, age- and disability-disaggregated information gaps; and iv) to conduct awareness raising sessions in selected villages to address discriminatory gender norms relative to access to early warning information. While the activities under activities 1.1.1 and 1.1.2 are also related to capacity development and strengthening of the public sector, they are focused on national and provincial government departments with a meteorological/flood risk management mandate. By contrast, Activity 1.2.1 prioritizes the capacity strengthening needs of district-level government and communities with regards to the implementation of climate-sensitive and gender-responsive AA and DRR in the targeted districts. This activity therefore promotes the integration of gender- and climate-sensitive anticipatory action in the beneficiary communities through: i) training for government stakeholders on impact-based forecasting protocols and triggers for AA and; ii)

⁷⁹ Refer to Activity 2.2 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

- strengthening governance structures of District Disaster Management Committees (DDMCs); iii) development of standardized AA operating procedures for the dissemination and communication of flood early warning information/advisories; and iv) development of an anticipatory action beneficiary database. Project outcomes and lessons learned regarding improved capacity within subnational government to implement AA will be carefully documented and considered for inclusion as part of the knowledge products and project communication strategy under Component 3, particularly the gender-responsive DRR practices which will be developed as guidelines under Activity 3.2.
50. Activity 1.2.1 will also integrate climate-sensitive anticipatory action in the beneficiary communities through training for government stakeholders on impact-based forecasting (IBF) as well as protocols and triggers for AA and preparedness and prepositioning activities/protocols. Testing of the identified protocols and triggers will be undertaken through a simulation exercise involving DMCs and cross-sectoral stakeholders at the local levels. Potential funding sources for AA will also be identified during this validation exercise. AA protocols and triggers will be integrated into the existing operations of the disaster management committees in Buner and Shangla. Capacity development under this activity will adopt a 'training of trainers' (ToT) approach to ensure sustainability of skills transfer beyond the project lifespan.
 51. Using the community-based participatory planning (CBPP) exercise (which will be undertaken in a gender-separated manner under Activity 2.1 as a platform, Activity 1.2.1 will use a bottom-up consultative approach to establish a flood impact database (FID) that includes an anecdotal historical time-series of flood events and the associated impact on health, livelihoods, and infrastructure in the beneficiary districts. An important component of the FID will be to identify vulnerable households in the beneficiary communities with a focus on disproportionately vulnerable groups such as women- or child-headed households, and households with people with disabilities and the elderly. The FID will be cross-referenced against the flood risk analysis to align the qualitative and quantitative data.
 52. Project funds will also be used under Activity 1.2.1 to undertake a qualitative gender analysis⁸⁰, including community consultations, that will: i) assess the impact of floods on communities, especially marginalized groups; ii) evaluate the status of women's inclusion in relevant institutions; and iii) map out existing local women's associations/organizations or those for persons with disabilities.
 53. As women and other marginalized groups have significantly reduced access to EWS and ICT, this activity will also undertake awareness-raising sessions and social and behaviour change communication (SBCC) in selected villages to address discriminatory gender norms relative to access to information, including utilizing locally available and low-cost solutions, such as working with lady health workers on the provision of EWS and ICTs.
 54. This activity also focuses on mainstreaming anticipatory action (AA) protocols and procedures at the provincial government level in KP through two interrelated activities. The first activity is an institutional support exercise that will create an enabling environment for the uptake and implementation of AA approaches within KP. The second activity under this output is focused on the establishment of a database of AA beneficiaries at the district or union council level.
 55. To promote improved uptake of AA approaches within PDMA, this activity will establish a baseline of existing AA and disaster risk management (DRM) capacity and practices at the provincial level, including an assessment of representation by women in DRM positions. The baseline will be used to determine entry points for climate-resilient AA practices that are suitable for the context of the two beneficiary districts, based on similar work undertaken by WFP in Bangladesh and Nepal. Additionally, this activity will focus on the development of AA triggers and protocols for floods, allowing for training and institutionalization of these practices. Development of AA protocols include co-design and definition of triggers, identification of appropriate anticipatory actions, allocation of pre-identified finance, development of a targeting strategy, and defining roles of implementation stakeholders. The capacity development aspect of this activity will be combined with the technical training under Output 1.2 to ensure that AA approaches are adequately linked to EWS and IBF.
 56. The capacity of the federal and provincial government will be strengthened through the development of anticipatory action protocols which include identifying and agreeing on triggers, anticipatory actions and protocols with clear roles and responsibilities of stakeholders involved. The triggers set will be based on the national flood forecasting and early warning, and risk information based on vulnerability data to identify locations and communities to support. Anticipatory actions will be identified through a consultative process with community and sectoral line departments, such as irrigation, agriculture, health and social protection based on accuracy of the EW and lead time available. Some examples are dissemination of EW and preparedness information (crop information, water management, etc.); evacuation support; shelter preparation; and anticipatory cash to social protection beneficiaries and these early actions will be validated based on community based risk analysis. WFP will support the government to include the triggers and anticipatory actions in the contingency planning process with the aim to implement anticipatory actions through national funding sources.
 57. The elements of the anticipatory action framework and process within this project will only include the 'building' elements of the AA framework, i.e. systems strengthening, no cash transfers or maladaptation practices. It will also provide complementarity with the ongoing WFP project on AA in a different region, where together with other actors such as FAO and Red Cross, WFP is supporting the NDMA in the establishment of National Coordination Forum for AA – who is tasked

⁸⁰ Refer to Activity 1.2 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

to develop a national AA framework to institutionalise the integration of AA into DRM structure of Pakistan. This includes delivery mechanism and operational plan for AA, Standard Operating Procedures (SOPs), a menu of potential AA, sector-specific AA plans, and a financial framework for AA implementation. Moreover, through the same platform, together with other AA actors, WFP is advocating for the reforms in DRF-related allocation in the relevant government's financial mechanism at provincial and district level. Coupled with proposed action under GCF on strengthening governance structure at district level, AA databases, protocols/procedure, the overall effort will go beyond the lifecycle of the project. Criteria for the selection of the adaptation include scalability, policy fit, feasibility, and alignment with mandates, more to be added as a deeper understanding of the system is achieved.

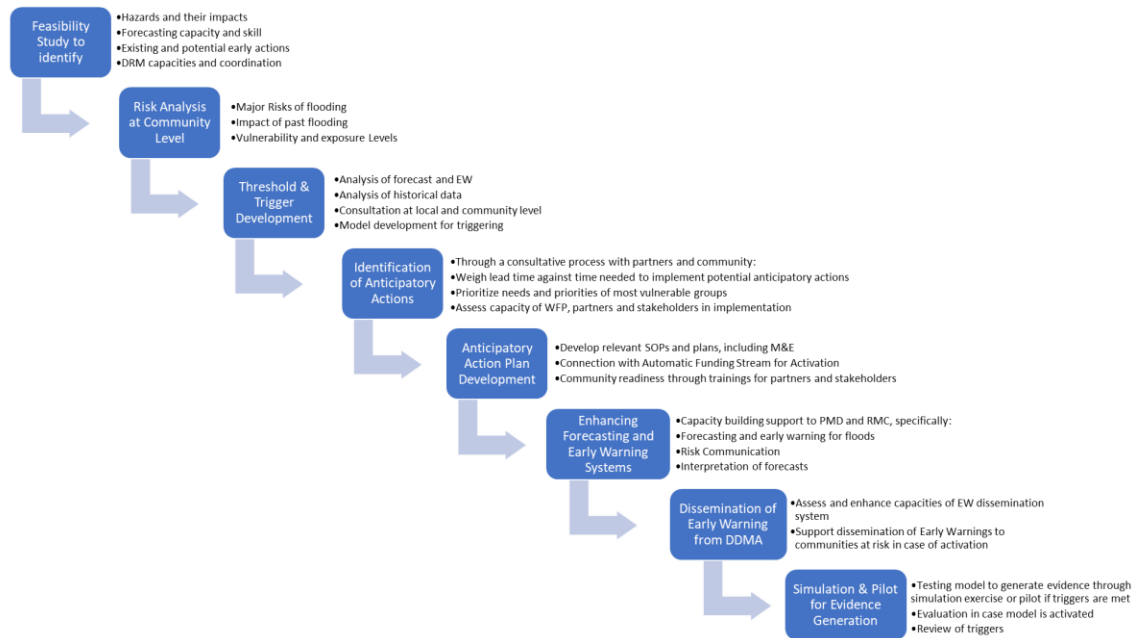


Figure 9: AA schematic. Please note this project only looks at building components 2-5

58. To improve the functionality and sustainability of the DDMCs in Buner and Shangla districts, a needs assessment for small-scale repairs and improvements to these centres, as well as IT equipment will be undertaken under Activity 1.2.1. Following identification and costing of the individual needs of each DDMC, repairs will be implemented, and IT equipment will be installed.
59. Lastly, Activity 1.2.1 will build on existing databases at the local level (for example, social protection programmes, households impacted in previous disasters, and others), to develop a sex, age, and disability disaggregated beneficiary database for AA interventions and activities within Buner and Shangla districts that will benefit from AA in the event of a trigger being met. The database will be disaggregated by sex, age, and disability, based on vulnerability and exposure to flashy floods with emphasis on the households most vulnerable to flooding impacts (such as single parent, women or child-headed households, persons with disabilities, pregnant and breastfeeding women, children under five, transgender community members, and the elderly)⁸¹. This AA database will identify priority communities for awareness-raising sessions on equal access to EWS and ICT, including digital literacy.

Component 2: Increased climate resilience through local adaptation plans and diversified livelihoods

60. The main livelihood activities in the beneficiary districts — agriculture and livestock farming — are climate-sensitive and directly exposed to several negative climate change impacts, including flooding. This scenario ultimately results in higher levels of food insecurity and increasingly marginal livelihoods in Buner and Shangla districts. Disproportionately vulnerable groups in flood-affected areas face additional impacts such as limited access to emergency shelters and social safety nets beyond loss of livelihoods or increased food insecurity.
61. Component 2 will respond to the need to support beneficiary communities to develop adaptive capacity by strengthening adaptation planning and promoting climate-resilient livelihoods by increasing and diversifying incomes and reducing dependency crops that are prone to losses during floods. Under Component 2, local climate change adaptation plans (LCCAPs) will be developed through community-based participatory planning (CBPP), a process that will tailor programme

⁸¹ Refer to Activity 1.5 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

responses to local requirements, leading to implementation of priority actions. Project interventions will ensure that locally adapted measures for sustainability are in place and the communities are in a position to independently manage/protect their livelihoods in the future. This is further supported by formalising and registering community governance bodies with the federal Department of Social Welfare, as a sustainable solution for self-management and financial sustainable organisations. Legal identity of the community organisations can provide opportunities to access development funds from other sources to support sustainability of project interventions beyond project life and supports longer term resilience building via integrated community-based adaptation approaches.

