GREEN CLIMATE FUND

Empowered lives. Resilient nations.

Project title: Scaling-up of Glacial Lake Outburst Flood (GLOF) risk reduction in Northern Pakistan	
Country: Pakistan	
Implementing Partner: Ministry of Climate Change of Pakistan	**Management Arrangements :** National Implementation Modality (NIM) with UNDP Support Services to NIM
UNDAF/Country Programme Outcome: One-UN Programme II (2013-2017) **Strategic Priority Area-3:** Increased national resilience to disasters, crises and external shocks **Outcome: 3.2:** Vulnerable populations benefit from improved sustainable environmental management practices, including climate change mitigation and adaptation CCPAP (2013-2017) **Outcome 3.2:** Vulnerable populations benefit from improved sustainable environmental management practices, including climate change mitigation and adaptation;	
UNDP Strategic Plan Output: **Output 1.4.** Scaled up action on climate change adaptation and mitigation across sectors which is funded and implemented	
UNDP Social and Environmental Screening Category: Moderate	**UNDP Gender Marker for each project output:** GEN-2
Atlas Award ID: 00102590	**Atlas Project ID:** 00104582
UNDP-GEF PIMS ID number: 5660	**GCF ID number:** FP018
Planned start date: July 2017	**Planned end date:** June 2022
LPAC date: *22 June, 2017*	
Brief project description: The melting of the Hindu Kush, Karakoram, and Himalayan glaciers in Northern Pakistan due to rising temperatures has created 3,044 glacial lakes in the federally-administered territory of Gilgit-Baltistan (GB) and the province of Khyber Pakhtunkhwa (KP). It is estimated that 33 of these glacial lakes are hazardous and likely to result in glacial lake outburst floods (GLOFs)[1]. Such outbursts have occurred in the past and when they do, millions	

[1] http://www.glof.pk/index.php/video-gallery/video/a-journey-through-glaciers

of cubic metres of water and debris is released in a few hours, resulting in the loss of lives, destruction of property and infrastructure, and severe damage to livelihoods in some of the most remote areas of Pakistan. Currently 7,101,000 people remain at risk in GB and KP. In July 2015, over 280,000 people in GB and KP were affected by a combination of heavy rains and GLOFs.

At present, the country faces a critical gap in technical and technological capacity to monitor the status of glaciers through hydrological monitoring and forecasting. Current early warning systems (EWS) do not have the capacity to support the management of risks posed by rising water levels in the lakes or the ability to issue early warnings to communities. The design and implementation of medium- and long-term disaster management policies as well as risk reduction and preparedness plans is also not fully geared to deal with the specifics of GLOF threats.

The Government of Pakistan has recognized the threat from GLOFs in its National Climate Change Policy and in its National Determined Contribution to monitor changes in glacier volumes and related GLOFs Currently, 58.7 million people in Pakistan are living in poverty, with 46 per cent of the rural population and 18 per cent of urban households below the poverty line. To be able to strengthen capacities of vulnerable communities to address the GLOF issue urgently in the scale that is needed, the Government of Pakistan needs financial support from international donors. Flood hazards are already greater than what national public finance can manage. As a result, it has secured GCF resources to upscale ongoing initiatives on early warning systems and small, locally-sourced infrastructure to protect communities from GLOF risks. The interventions proposed for scale-up by this project will be based on activities implemented in two districts that have demonstrated success. In these districts engineering structures like gabion walls have been constructed and automatic weather stations, rain gauges and discharge equipment were installed. Rural communities receiving this support were able to avoid human and material losses from GLOF events. The proposed GCF project will expand coverage of interventions to fifteen districts in the Khyber Pakhtunkhwa and Gilgit-Baltistan provinces. It will strengthen the technical capacity of sub-national decision makers to integrate climate change and disaster risk management into medium- and long-term development planning processes.

FINANCING PLAN	
GCF grant	USD 36,960,000
UNDP TRAC resources	-
Cash co-financing to be administered by UNDP	-
(1) Total Budget administered by UNDP	**USD 36,960,000**
PARALLEL CO-FINANCING (*all other co-financing (cash and in-kind) administered by other entities, non-cash co-financing administered by UNDP)*	
UNDP	USD 4,000,000
Government of Gilgit-Baltistan	USD 500,000 (PKR 50 Million)
(2) Total co-financing	**USD 4,500,000**
(3) Grand-Total Project Financing (1)+(2)	**USD 41,460,000**

SIGNATURES		
Signature: **Syeb Abu Ahmad Akif** Secretary Ministry of Climate Change, Government of Pakistan	**Agreed by Government/ Implementing Partner**	**Date/Month/Year:** 24.08.2017
Signature: **Neil Buhne** Resident Representative United Nations Development Programme	**Agreed by UNDP**	**Date/Month/Year:** 10.8.2017

SYED ABU AHMAD AKIF
Secretary
Ministry of Climate Change
Government of Pakistan
Islamabad

I. TABLE OF CONTENTS

II. DEVELOPMENT CHALLENGE

1. Pakistan lies in a geographic region where temperature increase is projected to be higher than the global average. One of the major threats identified in Pakistan's National Climate Change Policy (NCCP) is the projected recession of the Hindu Kush, Karakoram, and Himalayan glaciers due to global warming and carbon soot deposits from trans-boundary pollution sources. In addition to threatening water inflows into the Indus River System (IRS), glacial recessions are a prominent threat to the water sector due to the country's arid climate and its reliance on water from glaciers and snowmelt. Glacial melt in the Himalayas is expected to increase the flooding of the Indus River and its tributaries over the next two to three decades, which will be followed by decreased river flows as the glaciers recede. Two areas in Pakistan's north - home to the country's Hindu Kush, Karakoram and Himalayan glaciers - are particularly threatened: the administrative territory of Gilgit-Baltistan (GB) and the province of Khyber Pakhtunkhwa (KP).

2. Pakistan was ranked number three in the 2014 Global Climate Risk Index, with over US $2.4 billion (PPP) in losses between 1993-2012 due to climate change with the majority of losses caused by floods. The role of GLOFs in the overall intensity of floods in Pakistan is all the more pronounced as a result of the rapidity at which Pakistani glaciers are melting compared to any other part of the world (Pakistan Economic Survey 2014-15). In 2010 GLOF's resulted in unprecedented devastation to human lives, houses, transport networks, irrigation channels and cultivated land in the Bindo Gol valley. Another example is the case of Booni Gole Glacier located near Chitral that generated an outburst flood in July 2010 and caused huge erosive damages. Overall, the floods in 2010 caused 1,980 reported deaths and nearly 2,946 injuries. Approximately 1.6 million homes were destroyed, and thousands of acres of crops and agricultural lands damaged (ADB, 2010). Approximately 7,100,000 people live in the most vulnerable districts of these two provinces.

3. Several factors lay behind socio-economic vulnerabilities of Pakistani society to climate-related hazards. They include:

a) lack of awareness of GLOF risks,
b) inadequate management systems in place to address them,
c) increasing poverty rates,
d) poor construction practices,
e) unsustainable livestock and agricultural management practices,
f) fragile natural environment in mountainous regions,
g) weak early warning systems, and
h) almost non-existent resilience tools available for communities to reduce risk.

4. Further aggravating the vulnerability of Pakistan's rural communities are:

a) Poor communication infrastructure and lack of critical facilities.
b) Lack of safe land and scattered settlement patterns in mountainous regions to construct communities and infrastructure
c) Climate change, climate variability and harsh weather conditions.
d) Rapid growth of human and animal populations potentially exceeding local carrying capacities,
e) Environmental degradation resulting from poorly managed urban and industrial development processes, and climate change and variability.

5. IPCC reports predict that, in the coming decades, the frequency, severity and impact of certain weather hazards may increase. This could lead to greater social, economic and environmental losses. The Khyber Pakhtunkhwa and Gilgit-Baltistan provinces are particularly vulnerable, as demonstrated by recent events. From 16-22 July 2015, the region was struck by several major GLOF events triggered by monsoon rains and rapid snowmelt. Initial assessments indicate that at least 285,000 people (the majority of which are women and children) have been affected in Chitral District of Khyber Pakhtukhwa province alone, including 3 fatalities. Another 2 fatalities are reported from Diamer District of Gilgit-Baltistan province. Within the entire project region, at least 389 houses have

been damaged or destroyed in addition to 17 bridges, 11 power stations, and 109 drinking water supply structures. The losses caused by these GLOF events are extensive and rehabilitation of the flood-affected people and reconstruction of damaged infrastructure in Chitral district after the GLOF event in 2015 is estimated to have cost US$ 100 million.

6. According to a recent Climate Public Expenditure and Institutional Review (CPEIR) published in April 2015, climate change is a key factor that needs to be addressed if economic growth, poverty reduction and well-being of the population is to be realized. The report identifies a number of threats to Pakistan's long term prosperity including:

a) changing monsoon patterns,
b) melting glaciers which supply 40% of inflow to the entire Indus River system and support 90% of Pakistan's agriculture sector and almost 30% of its power sector),
c) increased frequency of extreme weather events (floods and droughts), and
d) decreased capacity of water reservoirs.

7. Due to these impacts, the total costs of adaptation in Pakistan are currently estimated at around $6.5 billion per year (2015) but expected to increase to $26.4 billion by 2050 under a business-as-usual scenario, based on a UNFCCC National Economic and Environmental Development Study. Timely preparedness interventions are needed now to build adaptive capacity and reduce future climate damages.

8. Despite the adoption of the National Disaster Response Plan in 2010, Pakistan has not succeeded in building resilient communities and promoting disaster risk preparedness as demonstrated by the floods in 2010, 2011 and 2012 (J. Ahmad et al., 2014). The investments in disaster management from government, private sector, charities as well as international donors have been largely used for disaster recovery instead of prevention (M.A. Kahn, 2014). The 2010 flood resulted in US$9.7 billion, representing 5.7% of Pakistan's GDP, however, the observation of institutional gaps and regulatory weaknesses revealed that these losses could have been highly reduced through improved disaster preparedness and response (S. Deen, 2015).

9. Vulnerable populations (particularly women and children) are not able to face the costs of adaptation due to their low resources and the high costs of adaptation. The average household income within the 37 project communities is estimated at US $1,126 per year, compared to a national average of US $3,796 per year. Based on one study of multi-dimensional poverty, 38.8% of all people in the 15 districts covered by the project are living in poverty, compared to a national poverty index of 27.8%.

10. Government financial resources are also severely lacking, thus, external financing, particularly through grants, is vital. Gilgit-Baltistan is entirely dependent on yearly allocations from the Federal Government; it does not have a significant revenue base of its own. However, Gilgit-Baltistan has the most focused policy commitment to respond to climate change with the highest expenditure. Hence, there is a critical need to allocate external funds to support climate change interventions in GB.

11. The need for an effective Early Warning System (EWS) is critical. Despite the fact a warning system was in place during the 2010 floods, only 10% of the affected villages received advanced warning due to the limited technical capacity of the system and inability of district authorities to transmit information to the community level (P. Gonzalez, et al., 2014). The project, by expanding the previous interventions carried out by GLOF I to improve technical capacity and community-based EWS and the GLOF response measures, will ensure that the targeted vulnerable populations receive adequate and timely information that will ensure their preparedness and response in future flash flood events.

12. As of today, institutions still need to be strengthened to improve the resilience of the populations to climate change. The severity of the impacts of the recent floods has been an indicator of this institutional gaps, in particular due to the improper implementation of adaptation plans (M. Shabbir, et al., 2014). In addition, flood-prone areas are large and numerous in Pakistan, which implies that this a priority area for preparedness activities; however, Pakistan

is not yet prepared to cope with disasters of the magnitude of GLOF events (J. Karamat, 2010). By strengthening sub-national institutions, the project will ensure better response and capacity to alleviate the harm from these natural hazards.

13. Future temperature rise for Pakistan is estimated to be +1.4 - 3.7°C by 2060 according to GCMS models (IPCC 5th Assessment Report). In addition, historical data (1902-2002) shows that the country's number of hot days and nights per year has increased by 20 days and 23 days respectively defined as the temperature exceeded on 10% of days or nights in current climate of that region and season (World Bank, 2015). Mostly as a result of monsoon rains in July through September, Pakistan experiences frequent and severe flooding in the Indus River Basin where millions live on low-lying lands. According to IPCC projections, climate change can be expected to impact the effects of this phenomenon (Hijioka et al., 2014). In 2010, an unprecedented rainfall inundated approximately one-fifth of the nation's land and affected an estimated 21 million Pakistanis (World Bank, 2011). Nine of the 25 heaviest rains ever recorded in Pakistan occurred between July and August of that year (World Bank, 2011).

14. On the other hand, in 1999-2002 Pakistan experienced a nationwide drought that revealed the limitation/vulnerabilities of the Indus River Basin irrigation system, as the total flows of water in major rivers declined roughly 34% below the monthly norm (World Bank, 2011). People faced severe water shortages and major crop yields declined 10% (World Bank, 2011). Changing the seasonal distribution of rainfall, coupled with rising temperatures, is likely to increase evaporation and reduce water availability in drought-prone regions (World Bank, 2011). The IPCC concludes that a shift in climate variations will have a resounding effect in countries heavily dependent on agricultural production (Hijioka et al., 2014). This appears then will be the case for Pakistan which is largely an agro-based economy. Agriculture in Pakistan contributes to 21% of the total GDP and 70% of the total population draw their livelihood from various agricultural activities (Asif & Islam-ul-Haque, 2014). In the northern state of KP, for example, agriculture contributes to 14% of the economy and provides direct and indirect livelihood to the majority of the rural population (Ikram et al., 2014).

III. STRATEGY

15. The Government of Pakistan's preferred response to the increasing rate of glacial melt as a result of climate change is to establish efficient and effective mechanisms to enhance the resiliency of vulnerable communities. In the context of the increasing risk of glacial lake outbursts, the objectives of the proposed project are to:

(i) empower communities to identify and manage the risks associated with GLOFs and other related impacts of climate change,
(ii) strengthen public service systems to lower the risk of GLOF related disasters, and
(iii) support the development of sustainable and climate-resilient livelihood options for communities in the regions targeted by this project.

