



ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	Regular-sized project concept
Country:	Afghanistan
Title of Project/Programme:	Climate change resilient livelihoods advanced in rural Afghanistan (UNDP PIMS 6340)
Type of Implementing Entity:	MIE
Implementing Entity:	United Nations Development Programme
Executing Entity/ies:	Ministry of Rural Rehabilitation and Development (MRRD)
Amount of Financing Requested:	9,432,556 (in U.S Dollars Equivalent)

Project / Programme Background and Context:

Geographical and Socioeconomic Context

1. Afghanistan is a land-locked, mountainous and semi-arid country, bordered by China, Iran, Pakistan, Tajikistan, Turkmenistan and Uzbekistan. The country's area of 652,000 square kilometers is administratively divided into 34 provinces (*wilayat*).
2. The climate in Afghanistan is characterized by semi-arid to arid continental type with hot dry summers and cold winters. Precipitation varies over the country, is generally small, of high variability and can in some regions be concentrated to just few days in the rainy season. Rainstorms can yield the whole rainfall of a month within few hours, often causing flash floods, erosion and landslides. Highest rainfall amounts of up to 1000+ mm per annum are received in the highest mountain regions. About 50 percent of precipitation occurs in winter (January to March), much of which falls as snow in the central mountainous regions. A further 30 percent falls in spring (April to June). The Central plateau and mountains of Koh-e Baba, Tierband-e Turkestan and Feroz Koh receive low to moderate precipitation of 300-500 mm p.a. The lowlands in the North and in the South-east have rainfall of only 100-200 mm or in the country's southwestern provinces even less than 50 mm per annum. Temperature patterns in Afghanistan are subject to altitudinal gradients and show high inter-seasonal differences. Annual mean temperatures vary between -5 and 25°C without consideration of the high mountains. Mean July temperatures in large parts of the country are between 15 and 35°C, while mean January temperatures are between -15 and 20°C¹.
3. Although Afghanistan is located in a semi-arid environment, it is still rich in water resources mainly because of the high mountain ranges such as Hindu Kush and Baba, which are covered with snow. Over 80 percent of the country's water resources originate in the Hindu Kush mountain ranges at altitudes of over 2 000 m. The mountains function as natural water storage, with snow during the winter and snowmelt in the summer that supports perennial flow in all the major rivers². The total ground water recharge in entire Afghanistan is estimated with 16.4 km³ or 10% of the average total precipitation

¹ Summarized based on Breckle, S.-W. and Rafiqpoor, M.D. (2010). Field Guide Afghanistan—Flora and Vegetation, Bonn, Scientia Bonnensis.

² ICARDA. 2002. Needs assessment on soil and water in Afghanistan. Future Harvest Consortium to rebuild agriculture in Afghanistan. International Center for Agricultural Research in the Dry Areas.

amount. This would be a high percentage by international standards but can be realistic due to the concentration of rainfall in form of snow, which can often find ready access to ground water when it melts. Groundwater extraction is estimated at about 2.8 km³, of which 99% is used for agriculture. Of this 1.2 km³ comes from karez systems, 1.0 km³ from springs and the remaining from shallow and deep wells³. Historically, groundwater withdrawal has been largely limited to water from shallow unconfined aquifers abstracted using karez and traditional wells from which water is drawn using animal power (arhad). More recently, deeper confined aquifers are being developed for domestic and municipal water supply using modern well-drilling techniques⁴. It is not fully known how much of the groundwater can be extracted without leading to an excessive decline in groundwater levels, which may result in a stage of ‘water mining’⁵. Problems may arise in the Kabul and Eastern Helmand river basins.