62. Communities targeted by Component 2 will have benefitted from the improved EWS, forecasting capabilities and anticipatory action activities developed in Component 1 but will require complementary support to plan and implement actions that make their livelihoods more diversified and climate-resilient in the long term. Building on the preliminary menu of resilience building and adaptation options developed during the project design phase, a refined menu of options at union council level will be validated under this component through CBPP. The validated menu of options will include community level activities at farm/farmer's group level (ensuring the meaningful participation of women and men). For all assets created at the farmers' and community levels, project specific gender-responsive agreements will be developed prior to implementation that spell out (i) ownership arrangements; ii) management arrangements; and iii) maintenance arrangements; ensuring equal access to and control over assets, and decision-making on management and maintenance of those assets between women and men. It is further ensured that any asset created will account for potential future climate impacts, and will take appropriate design choices during the design process of the assets in question.
63. The preliminary adaptation menu has been designed through an inclusive, participatory manner by women and men such that the menu addresses their needs and interests equitably, to not only enhance climate resilience, but also to promote environmental and social sustainability. The three interlinked goals (climate resilience, environmental sustainability, and equitable social benefits) will inform the further development and validation of the adaptation menu during local adaptation planning, and throughout implementation.
64. Component 2 will systematically integrate/mainstream gender issues, including responding to the need raised by women during the consultations to enable diversification beyond rice to more nutritious food (e.g., homestead gardening, pulses, poultry, and production, value addition and marketing of neglected nutritious crops).

Output 2. Local adaptation plans co-developed and prioritized community adaptation actions implemented

65. Activities under this output will address the lack of grassroots climate change adaptation planning and will strengthen local governance at the beneficiary union and village council level within Buner and Shangla districts. A community-based participatory planning (CBPP) approach will be employed to ensure that activities and interventions under this output are suited to the local context and needs (especially those of disproportionately vulnerable and/or underrepresented groups) of the respective beneficiary communities, and to promote buy-in and ownership of the adaptation plans at local government and community level. This ensures ownership and support by the government along with the communities as the local govt line departments have participated in the consultations and the selected plan is then in line with govt priorities and development plans for the districts. WFP's approach to CBPP forms part of the organisation's three-pronged approach (3PA⁸²) which is used to strengthen the design, planning and implementation of programmes in resilience building, safety nets, disaster-risk reduction, and preparedness.
66. The objectives of the activity under this output are to proactively strengthen the capacity of existing community structures on the use of planning instruments to manage climate risks and to co-develop local climate change adaptation plans for each prioritised beneficiary union council (four in total). This will be complemented by activities that support existing or establish local women's associations regarding community-based DRM. The local climate change adaptation plans (LCCAPs) will be aligned with the relevant climate policy at national and subnational level and will incorporate outputs from the observed and projected flood risk modelling under Component 1. Lessons learned for upscaling and replication of the activities under this output will form part of the consolidated communications strategy for the project under Component 3.

Activity 2.1 Local adaptation plans co-developed for beneficiary union councils

67. Key stakeholders at the district and community level will participate in capacity development⁸³ on local climate change risks and on how to follow a community-based participatory planning (CBPP) approach to develop gender-responsive Local Climate Change Adaptation Plans (LCCAPs, one for each beneficiary union council, but with sub-sections dedicated to each village cluster, individual village, or sub-village) that respond to the needs of all community members – diverse women, men, girls and boys. This is why the project will actively engage women in the planning and design of the LCCAPs. CBPP is a multistakeholder approach. Hence, this activity will equip public sector and civil society stakeholders to understand local climate change risks and how to use planning instruments to coordinate responses to climate-related hazards at the community level on local climate change risks, including the identification of priority resilience building and adaptation

⁸² WFP. 2017. 3PA Factsheet. [Online]. Available: <https://www.wfp.org/publications/2017-three-pronged-approach-3pa-factsheet>

⁸³ Capacity development under this activity will adopt a 'training of trainers' (ToT) approach to ensure sustainability of skills transfer beyond the project lifespan.

- measures that respond to local climate risks. CBPP and capacity development exercises will be undertaken as mixed sessions as well as sex-disaggregated sessions, as needed⁸⁴.
68. Through the CBPP process leading to the development of four LCCAPs, communities will identify priority resilience building and adaptation measures that respond to local climate risks, and that are disaggregated for the different stakeholder groupings (women, men, female youth, male youth, people with disabilities, and other specific groups will be identified during the CBPP process), to ensure that needs and priorities are equitably addressed. The first step in the LCCAP development process will be a needs assessment at the beneficiary union council level to determine prioritized adaptation actions that are appropriate for the context of the respective cluster/village/sub-village, including the diverse community members themselves. LCCAP development will focus particularly on inclusive and gender-responsive climate adaptation measures as prioritised by women, men, and PWD, elders, and women-led/ women and disability-focused CSOs. Similarly, there will be an emphasis on meaningful participation of women and men in the design, selection, and implementation of climate-resilient livelihood activities, including climate-smart agricultural practices, and vocational training by examining barriers for participation, for example, location, time, transportation, child-care, etc., and subsequently adopting solutions⁸⁵.
69. A key component of the LCCAP process under this activity will be to validate and select the most appropriate options from the menu of potential adaptation interventions that has been proposed during the project development phase (table 5 below)Table 5. It will be supplemented by appropriate action plan for implementation. The LCCAPs will be a multi-year community-based plans that can be used by communities themselves, and any actor supporting development and adaptation efforts in the community. A key informant and evidence-base for the LCCAPs will be the outputs of the flood risk modelling under Output 1.1 to ensure that adaptation planning is risk-averse and climate-sensitive. The CBPP processes under Output 2 will be carefully documented to capture lessons learned that will be used to formulate LCCAP guidelines to replicate and/or upscale the initiative in other areas of Pakistan.
70. The selection criteria for activities will be identified through the CBPP process⁸⁶ follow the WFP guidelines and manuals. Criteria for selection of activities will include, but are not limited to, (1) Suitability for the community (are community members able and willing to implement said activities?), (2) suitability to address identified climate impact in question, (3) low impact level with regards to the ESS impact assessment, (4) will the identified activities be sustainable and maintained, (5) will the implemented activities be cost-effective (6) is there measurable impact/evidence from implementing these activities.

Table 5. Menu with proposed adaptation measures⁸⁷.

Adaptation practices	Adaptation benefits	Level of implementation
Climate resilient agricultural practices (CRA)		
Conservation Agriculture Techniques	<ul style="list-style-type: none"> - Increases in soil moisture reserves during unseasonal drought periods, linked to increased organic matter content - Reduction of soil disturbance and maintenance of cover reduces runoff and erosive losses during increasingly intense extreme rainfall events 	Farm/community level
Field dredging ⁸⁸	<ul style="list-style-type: none"> - Removes excess water during plant growth, reduces soil erosion and prevents the development of fungal diseases. - Efficient drainage systems control excess soil water and accumulation of excess salts in the crop's root zone. - Decreases the prevalence of important water-related diseases that affect human, plant and animal health. - Organic matter applications improve soil structure and avoid soil compaction. 	Farm level
Crop rotation ⁸⁹	<ul style="list-style-type: none"> - Increase soil fertility as each crop has different nutrient requirements and plant-soil dynamics. - Increase crop yields with the diverse nutrient availability. - Reduce soil erosion and prevent nutrients from being eroded by wind or water (through an increase in crop cover). 	Farm level
Water and Soil Conservation measures		
	<ul style="list-style-type: none"> - Water conservation - Soil conservation - Reforestation of sloped watersheds - Minimal soil disturbance - Weed management 	Community level
Micro-scale flood protection infrastructure⁹⁰		

⁸⁴ Refer to Activity 2.3 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

⁸⁵ Refer to Activity 2.4 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

⁸⁶ For further details on CBPP standard procedures and process, please see: <https://docs.wfp.org/api/documents/WFP-0000144168/download/>

⁸⁷ The proposed activities have been pre-screened for environmental and social risks using the WFP corporate Environmental and Social Sustainability and Framework screening tool to ensure that they are within the correct ESS category, i.e., Category C. The activities are further detailed under Section 6 of Annex 2: Pre-feasibility Study.

⁸⁸ Alvar-Beltrán, J., Elbaroudi, I., Gialletti, A., Heureux, A., Neretin, L. Soldan, R. 2021. *Climate Resilient Practices: typology and guiding material for climate risk screening*. Rome, FAO.

⁸⁹ *Ibid.*

⁹⁰ Examples and photographs of such infrastructure is included under Section 6 of Annex 2: Pre-feasibility Study.

Rehabilitation and transformation of gullies	<ul style="list-style-type: none"> - Decrease soil erosion and prevent nutrients from being washed away by wind or water - Conservation and reforestation measures 	Community level
Stone pitching and improvement of water reservoirs	<ul style="list-style-type: none"> - Enhance the water retention capacity to ensure continuous access to clean water - Mitigate flood flow in event of excess rain 	Community level
Eyebrow basins, trench bunds and small herring-bone basins	<ul style="list-style-type: none"> - Enhance soil-water retention capacity needed as a preparatory action for tree planting. 	Community level
Alternative livelihood activities		
Creation of additional vegetable gardens/orchards at HH/ community levels	<ul style="list-style-type: none"> - Enhance community and household livelihoods via the generation of additional income and the supply of local produce at lower costs. 	Farm/community level

71. Project funds will also be used under Activity 2.1 to establish or work with pre-existing local women’s associations to provide information and coordinate community-based disaster risk management, linking them with key services such as available emergency shelters, logistical, psychosocial services, social safety nets including services tailored to victims of gender-based violence at UC level.
72. Based on the flood impact database under Activity 1.1.2, vulnerable households in the beneficiary union councils will be prioritised to receive technical assistance for climate-resilient livelihood practices and strategies. The livelihood practices for each cluster/village/sub-village will be determined by matching local needs (identified from the adaptation menu) with the appropriate activities from the menu of adaptation interventions as outlined in the relevant LCCAP. This process will prioritise gender-friendly water and flood protection infrastructure ensuring the meaningful participation of women and men from the communities⁹¹. Once the communities have selected and defined the relevant pre-screened activities, each activity will be re-screened before implementation to ensure that they don’t pose any risk in the specific context in which they will be implemented. The re-screening process will ensure that only Category C/minimum risk activities will be considered eligible, while medium/high risk activities will either be excluded or redesigned. Once communities in the project localities have identified priority adaptation and resilience building activities, these will then implemented through a multi-pronged approach, which will involve combination of technical assistance and the provision of climate-resilient agricultural inputs, e.g., drought- and heat-tolerant and early-maturing seeds, basic tools, and post-harvest and storage inputs such as tarpaulins. This activity will be undertaken throughout the project lifespan, according to an action plan that will be developed under the LCCAPs. To diversify livelihoods and remove dependency on one form of livelihoods, vocational training will be provided as part of the overall technical assistance, prioritizing disproportionately vulnerable groups that rely on climate-sensitive livelihoods.
73. This activity will also include the design and installation of climate-resilient and gender-friendly water and flood protection infrastructure to mitigate and protect against damage from floods in observed and future high-risk areas identified under Output 1.1. These interventions will be selected with women and men from the communities, to reduce exposure to flood risks and increase livelihood resilience by protecting and enhancing critical ecosystem functions, improving agricultural practices, and protecting essential assets and infrastructure at the community level. WFP will lead the implementation of this activity with a view to handing over this role to the provincial Directorate of On-farm Water Management, Department of Agriculture when the project concludes. Compliance with Category C/minimum risk requirements under the GCF Environmental and Social Policy and the WFP ESS framework will be an essential prerequisite for the selection of any infrastructure. As part of the design process for all infrastructure, operation and maintenance plans will be developed to ensure sustainability beyond the project lifespan.
74. Lastly, Activity 2.1 will strengthen and formalize existing community governance structures through capacity development and registration of village committees and women’s associations as community-based organizations to ensure that investment of project funds in community governance and planning processes is sustainable beyond the project lifespan.
75. The activity will therefore strengthen and/or formalize existing community governance structures (village committees) through capacity development (linked to the overall CBPP process under this activity) and registration of these committees as community-based organizations (CBOs) with the Department of Social Welfare. Within the Pakistan context, CBOs can mobilize communities by expressing demands, organizing, and implementing participatory processes, accessing external development services, and sharing benefits. They can be mandated to address a wide range of social and humanitarian issues relating to development, individual and community welfare, and poverty alleviation. Since they are grassroots organizations and locally elected, CBOs tend to become trusted partners in the community. Once registered, CBOs can access support for Community Management Skill Training (CMST), Community Organization (CO), Village Organization, and Local Management Skill Training (LMST), among others. In addition to the village committees, project funds will be used to strengthen farmer’s, youth, and women’s groups to enable value chain development (aggregation and marketing) of climate-

⁹¹ Refer to Activity 2.5 under Annex 4: Gender Analysis and Action Plan for further details of this sub activity.

resilient value chains. For the value chain development, engagement of local entrepreneurs and the private sector into the project is to be explored at inception stage. It is envisioned that such involvement would contribute to capacity building at a community level, provided sustainable local entrepreneurs and private sector entities are identified who could add benefits to this project.