16. Long-term solutions for communities are hindered by the following socio-economic, political and institutional barriers:

- Institutional capacity and coordination at the sub-national level, and across relevant agencies to address the risks from GLOFs and climate change is limited, but the proposed project will strengthen public service systems to lower the risk of GLOF related disasters.
- Government institutions have limited resources, capacity, and logistical feasibility to construct infrastructure required for remote mountain communities to reduce exposure and respond to disasters and climate change. Therefore, the proposed project is needed to establish efficient and effective mechanisms to enhance the resiliency of vulnerable communities

- Capacity and information availability at the community level to prepare for and respond to immediate threats from GLOFs is limited. The proposed project will provide the community much needed skills and information to address GLOF-related risks.
- There is a lack of access to readily available financial capital for households to cope with GLOF-related risks, the proposed project will scale up a revolving, community-based fund to enhance the resiliency of vulnerable communities.
- Current natural resource, land, and water use practices are unsustainable. Ecosystem-based adaptation interventions will provide a paradigm shift required to catalyze new long-term sustainable use patterns that form the foundation of local agro-based livelihood assets.

17. The project will scale up piloted interventions in 15 districts in Khyber Pakhtunkhwa (KP) and Gilgit-Baltistan (GB)[2]. The interventions have been tailored and agreed upon with beneficiaries to address climate change impacts and GLOF risks by preventing loss of lives and strengthening community infrastructure. , thus contributing to a climate-resilient sustainable development in the long-term. Overall, the project will contribute to increased resilience and enhanced livelihoods of the most vulnerable people affected by climate related disasters and variability through the replication of demonstrated adaptation measures, empowering beneficiaries to address climate-induced disasters including risks from GLOF.

18. The project will strengthen adaptive capacity and reduce rural communities' exposure to climate risks and GLOF. Interventions will increase the technical capacity of provincial and line departments to integrate CC and GLOF risks into development plans, tools and budgets, as well as expand the coverage of Pakistan Meteorological Department's EWS based on hydrological modelling and flood scenarios.

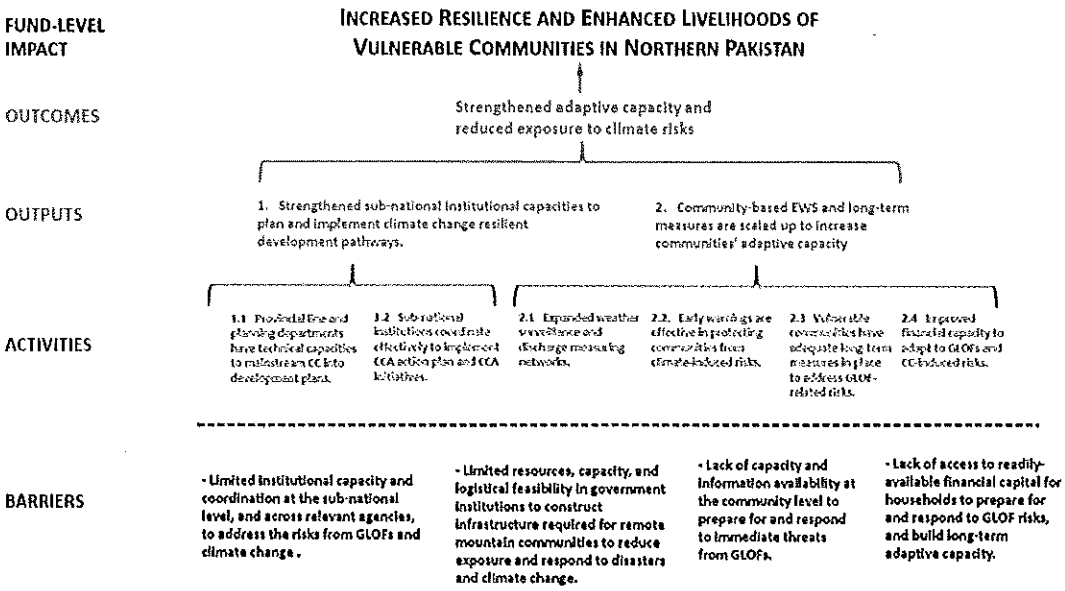
19. Moreover, the project will strengthen sub-national institutional capacities to plan and implement climate change and disaster-resilient development pathways, develop the capabilities of local level institutions to incorporate climate change adaptation considerations into development plans in Gilgit-Baltistan and Khyber-Pakhtunkhwa. Institutions targeted by the project include:

(i) Local level disaster management authorities, Agriculture, Livestock and Water departments, and
(ii) federal institutions including the Ministry of Kashmir Affairs and Gilgit Baltistan, Ministry of Climate Change and National Disaster Management Authority.

20. In addition, the project will contribute to the reduction in vulnerability to GLOF risks by enhancing adaptive capacity and resilience of vulnerable subsistence farmers and flood-risk prone communities through community-based EWS to increase communities' adaptive capacity. AWS and river discharge sensors will feed information into Pakistan Meteorological Department network for hydrological modelling to develop flood scenarios to expand the EWS to 15 districts in KP and GB, directly benefiting 696,342 people.

21. The project presents a holistic model of climate-resilient development to enable one region in Pakistan to manage the risks from GLOFs and other impacts of climate change, incorporating top-down regulatory support, bottom-up community preparedness, and long-term planning for sustainable and climate-resilient use of natural livelihood assets. These activities, working in concert with each other and existing initiatives on the ground for livelihoods development, greatly enhance the region's endogenous adaptive capacity. The barrier each activity addresses, and its ability to support strengthened adaptive capacity and reduced exposure to risks, is illustrated in the theory of change presented below:

[2] During project development phase, there were 7 districts in Gilgit-Baltistan. The number rose from 7 to 10 after addition of 2 districts in Baltistan and separation of Hunza-Nagar district. Therefore, the total number of districts covered by the project rose to 15. See relevant annex with a Map of project locations.



22. In the holistic approach of the project, activity streams feed off each other to produce and maintain a meaningful paradigm shift that enables the long-term resilience of the region. For example, slope stabilization through re-vegetation would not be sustainable beyond a one-off investment in the absence of a natural resource management plan. This project ties this ecosystem-based adaptation measure with the mainstreaming of climate change risks and solutions at an institutional level within sub-national agriculture departments and environmental protection agencies. Further, it capacitates communities to pursue alternative livelihoods which are less demanding of natural resources and more resistant to climate change, catalyzing a shift in land, water, and natural resource use practices. Together, these activities ensure that the forest resources planted for slope stabilization and their intrinsic protective value against GLOFs and other climate risks are conserved in the long term.

23. Similar linkages are present between other project activities – for example, inviting engagement of micro-credit lenders in the region could enable individuals to pursue other sustainable and climate-resilient livelihoods not covered by the programmatic or temporal scope of this project; and drip irrigation systems to enhance long-term water security could also support alternative livelihoods development in addition to reducing pressures on water supplies required for natural resource conservation.

24. The primary goal of this project is to save human lives and property through the operation of EWS and protective structures. Secondly, the project will promote slope stabilization through ecosystem-based interventions. The project will also produce significant co-benefits in terms of income and business generation, community capacity-building, improved quality of human life, sustainable and climate-resilient land use, reversal of environmental degradation, and women's empowerment. The subsections that follow provide additional information on how these benefits will be achieved:

Economic benefits:

25. The project will generate employment opportunities for local communities both during and beyond the timeframe of the project. Labor will be sourced locally for the construction of infrastructure, such as gabion walls, check dams, spillways, river gauge stations, weather stations, as well as for reforestation and slope stabilization programmes. The engagement of microcredit lenders and insurance companies, and development of an index-based insurance scheme, will help create an enabling environment to incubate enterprise growth, in conjunction with other existing initiatives (e.g. through SMEDA and ASF). Climate change will have an impact on food security in areas where employment opportunities in ecosystem services sector are scarce. The project will support the communities in protecting their natural resources by strengthening the capacities to sustainably use ecosystem services and thus

generate new businesses that are not entirely dependent on natural resources. For full details of economic and financial benefits see the relevant sections of the GCF funding proposal.

Environmental Benefits

26. The project produces a number of environmental and ecosystem co-benefits. Much of the natural state of slopes and floodplains in the target valleys has been degraded. Bioengineering and reforestation not only creates natural buffers for flooding and reduces risks of landslides, debris slides, and avalanches, but these activities can also restore the natural biodiversity of the region. The project will coordinate with other initiatives (e.g. the Mountains and Markets project) focused on alternative livelihoods and sustainable harvest of non-timber forest products (e.g. medicinal plants) to tie ecosystem conservation to income generation. Together, these activities will help reduce dependencies on natural resources, improve overall land productivity (both for pasture and farmlands), increase the functional integrity of the natural landscape, and reverse degradation of land and water resources, resulting in greater resilience to climate change impacts both overall and in the constituent productive areas.

27. Healthier ecosystems provide higher crop yields, strengthened agricultural practices, and reduced crop losses. Ultimately, this will contribute to enhanced food security and resilient livelihoods and ecosystems. GCF resources will also yield environmental benefits through strengthened ecosystem resilience and improved soil retention.

28. Planting trees results in several primary and secondary benefits, including:

- reducing landslides that destroy local homes and infrastructure; and protecting the soil reduce destruction of infrastructure.
- increasing carbon absorption and, therefore, reduce the impacts of climate change;
- reducing the amount of raw materials needed to repair or build homes or build new homes
- reducing amount of waste material that needs to be managed after landslides and floods after homes are damaged.

29. The prior two issues will also be direct results of the programme through the development of small-scale hard infrastructure, particularly when using environmental friendly construction materials.

Social Benefits

30. The project will provide the communities with improved information to allow them to make decisions prior to, during and post GLOF events. It will also provide valuable data that will allow for future planning in terms of structural planning of houses, the management of their agricultural crop, land-use planning, etc. With this information, it is highly likely that lives will be saved and it will improve two-way communication mechanisms and inclusion of resilience building projects in the socio-economic planning process.

31. The project will strengthen local communities through GLOF awareness raising, response training and the formation of village hazard watch groups. In addition, community leaders will be direct beneficiaries from the technical skills development and training program of the project. The training will enable these community leaders to assist villagers in development and implementation of local land use plans. Local NGOs/CBOs will have an improved understanding of community based and participatory approaches for the introduction and implementation of climate change adaptations initiatives at the local level. Strengthening of local community-based organizations will also enable farmers and women to receive small grants for addressing GLOF impacts.

IV. RESULTS AND PARTNERSHIPS

I. Expected Results:

Output 1: Strengthened sub-national institutional capacities to plan and implement climate change -resilient development pathways

32. This output responds to the need for systematic integration of GLOF risk management into the processes, policies and plans of institutions that have a stake in avoiding human and material losses from disasters in vulnerable areas in Khyber Pakhtunkhwa (KP) and Gilgit-Baltistan (GB). The project will strengthen the capabilities of local level institutions to incorporate climate change adaptation considerations into development plans. The incorporation of climate change adaptation measures into planning instruments will also be based on progress made at the national level under the NCCP and by other regions in including climate change measures in sectoral, territorial, and environmental planning instruments. In addition, GCF resources will be used to promote the inclusion of information generated from early warning systems and hydrological modeling (Output 2) to generate flood scenarios that then can better inform local development plans and, by extension, budgeting.

Activity 1.1: Provincial line and planning departments have technical capacities to mainstream climate change into development plans

33. Provincial and territorial governments have recognized the risks of climate change, and have begun mobilizing to address it. Building on this progress and based on the current structure and coordination mechanisms established by the NCCP, the project will support the development of provincial climate change adaptations action plans that address GLOF risks from a sectorial perspective, focusing primarily in agriculture, livestock and water sectors. At the provincial level, the project will support the integration of GLOF risks into existing provincial climate change policies, based on information and data generated in Output 2 [hydrological modeling and flood scenarios]. In addition, EPAs, line and planning departments in GB and KP will integrate climate change risks that will set the foundations for adaptation sectorial and provincial action plans.

34. The Climate Change Adaptation (CCA) action planning process will be driven by the DRM, Agriculture, Livestock, and Water sub-national departments in KP and GB, based on the strategic objectives underlying the National Climate Change Policy. The overall purpose of Output 1 is to introduce appropriate policies and plans to address GLOF risks across different sectors. The project will finance the identification and preparation of written policy recommendations on how to address GLOF risks in diverse sectors, based on evidence and will be subject to approval by a multi-stakeholder board. These policy recommendations will be submitted to Cabinet, with PSC members serving as advocates in their respective line ministries. Their adoption by relevant line Ministries and local authorities will be tracked. This initiative will be instrumental in addressing one of the most critical policy gaps to catalyze behavioral and policy changes required to managing GLOF risks across key sectors.

Indicative inputs for the above activity include:

- Developing integrated provincial CCA action plan encompassing key sectors (mainstream CC risks into DRM, Agriculture, Livestock, and Water Sectors) in KP and GB, linked to NCCP.
- Integrating GLOF risks with existing KP and GB provincial CC policies which will serve as framework for the CCA action plan.
- Building capacities of EPAs, line departments (Agriculture, Water and DRM) and planning departments to mainstream CC risks in development plans (building blocks of CCA action plans) in GB and KP.

Activity 1.2: Sub-national institutions coordinate effectively to implement adaptation action plans and climate change initiatives

35. The project will strengthen and expand existing sub-national institutional and coordination arrangements including financial, planning and budgeting processes and other requirements for implementing adaptation action plans and climate change initiatives in GB and KP. Climate change coordinating entities will be established (and strengthened if currently operating) using a multi-stakeholder approach to integrate climate change responses across key sectors. In addition, the project will increase consideration of GLOF and climate change risks among

district authorities, NGOs and CBOs as these will be key agents implementing adaptation action plans. Activity 1.2 aims to strengthen and expand existing sub-national institutional and coordination arrangements including financial, planning and budgeting processes and other requirements for implementing adaptation action plans and climate change initiatives in GB and KP. GCF resources will be used to strengthen the Climate Change Cells in sectoral ministries in KP and GB to implement adaptation action plans financed under Activity 1.1.

Indicative inputs for the above activity include:

- Establishing/ strengthening provincial-level CC coordinating entities within the Planning and Development Departments (involving CBOs, NGOs, and EPA) to coordinate responses and management of medium- and long-term risks across key sectors.
- Raising awareness of district authorities and local NGOs and CBOs of the need to effectively coordinate CC initiatives and play strategic roles in implementing CCA action plans across key sectors.