4. Land-use in Afghanistan is largely determined by the climate conditions and the availability of surface and ground water for irrigation. The dominant land-use type in Afghanistan is rangeland used for extensive livestock grazing. The second largest land-use category is rain-fed arable land. Rain-fed farming depends on sufficient precipitation during the winter and spring season and is accordingly concentrated in the north of the country, where climate is most suitable. The dominant crop is wheat, of which 80 percent is sown as a winter crop. Important irrigated crops include rice, other cereals and fruit trees. Irrigated agriculture is restricted to river valley and alluvial fans at the bottom of mountain ranges.
5. The population was 34.7 million in 2016⁶, of which 73 percent reside in rural areas⁷. About 63.7 percent of the population is under age 25⁸. Afghanistan has a high annual population growth rate with 2.5% in 2017⁹ due to a high average birth rate per woman. The rapid population growth (+200% since 1985, +45% since 2005¹⁰) combined with the post-war situation as well as economic and environmental conditions are among the reasons for high poverty level, lack of perspectives, especially of young people and resulting civil conflict and emigration.
6. Approximately 80% of the Afghan population is engaged in agriculture directly or in secondary or tertiary activities, with the estimated ratio of irrigation and rain-fed farming around 4:1.¹¹ With 69% of households owning any type of livestock, farming households in Afghanistan are generally threatened by temperature increases and erratic rainfall. Afghanistan’s 2012 Risk and Vulnerability Assessment estimates that 36 percent of people have been affected by natural disasters.
7. Considering that agriculture accounts to almost a quarter of the Afghan national economy, there are also financial costs to consider. Based on World Bank data, drought causes an average of US\$280 million in damages to agriculture each year, and an extreme event such as a continuous drought could cost over US\$3 billion.¹² A combination of inadequate awareness, limited technical and functional capacity, and limited economic resilience and infrastructure capacities calls for immediate humanitarian assistance often, causing deflection of donor attention to climate change and environmental management.

³ ADB (2015). Preparation of the Afghanistan Water Resource Sector Development Strategy. Volume 2 Annexes. TA-7994 AFG.

⁴ Rout, B. 2008. Water management, livestock and the opium economy. How the water flows: a typology of irrigation systems in Afghanistan. Afghanistan Research and Evaluation Unit Issue Paper Series.

⁵ Qureshi, A. S. 2002. Water resources management in Afghanistan: the issues and options. International Water Management Institute.

⁶ 29.7 million as per national statistics, of which 1.5 million are nomads; 36.4 million as per <http://www.worldometers.info/world-population/afghanistan-population/>

⁷ World Bank data

⁸ UNFPA, <http://afghanistan.unfpa.org/en/node/15227>. According to World Bank data, 44 percent are under 14

⁹ <http://www.worldometers.info/world-population/afghanistan-population/>

¹⁰ <http://www.worldometers.info/world-population/afghanistan-population/>

¹¹ This ratio was calculated based on the estimated cultivated land in Afghanistan for 2018 in Islamic Republic of Afghanistan Central Statistics Organization 2018. Afghanistan Living Conditions Survey 2016-17. However, this ratio does not imply for each region. Based, on the findings of the Emergency Food Security Assessment the ration differs region to region, while ratio of irrigation and rainfed farming in non-drought areas is around 4:1, whereas in drought affected areas it is 3:2.

¹² Addressing Challenges with Water Scarcity, Food Insecurity and Famine Risk in Afghanistan, World Bank, Kabul, 2018