Component 3 – Improved knowledge management and learning

76. Project funds will be used under this component to develop a framework that leverages the project’s potential for replicability and upscaling at the regional, national, and subnational levels. To that end, a knowledge management and learning (KML) approach will be used to build the evidence-base for replication and behaviour change for beneficiary communities and institutions through: i) strengthened capacity and upskilling for knowledge-sharing and evidence-base development; ii) the development of multi-purpose knowledge products that can contribute to future climate change interventions/projects, climate change policy, awareness-raising, and research outcomes; and iii) an end-to-end gender-responsive project communication strategy to promote consistent messaging and high visibility of good practices and lessons learned throughout the project implementation process. Several knowledge products will be developed that highlight the perspectives of beneficiaries and participating women-led organizations⁹².
77. An inclusive approach to KML will be adopted throughout the project, ensuring that local ecological or indigenous knowledge is adequately incorporated and integrated with more ‘formal/scientific’ knowledge types, and that no groups are marginalised in the knowledge generation process. There will be specific emphasis on integrating insights from women beneficiaries and women-led organizations in the knowledge collection process. Concerning knowledge transfer, the project will emphasise bi-directional learning through co-creation of knowledge products and capacity development exercises. The capacity strengthening and training exercise under Activity 3.1 is an example of this, where institutional and community project beneficiaries will be trained in the co-design, creation, and dissemination of project knowledge products.
78. Part of WFP Pakistan’s in-kind co-finance contribution to the project is to provide KML services through its in-house communications department. The in-house WFP communications team will work closely with national and subnational government counterparts as well as WFP colleagues at the Regional Bureau Bangkok and Headquarters in Rome to ensure that the project communication strategy is aligned with WFP’s internal protocols and policies (including but not limited to social safeguards). Access to an existing international communication system will ensure that learnings from the project can be shared across different regional and national contexts and inform related work, projects, and research.

Output 3: Knowledge and lessons learned captured and disseminated to facilitate replication and upscaling

79. Project funds under this output will be employed to: i) ensure that the capacity of project stakeholders to capture/record project outcomes and generate an evidence-base for replication/upscaling is strengthened; ii) develop usable knowledge products to raise awareness on climate change risk and adaptation strategies appropriate for the Pakistan context; and iii) coordinate the knowledge management and learning (KML) aspects of components 1 through 3. By providing a platform for curation and dissemination of the project evidence-base for replication and upscaling, this output will ensure consistent and streamlined communication before, during, and after project implementation as well as realise maximum visibility and awareness-raising potential. There will be specific emphasis on capturing knowledge that benefits disproportionately vulnerable groups such as women, the elderly, youth, and people with disabilities (PWDs) under this output. The integration of international good practice in the DRR space will be included in the project through the capacity development of public sector DRR officials at an international conference.

Activity 3.1 Knowledge and lessons learned captured

80. This activity will form part of the capacity development exercise under Activity 2.1 and focus on training project stakeholders to participate in evidence generation and contribute to knowledge management. This includes methods for knowledge transfer and protocols to capture expertise and insight from the implementation of each project component.
81. This activity will also produce a suite of multi-purpose knowledge products (case studies, policy briefs, video documentaries, and social media posts) that can be integrated into and inform several media, research, and policy streams such as: i) existing and future climate change policy or strategy at the national and subnational levels (MOCC, PMD, FFC, PDMA, Buner and Shangla districts, etc); ii) institutional strategy such as the Country Strategic Plans (CSPs) for organisations such as national and regional WFP and their Cooperating Partners; and iii) research and academia. The expertise and insight from community-level project beneficiaries will also be captured during this process to ensure that available knowledge with regard to climate change adaptation and flood management is included in these knowledge products. There will be a focused effort to develop and include gender-mainstreamed knowledge products⁹³ (i.e., case studies with illustrations on gender-transformative climate change adaptation for sustainable agrifood systems and disaster risk management; videos) to inform national and sub-national climate change adaptation and disaster risk management policies. Gender-focused knowledge products will be developed under this activity as a subset, including the development and dissemination of materials and climate-resilient

⁹² Refer to Activity 3.1 and 3.2 under Annex 4: Gender Analysis and Action Plan for further details of this sub activity.
⁹³ Refer to Activity 3.2 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

EWS practices in the local languages of the beneficiary districts. Supplementary knowledge products developed under this activity will include project awareness-raising and promotional materials.

82. Under this activity, an opportunity for synergistic collaboration on capacity development and knowledge and awareness with WWF’s recently approved “*Recharge Pakistan: Building Pakistan’s resilience to climate change through Ecosystem-based Adaptation (EbA) and Green Infrastructure for integrated flood risk management*”⁹⁴ has been identified. Since there are thematic and contextual similarities between these two GCF projects, the EEs and co-EEs will work closely together to ensure the integration of evidence, good practice and lessons learned generated by the two projects into the development and use of knowledge products and decision-making tools. Further details of the WWF-WFP collaboration are included under Section 6 of Annex 2 (Pre-feasibility Study).
83. Lastly, Activity 3.1 will facilitate improved knowledge and good practice on DRR through attendance of five stakeholders from the co-EE (KP government) at an international DRR conference. The project will be profiled at this event through opportunities to present and participate in panel discussions on specific DRR technical issues and practices.

Activity 3.2 Knowledge and lessons learned disseminated

84. Project funds under this activity will be used to develop and implement an end-to-end project communication strategy (PCS). WFP Pakistan’s in-house communication department will lead the co-design and implementation of the PCS, working closely with their counterparts at MOCC, PMD, FCC, PDMA and others. The communication strategy will include the development of a calendar of events (international, national, internal) to profile the project learnings and knowledge products and achieve greater visibility and exposure for the project’s knowledge products. The integration of a gender lens will be prioritised during the development and implementation of the communication strategy⁹⁵.
85. The outcomes of the capacity development of public sector officials and community members in gender-responsive DRR undertaken as part of Activity 1.2.1 will be used as the basis to develop technical guidelines for DRR in Pakistan that takes into account gender-based differences, as well as those for persons with disabilities and other marginalized groups.
86. A national/provincial conference and project close-out meeting will be convened in Year 4 that includes all stakeholders including direct beneficiaries, especially women and other marginalized groups, where possible to share their views on the project, as well as disseminate knowledge products and lessons learned from the project for replication and upscaling⁹⁶.

B.2.2. Outcome mapping to GCF results areas and co-benefits categorization

Fill in the GCF results area table below to map each project/programme outcome identified in section B.2.1 to the contributing GCF results area(s) by referring to the description of eight results areas provided in the guidance note.

Outcome number	GCF Mitigation Results Area (MRA 1-4)				GCF Adaptation Results Area (ARA 1-4)			
	MRA 1 Energy generation and access	MRA 2 Low-emission transport	MRA 3 Building, cities, industries, appliances	MRA 4 Forestry and land use	ARA 1 Most vulnerable people and communities	ARA 2 Health, well-being, food and water security	ARA 3 Infrastructure and built environment	ARA 4 Ecosystems and ecosystem services
Outcome 1: Improved capacity for flood early warning systems and anticipatory action	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outcome 2: Increased climate resilience through local adaptation plans and diversified livelihoods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outcome 3: Improved knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

⁹⁴ Worldwide Fund for Nature (WWF). 2023. *Recharge Pakistan*. [Online]. Available: <https://www.greenclimate.fund/project/fp207>

⁹⁵ Refer to Activity 3.1 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

⁹⁶ Refer to Activity 3.3 under Annex 4: Gender Analysis and Action Plan for further details of this subactivity.

management and learning								
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If any co-benefits have been identified in section D.3, fill in the co-benefit table below to map each co-benefit to the corresponding category as defined in the FP guidance note.

Co-benefit number	Co-benefit					
	Environmental	Social	Economic	Gender	Adaptation	Mitigation
Co-benefit 1. Improved gender equality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Co-benefit 2. Enhanced nutritional health	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Co-benefit 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Co-benefit ...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B.3. Implementation / institutional arrangements (max. 750 words)

The implementation and institutional arrangements for the project are described below in terms of the: i) Accredited Entity; ii) Co-executing Entities; iii) Implementing Partners; and iv) project governance structure. These arrangements have been developed and validated in close consultation with the NDA, the Provincial Government of Khyber Pakhtunkhwa, and other relevant stakeholders in-country.

Accredited Entity

87. WFP will act as the GCF Accredited Entity (AE) and will undertake all fiduciary and operational responsibilities for the delivery of the programme vis-à-vis the GCF. WFP is the leading humanitarian organization saving lives and changing lives, delivering food assistance in emergencies, and working with communities to improve nutrition and build resilience of the communities against climate change. In 2022, WFP assisted ~158 million people around the world.

Co-Executing Entities

88. The project will be jointly executed by WFP through its Pakistan Country Office (CO), and the Government of Khyber Pakhtunkhwa Province acting through the Planning and Development Department. WFP has an established Memorandum of Understanding (MoU) with the Planning & Development Department, Government of Khyber Pakhtunkhwa, for the Country Strategic Plan (CSP) spanning 2023-2028. As part of its operations, WFP conducts capacity assessments if required of government departments and private sectors, as agreed upon mutually and subject to the consent of the host government or private entity, on a case-by-case basis. Given the longstanding relationship between WFP and the Planning & Development Department and the absence of direct fund transfers to P&D, no major risk is envisioned however the assessment is planned at the project's inception stage with the department's consent.