Output 2: Community-based EWS and long-term measures are up-scaled to increase communities' adaptive capacity

36. The project will expand the climate information surveillance and discharge measuring network in the region by installing 50 automatic weather stations (AWS) and 408 river discharge gauges/sensors. These monitoring instruments will provide the requisite data to conduct hydrological modeling to generate flood risk scenarios that will feed into a flood early warning system to enable the dissemination of flashflood warning signals on a 24-hour basis generated by PMD through cellphones. AWS and river discharge sensors will provide information to capacitate village hazard watch groups that will be part of a local-level early warning system. Small-scale hard adaptation structures will be constructed (gabion walls, spillways, check dams) to protect human lives and household's assets in combination with bioengineering interventions to stabilize slopes slides, reducing the risk of debris slides. The protective capability of these structures will be amplified by additional resources channeled to the communities, ex-ante and following a GLOF event through the scale up of already established, revolving community-based disaster risk management funds. In addition, ecosystem-based adaptation interventions will be promoted in order to increase resilience against GLOFs events while supporting livelihoods.

Activity 2.1: Expanded weather surveillance and discharge measuring networks

37. The project will facilitate the updating of river discharge and meteorological information into the Pakistan Meteorological Department (PMD) network to address the vulnerability of the identified target area and provide information for the development of an Early Warning System. The installation of 50 automatic weather stations (22 in KP and 28 in GB) and the installation of 408 river discharge gauges/sensors (170 in KP and 238 in GB), will be used to measure lake volume, flow and discharge rates, and will provide data to conduct hydrological modeling to generate flood risk scenarios (Input 2.2.1).

38. Indicative inputs for the above activity include:

- Installation of 22 weather monitoring stations in KP and 28 in GB: to collect meteorological data in the catchment areas to understand parameters with flood peaks.
- Installation of 170 river discharge gauges/ sensors in KP and 238 in GB: to collect river flood data to understand and predict flood peaks
- GBDMA and KPDMA provide extension to PMD on installation and maintenance of equipment

Activity 2.2: Early warnings are effective in protecting communities from climate-induced risks.

39. Existing flood early warning systems in the target area will be expanded to enable the dissemination of flash flood warning signals on a 24-hour basis. Information generated by AWS and river discharge gauges (170) / sensors (22) will be used by Pakistan Metrological Department (PMD) to conduct hydrological modeling to generate flood scenarios and calculate GLOF lead time. GLOF hazard maps previously developed and updated hydrological modeling will be utilized to estimate the probable flood inundation sites. PMD will analyze this information and alerts will be issued through cellphones and other media.

40. AWS and river discharge gauges/ sensors information will be gathered and analyzed at the Main Control Room at PMD, where an analysis of thresholds for potential GLOF risks will be carried out. When warnings are triggered, PMD will issue meteorological and hydrological alerts regarding possibilities of GLOF events in the target valleys. The communication channels for PMD to disseminate the alerts will be mobile phones (Call + SMS), sirens, FM Radio, and the Internet website. The most effective means of communicating warnings to villagers is by mobile phone; which is available in most of the valleys. However, where signals are poor, sirens or declarations from mosques, and satellite based communication can be used. PMD has deployed this type of communications and alert system in other regions. UNDP will support expanding this coverage to the twelve target districts.

41. Indicative inputs for the above activity include:

- Conducting hydrological modeling to generate flood scenarios and calculate GLOF lead time
- Setting up and training village hazard watch groups to monitor GLOF and disseminate early warnings

Activity 2.3: Vulnerable communities have adequate long-term measures in place to address GLOF-related risks

42. Potential outburst flood hazards need to be addressed from different perspectives and in coordination with CBOs and community members aiming to protect life and property in the downstream of each valley, hence the importance to combine preparedness and response, small-scale infrastructures with EWS-based mechanisms downstream (Activity 2.2) to address GLOF risks.

43. The project will support the expansion of DRM Committees and Emergency Response Cells by providing early warning equipment and promoting advanced planning of risk management activities using preexisting DRM plans (modified and enhanced by GLOF I project). Small-scale adaptation structures will be constructed, expanding on the experience of the pilot project activities carried out in GLOF I project financed by the Adaptation Fund.

44. Many slopes surrounding vulnerable valleys have been denuded of vegetation by human activities, increasing the risk of a landslides. Ecosystem- based adaptation through bioengineering helps stabilize slopes at risk through reforestation and vegetation, reinforcing the structural integrity of slope sides and increasing their shear resistance., These activities will be linked to the sustainable land and pasture management plan to ensure that the vegetative cover and the stabilization it provides will be maintained in the long term. Choosing local indigenous species for re-vegetation will help conserve and restore natural ecosystems in the project area, and sustainable harvest of those species with economic value will contribute to income generation. During the pilot project, demonstration sites were established for slope stabilization through these bioengineering techniques in two locations. These demonstration sites will be used to train communities and local support organizations from the 15 districts included in this project.

45. In GB and KP, despite having access to water resources from the glaciers, irrigated agriculture is still limited. Because of the reliance of the agriculture sector on rain-fed agriculture, increasing climate variability is causing a greater frequency of crop failure and associated food insecurity. Increasing and improving existing irrigation systems to help against crop failure is, therefore, a priority. The project will increase the capacity of existing micro-irrigation systems and rehabilitate irrigation channels thought the installation of 240 water efficient farming technologies in 24 targeted valleys. One hundred and twenty (120) drip irrigation systems will be installed to support fruit trees (apples, apricot, cherries, peaches, plums and walnuts) and 120 sprinkle irrigation systems will be installed for vegetables and cereal crops (potato) raising.

46. Indicative inputs for the above activity include:

- Expanding DRM Committees and emergency response cells to act as first responders and manage drills and simulations.
- Training GBDMA and KPDMA communities and DRM committees on disaster preparedness and response.
- Constructing 250 small infrastructure to reduce medium- and long-term risks of floods (gabion walls, check dams, spillways).
- Expanding slope stabilization to mitigate risks from debris slides (100000 ha in KP and 140000 ha in GB).

- Installing 240 water efficient farming technologies (Micro Irrigation Systems: 120 Drip Irrigation Systems and 120 Sprinkle Irrigation Systems and rehabilitation of irrigation channels in 24 targeted valleys)

Activity 2.4: Improved financial capacity to adapt to GLOFs and other climate change-induced risks

47. Access to finance is critical for enabling communities and households to prepare for extreme weather events and to build adaptive capacity. As part of the Adaptation Fund financed GLOF I project, a community-based revolving fund was established with an initial endowment of PKR 1 million (2015 US$ 9,800), which has since increased to PKR 2.7 million (2015 US$ 26,600) through contributions by local communities and governments. The fund operates based on pooled risk-sharing, and supports GLOF response and preparedness activities within these communities where other sources of risk insurance or credit are lacking, and/or relief from other sources is delayed. The fund only disburses payouts preceding or following an emergency, and is repaid over time by its enrollees. As GLOF events can impact on human lives and livelihoods, the fund plays a vital role by providing financial support to community members. The project aims at increasing adaptive capacity of communities to recover from GLOF shocks and losses to their assets and livelihoods. However, it is currently insufficient to provide adequate coverage within the pilot villages or expansion to the others included in this project. With GCF resources, a one-time endowment will be made to set the fund officially and increase the size to around US$ 50,000 for each disaster risk management cell. Based upon experience to-date, this amount is sufficient to cover climate adaptation measures. Also, relevant stakeholders (i.e. micro-credit lenders, insurance companies, SMEs, Government agencies, etc.) will be trained to improve coordination and delivery of integrated adaptation and disaster risk management initiatives in GB and KP.

48. This project will support awareness raising and training events that target local public and private entities to increase their understanding of risk and mitigation measures required for GLOFs and of other local climate and disaster phenomena. Further, GCF resources will be used to create incentives for micro-credit lenders and insurance companies to better cover these organizations by:

(i) addressing current barriers in credit and insurance markets, and
(ii) exploring new innovative products such as index-based insurance payouts based on discharge as recorded by the river gauges (Input 2.1.2) and/or rainfall as recorded by the AWS (Input 2.1.1).

Indicative inputs for the above activity include:

- Scaling-up revolving community-based disaster risk management fund i.e. $ 50,000 USD per Community based Disaster Risk Management Committee (CBDRMC) to address climate change adaptation measures (medium- and long-term risks)
- Training relevant stakeholders (i.e. micro-credit lenders, insurance companies, SMEs, Government agencies, etc.) to improve coordination and delivery of the CBDRM Fund and adaptation/DRM initiatives on the ground in GB and KP.

ii. Partnerships:

49. The extensive scope of the project requires close partnerships with a range of stakeholders at federal and provincial levels, including UN agencies and international partners. The project will review all ongoing interventions by partners in target regions and establish a mechanism for coordination, sharing information, best practices and lessons learned. A detailed partnership strategy will be prepared during the project inception phase.

50. At the federal level, the project will rely on the key stakeholder and the implementing partner of the project, the Ministry of Climate Change (MCC). The Ministry was re-established in 2015 (following its downgrading to a division in 2013) thereby giving climate change prominence once again at the federal level. MCC has five departments: National Disaster Management Authority, Pakistan Environmental Protection Agency, Pakistan Environmental Planning and Architectural Consultants, Global Change Impact Studies Centre and Zoological Survey Department. It has an annual budget of US around $4.5 million (2013-14). The MCC's core mandate is associated with the Framework for Implementation of the National Climate Change Policy (NCCP). The Ministry is also responsible for other environmentally related national policies, including sanitation, drinking water, forests and resettlement and

environmental (PEPA) policies. The Public Sector Development Programme is the main instrument for providing budgetary resources for development projects and programmes and its budget was US $ 115 million in 2013-14.

51. The National Disaster Management Authority (NDMA) is an attached department of the MCC. This provides better coordination among related departments when responding to extreme weather events/disasters. NDMA is the lead federal agency for disaster management. It is the executive arm of the National Disaster Management Commission (NDMC), which has been established under the Chairmanship of the Prime Minister as the apex policymaking body in the field of Disaster Management. In the event of a disaster, all stakeholders including Government Ministries, Departments, Organizations, Armed Forces, INGOs, NGOs, and UN Agencies work through and form part of the NDMA to coordinate their activities.

52. The Pakistan Meteorological Department, with branches at the federal, provincial and district levels will provide technical backstopping to all project activities (http://www.pmd.gov.pk/PMD/pmdinfo.html). PMD has a highly qualified pool of experts, which will be consulted by the project as required (8 PhDs and 44 MSc in Meteorology). PMD maintains an extensive network and AWS and meteorological stations, as well as a Climate Data Processing Centre, which will be further, enhanced through the project. PMD produces sophisticated numerical weather products, seasonal forecasts and conducts regular glacial monitoring.

53. Following 18th Amendment to the Constitution of Pakistan in 2010, a major change in governance took place, with the devolution of 47 previously federal responsibilities to the provincial level, including "environmental pollution and ecology." Climate change, traditionally considered to be part of the environmental sector, was also devolved. However, the federal government, through the Ministry of Environment (now, Ministry of Climate Change [MCC]), continues to lead on implementation of international agreements and treaties related to the environment and climate change, and therefore maintains responsibility for national and international policy and obligations. The proposed project will strengthen the framework between federal and provincial governments by further developing the capabilities of local-level institutions to incorporate climate change adaptation considerations into development plans in GB and KP. The project will also work closely with provincial line departments of agriculture, livestock, irrigation, forest, environment, wildlife and others as relevant.

iii. Stakeholder engagement:

54. Since a pilot UNDP project has been under implementation for several years (GLOF-I project), there is an established model of working with various national, sub-national and international stakeholders around issues of GLOFs. The proposed activities have been generated through consultation with stakeholders and beneficiaries, therefore there is a great deal of ownership in achieving results. At the launch of the current project, all key stakeholders will be invited for an inception workshop to discuss proposed interventions in full detail, to ensure that proposed activities are implementable and remain valid. The role of key stakeholders is described below.

55. At the federal level, the MCC and its associated departments will play a lead role on behalf of the Government of Pakistan in the project, and coordinate engagement with all federal and provincial agencies. In March 2017, new legislation was passed (Climate Change Act, 2017) concerning climate change, establishing a high-level Climate Change Council chaired by the Prime-Minister, a new institution, the Climate Change Authority, and a Climate Change Fund. The new institutional arrangements under this new legislation are quite significant, but have yet to be put into effect. Thus, their impact on the stakeholder engagement strategy for the project needs to be carefully reviewed during project inception.

56. Provincial Governments of Khyber Pakhtunkhwa and Gilgit-Baltistan, in close collaboration and respective line departments of federal agencies at provincial level (PDMA/DDMA, P&D, PMD, Agriculture, Irrigation, Forest, Environment, Water and Sanitation, Wildlife) will be responsible for coordinating all provincial level activities.

57. Local communities (women, men, and youth), farmers and pastoralists across project districts in Gilgit-Baltistan and Khyber-Pakhtunkhwa provinces are the main beneficiaries of project interventions and improvements.

They will actively be engaged in planning and implementation of field activities that enhance their livelihoods and increase their resilience to climate change impacts and mitigate natural disasters. Local knowledge, support, and experience of above stakeholders will be leveraged to support the implementation and long-term sustainability of project activities. A multi-sectoral stakeholder committee will be established in each of the district to support the implementation of the project activities, facilitate dialogue on GLOFs and coordination among all stakeholders. The implementation will include a system for effective monitoring and enforcement of the process and delineation of roles and responsibilities among key stakeholders.

iv. Mainstreaming gender:

58. A Gender Analysis and Action Plan has been prepared for this project (see Annex 6). This document was prepared with limited on-the-ground consultation; relying heavily on information and experience generated by the GLOF-I project implemented by UNDP/MCC. As a result, stakeholder consultation will be undertaken at project start-up to update the document.

59. The Gender Action Plan provides a preliminary outline of the:

- proposed actions that narrow gender inequality given the cultural and religious sensitivities;
- specific or targeted actions that address the needs and constraints of women, girls, men, and boys;
- actions to offset any risks of adverse gender impacts;
- ensure women's participation promotes their leadership qualities; and
- ensure women are included as planners, co–implementers and agents of change.

60. The project will mainstream a gender perspective into the all activities and gender balance will be taken in to account when hiring and engaging the project team. Traditionally, women have passed on their skills in water and forest management and the management of biodiversity. Climate change affects women differently than men, and so climate strategies must consider gendered patterns to be effective. Through experience, women have acquired valuable knowledge to effectively contribute to the identification of appropriate adaptation techniques and it is important to understand how the gender approaches to strengthen sustainable livelihoods can also make initiatives more effective. In the targeted areas, women are primarily responsible for household tasks, including collecting firewood and water. Based on the Gender Action Plan (Annex 6), women quotas have been established for the active participation of women during the project implementation, from the project management unit to the implementation of all activities supported by GCF resources such as participation in DRM committees and village hazard watch groups, training provided on climate change, GLOF events, DRR, business development, slope stabilization programme, etc.

61. To ensure that the project will not adversely impact the needs of women in the targeted communities, gender considerations will be mainstreamed into all trainings and knowledge-sharing activities associated with project implementation. For example, opportunities for women to take leadership roles will be assessed, such as to provide home garden-based livelihood trainings. Early warning system communication design will apply gender-particular considerations to the dissemination of disaster warnings and post-GLOF support. Local government entities in charge of managing post-GLOF support will be trained in order that financial support can flow to activities that meet the needs of women. Likewise, operations and management plans for EWS are subject to managerial handover to local governments in collaboration with communities. Women's voices will inform the management at the local level of EWS and the maintenance committees will provide an additional avenue for women to assume leadership roles.

v. South-South and Triangular Cooperation (SSC/TrC):

62. The population in the highland areas of the HTP (Himalayan-Tibetan Plateau) it is estimated approximately in 30 million people[3]. Communities in this area are bearing additional stresses due to global warming, "leading to shifting tree lines and biodiversity loss as well as increased hazards from GLOFs" (Manton, Stevenson, 2014). This area

[3] Manton, and Stevenson, "Climate in Asia and the Pacific: Security, Society and Sustainability", Ed. Springer, 2014, page 299.

is particularly at risk form GLOFs, counting up to 151 potentially dangerous glacial lakes (ISDR, GFDRR, WB, 2010) – excluding the 52 potentially dangerous lakes in Pakistan. In Nepal, 16,754 people are estimated to be highly exposed to a potential risk of flood while almost 4 million people are moderately exposed only by these three lakes (Imja Tsho, Tsho Rolpa and Thulagi) with about US$ 459.6 million of assets exposed4. Concerning the trans-border lake – Lumu Chimi Lake – a total of 16,313 people are highly exposed and 727,185 are moderately affected by GLOF risks with an estimated total of US$ 188.81 million of assets exposed. A study has also be conducted in Bhutan, in Punakha-Wangdi Valley and Chamkhar Valley, in the context of a UNDP-GEF project, which estimated the total population at risk of 3,835 people.

63. The project districts cover 99% of the glaciated area of Pakistan, and targets all those communities which are currently most vulnerable to GLOF events. Therefore, given that GLOF risks within Pakistan are idiosyncratic to these project sites, specific core activities, such as GLOF EWS and protective structures, may not be directly replicable elsewhere in the country. However, the design of and lessons learned from the implementation and use of these components may prove useful in developing response and preparedness measures in other vulnerable communities where GLOF risks are present across the Himalaya, Hindu-Kush, Karakoram, Tien Shan, and Andes mountain ranges. The project will strengthen its collaboration and exchange of experience with similar initiatives in South Asian countries such as Nepal, Bhutan, India and others to enhance cross-border scientific data and experience exchange to facilitate collective effort in reducing the risk of GLOFs in bordering areas. Relevant state and non-state institutions from regional countries will be invited to participate in scientific, policy and technical dialogue around issues of GLOF. Experience of countries outside the south-Asian sub-region will also be reviewed and relevant recommendations will be identified. Similar projects could be recommended for initiation through funding from GCF in South Asia to further improve meteorological and hydrological observation networks in the South-Asian region.

vi. Knowledge:

64. The project will produce a number of flagship knowledge products, which will be widely disseminated nationally and internationally. Jointly with the Pakistan Meteorological Department, research institutions, the project will update and publish a Glacier Inventory of northern Pakistan. GLOF hazard maps will be produced early in the project and be used to guide subsequent project activities (identification of specific project sites, installation of specialized meteorological equipment, EWS, etc.). The project will also produce a range of guidelines and manuals to support capacity building activities relating to: community hazard groups, hydro-meteorological infrastructure, risk insurance and financial instruments for coping with disaster risks, water efficient farming for slope stabilization, etc.).

65. Results from the project will be disseminated both within and outside of GB and KP through a number of existing information-sharing networks and forums. The MCC conceived this project as a pivotal experience for developing tools and information to reduce the vulnerability of local communities to the effects of climate change, and to facilitate the incorporation of adaptation measures into policy and planning processes at the local and regional levels. At the national level, the project will capture and disseminate lessons learned through the MCC's web page. This webpage was developed to provide access to the public for climate change-related information and to improve national capacity to address GLOF risks. In this way the project results will be shared with a wide variety of stakeholders at the national level The technical officers of the Ministry of Petroleum & Natural Resources, the Ministry of Food Security and Research and the Ministry of Water & Power working on areas where climate change will have adverse impact will be the key ministries for disseminating the results of the project.

66. At the local level, the project will establish and strengthen provincial coordinating entities with Departments of Planning and Development to coordinate climate change response across key sectors. Community-based organizations, non-governmental organizations, community members, community leaders and EPAs will be the foundation to identify lessons learned from the project and share knowledge among stakeholders and will be the basis for replicating successful experiences at the local level. Additionally, lessons learned will be shared locally through printed material (booklets and leaflets) and videos, which will be developed as part of the planned activities

for sharing information about the successful experiences and lessons learned from the project and its potential for replication in other locations. Utilization of telecommunication technology ranging from commercial radio to mobile phones will ensure that the materials reach community beneficiaries.

67. Lessons learned will also be shared regionally and globally through the Adaptation Learning Mechanism (ALM), which is a collaborative knowledge-sharing platform for sharing adaptation experiences and good practices through an open/global learning process. The UNDP is operating the ALM in close partnership with the UNFCCC, UNEP, WB, GEF, Adaptation Fund and specialized UN agencies.

V. FEASIBILITY

i. Cost efficiency and effectiveness:

68. The proposed project builds upon the experiences, data, information and coordination networks created by the GLOF I project financed by the Adaptation Fund. By expanding the scope of proven interventions, based on existing institutional and management frameworks, the proposed project is more cost-effective than the implementation of a separate new initiative. Additionally, this approach builds upon strengthened local capacities and previous experiences that will maximize effectiveness of proposed interventions on which future investments can build on. Synergies between the proposed project and current PMD's EWS for GLOF risks currently covering two districts will be used to enhance the cost-effective hiring of specialized technical staff, coordination of data and information, training (operations & maintenance of equipment; forecasting techniques; tailored advisories and warnings), and effective use of communications and standard operating procedures.

69. MCC through its divisions will provide technical and management support to implement interventions on the ground support to the proposed project through its budget allocations. PMD will incorporate in its general operational budget all associated costs related to the involvement of PMD in the EWS after the project is completed. This will include the incorporation of the AWS and river discharges sensors that will provide information for the local EWS as part of PMD's monitoring network, as such, the gathering, analysis, and dissemination of all climate-related information to be generated though the project will be done as part of PMD's functions during and after the project conclusion. This will allow for the continued generation of information to feed the EWS, hydrological modelling, as well as generation of flood scenarios for GB and KP.

ii. Risk Management:

70. The overall risk rating for this project is Moderate. A Risk Log has been prepared for the project which provides full details on risks to be managed during project implementation (see Annex 14). The main risks identified include:

- Sediment movement during construction activities of hard infrastructure
- Sediment movement during forest rehabilitation activities
- Reduction in the availability of land through the rehabilitation and planting of vegetation
- Failure of infrastructure constructed as part of the programme
- Lack of commitment from communities where restoration activities, alternative livelihoods and EWS are established undermines the effectiveness of the GCF project demonstrations
- Extreme weather events occur during the design and implementation phase of the GCF project result in disruptions to restoration activities and severely affect communities, prior to the EWSs being established.
- A disaster takes place and the EWS system fails to alert the population on time.
- Access and Maintenance of Equipment could be difficult as target area is remote. Limited capacity of the community members in maintenance of equipment as well as management of funds

- Security issues in the target area may cause delays in implementation. Some of the proposed sites have remained exposed to instability due to sectarian violence which cause delays in the activities and utilization of DRM funds.

71. As per standard UNDP requirements, the Project Manager will monitor risks quarterly and report on the status of risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probablity are high (i.e. when impact is rated as 5 and probablity is 1,2,3,4, 5 or when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported in the Annual Project Report.

iii. Social and environmental safeguards:

72. This project has completed a Social and Environmental Screening Procedure (see Annex 5 (a)). The screening was undertaken to ensure the project complies with UNDP's Social and Environmental Standards. The overall social and environmental risk category for this project is Moderate. An Envrionment and Social Management Plan was also developed for the project (see Annex 5 (b)). However since this document was prepared *prior* to the SESP, it may need to be adjusted to accommodate any findings of the screening procedure. This will be done during project inception. The following assumptions were made while preparing the Environmental and Social Management Plan:

1. All components of the proposal will have an Environmental and Social Impact Assessment/s prepared prior to the construction and operation of the specific project components;
2. None of the projects will require the physical displacement of people;
3. Appropriate modelling will be conducted prior to the final design of any hard infrastructure to ensure the infrastructure will not have significant impacts on hydrological processes;
4. Appropriate erosion and sediment control will be undertaken during all stages of the projects;
5. Any peoples that might have their livelihoods affected during the project will be no worse off with new proposed activities including agricultural-based livelihoods;
6. No culturally or indigenous sites will be impacted by the project; and
7. There will be no release of pollution and/or chemicals because of the project

73. Overall, it is expected that the programme will have some environmental impacts although these can be mitigated effectively through appropriate management measures. The programme will have significant environmental benefits in the short to long term through the improvement of flood mitigation, improved water quality through the minimization of sediment loss, hillslope protection, the absorption of greenhouse gas emissions and most importantly, through providing communities with climate information that will result in lives being saved.

74. There are limited social impacts associated with the project.

a) It is understood that the inhabitants of the area are indigenous and therefore special considerations need to be made to ensure impacts are alleviated.

b) Importantly, no people will be displaced or relocated, however there will be a reduction in the availability of grazing land through the rehabilitation and planting of vegetation. This will- overall - improve the livelihoods of people working in and around the rehabilitated forests and increase their income potential.

75. Where available, local people will be employed to undertake propagation, planting and maintenance of the trees, thereby providing a social benefit to the community. Further the trees will act as a buffer during storm, events and therefore reduce the potential loss of lives and assets. Where the impacts cannot be mitigated, a Livelihood Restoration Plan and Indigenous Peoples' Plan will be developed.

76. As per Environmental and Social Management Plan (Annex 5 b) all works must adhere to findings of the Enviornmental and Social Impact Assessment. A public consultation process will be initiated as per the Stakeholder Engagement Plan (to be prepared) to address any concerns that local communities may have before, during and

after implementation of intended activities. A publicied telephone number and email address will be maintained during project activities to serve as a point of contact for enquiries, concerns and complaints by communities and people. All enquiries, concerns and complaints will be recorded on a register and appropriate manager will be informed. The following information will be recorded: (a) time, date and nature of the enquiry, complaint or concern; (b) type of communication (phone call, letter, etc.); (c) Name and contact details of the person enquiring; (d) response and investigation undertaken a a result of the enquiry, complaint or concern; and (e) actions taken and name of the person taking action.

iv. Sustainability and Scaling Up:

77. Sustainability is associated with the capacity of local communities and of local and regional authorities to influence collective decisions regarding the implementation of policies and activities to address climate change impacts. For this result the foundation for sustainability are the community-institutional partnerships that will be built among MCC, provincial line and planning departments, CBOs, NGOs and communities in GB and KP to address GLOF risks.

78. In this regard, the project will facilitate the incorporation of GLOF risks into development plans and development of provincial adaptation action plans in diverse sectors (DRM, agriculture, livestock, and water) based on a multi-stakeholder approach that will guarantee the institutional support of project actions and results after the project is completed. This will be further strengthened by articulating provincial-level climate change coordinating entities with Planning and Development Departments involving CBOs, NGOs and EPAs. The project will coordinate the communication between different entities but also create communication structure for sustainable continuation of the project work in the future.

79. The project will provide training in different topics related to climate change adaptation to staff of local, regional, and national-level institutions directly involved in the reduction of GLOF risks targeting women and monitoring (pre-post training assessments etc.) the process. Improved institutional knowledge and skills will be instrumental in the development and implementation of adaptation measures during the life of the project and in the future, as well as for the replication of successful activities in other areas of Northern Pakistan and neighboring countries threaten by GLOF risks.

80. Regarding the financial sustainability strategy for the local-level early warning system, the Pakistan Meteorological Department (PMD) will incorporate in its general operation budget all associated costs related to the involvement of PMD in the EWS after the project is completed as stated in the agreement between ongoing GLOF project and the PMD. This will include the incorporation of the AWS and river discharges sensors that will provide information for the local EWS as part of PMD's monitoring network. As such, the gathering, analysis, and dissemination of all climate-related information to be generated though the project will be done as part of PMD's functions during and after the project conclusion. This will allow for the continued generation of information to feed the EWS, hydrological modelling, as well as generation of flood scenarios for GB and KP.

81. As for the small-scale infrastructures to reduce the risks of floods, the sustainability of interventions will be achieved by incorporating the adaptation measures as part of the federally-administered territory of GB and KP programming budgets to cover for maintenance costs. As per LOA/MOA, the Beneficiary Community or Govt. Department will be responsible for the Operation and Maintenance of Infrastructure and Technology.

82. The community-based revolving fund established by the GLOF I project financed by the Adaptation Fund is financially sustainable by only disbursing payouts preceding or following an emergency and is being repaid over time by its enrollees. Activities covered, fund management, and disbursal and repayment mechanisms are formalized and will be expanded with GCF resources.

83. The adaptation measures that are being proposed and that will directly benefit local communities and respond to their adaptation needs were identified jointly with members of the local communities in the target area. That said, during implementation, community groups, community members, and women participation will be further fostered and strengthened through the implementation of concrete adaptation measures. This approach, which includes capacity-building and awareness-raising related to climate change adaptation, will empower the participating social groups and will promote social organization for the development and implementation of strategies to reduce risk related to GLOF. In addition, these interventions will promote alternatives for income

generation and food production to enable individuals to better cope with the impacts of climate variability increasing the ownership and sustainability of these interventions.

v. *Economic and/or Financial Analysis:*

84. The project aims to scale up interventions that were shown to have impact in a pilot project phase to help reduce the vulnerability of mountain communities in Pakistan to climate related flood damages. The economic analysis quantified a sub-set of project life-span benefits and costs to produce an economic net present value and an economic internal rate of return. The project is constituted of two components as described in this document. The economic cost benefit analysis covers all 2 components: component 1 (support policy-making efforts and strengthen technical capacities to address GLOFs risks) and component 2 (which reduces community vulnerability to climate related flood risk).