89. WFP Pakistan has a robust programme track record and has supported several of Pakistan's national development priorities since it began operating in-country in July 1968. WFP's core operations and programmes consist of interventions to improve food security and livelihood resilience, reduce malnutrition, promote market alliances, support school feeding and enhance education and improve gender equality. The project is aligned and contributes to the Strategic Outcome 1 of WFP's Country Strategic Plan. WFP Pakistan has a strong field presence with field offices and Cooperating Partners, including a WFP sub-office in Peshawar. WFP Pakistan has well-established and robust implementation capacity in the resilience-building, disaster risk reduction, and capacity development fields in the country as a whole, as well as in Khyber Pakhtunkhwa province, and is therefore well placed to execute the project. The P&D Department's mandate is provincial and sectoral policy and decision-making in the field of development in the Khyber Pakhtunkhwa province. It is responsible for the implementation and monitoring of the overall development plans of the province and is the entry point for international partners in the province. Their primary role in the project will be to facilitate, plan, coordinate, oversee (appraise and review) and ensure smooth implementation of the project's activities.

Table 6. Executing entity per project activity

Project activity	Executing Entity
1.1.1.: Hydromet monitoring, forecasting, and early-warning capability strengthened	WFP
1.1.2.: Early-warning system strengthened	WFP, P&D
1.2.1.: Anticipatory action system developed at provincial level	WFP, P&D

2.1: Local adaptation plans co-developed for beneficiary union councils	WFP, P&D. WFP will contract CPs for the implementation of this activity.
3.1: Knowledge and lessons learned captured	WFP, P&D
3.2: Knowledge and lessons learned disseminated	WFP, P&D

Cooperating Partners

90. WFP collaborates with Cooperating Partners (CPs) to implement its projects at the community and household levels. CPs can include, among others, I/NGOs, local government, or academic institutions. The activities of component 2 in the two beneficiary districts of Shangla and Buner will be implemented by WFP’s in-country CPs. The CP selection process will follow standard WFP protocols, such as WFP’s NGO Partnership Guidance, and any contractual engagement results in Field Level Agreements (FLA). The CPs will have defined tasks as outlined in their respective FLA. While they may provide contextual information, challenges or suggestions for field level implementation due to their proximity to the field, the final discretion, decision-making authority, and responsibility for activities lies with the EE. This also applies to the supporting function of the CPs for the beneficiary identification. While the CPs identify potential beneficiaries based on criteria provided by WFP, the verification of the beneficiary lists to ensure compliance will lie with WFP. Opposed to Cooperating Partners, Service Providers refer to the private sector or any entity that will be procured to provide a service. WFP will enter into service contracts with service providers.

Project Governance Structure

91. The governance structure of the project includes a Project Steering Committee, a Project Technical Working Group, a Project Management Unit, Project Implementation Unit, and District Coordination Groups. The project governance structure is presented in *Figure 10* and a detailed description of the roles and responsibilities is presented in *Table 7* overleaf.

Project Steering Committee (PSC)

92. The PSC will provide strategic orientation to the implementation of the project and will be chaired by the Ministry of Climate Change and Environmental Coordination (MOCC) with the Provincial Government of Khyber Pakhtunkhwa (member) and WFP as co-chair. The Committee will be located in Islamabad and meet twice a year; however, the Chairperson(s) may also convene *ad hoc* meetings to discuss oversight or implementation issues. Decisions taken at the PSC level will be mutually agreed by the Chair (MoCC) and co-chair. Minutes of PSC meetings will be made publicly available and circulated to all Committee members and all other project stakeholders. The PSC will consist of the following organisations: MoCC (Chair), P&DD (co-chair), WFP representatives (co-chair/Secretary), Forest and Environment Department, PDMA/RRS Department, Social Welfare Department, Agriculture Department, Regional PMD and District Administration of Buner and Shangla (all as members) The Committee Chair will have the option of inviting other experts and may invite representatives from other key projects funded by government or through development assistance to attend as observers, or for knowledge sharing and peer assistance.

Project Technical Working Group (PTWG)

93. The PTWG will provide technical back-stopping to the PSC and will be chaired by Additional Chief Secretary P&DD KP and will consist of representatives from the Departments of the Provincial Government of Khyber Pakhtunkhwa, (IDS P&DD KP, On-Farm Water Management, Social Welfare Department, Irrigation Department, PDMA, Soil Conservation Department, Environment Protection Agency, Forest Department, WFP (Secretary), UNDP, WWF and academia (if required/as needed) as members. The Committee Chair will have the option of inviting other experts and may invite representatives from other key projects funded by government or through development assistance to attend as observers, or for knowledge sharing and peer assistance. The PTWG Will provide technical inputs to the project on the implementation of the activities in the field and will review the progress on quarterly basis. The PTWG will also provide support in resolving any bottleneck in the implementation and will have authority to re-design the activity on the need basis with approval of WFP and PSC within the scope of overall project activities align with GCF rules and regulations.

Project Management Unit

94. A Project Management Unit (PMU) will be established and will be based in Peshawar (the capital of Khyber Pakhtunkhwa Province). The PMU will be headed by a GCF-funded Project Manager. The PMU will be responsible for coordination, reporting and communication with stakeholders at Federal Level, World Food Programme (CO Pakistan) and Regional Bureau. The PMU will manage all the activities pertaining to day-to-day management of operations and project implementation including liaising with PIU and Provincial Government of KP.

Project Implementation Unit

95. A Project Implementation Unit will be set up in Peshawar. The PIU will be headed by a technical support officer acting as the Project Coordinator contracted by WFP and comprising staff from WFP and the Planning and Development Department of Khyber Pakhtunkhwa province. The PIU will be managed by the Project Coordinator who will be responsible for project implementation and coordination with all stakeholders. The PIU will be responsible for overseeing the implementation of day-to-day activities with the participating provincial government, CPs, and other stakeholders.

96. In line with the amended ToC, and logical framework a detailed monitoring implementation and supervision plan will be developed to ensure monitoring and supervision of activities as per their schedule. This plan will be supported by the co-EE and corporate monitoring guidelines. The monitoring data will be compiled at central level where it will be analyzed and used accordingly. The development of the Monitoring and Evaluation Plan will take place during the Inception Phase to ensure ground truthing and include inputs from all relevant project management and implementation entities.

District Coordination Groups

97. Within the PMU, there will be one District Coordination Group for each of the Districts of Shangla and Buner. The Groups will be responsible for coordination between the Cooperating Partners in the Districts, the PMU and other stakeholders. The Project Manager will be responsible for oversight of the District Groups.

98. This prevailing focus on the institutional arrangement aims to strengthen government systems, build capacity and enhances service delivery; all of which is part of the project's strategy for ensuring project benefit streams are sustainable – and can even be scaled up – beyond project closure. Such partnership-oriented implementation arrangements are thus not only needed for effective project delivery, but also to equip the country to continue driving the process of sector transformation in the medium/long term. Detailed project implementation arrangements are summarized in table 7, and further explained below. Similarly, Table 7 table 6 cross-references executing entities per project activity.

99. Related to financial flows, WFP assumes responsibility for effective management of project funds, including financial disbursement, procurement, oversight, and reporting (annual, mid-term, and final evaluations). Funds channelled from GCF to WFP will be channelled to the Cooperating Partners and Service Providers through WFP in its role as co-executing entity t based on successful capacity assessments and workplans within established agreements, which will be closely monitored to ensure compliance and fulfilment of responsibilities. The Decision-Making process passes through the Project Steering Committee, the Project Management Unit, and for day-to-day tasks for implementation the Project Implementation Unit who provides a workplan and budget for approval by the previously listed entities, and subsequently ensures timely and accurate flow of funds for project implementation. Flow of funds and Decision lines are detailed in figure 11.

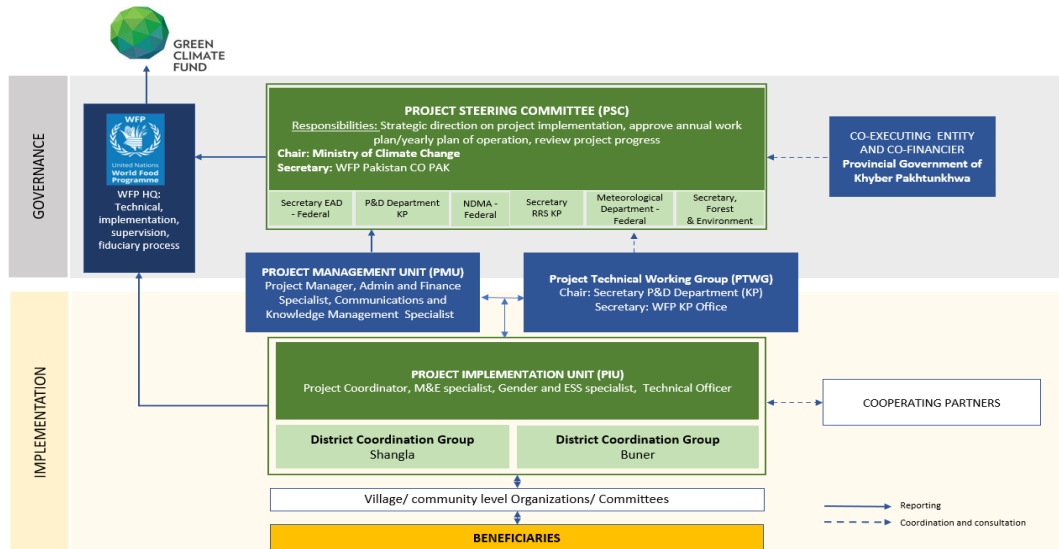


Figure 10. Project governance structure

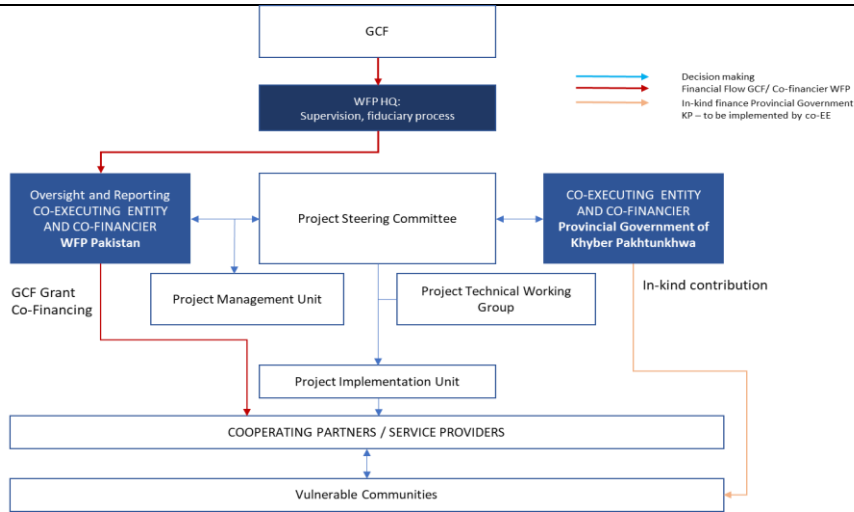


Figure 11. Project financial flows

Table 7. Detailed description of the roles and responsibilities of the entities part of the project governance structure