85. Quantified Benefits and Costs: The benefits that are included in the analysis are a subset of the total possible benefit stream generated by the intervention. Estimated benefits associated with Component 2 include (1) deaths averted by the installation of the early warning system; and (2) housing stock damage averted by installation of flood protection works, and (3) improved farm profit from the livelihoods intervention through improved irrigation. The bulk of benefits are generated by deaths and housing stock damage averted. For a more complete discussion for quantified benefits, including benefits resultant from averted deaths, refer to the Economic Analysis (Annex XII (b) of the GCF funding proposal).

86. Net Present Value (NPV) and Economic Internal Rate of Return (EIRR): The project has a positive net present value of $11,064,354 and an with an economic internal rate of return of 15% over a presumed 25 years project life span (which includes 5 years of project implementation and 20 years of operation) using a 10% discount rate (all values in 2014 terms). Under Component 2, sub-activity EWS generated a net present value of $10,290,270 with an economic internal rate of return of 18%, while sub-activity Livelihoods had a net present value of $4,737,938. The bulk of costs is incurred during the 5 years of the project implementation. Moreover, operational and maintenance expenditures (as specified for the five years of project implementation) were carried forward for the full life of the project with an assumption that half of those were labor costs.

87. Sensitivity Analysis: The drivers of the benefit value stream are the efficacy of the early warning system, flood protection works and the benefits due to expansion in irrigation (a Component 2). The efficacy of all 3 systems has been set to a conservative 50% (based on literature). In terms of switching values, a reduction in efficacy of the early warning system from 50% to 3% results in zero net present value while even a reduction in efficacy of the flood protection works from 50% to 0% results in a positive net present value (the flood protection works would have to be actively destructive for a net present value of zero). So, the early warning system's efficacy is crucial to generating real benefits from this project as a smaller "drop" in assumed efficacy results in dramatic reductions in the benefit stream.

88. The community-based revolving funds under DRM cells, which will be capitalized by a one-time endowment of $50,000 from GCF resources, will provide micro-credit to support GLOF response and preparedness activities within these communities only when other sources of risk insurance or credit are lacking, and relief from the central government is slow to reach. The fund will only disburse payouts preceding or following an emergency, and is repaid over time by its enrollees. The credit terms typically are – interest rate of 10% per annum and a tenor of 1-1.5 years. The fund management cost is 10% which needs to be recovered from the fund. Given that this is non-profit making activity funded by a grant, the micro-credit scheme's interest rate only needs to factor-in fund management costs, inflation and loan default risks. However, since the interest rate of 10% covers only the fund management cost, the net fund resources available for on-lending to communities will keep reducing annually. Nonetheless, this reduction is likely to be small enough to ensure the fund's financial sustainability at a reasonable level, if loan repayment rates are 100%. If repayment rates are lower, the available fund resources to communities will be lower and hence, it is important for the fund managers to ensure that repayment rates remain high, ideally 95% and above to ensure financial sustainability of the fund. If repayment rates are 50% or below, the fund resources will deplete rapidly and won't be sufficient to meet much of the communities' requirements beyond the first 1-2 years of the project duration. Based on evidence of the ongoing instrument in place in Pakistan, the risk of default is low.

89. The GCF grant resources sought for this project will help remove key barriers to support investments which, due to the primarily public good nature, do not entail any revenue generation or significant cost recovery during the

project duration. The one exception is the community-based revolving fund financed by adaptation fund. Even in the community-based revolving fund, cost recovery is primarily aimed to sustaining the financial intervention.

VI. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s):

Goal 1: End poverty in all its forms everywhere

Goal 11: Make cities inclusive, safe, resilient and sustainable

Goal 13: Take urgent action to combat climate change and its impacts

This project will contribute to the following country outcome included in the UNDAF/Country Programme Document:

One-UN Programme II (2013-2017)

Strategic Priority Area-3: Increased national resilience to disasters, crises and external shocks

Outcome: 3.2: Vulnerable populations benefit from improved sustainable environmental management practices, including climate change mitigation and adaptation

CCPAP (2013-2017)

Outcome 3.2: Vulnerable populations benefit from improved sustainable environmental management practices, including climate change mitigation and adaptation;

This project will be linked to the following output of the UNDP Strategic Plan:

Output 1.4: Scaled up action on climate change adaptation and mitigation cross sectors which is funded and implemented.

GCF Paradigm shift objectives:

Increased climate-resilient sustainable development: The project presents a holistic model of climate-resilient development to enable Northern Pakistan to manage the risks from GLOFs and other impacts of climate change, incorporating regulatory support, community preparedness, GLOF response capacitation, and long-term planning for sustainable and climate-resilient use of natural livelihood assets.

	Objective and Outcome Indicators	Baseline	Mid-term Target	End of Project Target	Assumptions
SDG indicators	***Indicator 1.5.3, Indicator 11.b.2, Indicator 13.1.1:*** *Number of countries with national and local disaster risk reduction strategies*	*National – Yes (2015)* *Local – No*	*n/a*	*Local – Yes (Provincial and district disaster risk reduction plans in Khyber Pakhtunkhwa and Gilgit-Baltistan are available)*	*The Government of Pakistan is currently in the process of defining the national SDG framework and localizing global SDG targets and indicators. At project inception, the project, jointly with Government partners will review the baselines and define project specific mid-term and end-of-project targets, in line with global SDG targets and indicators.*

UNDP Strategic Plan Indicators	***Indicator 1.4.2:*** *Extent to which implementation of comprehensive measures – plans, strategies, policies, programmes and budgets – to achieve low-emission and climate-resilient development objectives has improved.* *# of direct project beneficiaries: 696,342 people*	*Scale 1:*[5] *No provincial climate change adaptation action plans to address GLOF risk exist in Khyber-Pakhtunkhwa and Gilgit-Baltistan*	*n/a*	*Scale 4* *Integrated climate change adaptation action plans to address GLOF risk approved for Khyber-Pakthtunthkwa and Gilgit-Baltistan*	*The provincial governments continue to prioritize climate change adaptation.*
FUND LEVEL IMPACT:					
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	*1.1 Change in expected losses of lives and economic assets (US$) due to the impact of extreme climate-related disasters in the geographic area of the GCF intervention.*	*There are 33 potentially dangerous lakes in KP and GB.* *960 destructive outburst floods are in KP and GB areas in last two decades.*	*n/a*	*By the end of the project,* *100% of households in KP and GB target communities are benefiting from engineering measures and early warnings in place to reduce the impact of GLOF events. (696,342 people: 348,171 men, 348,171 women)*	*The political situation stays stable throughout the project duration.* *Stakeholders are able to perceive reductions in vulnerability over the time-scale determined by project duration.*
PROJECT OUTCOMES:					
7.0 Strengthened adaptive capacity and reduced exposure to climate risks	*7.2: Number of males and females reached by climate related early warning systems and other risk reduction measures established/ strengthened*	*GLOF early warning system in KP and GB covering two districts* *Vulnerable households are not able to receive and react to GLOF early warning messages in the KP and GB.* *No physical structures in place to mitigate the*	*n/a*	*By the end of the project, 100% of households in KP and GB target communities are able to receive and respond to early warnings and take the appropriate actions following the warning (348,171 men, 348,171 women).*	*Government remains supportive to link longer-term climate change planning with current disaster risk management initiatives* *No tampering with early warning system installations.* *Community workforce available to support engineering measures.*

[5] Scale 1 (Not improved): No action has yet been taken and/or it has not yet led to the desired results.

Scale 2 (Have improved to a very partial extent): A political commitment has been made (e.g. policy discourse has commenced) on the need for a plan, strategy, policy, or programmes low-emission and climate resilient development objectives, but no finance is yet in place; this may have been as a result of UNDP support for evidence gathering, piloting and demonstration activities, and activities to build partner capacity (knowledge, skills, approaches).

Scale 3 (Have improved to a partial extent): Plans, strategies, policies, programmes are backed-up by the allocation of annual financial resources (i.e. budgets for line ministries that allow for the integration of LE and/or CR objectives). These budgets are either resourced from external or domestic sources that are especially earmarked for LE and/or CR objectives.

Scale 4 (Have improved to a large extent): There is evidence that the LE and/or CR objectives are being implemented according to the plan, strategy, policy or programme; sufficient staff capacities and resources are in place to implement, and/or evidence of results from the change can be recorded and verified

		effect of GLOF events.			
PROJECT OUTPUTS:					
1. Strengthened sub-national institutional capacities to plan and implement climate change resilient development pathways.	*1.1. Strengthened institutional and regulatory systems for climate-responsive planning and development.* *1.2. Number of policies introduced to address GLOF risks or adjusted to incorporate GLOF risks.*	*National, provincial and local disaster management institutions and development planners are unable to design, finance and analyze GLOF risk reduction measures on the basis of reliable, comprehensive information.* *Only 2 comprehensive disaster management guidelines exist for the KP and GB regions.*	*By the end of Year 3, 100% of the national and 90% of district and community authorities in the KP and GB regions are able to prioritize and plan measures to minimize potential losses from GLOFs.*	*By the end of the project, at least four policies have been adopted by Government to address or incorporate GLOF risk reduction.*	*The political situation stays stable throughout the project duration.* *Stakeholders are able to perceive reductions in vulnerability over the time-scale determined by project duration.*
2. Community-based EWS and long-term measures are up-scaled to increase communities' adaptive capacity.	*2.1. Number of vulnerable households in KP and GB covered by a GLOF early warning system.* *2.2. Number of Community-based organizations trained in the operation and maintenance of the EWS.* *2.3. No. of physical assets constructed to withstand the effects of GLOF events.*	*Vulnerable households are not able to receive and react to GLOF early warning messages.* *24 GLOF early warning system for KP and BG in place.* *No physical structures in place to withstand the effect of GLOF events.*		*By the end of the project, 100% of households in target communities are able to receive and respond to early warnings and take the appropriate actions following the warning. (696,342 people: 348,171 men, 348,171 women)* *By the end of the project, at least 24 CBOs are trained in the operation and maintenance of the EWS and ensure its continued functionality.* *By the end of the project, at least 250 targeted engineering structures have been established to withstand*	*No tempering with the early warning system installations,* *Functioning backup systems in place.* *Communities are receptive to the adoption of mitigation measures and participate actively in construction efforts.*

				the effects of GLOF events on livelihood assets.	

While activities have not been included in the above Results Framework, Annex 10 provides a time table of outputs and activities for the project.

VII. MANAGEMENT ARRANGEMENTS

i. Roles and responsibilities of the project's governance mechanism:

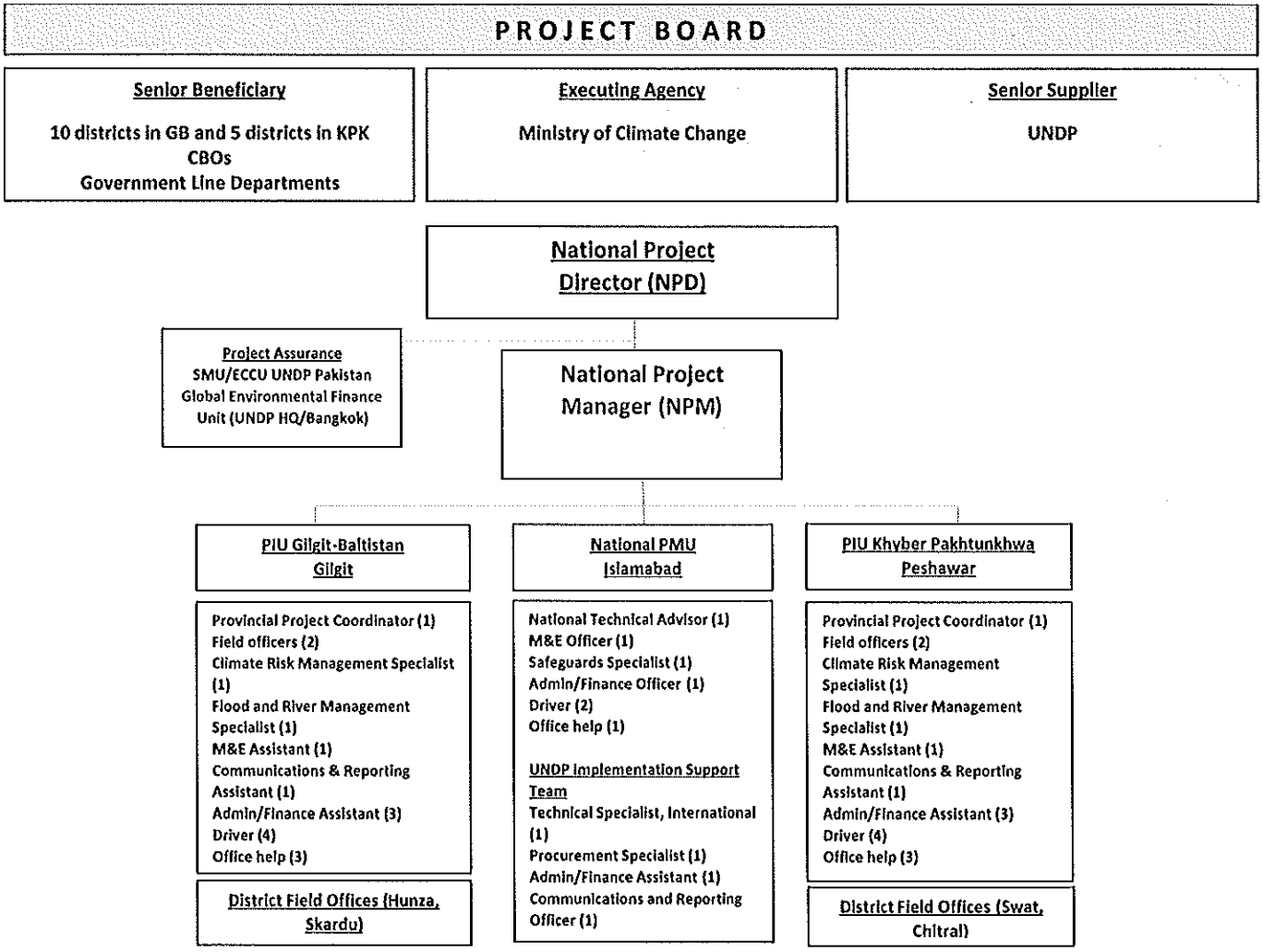
90. The project will be implemented following UNDP's national implementation modality (NIM), according to the *Supplemental Provisions* (under the United Nations Special Fund) between UNDP and the Government of Pakistan, the Country Programme Action Plan (CPAP), as well as policies and procedures outlined in the UNDP Programme and Operations Policies and Procedures (POPP) and NIM Guidelines. The Implementing Partner has requested UNDP to provide support services to implement the project in compliance with UNDP rules and regulations, policies and procedures.