PROJECT ENTITY	ROLES AND RESPONSIBILITIES
Project Steering Committee (PSC)	<ul style="list-style-type: none"> – Provide strategic orientation for project implementation – Provide decision-makers information on project progress, results, and impacts. – Ensure alignment of the project with national policies and provincial policies/plans – Ensure transparency of processes – Ensure ownership of actions for addressing climate issues by national authorities – Ensure sound inter-institutional coordination – Ensure in-kind co-financing from government agencies is delivered in a timely manner – Show strong leadership commitment to gender mainstreaming for the project – Review and approve the annual work plans and budget
Project Technical Working Group (PTWG)	<ul style="list-style-type: none"> – Monitor implementation, and safeguard compliance – Invite, where relevant, representatives of accompanying institutions. – Mobilize timely technical expertise from the participating institutions as per agreed annual work plan – Provide technical assistance for the project implementation and management
Project Management Unit (PMU)	<ul style="list-style-type: none"> – Prepare the annual work plan and budget for review and approval by the PSC and WFP – Reports to PSC on execution (physical and financial) on quarterly basis or as required – Prepare procurement, contracting, administrative and accounting documents for action by WFP – Prepare and keep an updated record of financial records, data and information, briefs, reports (monthly, quarterly, annual) presentations, record notes, notifications/orders, minutes, executive notes, official correspondence and any other project record required by government. – Update, monitor, supervise and coordinate project progress and report to WFP's M&E unit – Manage day-to-day project activities and coordinate with the Project Technical Working Group – Establishment and regular coordination with two District Coordination Groups (Shangla and Buner), to ensure sound implementation at the local level
Project Implementation Unit (PIU)	<ul style="list-style-type: none"> – Provide support to PMU in strategic orientation to the project implementation at provincial level – Assist PMU, provincial level decision-makers information on project progress, results, and impacts – Ensure alignment of the project with provincial policies in-lieu of overall project goals and objectives – Ensure transparency of processes at District and Provincial level – Ensure sound inter-institutional coordination – Ensure in-kind co-financing from government agencies is delivered in a timely manner – Show strong leadership commitment to gender mainstreaming for the project – Assist in drafting the annual work plans and budget in consultation with Provincial Line Departments – Ensure the quality of the activities at field level through robust monitoring and supervision.
District Coordination Group	<ul style="list-style-type: none"> – Ensure the effective and efficient implementation of the activities at the district level and timely / regular coordination with PMU. – Communicate and coordinate any challenges and bottlenecks in the implementation of the project activities and consult with the CP and PMU to resolve the issues – Monitor and supervise the project activities of the CPs

C. FINANCING INFORMATION

C.1. Total financing						
(a) Requested GCF funding (i + ii + iii + iv + v + vi)		Total Amount: <u>8.78</u>		Currency: <u>million USD (\$)</u>		
GCF Financial Instrument		Amount	Currency	Tenor & grace	Pricing	
(i)	Senior loans	<u>0</u>	<u>Options</u>	<u>Enter years</u>	<u>Enter %</u>	
(ii)	Subordinated loans	<u>0</u>	<u>Options</u>	<u>Enter years</u>	<u>Enter %</u>	
(iii)	Equity	<u>0</u>	<u>Options</u>		<u>Enter % equity return</u>	
(iv)	Guarantees	<u>0</u>	<u>Options</u>	<u>Enter years</u>		
(v)	Reimbursable grants	<u>0</u>	<u>Options</u>			
(vi)	Grants	<u>8.78</u>	<u>million USD (\$)</u>			
(b) Co-financing information⁹⁷		Total amount		Currency		
		<u>1.07</u>		<u>million USD (\$)</u>		
Name of institution	Financial instrument	Amount	Currency	Tenor & Grace	Pricing	Seniority
<u>WFP Pakistan</u>	<u>Grant</u>	<u>0.20</u>	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter %</u>	<u>Options</u>
<u>WFP Pakistan</u>	<u>In kind</u>	<u>0.37</u>	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter %</u>	<u>Options</u>
<u>Government of Khyber Pakhtunkhwa</u>	<u>In kind</u>	<u>0.5</u>	<u>million USD (\$)</u>	<u>Enter years</u> <u>Enter years</u>	<u>Enter %</u>	<u>Options</u>
(c) Total investment (c) = (a)+(b)		Amount		Currency		
		<u>9.85</u>		<u>million USD (\$)</u>		
(d) Co-financing ratio (d) = (b)/(a)		<u>12%</u>				
(e) Other financing arrangements for the project/programme (max ½ page)		<p>Please explain if any of the financing parties including the AE would benefit from any type of guarantee e.g. sovereign guarantee, MIGA guarantee, etc.</p> <p>Information on legal due diligence (taxes, insurance, etc.) shall be reported in Annex 9a.</p> <p>Please also include parallel financing associated with this project or programme (refer to the co-financing policy).</p>				
C.2. Financing by component						
Please provide an estimate of the cost per component (in line with Components described in Section B.2.1 above) and disaggregate by sources of financing as Annex 3. Also, ensure consistency with the Logical Framework (Annex 2a) and Timetable (Annex 2b) of the project/programme.						

⁹⁷ If the co-financing is provided in different currency other than the GCF requested, please provide detailed financing information and a converted figure in the GCF requested currency in the comment box. Please refer to the date when the currency conversion was performed and the reference source.

Component	Output	Indicative cost Options	GCF financing		Co-financing		
			Amount Options	Financial Instrument	Amount Options	Financial Instrument	Name of Institutions
Component 1: Improved capacity for flood early warning systems and anticipatory action	Activity 1.1.1	1,381,472	1,317,280	Grants	64,192	Grants	WFP
	Activity 1.1.2	243,000	243,000	Grants	NA	Choose an item.	NA
	Activity 1.2.1	1,723,948	1,716,940	Grants	7,008	Grants	WFP
Component 2: Increased climate resilience through local adaptation plans and diversified livelihoods	Activity 2.1	3,611,860	3,111,860	Grants	500,000	In kind	Government of Khyber Pakhtunkhwa, Planning and Development Department
Component 3: Improved knowledge management and learning	Activity 3.1	1,342,120	1,316,920	Grants	25,200	Grants	WFP
	Activity 3.2	444,900	341,300	Grants	103,600	In kind	WFP
Monitoring and Evaluation		313,560	313,560	Grants			
PMC		784,481	416,281	Grants	368,200	In kind	WFP
Indicative total cost (USD)		9,845,341	8,777,141		1,068,200		

This table should match the one presented in the term sheet and be consistent with information presented in other annexes including the detailed budget plan and implementation timetable.

C.3 Capacity Building and Technology development/transfer

If the project/programme is envisaged to support capacity building and technology development/transfer, please specify the total requested GCF amount for these activities respectively in this section.

C.3.1 Does GCF funding finance Capacity building activities?	Amount: 3,059,480 USD
C.3.2. Does GCF funding finance Technology development/transfer?	Amount: 1,950,008 USD

C.4. Justification for GCF funding request (max. 500 words)

Contribution to GCF mandate

100. The project will make a substantive contribution to GCF's core mandate since it will help to catalyse a paradigm shift to climate-resilient development pathways in Pakistan. Over the four-year implementation period, the project will offset or avoid — among others — the costs of humanitarian aid which would be incurred in the absence of the project. While the project will generate developmental co-benefits, the project's main activities (improved climate information services and the promotion of climate-resilient livelihoods) which GCF funds will be used for, contribute to reducing the impacts from the identified climate change hazards, i.e., flash-floods⁹⁸.

Alignment with key national policy

101. The project is aligned with and will contribute substantively to several of the adaptation goals stated in Pakistan's updated NDC⁹⁹, including but not limited to¹⁰⁰: i) disaster risk reduction and enhanced EWS (Component 1); ii) strengthening adaptive capacity (Component 2); and iii) agriculture (Component 2).

⁹⁸ Refer to Section B.1 as well as Section 2.2 of Annex 2: Pre-feasibility Study for further detail of the climate change hazard that the project will contribute to addressing.

⁹⁹ Government of Pakistan. 2021. Updated Nationally Determined Contributions to the United Nations Framework Convention on Climate Change. [Online]. Available: <https://unfccc.int/sites/default/files/NDC/2022-06/Pakistan%20Updated%20NDC%202021.pdf>

¹⁰⁰ Refer to Error! Reference source not found. in Section D.5 (Country Ownership) for a full comparison of the project's alignment with national policy.

Economic status and external debt

102. Pakistan is classified by the World Bank as a low-income developing country. The economy is currently under severe economic stress with low foreign reserves, a depreciating currency, and high inflation^{101,102}. The economic situation in the country is characterised furthermore by acute pressure on domestic prices, the fiscal sector, the exchange rate, and foreign reserves¹⁰³. These economic pressures and imbalances were exacerbated by the catastrophic flooding in 2022, surging world commodity prices, tightening global financing conditions, and domestic political uncertainty. Pakistan is at risk of debt defaulting on its debt liabilities of ~ USD 126 billion¹⁰⁴, with ~80% of this debt (~USD 97 billion) owed by the government of Pakistan directly to various creditors, while the remainder of the debt is owed by government-controlled public sector enterprises to multilateral creditors¹⁰⁵.

Concessionality

103. Buner and Shangla are two of the most isolated and under-developed districts in KP Province and Pakistan as a whole. Public budgets in this area are inadequate and are mostly allocated to basic infrastructure and government services, such as education, health, transport, housing, and energy, in addition to disaster-relief efforts. There are limited public and private funding options for communities in the beneficiary districts. Alternative funding options for the type of activities envisioned under the project are limited to non-existent. Private sector presence and capacity to invest in the target districts remains limited due to their underdevelopment, predominantly rural nature, and challenging terrain.

104. As such, there is limited funding available for climate change adaptation activities such as improved CIS or alternative, flood-resilient livelihoods, despite these being fundamental for the vulnerable communities living in Buner and Shangla Districts. The Government of Pakistan (at the federal level) and of KP Province recognize and prioritize climate change which is why ~USD 0.5 million of in-kind co-finance has been committed to the project from the public sector¹⁰⁶. This demonstrates that the government supports and prioritizes the project's activities without compromising other essential development activities. The proposal is therefore requesting 100% grant funding from the GCF as the proposed project is not revenue-generating but is a public good service (particularly Component 1 - Improved capacity for flood early-warning systems and anticipatory action) that will benefit the most vulnerable people.

Co-benefits

105. The project will also make a substantive contribution to gender, equality, and social inclusion (GESI) outcomes which are aligned with the GCF's gender, environmental and social policy of the GCF, specifically through outcomes 1 and 2. Under Outcome 1 (Improved capacity for flood early warning systems and anticipatory action), the project will support improved gender equality within the climate information services sector in Pakistan through targeted capacity development and training of women. Under Outcome 2 (Increased climate resilience through local adaptation plans and diversified livelihoods), the project will realise similar GESI co-benefits by ensuring that technical support for livelihood activities is gender-responsive, and that women and other marginalized groups are prioritised for vocational training. The project will also realise the co-benefit of enhanced nutritional health under Outcome 2 through technical support for climate-resilient livelihood activities, gender responsive community infrastructure development and information sharing.

C.5. Exit strategy (max. 300 words)

The project's exit strategy is based on its contributions to: i) institutional capacity development and knowledge transfer; ii) project ownership and buy-in; iii) sustainability of interventions; iv) alignment with and contribution to the country's regulatory landscape; and v) operations and maintenance planning. Together, these contributions will ensure that the paradigm shift catalysed by the project will continue after project completion.

Institutional capacity

106. The strengthening of stakeholder capacity at the institutional and community levels is a prominent feature of all three project components. Technical capacity for anticipatory action, impact-based forecasting, and gender responsive flood EWS will be developed and institutionalized under Component 1. Under Component 2, subnational stakeholders (beneficiary communities and district authorities) will receive capacity strengthening for adaptation planning. Similarly, under Component 3, capacity development for knowledge-sharing and the development of an evidence-base will accrue to beneficiary communities and public sector stakeholders. All capacity development activities are designed for maximum knowledge transfer and sustainability through a train-the-trainers approach.

Project ownership

107. The project has been designed in close consultation with beneficiary institutions and communities including women and other marginalized groups to promote ownership and buy-in among project beneficiaries. Consultations during project development ownership of the beneficiaries is established, both for community members and institutions. Consultations

¹⁰¹ The World Bank Group. 2023. *The World Bank in Pakistan*. [Online]. Available: <https://www.worldbank.org/en/country/pakistan/overview>

¹⁰² United States Institute of Peace. 2023. *Pakistan's Existential Economic Crisis*. [Online]. Available: <https://www.usip.org/publications/2023/04/pakistans-existential-economic-crisis>

¹⁰³ *Ibid.*

¹⁰⁴ As of December 2022.

¹⁰⁵ United States Institute of Peace. 2023. *Pakistan's Existential Economic Crisis*. [Online]. Available: <https://www.usip.org/publications/2023/04/pakistans-existential-economic-crisis>

¹⁰⁶ In-kind co-finance from the Government of KP Province is over-and-above the USD 200,000 (cash) and USD 368,200 (in-kind) contributions by WFP.

during project development included three rounds of engagement with federal and subnational authorities¹⁰⁷, as well as two rounds of consultations with communities in the beneficiary districts. These consultations were geared towards co-development of project activities and to avoid imposing top-down interventions and encourage buy-in to the project at the earliest possible stage.

Sustainability

108. The sustainability of the technology improvements under Component 1 has been carefully considered during project development. The type of technology and equipment proposed is based on the gap analysis of technological needs within the public climate information services sector undertaken during project development. The type of hydrometeorological instrumentation selected to improve coverage in the beneficiary districts is based on what is in operation elsewhere in Pakistan, as well as what WFP have successfully implemented in other geographies with similar flood risk profiles. Project interventions such as the flood early-warning system are likewise designed to integrate with existing structures and operations so that a smooth transition at the end of the project's lifespan can occur. Regarding the implementation of AA activities, WFP will put effort into mobilizing funds with OCHA from the CERF-AA initiatives, and WFP's hunger-related climate change trust fund at HQ-level for the implementation of anticipatory actions. In the longer run, WFP will also advocate with the Government of Pakistan for development of financial mechanisms and funds for AA.

Regulatory contribution

109. The project will make a substantive contribution to the regulatory landscape of Pakistan by strengthening several frameworks and policies. In particular, outputs 1 and 2 will bolster policy and regulations related to standard operating procedures for EWSs, disaster risk management protocols, subnational climate change adaptation policy, and formalization and registration of community governance structures, respectively.

Operation and maintenance plans

110. A smooth exit strategy for the project regarding equipment and infrastructure for flood EWS will be ensured through the development of detailed operation and maintenance (O&M) plans for the hydrometeorological instrumentation procured. In addition to the technical manuals from the original equipment manufacturers (OEMs), this will include protocols on calibration, routine maintenance, and repair where necessary. Budget under this output has been set aside as contingency for repairs and maintenance during project implementation to cover unforeseen expenses and ensure that equipment procured under the project is operational throughout the project's lifespan. To ensure continued operation after the project has concluded, government departments with the mandate for meteorological services will be engaged at project inception to ensure that budget for future maintenance (i.e., beyond the project lifespan) is proactively planned for and allocated well ahead of time. Concerning small-scale flood protection at the community level, these interventions will likewise include detailed O&M plans to ensure sustainability of these structures.

C.6. Financial management/procurement (max. 300 words)

111. The project will utilize WFP financial management and procurement systems in line with its accreditation. All financial management and procurement, including financial accounting, disbursement methods, and auditing will be specified under the Funded Activity Agreement (FAA) and will be aligned with the process and method agreed in the Accreditation Master Agreement (AMA).
112. The GCF will transfer funds annually to WFP on the basis of a disbursement schedule, as outlined in the FAA. WFP's Finance Division at Headquarters level certifies annual financial statements. The financial reporting will be done in accordance with clause 17 of the AMA, WFP will be responsible for ensuring that project funds are spent according to the funding project proposal and the FAA.
113. WFP shall be responsible for all project procurement of goods and/or services in accordance with WFP's rules, policies, and procedures. This includes also subcontracting with CPs in order to maximize and prioritize the purchase of local goods and services. WFP follows a competitive and transparent process when procuring goods and services from suppliers. WFP's financial accounting, disbursement methods and auditing are compliant with UN rules and regulations as well as with the requirements of all major donor agencies worldwide. Refer to Annex 8 for further details on procurement plan.
114. To mitigate any risks of improper procurement practices such as bribery, financial mismanagement, corruption, etc. the procurement process follows the procurement manual. Additionally, corporate policies, tools and committees are in place to avoid and minimize risk, such as segregation of duties, delegation of authority, local purchase and contracting committees, technical and financial evaluation panels and declarations at different stages. The vendors are prequalified and meet the criteria outlined in the corporate guidelines.

¹⁰⁷ Refer to section D.5 – Country ownership, for details of the stakeholder consultation process.

Internal reviews and audits will take place in accordance with established WFP rules and procedures. Audit arrangements will be as per Clause 16 of the AMA. WFP's financial accounting, disbursement methods and auditing are compliant with UN rules and regulations.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

D.1. Impact potential (max. 300 words)

115. The project contributes to the overall mandate of the GCF by catalysing a paradigm shift to climate-resilient development pathways in Pakistan. At the adaptation results area (ARA) level, the project contributes directly to ARA 1 (Most Vulnerable People and Communities) and ARA 2 (Health, Well-Being, Food, and Water Security). At the GCF outcome level, the project will accrue results in terms of: i) beneficiaries adopting improved and/or new climate-resilient livelihood options (IRMF Supplementary Indicator 2.1); and ii) beneficiaries covered by new or improved early warning systems (IRMF Supplementary Indicator 2.4).
116. Under the abovementioned ARAs and IRMF indicators, direct project beneficiaries¹⁰⁸ over the implementation period are estimated at 146,737 (73,898 males and 72,839 females, 0,06% of Pakistan's population of ~240 million), while indirect beneficiaries of the project number 1,623,400 (817,023 males and 806,377 females)¹⁰⁹.
117. The project will deliver change at the beneficiary community and institutional level by improving climate information services (CIS) and early-warning systems (EWS) such that they are grounded in impact-based forecasting and anticipatory action to estimate potential impacts at local level. The project will focus on several aspects including systems, processes, gender sensitive approaches, technologies and capacities of institutions and beneficiary communities. These investments can be easily scaled up and expanded to other flood-prone areas in other contexts with similar challenges and hazards. By the end of the project, strengthened early warning systems will provide projected flood risk data for beneficiary districts, ensuring that flood risk is integrated into local planning and decision-making processes. This will result in an immediate increase in preparedness, with 75% of the target population receiving tailored advisories on crop information, water management, and evacuation support, among other measures. In addition to the strengthened CIS and EWS aspects described above, the project will address the interface between climate change, agriculture, and food security. This will include disaster risk reduction and support for climate-resilient agricultural (CRA) practices and community-level flood protection, to address current climate risks and build capacity for longer-term adaptation of vulnerable communities in the beneficiary districts. Furthermore, baseline assessments will determine the exact caseload of assistance needed for highly vulnerable populations. Over time, the intervention is projected to reduce flood impacts significantly, with at least 40% of target households gaining the capacity to avert negative coping strategies.
118. The project beneficiaries will benefit not only from the reduced impacts from floods in the short term and adaptation to climate change impacts in the longer term but also from more climate-resilient livelihood opportunities as a result of the project's intervention. The project will reduce the risk of death, injury and serious damage to homes and infrastructure among the beneficiary communities in the target areas by improving technical capacities at the district level for early warning and anticipatory action.

D.2. Paradigm shift potential (max. 300 words)

Paradigm shift potential

119. The project will enhance the adaptive capacity of vulnerable communities in Buner and Shangla Districts and strengthen the technical capacity of the public climate information services (CIS) sector to use impact-based forecasting to develop and disseminate accurate and timely flood early-warnings. This will catalyse a paradigm-shift from the present baseline situation, which focuses on traditional weather advisories (i.e., what the weather will be, rather than what the weather will do) and disaster response. In the current baseline scenario within the beneficiary districts, there are no structures in place to act before an extreme weather event happens: vulnerable communities do not receive sufficient information in advance, there are no plans or standard operating procedures pre-defined, nor funds earmarked to allow action before the event hits. The most vulnerable only receive limited support after the flood has happened. Livelihoods in the beneficiary districts are extremely climate-sensitive and exposed to flash-floods/hill-torrents. Beneficiary communities have low levels of capacity to implement climate-resilient livelihood activities and are often not prioritized in local development planning processes and therefore lacking adequate funding and sustainability. Women and persons with disabilities are the most marginalized and neglected.
120. The project will promote a paradigm shift to anticipatory actions that reduce the expected impact of floods before they occur by strengthening resilience of vulnerable communities, thus leading to reduced recovery times and overall costs of response.

¹⁰⁸ Baseline beneficiary numbers are based on the 2017 Population and Housing Census. The prevailing population growth rate at the district level was applied to the baseline population to estimate the population as of 2023.

¹⁰⁹ Pakistan Bureau of Statistics. 2017. Final Results of the 6th Population and Housing Census. [Online]. Available: <https://www.pbs.gov.pk/content/final-results-census-2017>

Specifically, the project's paradigm shift potential lies in: i) the innovative component of forecast-based anticipatory actions for flood events, which, based on tailored forecasts that contain pre-agreed thresholds and triggers linked to operating procedures, aims to complete the link from early warning systems to early actions; ii) the knowledge and capacity building activities that will enhance the understanding of climate change impacts and guide the climate-proofing of livelihoods and the integration into local plans of adaptation measures over the long-term; iii) the gender-transformative approach, with a strong focus on women's empowerment and income-generating activities, also working with women's community organizations and mixed community organizations where decisions, planning and implementation of projects are carried out jointly by men and women; iv) a systemized knowledge management and learning mechanism that will lead to increased potential for upscaling and replication through the activities proposed under Component 3.

121. Component 3 has been specifically designed to drive the scalability and replicability elements the proposal, capturing knowledge and best practices from project activities with the aim of leveraging the project's potential for replicability and upscaling at the regional, national, and subnational levels. The project aims to develop development of multi-purpose knowledge products that can contribute to future climate change interventions/projects, climate change policy, awareness-raising, and research outcomes. Where possible, the project will also collaborate with WWF's 'Recharge Pakistan' GCF project to develop collaborative knowledge products, where appropriate. Similarly, community-level adaptation actions and climate-resilient livelihoods at the community level have high national replication potential, given Pakistan's overall vulnerability to climate change, and the general lack of finance for adaptation action.