91. The **Implementing Partner** for this project is the Ministry of Climate Change, Government of Pakistan. The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP/GCF resources

92. The Implementing Partner is responsible for:

- Approving and signing multi-year work plans
- Approving and signing the combined delivery report at the end of the year; and
- Signing the financial report or the funding authorization and certificate of expenditures

The project organisation structure is as follows:



93. **Project Board:** The Project Board (also called Project Steering Committee) is responsible for making by consensus, management decisions when guidance is required by the Project Manager, including recommendations for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Board, final decision shall rest with the UNDP Programme Manager (UNDP Resident Representative).

94. Specific responsibilities of the Project Board include:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
- Address project issues as raised by the project manager;
- Provide guidance on new project risks, and agree on possible countermeasures and management actions to address specific risks;
- Agree on project manager's tolerances as required;
- Review the project progress, and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Appraise the annual project implementation report, including the quality assessment rating report; make recommendations for the work-plan;
- Provide ad hoc direction and advice for exceptional situations when the project manager's tolerances are exceeded; and
- Assess and decide to proceed on project changes through appropriate revisions.

95. The composition of the Project Board must include the following roles:

1) **Executive:** The Executive is an individual who represents ownership of the project who will chair the Project Board. This role can be held by a representative from the Government Implementing Agency or UNDP. The Executive is Secretary, Ministry of Climate Change.

The Executive is ultimately responsible for the project, supported by the Senior Beneficiary and Senior Supplier. The Executive's role is to ensure that the project is focused throughout its life cycle on achieving its objectives and delivering outputs that will contribute to higher level outcomes. The executive has to ensure that the project gives value for money, ensuring cost-conscious approach to the project, balancing the demands of beneficiary and suppler.

Specific Responsibilities: (as part of the above responsibilities for the Project Board)

- Ensure that there is a coherent project organisation structure and logical set of plans;
- Set tolerances in the AWP and other plans as required for the Project Manager;
- Monitor and control the progress of the project at a strategic level;
- Ensure that risks are being tracked and mitigated as effectively as possible;
- Brief relevant stakeholders about project progress;
- Organise and chair Project Board meetings.

2) **Senior Supplier:** The Senior Supplier is an individual or group representing the interests of the parties concerned which provide funding and/or technical expertise to the project (designing, developing, facilitating, procuring, implementing). The Senior Supplier's primary function within the Board is to provide guidance regarding the technical feasibility of the project. The Senior Supplier role must have the authority to commit or acquire supplier resources required. If necessary, more than one person may be required for this role. Typically, the implementing partner, UNDP and/or donor(s) would be represented under this role. The Senior Suppler is: UNDP Pakistan.

Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Make sure that progress towards the outputs remains consistent from the supplier perspective;
- Promote and maintain focus on the expected project output(s) from the point of view of supplier management;

- Ensure that the supplier resources required for the project are made available;
- Contribute supplier opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Arbitrate on, and ensure resolution of, any supplier priority or resource conflicts.

3) **Senior Beneficiary:** The Senior Beneficiary is an individual or group of individuals representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary's primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. The Senior Beneficiary role is held by a representative of the government or civil society. The Senior Beneficiary is: Governments of Gilgit-Baltistan and Khyber Pakhtunkhwa.

The Senior Beneficiary is responsible for validating the needs and for monitoring that the solution will meet those needs within the constraints of the project. The Senior Beneficiary role monitors progress against targets and quality criteria. This role may require more than one person to cover all the beneficiary interests. For the sake of effectiveness, the role should not be split between too many people.

Specific Responsibilities (as part of the above responsibilities for the Project Board)

- Prioritize and contribute beneficiaries' opinions on Project Board decisions on whether to implement recommendations on proposed changes;
- Specification of the Beneficiary's needs is accurate, complete and unambiguous;
- Implementation of activities at all stages is monitored to ensure that they will meet the beneficiary's needs and are progressing towards that target;
- Impact of potential changes is evaluated from the beneficiary point of view;
- Risks to the beneficiaries are frequently monitored.

96. **Project Manager:** The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

97. The Implementing Partner appoints the Project Manager, who should be different from the Implementing Partner's representative in the Project Board.

98. Specific responsibilities include:

- Provide direction and guidance to project team(s)/ responsible party (ies);
- Liaise with the Project Board to assure the overall direction and integrity of the project;
- Identify and obtain any support and advice required for the management, planning and control of the project;
- Responsible for project administration;
- Plan the activities of the project and monitor progress against the project results framework and the approved annual workplan;
- Mobilize personnel, goods and services, training and micro-capital grants to initiative activities, including drafting terms of reference and work specifications, and overseeing all contractors' work;
- Monitor events as determined in the project monitoring schedule plan/timetable, and update the plan as required;
- Manage requests for the provision of financial resources by UNDP, through advance of funds, direct payments or reimbursement using the fund authorization and certificate of expenditures;
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports;
- Be responsible for preparing and submitting financial reports to UNDP on a quarterly basis;

- Manage and monitor the project risks initially identified and submit new risks to the project board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log;
- Capture lessons learned during project implementation;
- Prepare the annual workplan for the following year; and update the Atlas Project Management module if external access is made available.
- Prepare the Annual Project Report and submit the final report to the Project Board;
- Based on the Annual Project Report and the Project Board review, prepare the AWP for the following year.
- Ensure the mid-term review process is undertaken as per the UNDP guidance, and submit the final MTR report to the Project Board.
- Identify follow-on actions and submit them for consideration to the Project Board;
- Ensure the terminal evaluation process is undertaken as per the UNDP guidance, and submit the final TE report to the Project Board;

99. **Project Assurance**: UNDP provides a three – tier supervision, oversight and quality assurance role – funded by the agency fee – involving UNDP staff in Country Offices and at regional and headquarters levels. Project Assurance must be totally independent of the Project Management function. The quality assurance role supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. This project oversight and quality assurance role is covered by the accredited entity fee provided by the GCF.

100. As an Accredited Entity to the GCF, UNDP delivers the following GCF-specific oversight and quality assurance services: (i) day to day project oversight supervision covering the start-up and implementation; (ii) oversight of project completion; and (iii) oversight of project reporting. A detailed list of the services is presented in the table below.

Function	Detailed description of activity	Typical GCF fee breakdown
Day-to-day oversight supervision	**1. Project start-up:** • In the case of Full Funding Proposals, prepare all the necessary documentation for the negotiation and execution of the Funding Activity Agreement (for the project) with the GCF, including all schedules • In the case of readiness proposals, if needed assist the NDA and/or government partners prepare all the necessary documentation for approval of a readiness grant proposal • Prepare the Project Document with the government counterparts • Technical and financial clearance for the Project Document • Organize Local Project Appraisal Committee • Project document signature • Ensure quick project start and first disbursement • Hire project management unit staff • Coordinate/prepare the project inception workshop • Oversee finalization of the project inception workshop report **2. Project implementation:** • Project Board: Coordinate/prepare/attend annual Project Board Meetings • Annual work plans: Quality assurance of annual work plans prepared by the project team; issue UNDP annual work plan; strict monitoring of the	70%

Function	Detailed description of activity	Typical GCF fee breakdown
	implementation of the work plan and the project timetable according to the conditions of the FAA and disbursement schedule (or in the case of readiness the approved readiness proposal) • Prepare GCF/UNDP annual project report: review input provided by Project Manager/team; provide specialized technical support and complete required sections • Portfolio Report (readiness): Prepare and review a Portfolio Report of all readiness activities done by UNDP in line with Clause 9.02 of the Readiness Framework Agreement. • Procurement plan: Monitor the implementation of the project procurement plan • Supervision missions: Participate in and support in-country GCF visits/learning mission/site visits; conduct annual supervision/oversight site missions • Interim Independent Evaluation Report: Initiate, coordinate, finalize the project interim evaluation report and management response • Risk management and troubleshooting: Ensure that risks are properly managed, and that the risk log in Atlas (UNDP financial management system) is regularly updated; Troubleshooting project missions from the regional technical advisors or management and programme support unit staff as and when necessary (i.e. high risk, slow performing projects) • Project budget: Provide quality assurance of project budget and financial transactions according to UNDP and GCF policies • Performance management of staff: where UNDP supervises or co-supervises project staff • Corporate level policy functions: Overall fiduciary and financial policies, accountability and oversight; Treasury Functions including banking information and arrangements and cash management; Travel services, asset management, and procurement policies and support; Management and oversight of the audit exercise for all GCF projects; Information Systems and Technology provision, maintenance and support; Legal advice and contracting/procurement support policy advice; Strategic Human Resources Management and related entitlement administration; Office of Audit and Investigations oversight/investigations into allegations of misconduct, corruption, wrongdoing and fraud; and social and environmental compliance unit and grievance mechanism.	
Oversight of project completion	• Initiate, coordinate, finalize the Project Completion Report, Final Independent Evaluation Report and management response • Quality assurance of final evaluation report and management response • Independent Evaluation Office assessment of final evaluation reports; evaluation guidance and standard setting • Quality assurance of final cumulative budget implementation and reporting to the GCF • Return of any un-spent GCF resources to the GCF	10%

Function	Detailed description of activity	Typical GCF fee breakdown
Oversight of project reporting	• Quality assurance of the project interim evaluation report and management response • Technical review of project reports: quality assurance and technical inputs in relevant project reports • Quality assurance of the GCF annual project report • Preparation and certification of UNDP annual financial statements and donor reports • Prepare and submit fund specific financial reports	20%
	TOTAL	**100%**

ii. Direct Project Services as requested by Government: UNDP and the Government, represented by the Ministry of Climate Change, the Implementing Partner for "Scaling-up of Glacial Lake Outburst Flood risk reduction in Northern Pakistan" project, have agreed that the UNDP Country Office will provide support services for the implementation of the project (support services to NIM). UNDP Country Office will provide support services for assistance with Administration/Operations and specific technical support: in providing such support services, UNDP shall ensure that the capacity of the Implementing Partner (Ministry of Climate Change) is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP Country Office in providing such support services shall be recovered from the project budget. To ensure the strict independence required by the GCF and in accordance with the UNDP Internal Control Framework, these execution services should be delivered independent from the GCF-specific oversight and quality assurance services (i.e. not done by same person to avoid conflict of interest).

Administration and Operations support will include procurement of goods and services for the project, logistics, identification and recruitment of personnel and financial support services in relation to project related payments in accordance with UNDP regulations, rules, policies and procedures. *Technical assistance* will include substantive technical analysis on issues related to project interventions across all project components, facilitating dialogue and coordination with development partners and other UN agencies, and aligning project results with SDGs and other international frameworks (Sendai Framework for Disaster Risk Reduction, UNFCCC, Paris Agreement, etc.), technical inputs into GLOF risk reduction measures, development of provincial Climate Change Adaptation Action Plans, mainstreaming gender empowerment across project interventions, synthesize of lessons learned, replication of best practices, peer review of inception, monitoring and evaluation reports and technical deliverables produced by the project and provide substantive guidance and support in development of knowledge products.

These execution services will be charged to the project budget in accordance with the UNDP's Harmonized Conceptual Funding Framework and Cost Recovery Methodology. The letter of agreement for these direct project costs is included in Annex 2 to this project document.

iii. Project Management Unit:

Given the scale and complexity of the proposed project, the management arrangements have been thoroughly discussed between UNDP and the Implementing Partner, the Ministry of Climate Change to identify the management structure for the project, guided by the experience of the pilot phase of the project (GLOF-I, funded by Adaptation Fund) and HACT micro-assessment of the Ministry of Climate Change. A National Project Management Unit (PMU) will be established in Islamabad, along with two provincial Project Implementation Units (PIUs) in Peshawar, Khyber Pakhtunkhwa and Gilgit, Gilgit-Baltistan, along

with two field offices in each province (Chitral and Swat in Khyber Pakhtunkhwa and Hunza and Skardu in Gilgit-Baltistan). To facilitate support services to NIM, expedite liaison with central UNDP programme and operations units at country, regional and global levels, and facilitate communications and reporting to the Green Climate Fund, a Project Implementation Support Team will be constituted at Islamabad PMU or at UNDP Country Office.

iv. Agreement on intellectual property rights and use of logo on the project's deliverables: In order to accord proper acknowledgement to the GCF for providing grant funding, the GCF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GCF will also accord proper acknowledgement to the GCF as per the GCF branding guidelines.

v. Disclosure of information: Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy[6] and the GCF Disclosure Policy[7].

vi. Carbon offsets or units: As outlined in the AMA agreement between UNDP and the GCF, to the extent permitted by applicable laws and regulations, the Implementing Partner will ensure that any greenhouse gas emission reductions (e.g. in emissions by sources or an enhancement of removal by sinks) achieved by this project shall not be converted into any offset credits or units generated thereby, or if so converted, will be retired without allowing any other emissions of greenhouse gases to be offset.

vii. Transfer or disposal of assets: In consultation with the NIM Implementing Partner and other parties of the project, UNDP programme manager (UNDP Resident Representative) is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In all cases of transfer, a transfer document must be prepared and kept on file (POPP: https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_DOCUMENT_LIBRARY/Public/PPM_Project%20Management_Closing.docx&action=default).

In addition, the following GCF requirements must be followed: As stated in Clause 9.03 of the Funding Activity Agreement included in Annex[8], the Accredited Entity shall inform the GCF, in the final APR, which steps it intends to take in relation to the durable assets and/or equipment purchased with the GCF Proceeds to implement the Funded Activity.