Project scalability and potential for transformation

122. Activities under Component 2 have been tested in small-scale interventions in the framework of early recovery, reconstruction and rehabilitation projects funded through bilateral cooperation. The forecast-based anticipatory action part of Component 1 will build on recent pilot activities in this direction carried out by the government and other partners, such as UNDP under its GLOF2 project. Forecast-based anticipatory action builds on the framework of a traditional early warning system, by building and strengthening the necessary components to define activities that can be initiated or scaled-up before the impacts of a natural hazard occurs and therefore building people's capacity to prepare for those impacts.
123. Once the system and structures are in place in Buner and Shangla Districts, forecast-based anticipatory action can be replicated in other areas of Pakistan and applied to other hazards through the support provided under Component 3. With increased knowledge and strengthened technical capacity, public sector officials will be able to include anticipatory action approaches, climate change considerations and climate change adaptation activities in other locations' plans and enable other countries to adapt based on the results of this project. This approach increases the project's potential for scalability and potential for transformation.

D.3. Sustainable development (max. 300 words)

Sustainable Development Goals

The design and implementation of the project's activities will contribute to several Sustainable Development Goals (SDGs), in particular:

- SDG 1: End poverty in all its forms everywhere
- SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- SDG 5: Achieve gender equality and empower all women and girls
- SDG 13: Climate action: Take urgent action to combat climate change and its impacts

124. The project will yield demonstrable environmental, social, and economic co-benefits, with specific gender empowerment co-benefits, while also supporting the participation of underrepresented groups such as youth, transgender, people with disabilities (PWDs), and the elderly. The project's implementation will demonstrate — among others — the value of improved flood early-warning systems, climate-resilient livelihoods, and anticipatory action approaches in increasing the resilience and adaptive capacity of vulnerable communities in developing countries. This approach further underscores the potential for replicability and scalability in Pakistan and in other countries with similar socio-economic context and climate profiles.

Environmental co-benefits

125. Through the implementation of climate-resilient agricultural practices and installation of micro-scale flood protection infrastructure from the adaptation menu, the project will: i) help to increase soil moisture reserves and increase organic matter content during dry periods; ii) reduce soil disturbance, runoff, and erosion during increasingly intense extreme rainfall events; and iii) increase soil fertility through crop rotation, which will have biodiversity co-benefits. Similarly, through improved flood early warning and climate information dissemination systems, the project will lead to better-informed natural resource management and reduce ecosystem degradation and over-use of ecosystems as a coping strategy by rural communities. Improved climate information services (CIS) will also provide valuable information that can be used by national

and local authorities managing protected areas and biodiversity hotspots to prepare for, and mitigate, the impacts of climate change and extreme events.

Social co-benefits

126. Improved flood-risk knowledge will better inform land use and investment decisions to avoid maladaptive practices within the beneficiary districts and elsewhere in Pakistan. Through improved risk knowledge and quantitative flood forecasting capacity, as well as strengthened ‘last-mile’ delivery, impact-based forecasting and anticipatory action approaches will contribute to increased resilience and enhanced livelihoods of the most vulnerable people and communities in Pakistan. At the community level, the implementation of climate-resilient agricultural practices will strengthen livelihood security for small and marginal farmers in the beneficiary districts. By enabling climate-resilient planning at the community level, the proposed interventions will reduce climate risks for agricultural livelihoods, leading to enhanced food security and nutritional health. Proposed interventions will further include specific early action mechanisms for flood hazards, focusing on the humanitarian response to anticipated floods, as well as impacts on agriculture, infrastructure, and food security. A community-based participatory planning (CBPP) approach will be prioritised and will ensure that the perspective of project beneficiaries especially women is taken into consideration at each stage (design, implementation, reporting). This participation will in turn also provide new opportunities for employment and learning in marginalised communities, will strengthen their ability to economically benefit from the changes driven by the project and to become more capable at adapting to negative climate change events.

Economic co-benefits

127. The project’s economic co-benefits include avoided costs and added benefits. For example, improved data and knowledge on observed and projected flood risk will help the GoP to reduce and optimize budget spending, improving the use of public funds for disaster preparedness and recovery. Similarly, improved food security from the implementation and adoption of climate-resilient agricultural practices will avoid costs associated with malnutrition, while improved crop yield will create opportunities for additional income creation at the household level.

Gender co-benefits

128. The project will contribute towards gender equality efforts in Pakistan at both community and institutional levels. At the institutional level (in particular PMD, FFC, and R-PMD), an appropriate percentage of institutional staff capacitated by the project at national and subnational levels will be women. Including women in these activities will facilitate greater access and decision-making powers with regards to management and technical work related to climate information services (CIS) and early-warning systems (EWS) for women. Similarly, the project will include the development of guidelines and training on gender-responsive and inclusive disaster risk management (DRM) and natural resource management for stakeholders including but not limited to employees and trainers in the Pakistan Meteorological Department (PMD)/Flood Forecasting Division (FFD), Regional Meteorological Centre in Peshawar (RMCP), and DMCs in Buner and Shangla Districts. This training also includes elements on gender-responsive evidence generation and knowledge management. At a community level, the dissemination strategies being developed under the project include a focus on ensuring that women and other marginalized groups have fair and equal access to CIS and EWS. A gender-sensitive approach will also be implemented during the revision of any local plans or policies under the project to ensure that updated policies do not reproduce, generate, or exacerbate any systemic gender inequality. Gender responsive infrastructure will also be developed as prioritized by women. Finally, project funds will be used to establish or work with pre-existing local women’s associations (to provide information and coordinate community disaster risk management, linking them with key services such as available emergency shelters, logistical, psychosocial services, social safety nets including for gender-based violence, at district/Union Council/Village level.

D.4. Needs of recipient (max. 300 words)

Vulnerability profile

129. Following the devastating floods of 2022, the World Bank estimates that the costs for rehabilitation and recovery alone for Pakistan are at least USD16.3 billion, not including much-needed new investments to adaptation to climate change and build the resilience of the country to future climate shocks¹¹⁰. Buner and Shangla Districts are among the most vulnerable areas¹¹¹ of Pakistan since they are multi-dimensionally poor and highly exposed to extreme events including but not limited to flash-flooding. The project will therefore focus specifically on the following sub-groups within the beneficiary districts: i) people living in areas prone to repeated and/or severe flooding; ii) groups who are less able to recover quickly from floods; and iii) food insecure¹¹² areas/people. In addition, the project will prioritize areas/groups who are not receiving assistance from other external organizations, or government programmes¹¹³.

¹¹⁰ World Bank Group. 2022. *Pakistan Country Climate and Development Report*. [Online]. Available: <https://openknowledge.worldbank.org/entities/publication/614ddc2b-ca31-53c9-b59c-6bf12a56d336>

¹¹¹ Refer to Section B.1 and Section 1.2 of Annex 2 – Pre-feasibility Study.

¹¹² Determined through indicators that include food availability, access, and utilization.

¹¹³ Excluding the Benazir Income Support Programme (BISP).

Needs of the recipient

130. At the provincial level, during the 2022 floods, Khyber Pakhtunkhwa suffered ~USD 935 million in damages, ~USD 658 million in losses, and has recovery needs of ~USD 780 million¹¹⁴. The strategic recovery objectives¹¹⁵ (SROs) of Pakistan's Resilient Recovery, Rehabilitation, and Reconstruction Framework (4RF) do not include adaptation finance needs, which are estimated at between USD 7 and USD 14 billion annually¹¹⁶. With financial resources and contingency budgets being directed to disaster recovery and the dire economic situation¹¹⁷ faced by the country, alternative sources of finance for adaptation are non-existent in Pakistan, including those for implementation of the Climate Change Act.
131. There is a demonstrable need¹¹⁸ for technical capacity development in the public climate information services (CIS) sector, particularly regarding impact-based forecasting and anticipatory action. Similarly, at the community level, beneficiary communities are in dire need of technical assistance to be able to transition to climate-resilient livelihoods and flood protection. The project will address these capacity strengthening needs in a systematic, sustainable, and replicable manner.
132. The project will materially contribute to the removal of several information, technical, financial, policy, and social barriers in the beneficiary districts during the implementation period. In particular, the removal of the sparse meteorological coverage and inadequate flood early-warning barriers will catalyse a paradigm-shifting approach to disaster risk management. The removal of these technical barriers will be complemented by addressing several information, policy, and social barriers¹¹⁹. Sustainability is a key consideration during the design phase to ensure that project interventions (tangible, such as hydrometeorological equipment, and intangible, such as the formalization and registration of community governance structures) will continue beyond the project lifespan.

D.5. Country ownership (max. 500 words)

Policy alignment

133. The project is well aligned with Pakistan's overall climate change and development policy landscape and will contribute positively to several national and provincial priorities, including: i) strengthening forecasting, monitoring, and early warning systems for extreme weather events; ii) improving the capacity of the public sector and civil society for adaptation planning; and iii) gender-sensitive adaptation. list.
134. In terms of relevant climate change, disaster risk reduction, and gender policy¹²⁰, the project will contribute particularly to Pakistan's NDCs, especially towards the reduction of flood risk in and around the Indus Basin. Capacity building and knowledge transfer to enhance the resilience of communities to the impacts of climate change is also one of the NDC key priorities that the project will address. Similarly, the project aligns well with the KP Monsoon Contingency Plan with regard to improving emergency response to flooding and increasing response capacity through anticipatory action and impact-based forecasting. From a gender perspective, the primary point of alignment with national policy is the National Gender Policy Framework, where the project supports the promotion of equitable access to work opportunities, promotes an enabling environment for women and girls to access business skills through vocational training, as well as creating avenues to advance female leadership through support to women's associations.

Accredited and Executing Entity's track records

135. The government of Pakistan has requested WFP to act as the Accredited Entity (AE) and co-Executing Entity (EE) along with the Government of Khyber Pakhtunkhwa Province for the project.
136. WFP — the AE — is the leading humanitarian organization saving lives and changing lives, delivering food assistance in emergencies, and working with communities to improve nutrition and build resilience of the communities against climate change through livelihoods diversification. For its efforts to combat hunger, for its contribution to bettering conditions for peace in conflict-affected areas, and for acting as a driving force in efforts to prevent the use of hunger as a weapon of war and conflict, WFP was awarded the Nobel Peace Prize in 2020. In 2022, WFP assisted ~158 million people around the world. WFP globally has an excellent track record and experience in implementing climate adaptation and disaster risk reduction programmes and projects, and is currently implementing six GCF adaptation projects.
137. The co-Executing Entity, WFP Pakistan, has a robust programme track record and has supported several of Pakistan's national development priorities since it began operating in-country in July 1968. WFP's core operations and programmes consist of interventions to improve food security and livelihood resilience, reduce malnutrition, promote market alliances, support school feeding and enhance education and improve gender equality. The project is aligned and contributes to the Strategic Outcome 1 of WFP's Country Strategic Plan: "*Communities in Pakistan at higher risk of vulnerability to climate*

¹¹⁴ Government of Pakistan Ministry of Planning, Development, and Special Initiatives. 2022. *Resilient Recovery, Rehabilitation, and Reconstruction Framework Pakistan (4RF)*. [Online]. Available: <https://www.undp.org/pakistan/publications/pakistan-floods-2022-resilient-recovery-rehabilitation-and-reconstruction-framework-4rf>

¹¹⁵ SRO1: Enhance governance and the capacities of the state institutions to restore lives and livelihoods of the affected people, especially the most vulnerable; SRO2: Restore livelihoods and economic opportunities; SRO3: Ensure social inclusion and participation; SRO4: Restore and improve basic services and physical infrastructure in a resilient and sustainable manner.