[6] See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

[7] See https://www.greenclimate.fund/documents/20182/184476/GCF_B.12_24_-_Comprehensive_Information_Disclosure_Policy_of_the_Fund.pdf/f551e954-baa9-4e0d-bec7-352194b49bcb

[8] 23.04 of the AMA states: " In relation to a Funded Activity that is a grant financed in whole or in part with GCF Proceeds, if any part of such grant is used to purchase any durable assets or equipment used to implement the relevant Funded Activity (such as vehicles or office equipment), upon completion of the Funded Activity or termination of the relevant FAA in accordance with its terms, the Accredited Entity shall take such steps in relation to such assets or equipment which it reasonably deems in the best interest of the continued operation of the Funded Activity taking into consideration the objectives of the Fund and the terms of the applicable SBAA."

VIII. MONITORING AND EVALUATION (M&E) PLAN

101. The project results as outlined in the project results framework will be monitored and reported annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. Monitoring and Evaluation Plans are contained in Annex 8 and Annex 9 respectively

102. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the UNDP Programme Operations Policies and Procedures (POPP), UNDP Evaluation Policy and UNDP Pakistan M&E Policy (2015). While these UNDP requirements are not outlined in this project document, the UNDP Country Office will work with the relevant project stakeholders to ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GCF-specific M&E requirements will be undertaken in accordance with relevant GCF policies.

103. In addition to these mandatory UNDP and GCF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Workshop Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including national/regional institutes assigned to undertake project monitoring.

i. M&E oversight and monitoring responsibilities:

104. **Project Manager:** The Project Manager is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager will inform the Project Board, the UNDP Country Office and the UNDP-GEF Regional Technical Advisor of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

105. The Project Manager will develop annual work plans to support the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GCF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the Annual Project Report, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. Environmental and social management plan, gender action plan etc..) occur on a regular basis.

106. **Project Board:** The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

107. **Project Implementing Partner:** The Implementing Partner is responsible for providing any and all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes, and is aligned with national systems so that the data used by and generated by the project supports national systems.

108. **UNDP Country Office:** The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The annual supervision missions will take place according to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Board

within one month of the mission. The UNDP Country Office will initiate and organize key M&E activities including the Annual Project Report, the independent mid-term review and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GCF M&E requirements are fulfilled to the highest quality.

109. The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the UNDP POPP. This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the Annual Project Report and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. Annual Project Report quality assessment ratings) must be addressed by the UNDP Country Office and the Project Manager.

110. The UNDP Country Office will support GCF staff (or their designate) during any missions undertaken in the country, and support any ad-hoc checks or ex post evaluations that may be required by the GCF.

111. The UNDP Country Office will retain all project records for this project for up to seven years after project financial closure in order to support any ex-post reviews and evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GCF.

112. **UNDP-Global Environmental Finance Unit (UNDP-GEF):** Additional M&E and implementation oversight, quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as outlined in the management arrangement section above.

ii. Audit:

113. The project will be audited according to UNDP Financial Regulations and Rules and applicable audit policies on NIM implemented projects.[9] Additional audits may be undertaken at the request of the GCF.

iii. Additional monitoring and reporting requirements:

114. **Inception Workshop and Report:** A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:

a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project strategy and implementation;
b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E;
e) Identify how project M&E can support national monitoring of SDG indicators as relevant;
f) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; Environmental and Social Management Plan and other safeguard requirements; the gender action plan; and other relevant strategies;
g) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
h) Plan and schedule Project Board meetings and finalize the first year annual work plan.

115. The Project Manager will prepare the inception workshop report no later than one month after the inception workshop. The inception workshop report will be cleared by the UNDP Country Office and the UNDP-GEF

[9] See guidance here: https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx

Regional Technical Adviser, and will be approved by the Project Board. The project inception report must be submitted to the GCF no later than 6 months after the FAA effectiveness date.

116. **GCF Annual Project Report (APR):** The National Project Director, the UNDP Country Office, and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual APR covering the calendar year for each year of project implementation. The National Project Director will ensure that the indicators included in the project results framework are monitored annually in advance of the APR submission deadline so that progress can be reported in the APR. The APR will include reporting of: environmental and social risks and related management plans, gender, co-financing and financial commitments, GCF 'conditions precedent' outlined in the FAA, amongst other issues. The annual project report will be due for submission to the GCF in the first quarter of each year for the duration of the project. The last APR will be due for submission within 3 months after the project completion date.

117. The Annual Project Report will be shared with the Project Board. The UNDP Country Office will coordinate the input of other stakeholders to the report as appropriate. The quality rating of the previous year's report will be used to inform the preparation of the subsequent APR.

118. **Lessons learned and knowledge generation:** Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

119. **Independent Interim Evaluation Report:** An independent mid-term review process will begin after the second APR has been submitted to the GCF, and the MTR report will be submitted to the GCF in the same year as the 2nd GCF APR. The interim independent evaluation report is due for submission to GCF by the 3rd quarter of 2019. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO available on the UNDP Evaluation Resource Center (ERC). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and approved by the Project Board.

120. **Final Independent Evaluation Report:** Final Independent Evaluation Report will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin at least three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Final Independent Evaluation report is due for submission to the GCF within 6 months after the project completion date.

121. The Project Manager will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center. As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional

Technical Adviser, and will be approved by the Project Board. The TE report will be publicly available in English on the UNDP ERC.

122. The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC).

123. **Final Report:** The project's final Annual Project Report along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Mandatory GCF M&E Requirements and M&E Budget:

GCF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget[10] (US$)		Time frame
		GCF grant	Co-financing	
Inception Workshop	UNDP Country Office	USD 11,000	None	Within two months of project document signature
Inception Workshop Report and baseline assessments	Project Manager	USD 49,000	None	December, 2017
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office	None	None	Quarterly, annually
Monitoring of indicators in project results framework ***(including hiring of external experts, project surveys, data analysis etc...)***	Project Manager	Per year: USD 10,000 Total: USD 50,000	None	Annually
Annual Project Report	Project Manager and UNDP Country Office and UNDP-GEF team	None	None	Annually
NIM Audit as per UNDP audit policies	UNDP Country Office	Per year: USD 3,000 – 5,000 Total: USD 25,000	None	Annually or other frequency as per UNDP Audit policies
Lessons learned, case studies, and knowledge generation	Project Manager	Per year: USD 3,000 Total: USD 15,000	None	Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Manager UNDP CO	Per year: USD 5,000 Total: USD 25,000	None	On-going

[10] Excluding project team staff time and UNDP staff time and travel expenses.

GCF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget[10] (US$)		Time frame
		GCF grant	Co-financing	
Monitoring of gender action plan	Project Manager UNDP CO	Per year: USD 4,000 Total: USD 20,000	None	On-going
Monitoring of stakeholder engagement plan	Project Manager UNDP CO	Per year: USD 4,000 Total: USD 20,000	None	On-going
Addressing environmental and social grievances	Project Manager UNDP Country Office BPPS as needed	Per year: USD 5,000 Total: USD 25,000	None	On-going
Project Board meetings	Project Board UNDP Country Office Project Manager	Per year: USD 5,000 Total: USD 25,000	None	At minimum annually
Supervision missions	UNDP Country Office	None[11]	None	Two per year
Oversight missions	UNDP-GEF team	None[11]	None	Troubleshooting as needed
GCF learning misions/site visits	UNDP Country Office and Project Manager and UNDP-GEF team	USD 60,000	None	To be determined
Independent Mid-term Review (MTR) and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 90,000	None	3rd quarter 2019
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, and management response	UNDP Country Office and Project team and UNDP-GEF team	USD 90,000	None	December, 2020
Translation of MTR and TE reports into English	UNDP Country Office	USD 15,000	None	As required. GCF will only accept reports in English.
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		*USD 520,000* *1.4% of project budget*	*None*	

IX. FINANCIAL PLANNING AND MANAGEMENT

124. The total cost of the project is *USD 41,460,000.* This is financed through a GCF grant of *USD 36,960,000* and *USD 4,500,000* in parallel co-financing. UNDP, as the GCF Accredited Agency, is responsible for the oversight and quality assurance of the execution of GCF resources and the cash co-financing transferred to UNDP bank account only.

Project Financing

[11] The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GCF Agency Fee.

Component	Outputs	Financing institution			Total (US$)
		GCF	Government	UNDP	
		Grant	Grant	Grant	
Component 1.	Output 1	6,082,539	0	0	6,082,539
	Output 2	26,046,154	0	0	26,046,154
	Project Management	4,831,307	0	0	4,831,307
Total		36,960,000	0	0	36,960,000

GCF Disbursement schedule

125. GCF grant funds will be disbursed according to the GCF disbursement schedule. The Country Office will submit an annual work plan to the UNDP-GEF Unit and comply with the GCF milestones in order for the next tranche of project funds to be released. All efforts must be made to achieve 80% delivery annually.

Disbursements	Amounts (in USD)	Indicative expected month and year of disbursement
Disbursement 1	10,504,366	August 2017
Disbursement 2	7,461,097	August 2018
Disbursement 3	7,698,739	August 2019
Disbursement 4	5,737,254	August 2020
Disbursement 5	5,558,544	August 2021
TOTAL	36,960,000	

Budget Revision and Tolerance:

126. GCF requirement (refer to signed FAA): (1) Any reallocation among the Funded Activity's outputs described in Part A of Schedule 2 resulting in a variation of more than ten percent (10%) of the previously agreed budget for the output to which budget is reallocated must be approved in writing by the Fund in advance. (2) Any budget reallocation involving a major change in the project's scope, structure, design or objectives or any other change that substantially alters the purpose or benefit of the project requires the GCF's prior written consent.

127. UNDP requirement: As outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level

beyond the approved project budget amount for the year without requiring a revision from the Project Board (within the GCF requirements noted above). Should such deviation occur, the Project Manager and UNDP Country office will seek the approval of the UNDP-GEF team.

128. Any over expenditure incurred beyond the available GCF grant amount will be absorbed by non-GCF resources (e.g. UNDP TRAC or cash co-financing).

Refund to GCF:

129. Unspent GCF resources must be returned to the GCF. Should a refund of unspent funds to the GCF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

Project Closure:

130. Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP.[12] On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

Operational completion:

131. The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed.

132. UNDP and the Implementing Partner agree that any durable assets or equipment purchased during the implementation of the project (such as vehicles or office equipment) will upon operational completion of the project be transferred to the Implementing Partner. Any funds or proceeds received from the sale of such assets will be transferred to the GCF.

Financial completion:

133. The project will be financially closed when the following conditions have been met: a) The project is operationally completed or has been cancelled; b) The Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

134. The project is required to be financially completed within 12 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

[12] see https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx

X. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan		
Atlas Proposal or Award ID:	00102590	Atlas Primary Output Project ID: 00104582
Atlas Proposal or Award Title:	Scaling-up of Glacial Lake Outburst Flood (GLOF) risk reduction in Northern Pakistan	
Atlas Business Unit	PAK10	
Atlas Primary Output Project Title	Scaling-up of Glacial Lake Outburst Flood (GLOF) risk reduction in Northern Pakistan	
UNDP-GEF PIMS No.	5660	
Implementing Partner	Ministry of Climate Change of Pakistan	

GCF Output/Atlas Activity	Responsible Party (Atlas Implementing Agent	Financing Source	Budgetary Account Code	Budget Account Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	Budget Note*
			61300	Salary IP staff	22,774	23,912	25,108	26,364	27,682	125,840	1A
Output 1 Strengthened sub-national institutional capacities to plan and implement climate change resilient development pathways	Ministry of Climate Change of Pakistan	GCF	71300	Local consultants	389,880	304,200	304,200	230,000	195,000	1,423,280	1B
			72100	Contractual services companies	379,800	281,510	290,000	198,830	150,000	1,300,140	1C
			71600	Travel	392,577	270,057	293,377	226,802	131,850	1,314,663	1D
			74200	Audio visual&Print production costs	188,089	154,120	173,160	120,000	132,492	767,861	1E
			73100	Rental & maintenance - Premises	36,000	39,400	42,920	47,632	51,533	217,485	1F
			71400	Contractual services - individuals	16,800	19,500	20,200	23,000	25,500	105,000	1G
			72800	IT equipments	20,000					20,000	1H
			73400	Rental & maintenance of other equipments	14,770	27,000	28,000	29,500	30,000	129,270	1I
			72200	Equipment & furnitures	152,000	150,000	112,000	150,000	115,000	679,000	1J
Total Output 1					**1,612,690**	**1,269,699**	**1,288,965**	**1,052,128**	**859,057**	**6,082,539**	
			61300	Salary IP staff	91,095	95,650	100,432	105,454	110,727	503,358	1A
Output 2 Community-based EWS and long-term measures are scaled up to increase communities adaptive capacities	Ministry of Climate Change of Pakistan	GCF	71300	Local consultants	120,000	120,000	785,515	441,030	637,568	2,104,113	2B
			72100	Contractual services companies	3,707,652	4,137,878	2,761,197	2,143,556	1,175,000	13,925,283	2C
			71600	Travel	906,779	154,479	324,380	484,479	296,797	2,166,914	2D
			74200	Audio visual&print production costs	480,610	265,000	480,330	50,000		1,275,940	2E
			75700	Training, Workshops and Conference	220,000	60,000	275,250	198,596	932,719	1,686,565	2F
			72200	Equipment & furnitures	1,114,400	90,000	160,000	30,000	85,000	1,479,400	2G
			72800	IT equipments	650,000	90,000	193,067	55,000	90,000	1,078,067	2H

			73400	Rental & maintenance of other equipments	586,065	269,739	285,000	225,000	230,000	1,595,804	2I
			72500	Supplies	100,000	30,000	50,000	20,000	30,710	230,710	2J
Total Output 2					**7,976,601**	**5,312,746**	**5,415,171**	**3,753,115**	**3,588,521**	**26,046,154**	
Project Management	Ministry of Climate Change of Pakistan	GCF	71300	Local consultants	30,000	50,000	50,000	50,000	50,000	230,000	PM1
			71200	International consultants	60,000		90,000		150,000	300,000	PM2
			71400	Contractual services individuals	462,489	487,067	513,018	540,426	569,381	2,572,381	PM3
			74596	Service to Projects – GOE	221,586	221,585	221,585	221,585	221,585	1,107,926	PM4
			74200	Audio visual&print production costs	10,000	10,000	10,000	10,000	10,000	50,000	PM5
			71600	Travel	100,000	100,000	100,000	100,000	100,000	500,000	PM6
			72800	IT equipments	20,000					20,000	PM7
			73300	Rental & maintenance of IT equipment		5,000	5,000	5,000	5,000	20,000	PM8
			72500	Supplies	11,000	5,000	5,000	5,000	5,000	31,000	PM9
Total Proj Mngt					**915,075**	**878,652**	**994,603**	**932,011**	**1,110,966**	**4,831,307**	
Total Amount GCF					**10,504,366**	**7,461,097**	**7,698,739**	**5,737,254**	**5,558,544**	**36,960,000**	