¹¹⁶ Government of Pakistan. 2021. *Updated Nationally Determined Contributions to the United Nations Framework Convention on Climate Change*. [Online]. Available: <https://unfccc.int/sites/default/files/NDC/2022-06/Pakistan%20Updated%20NDC%202021.pdf>

¹¹⁷ United States Institute of Peace. 2023. *Pakistan's Existential Economic Crisis*. [Online]. Available: <https://www.usip.org/publications/2023/04/pakistans-existential-economic-crisis>

¹¹⁸ As per the capacity needs assessment undertaken during the threefold stakeholder consultation process as part of project development. Refer to Section D.5 below for full details of the stakeholder engagement process.

¹¹⁹ Refer to Section B.1 for a detailed barrier analysis.

¹²⁰ The full list of climate change and development policies that the project is aligned with can be found in Section 3 of Annex 2 – Pre-feasibility Study.

*change and other shocks are more resilient and have enhanced capacity to improve their livelihoods by 2027*¹²¹. WFP Pakistan has a strong field presence with field offices and Cooperating Partners throughout Pakistan, including a WFP sub-office in Peshawar. WFP Pakistan has well-established and robust implementation capacity in the resilience-building, disaster risk reduction, and capacity development fields in the country as a whole, as well as in Khyber Pakhtunkhwa province, and is therefore well placed to execute the project.

138. The other co-Executing Entity, the Planning and Development Department Khyber Pakhtunkhwa (P&D). The P&D Department's mandate is provincial and sectoral policy and decision-making in the field of development in the Khyber Pakhtunkhwa province. It is responsible for the implementation and monitoring of the overall development plans of the province and is the entry point for international partners in the province. Their primary role in the project will be to facilitate, plan, coordinate, oversee (appraise and review) and ensure smooth implementation of the project's activities.

Stakeholder consultations and ownership

139. Country ownership and transparent consultations were prioritized during the project development process to promote country ownership and buy-in.
140. Initial consultations with communities were led by the Provincial Government of Khyber Pakhtunkhwa Province, in light of restrictions in place because of the COVID-19 pandemic. WFP then held several consultations with government agencies at the Provincial Level, including the Planning and Development Department (P&DD), the Provincial Disaster Management Authority (PDMA), the Environmental Protection Agency (EPA), the Regional Pakistan Meteorological Department (R-PMD) Peshawar (the provincial arm of PMD) and the Flood Forecasting Division (FFD) of the Ministry of Water. Multiple consultations also took place with the Ministry of Climate Change and Environmental Coordination, Government of Pakistan at the National Level and with Provincial Stakeholders during the conceptualization of the project in 2020 where the concept note was shared, final changes presented and final adjustments to the concept note based on the inputs from stakeholders was made. Provincial government based on that provided the estimated co-finance as shown in Section C1. In addition to the government stakeholder meetings, a full round of consultations also took place with the other GCF Direct and International Access Entities operating in Pakistan i.e., UNDP, FAO, GIZ, IUCN, JS Bank, and the National Rural Support Programme (NRSP). The consultations with GCF entities helped WFP in avoiding duplication of activities and also no-overlap of the target districts or substantive areas.
141. After the approval of GCF on Concept note in 2022, further consultations took place at the full proposal preparation stage, especially with MoCC, UNDP, WWF, National Disaster Management Authority, Economic Affairs Division (EAD), Pakistan Meteorological Department (PMD), Federal Flood Commission (FFC) and Provincial Stakeholders (P&DD and line departments including Regional Met Department, Forest, Environment, Agriculture, On-Farm Water Management, Soil Conservation, PDMA and RRS) including the communities as these are the most active stakeholders in climate change adaptation. These consultations also helped in designing the project implementation modality, governance structure, and activities and also to ensure no geographical overlap, substantive alignment and mutually supportive actions at the national level as further details are added to the proposal. These consultations also helped in developing potentiality of building synergies and develop on each other capacities to have better long-term results. For example, IUCN is currently developing a gender and climate change strategy for Pakistan, which this project will ensure close alignment with.
142. Consultations also took place with Targets District Administration i.e., Buner and Shangla (including line departments i.e., PDMA, EPA, Forest, Environment, Irrigation, On-Farm Water Management, Soil Conservation Directorate) to validate the information and data approved by the GCF in the Concept Note.
143. These consultations also helped in gaining further information regarding any new initiatives. Meetings with targeted communities of Buner UCs (Batara, Malakpur and Makhranai) and Shangla UCs (Mian Kalay, PirKhana and KunKana) to gain knowledge regarding the community needs and requirements which will help in better designing the project activities. It also helped in assessing the District Administration (including the line departments) capacity in terms of resilience and anticipatory approaches. These consultative sessions also helped in aligning the project activities with the needs and requirements of the district administration, who are the first responder to any disasters and to plan anticipatory actions.

D.6. Efficiency and effectiveness

D.6.1. Estimated cost per t CO ₂ eq, defined as total investment cost / expected lifetime emission reductions (Mitigation and Cross-cutting)	(a) Total project financing	US\$ _____
	(b) Requested GCF amount	US\$ _____
	(c) Expected lifetime emission reductions	_____ tCO ₂ eq

¹²¹ World Food Programme. 2022. Pakistan Country Strategic Plan 2023-2027. [Online]. Available: <https://www.wfp.org/operations/pk02-pakistan-country-strategic-plan-2023-2027>

	(d) Estimated cost per tCO ₂ eq (d = a / c)	US\$_____ / tCO ₂ eq
	(e) Estimated GCF cost per tCO ₂ eq removed (e = b / c)	US\$_____ / tCO ₂ eq
D.6.2. Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (Mitigation and Cross-cutting)	(f) Total finance leveraged	US\$_____
	(g) Public source finance leveraged	US\$_____
	(h) Private source finance leveraged	US\$_____
	(i) Total Leverage ratio (i = f / b)	_____
	(j) Public source leverage ratio (j = g / b)	_____
	(k) Private source leverage ratio (k = h / b)	_____
D.6.3. Describe how the financial structure is adequate and reasonable in order to achieve the proposal's objective(s), including addressing existing bottlenecks and/or barriers; providing the minimum concessionality; and without crowding out private and other public investment. (max. 500 words)		
Cost		
144. The total project cost is USD 9.8 million. The proposed GCF contribution is USD 8.8 million, with WFP (cash and in-kind co-finance) and the Government of Khyber Pakhtunkhwa (in-kind co-finance) contributing the remaining project costs of USD 1.07 million. With these funds, the project will reach 146,737 direct beneficiaries and 1,623,400 indirect beneficiaries in the Buner and Shangla districts. This brings the total number of beneficiaries to 1,623,400 over the four-year project lifespan.		
Financial structure		
145. The project's financial structure is derived from the budgeted costs of the project, which include implementation of the three components, training, project personnel, equipment, as well as materials, goods, and services. This structure draws lessons from WFP's decades-long experience as a humanitarian partner in Pakistan and is designed to achieve the objectives in the most cost-effective and efficient way. As described in Section D.5, funds will be managed through the PIU with disbursements to the relevant CPs. Where WFP directly implements activities, these will be carried out in conjunction with government partners to facilitate buy-in, ownership, and experience in achieving all project outputs and outcomes. This structure will allow the project to balance support to national and subnational levels of government and engage appropriate counterparts at the federal, provincial, and district levels of government to implement each activity while minimizing potential financial and procurement risks.		
Value for money		
146. For the project, the total investment in climate adaptation for direct beneficiaries is approximately USD 68 over the four-year implementation period, or about USD 17 per year. When considering indirect beneficiaries, the annual cost of adaptation falls to USD 6 per capita and to about USD 4 per person on average over the project lifespan. This investment will realize returns for beneficiary communities that are much greater by improving food security and the resilience to flash-floods at the household level through local adaptation planning, as well as lowering flood risk through strengthened anticipatory action and early-warning.		
Concessionality		
147. Section C.4 (paragraphs 90-91) makes the case for maximum concessionality. Pakistan is a low-income developing country with an economy that is under severe economic stress with low foreign reserves, a depreciating currency, and high inflation. In this regard, Pakistan's ability to invest in early-warning systems, anticipatory action, and adaptation planning is already restricted and this lack of resources has contributed to limiting progress on its disaster risk reduction and adaptation agenda to date. Addressing the country's adaptation needs would require diverting obligated resources from other areas, which would compromise the government's ability to deliver on its commitments for other essential public goods and services. The proposed investments are a public good, and the project's grant will cover the cost of goods and services which in the absence of climate change would be less urgent and less necessary. These circumstances, combined with the country's overall financial position (refer to Section D.4 – Needs of Recipient), are consistent with the proposed grant-based finance structure described above.		

E. ANNEXES

E.1. Mandatory annexes

- Annex 1 NDA No-objection Letter(s) ([Template](#))
- Annex 2 Pre-feasibility (or feasibility) study ([Guidance](#))
- Annex 2a Logical Framework ([Template](#))
- Annex 2b Timetable ([Template](#))
- Annex 3 Budget plan that provides breakdown by type of expense including AE fees ([Template](#))
- Annex 4 Gender assessment and action plan ([Template](#))
- Annex 5 Co-financing commitment letter if applicable ([Template](#))
- Annex 6 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule
- Annex 7 Risk assessment and management ([Template](#))
- Annex 8 Procurement plan model ([Template](#))
- Annex 9a Legal Due Diligence (regulation, taxation and insurance) ([Template](#))
- Annex 9b Legal Opinion/Certificate of Internal Approvals ([Template](#))

E.2. Other annexes to be submitted when applicable/requested

- Annex 10 Economic and/or financial analysis ([Guidance](#))
(mandatory for private-sector proposals)
- Annex 11 Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
- Annex 12 Environmental and Social Action Plan (ESAP) ([Template](#))
- Annex 13 Operations manual for EDA projects ([guidance](#))
- Annex 14 Assessment of GHG emission reductions and their monitoring and reporting (for mitigation and cross cutting-projects)¹²²
- Annex 14 Accredited Entity fee request budget
- Annex 16 Operation and Maintenance Plan
- Annex 17 Project Location Map
- Annex 18 Beneficiaries Calculation

***** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents. *****

¹²²Guidance on GHG emission reduction calculations for GCF projects/programmes is available on the GCF Programming Guidance (<https://www.greenclimate.fund/sites/default/files/document/gcf-programming-manual.pdf>), Box 12 "How to estimate greenhouse gas emission reductions for GCF". This annex is mandatory for Mitigation and Cross-cutting projects