Budget Notes

Note	Description of cost item	Amount (USD)
OUTPUT 1		
1A	50% UNDP staff time to provide DPC for technical support to the project. Total cost is $629,198. 20% of this is allocated to output 1 and 80% is allocated to output 2.	125,840
1B	1 No. of Consultancies for Climate Change Expert to Incorporate GLOF into National Policies (Review and Revise)	30,000
	1 DRR/DRM Consultancy awarded (1 National)	15,000
	2 No. of Consultancies for Climate Change Expert to Incorporate GLOF into Sub-National Policies (Review and Revise)	45,000
	2 DRR/DRM Consultancies Awarded (2 Province level)	30,000
	3 No. of Consultancies for Climate Change Expert to Review/Revise National and Sub-National CCA Strategic Plan	60,000
	1 No. Consultancy to HVRA study in target valleys 12 target valleys	120,000
	3 No. of Bio-Engineering Feasibility Studies Conducted (4 Districts)	60,000
	4 No. of Forestry Survey and assessment consultancy study awarded.	60,000
	3 No. of Stake Holders need Assessment awarded (1 National and 2 Sub-National)	60,000
	Improved financial capacity to adapt to GLOFs and CC-induced risks. (Kitchen Gardening Manual and Micro-Financing)	50,000
	Improved financial capacity to adapt to GLOFs and CC-induced risks. (Kitchen Gardening Manual and Micro-Financing)	50,000
	Project Exit Strategy Developed for smooth transition of resources to Community and Government for sustainability	50,000
	12 No. of Indegenious Knowledge Survey Consultancies awarded	180,000
	11 No. (Glaciologist, Climatologist and Hyrdologist) Climate change assessment Consultancies awarded (provincial adaptatoin plans)	313,280
	3 No. of KAP Survey Consultancies awarded	150,000
	5 No. Baseline Survey Awarded	150,000
1C	Strengthening of CC-Cell at Sub-National level	129,800
	2 No. Skill Enhancement Training of 100 Govt. officials in GLOF/CC DRR and DRM (From National and Provincial Govt	161,428
	Stregthening GIS Lab at Provincial labs	150,000
	15 No. Skill enhancement training for Relief and Rescue teams (National and Provincial)	90,000

	GIS Mapping of Hazard community	50,000
	Strengthening of National Disaster Management Authority (NDMA)	120,082
	Stregthening of Provincial Disaster Management Authorities (KP & GB)	140,000
	Stakeholders skills enhancement trainings (2) at National level	60,000
	Strengthening of GIS Lab at National Level	108,830
	Stakeholders skills enhancement trainings (6) at Sub-National level	90,000
	Designing and Layout of National GLOF/CC Cell at PMD/MoCC	50,000
	Strengthening of GLOF/CC-Cell at National level	150,000
1D	PMD site visit (x9)	168,000
	Learning Visit and Experience Sharing Visit to International Countries (x2)	180,704
	Exposure Visit (Stakeholders) internal Country (x3)	155,110
	DRR/DRM Expert visit (x1)	20,000
	Field Offices Site Visits (x120)	403,098
	Assessment and Surveys (x62)	275,000
	Implementing partners/stakeholders site and monitoring visit (x30)	112,750
1E	GLOF Project Pre-Implementation Documentary	45,000
	GLOF Project Documentary capturing interventions	50,000
	GLOF Project Final Documentary	50,000
	Print Material for Awareness	120,492
	Radio outreach programmes	100,000
	National and Sub-National Website Developed	13,000
	Media Awareness campaign	242,000
	GLOF Project expos and Seminars at University for awareness raising	28,960
	Newspaper Articles/supplements	118,409
1F	Rental and maintenance of premises.	217,485
1G	Security Services (3 No. of Security Guards)	105,000
1H	IT Equipment	20,000

1I	Maintenance of other equipment	81,270
	Other equipment (Generator (40KVA))	48,000
1J	Repair & Maintenance	44,000
	Purchase of Vehicle (6 Toyota Landcruiser Prado (4x4) and 4 Hilux Pickup (4x4))	635,000
OUTPUT 2		
1A	50% UNDP staff time to provide DPC for technical support to the project. Total cost is $629,198. 20% of this is allocated to output 1 and 80% is allocated to output 2.	503,359
2B	1 No. of Consultancy to conduct ground trothing baseline surveys in 15 valleys	120,000
	6 Consultancies awarded to develop SOP for CDBRC (15 No.) and DERC (7 No.)	300,000
	2 No. Consultancy to streamline valley weather surveillence to national hydromet services	281,305
	Consultancies awarded to prepare community level Hazard and Disaster Risk profile	547,568
	Feasibility study 06 valleys for installation of EWS/AWS equipment and devices.	240,000
	Mock Drills in Targetted valleys and District organized by PDMA (GB & KP	120,000
	Consultancy to develop GIS maps of 15 target valleys and connecting it to Provincial and National GIS	305,515
	Consultancies awarded to Improved financial capacity to adapt to GLOFs and CC-induced risks. (Micro-Financing)	159,725
	2 Consultancies awarded to develop ToRs for CBDRMC	30,000
2C	Expanded weather surveillance and discharge measuring networks to 4 Districts (Purchase of Equipment)	8,002,956
	Early warnings are effective in protecting communities from climate-induced risks. (6 No. Construction and establishment of CBDRC/MC)	600,000
	Strengthening HWG in 12 targeted Valleys	609,730
	Strengthening local line departments in 15 Districts	305,000
	4 No. Strengthening of DERC through provision of equipments	400,000
	; Early warnings are effective in protecting communities from climate-induced risks. (6 No. Construction and establishment of CBDRC/MC)	1,200,000
	Improved financial capacity to adapt to GLOFs and CC-induced risks. (Revolvoing Funds = 30,000*24 valleys)	1,200,000
	Slope stabilization activities through Bio-Engineering Structures in 12 valleys	245,771
	60 No. Designing and Implementation of CC mitigation structures in 6 valleys	250,000

	4 No. Strengthening of DERC through provision of equipments	511,826
	Repair and rehabilitation of 60 irrigation system in 6 valleys	600,000
2D	4 No. of Site Visit by Subject specialists (PMD, DRR/DRM, Infrastructural experts, bio-engineering expert)	300,000
	10 No. of International Exposure visit of Community to other GLOF affected country (60 community leaders and members)	1,472,396
	27 No. of Stakeholders and Partners Visit to targeted valleys	394,518
2E	Establishment of digital library in National,Provincial offices and District level	100,000
	24 No. of Broadcasting documentaries on National, International and private TV Channels	350,000
	Development of IEC materials (Brochure, Pamplets, Banners, leaflets)	386,161
	1 No. of National GLOF Web-site developed and connected to PMD, Agriculture, NDMA/PDMA, MoCC	30,000
	Establishment of knowledge repository	75,610
	Development and sharing of information through Newspaper and Magzines	334,169
2F	12 No. of Awareness Workshops delivered at targetted National and sub-national school, community, Schools	145,000
	8 No. of Awareness Workshops delivered at targetted National and sub-national school, community, Schools	160,000
	17 No. of Awareness Workshops delivered at targetted National and sub-national school, community, Schools	145,250
	34 No. Awareness Workshops delivered at targetted National and sub-national school, community, Schools; 1 No. of International GLOF Conference held at National Level	550,000
	15 Communication and Coordination workshop held (1 each level) at National, sub-national and district level	195,000
	15 Communication and Coordination workshop held (1 each level) at National, sub-national and district level	157,839
	6 No. of National Debates on GLOF mitigation and adaptation measures at National and Provincial level	153,596
	17 No. Awareness Workshops and Seminars conducted at 15 districts, 2 Provinces, National Level school, community, Schools	179,880
2G	Purchase of 17 Generators (20 KVA Each) ($510,000)	510,000

	Purchase of Furniture for Offices (15 Field offices and 2 Provincial offices)	604,400
	Purchase of Furniture (6 DERC)	90,000
	Purchase of Furniture (15 TERC)	160,000
	Purchase of Furniture for 1 National Climate Change Cell	30,000
	Purchase of Furniture for GLOF information Centers at 15 Districts	85,000
2H	Purchase of IT Equipment for Offices (15 Field and 2 Provincial)	650,000
	Purchase of IT Equipment for Offices (6 DERC)	90,000
	Purchase of IT Equipment for Offices (15 TERC)	160,000
	Purchase of IT Equipment for Offices (1 National CCC)	35,000
	Purchase of IT Equipment for Offices (15 GLOF Information centres at Districts)	90,000
	Purchase of Plotters and GIS Maps Printers and Equipment (2 Provincial Climate Change Cell)	33,067
	Purchase of Plotters and GIS Maps Printers and Equipment (1 National Climate Change Cell)	20,000
2I	Fuel for Vehicles (10) and Generator (17)	600,000
	Repair and Maintenance of Vehicles (10 Vehicles and 17 Generators)	325,000
	Repair and Maintenance of Office premises (17 Offices)	670,804
2J	Stationaries and office supplies	230,710
Project Management		
PM1	1 No. of consultancies to develop National Climate Change Framework	20,000
	1 No. of consultancy awarded to incorporate or revise legal section in National and sub-national environmental and Climate Change Act	20,000
	1 No. of Consultancy awarded to develop Proposal for up-scaling of GLOF activities	50,000
	2 No. of consultancies awarded to develop GLOF up to date inventory and profile	50,000
	1 Consultancy awarded to develop Communication Strategy and framework at National and sub-national level	30,000
	2 Sub-National Consultancy awarded for socio-economic study of project targeted locations	30,000
	2 No. of consultancies to develop Sub-National Climate Change Framework align with National framework	30,000
PM2	Project Inception Workshop Conducted at National and Sub-National Level ($60,000);	60,000
	Mid-Term Evaluation of the project (1 National and 1 International Consultant ($90,000);	90,000

	Terminal Evaluation of the Project (1 International and 1 National Consultant) ($90,000);	90,000
	2 No. of Best Practices case study awarded to consultant ($60,000)	60,000
PM3	45 PMU contracts consist of: PMU Islamabad (8 contracts) National Project Manager, National Technical Advisor, M&E officer, Safeguards specialist, Admin & Finance Officer, Driver (2), Office helper Implementation Support Team (Islamabad) (3 contracts) Communication & Reporting officer, Procurement Specialist, Admin & Finance assistant. PIU KP Peshawar (9 contracts) Provincial Project Director, Climate Risk Mgmt Specialist, Flood & river Mgmt Specialist, Communication & reporting assistant, Admin & Finance assistant, M&E assistant, drivers (2) and office helper PIU KP Gilgit Baltistan (9 contracts) Provincial Project Director, Climate Risk Mgmt Specialist, Flood & river Mgmt Specialist, Communication & reporting assistant, Admin & Finance assistant, M&E assistant, drivers (2) and office helper Field Office – SWAT (4 contracts) Field Officer, Finance Assistant, Driver and Office Helper. Field Office – Chitral (4 contracts) Field Officer, Finance Assistant, Driver and Office Helper. Field Office – Hunza (4 contracts) Field Officer, Finance Assistant, Driver and Office Helper. Field Office – Skardu (4 contracts) Field Officer, Finance Assistant, Driver and Office Helper.	2,572,381
PM4	UNDP support services (admin related supports) as requested by the Government of Pakistan	1,107,926
PM5	Publications of the Survey/Assessment/Case studies/Evaluation studies Reports	50,000
PM6	Project staff Monitoring and field visit ($150,000);	150,000
	Training on Project Management/Finance/M&E/DRR/DRM/Rescue/relief/first aid ($250,000);	250,000
	MoCC/Stakeholders/UNDP site visits ($100,000)	100,000
PM7	Office equipment and supplies Purchase of IT Equipment for office	20,000
PM8	Repair and maintenance of IT equipments	20,000
PM9	Stationaries and office supplies	31,000

XI. LEGAL CONTEXT

Additional legal conditions

135. Any designations on maps or other references employed in this project document do not imply the expression of any opinion whatsoever on the part of UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

136. By signing this UNDP GCF project document, the Implementing Partner also agrees to the terms and conditions of the GCF Funded Activity Agreement (FAA) included in Annex and to use the GCF funds for the purposes for which they were provided. UNDP has the right to terminate this project should the Implementing Partner breach the terms of the GCF FFA.

Legal Context Standard Clauses

137. The project document shall be the instrument envisaged and defined in the Supplemental Provisions to the Project Document, attached hereto and forming an integral part hereof, as "the Project Document".

138. This project will be implemented by Ministry of Climate Change ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

XII. RISK MANAGEMENT

139. Consistent with the *Supplemental Provisions*, the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;

b) assume all risks and liabilities related to the implementing Partner's security, and the full implementation of the security plan.

140. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document [and the Project Cooperation Agreement between UNDP and the Implementing Partner][13].

141. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml.

142. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

143. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

144. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

145. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

146. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

147. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on

[13] Use bracketed text only when IP is an NGO/IGO

reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.

148. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

149. Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

150. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement.

151. Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled "Risk Management Standard Clauses" are included, *mutatis mutandis*, in all sub-contracts or sub-agreements entered into further to this Project Document.

XIII. MANDATORY ANNEXES (PROVIDED IN SEPARATE FILES)

1. GCF Term sheet and Funding Activity Agreement
2. Direct project cost letter of agreement
3. Letter of agreement between the Implementing Partner and Responsible Parties
4. Letters of co-financing
5. Social and environmental screening procedure (signed) and management plan for moderate risk projects (in English and local language as required by GCF disclosure policy.
6. Gender analysis and action plan
7. Map of project location (s) with GPS coordinates
8. Monitoring Plan
9. Evaluation Plan
10. Timetable of project implementation
11. Procurement plan
12. Terms of reference for Project staff
13. UNDP Project Quality Assurance Report
14. UNDP Risk Log
15. Results of the capacity assessment of the project implementing partner and HACT micro assessment