Climate Vulnerability

8. Afghanistan is among the most vulnerable countries (ranked 8th of 170 in the coming 30 years) to climate change impacts due to the high sensitivity and the low coping capacity of human systems. Climate change scenarios for Afghanistan suggest¹³ temperature increases of 1.4-4.0°C by the 2060s (from 1970-1999 averages), and a corresponding decrease in rainfall and more irregular precipitation patterns. Climate projections available for Afghanistan suggest a future cycle of higher temperatures¹⁴, reduced rainfall and higher evapotranspiration, and an increased frequency of extreme events such as droughts, storms, floods, landslides and avalanches. Satellite data show the decline in mountain glaciers in eastern Afghanistan, with 77 % of glaciers had retreated between 1976 and 2007¹⁵. Droughts are likely to be the norm by 2030, leading to land degradation and desertification. Decreasing snow cover leading to depletion of water resources; dryer conditions and rising temperatures adversely affecting agricultural pattern and yields; aggravating the damage of forests and rangelands already caused by overgrazing of livestock and fuel wood needs.
9. The impact of ongoing and projected climate change poses a significant threat to people's sources of livelihoods, considering that 44% of households depend on agriculture (households engaged in farming and/or animal husbandry) as their major source of income.¹⁶ There is evidence that the agriculture sector is highly vulnerable to increased temperatures and changes in rainfall/snowfall patterns and snow melt. Increased soil evaporation (resulting in moisture stress), reduced river flow and less frequent rain during peak cultivation seasons are already affecting agricultural productivity and crop choice options. Crop failure level is increasing due to insufficient rainfall in rain-fed areas and water shortages in irrigated areas. Water availability in some areas has already been drastically reduced both in terms of surface and ground water. Changes in precipitation and flow patterns (coupled with inefficient water use) pose a serious threat to ecosystem productivity, and food production. The cumulative effects of disappearance of glaciers, more frequent and intense droughts on surface water and groundwater could threaten the water supply for entire communities, leading to a range of humanitarian crises, including disease, population displacement and conflict. Rises in winter and spring temperatures will lead to more rapid and earlier snow melt, increasing the risk of flash flooding. It is estimated that 80% of Afghanistan's economic losses are caused by climate-induced disasters – such as (flash) floods and prolonged dry spell cyclically progressing into drought(s) in combination with extreme winters.¹⁷
10. Previous years have recorded high volatility of agricultural production—including years of sharply negative growth—driven by agriculture's reliance on weather conditions. Climate change is impacting the crop calendar, crop water needs, and leading to the degradation of soils, upland forests and rangelands—major livelihood sources for the rural poor. Besides the rain-fed agriculture, cultivation of crops on irrigated lands is especially affected.
11. Inadequate irrigation and rainfall water shortage have been recently identified as one of the three main reasons threatening the land cultivation.¹⁸ Water scarcity in complementarity with meagre water management on the national and local level is having a significant impact on agriculture production, be it reduction of the cultivated land, reduction of grazing land, decrease of water for livestock or contamination of water storages by floods and grey water. Water storage per capita is the lowest in the region and 3 of 5 river basins are water scarce. The rehabilitation and expansion of Afghanistan's large and medium irrigation systems have in the last decade been addressed by international financial and

¹³ Landell Mills 2016. Feasibility Study for the Panj-Amu River Basin Project (DCI-ASIE/2015/361-001) Draft Final Report, Supplementary Document 13 Climate Risk Assessment and Management Report.

¹⁴ Temperatures have already risen by 6 degrees Celsius since 1960.

¹⁵ Islamic Republic of Afghanistan Chief Advisor Office on Agriculture & Development 2017. Karez Action Plan.

¹⁶ Islamic Republic of Afghanistan Central Statistics Organization 2018. Afghanistan Living Conditions Survey 2016-17

¹⁷ For further information, see: www.unisdr.org/archive/31685.

¹⁸ Afghanistan Food Security and Agriculture Cluster 2018. Emergency Food Security Assessment in Rural Afghanistan - Key Findings. Draft version, August 2018.

technical assistance projects, e.g. by The World Bank¹⁹, Asian Development Bank²⁰, USAID²¹, FAO²² and others. Asian Development Bank²³ has implemented a project aiming at community-Based irrigation rehabilitation and development in four target provinces in Northern Afghanistan. However, a large portion of small-scale village and inter-village irrigation schemes has not yet been rehabilitated and is in urgent need of being adapted to the expected climate change. These systems consist of small canals, wells and/or underground irrigation canal(s) *karez*, used since centuries in Afghanistan and allowing for a cost efficient irrigation. In such a *karez* the groundwater is first captured at the bottom of the mountains by digging a vertical shaft, from where it will be led to the irrigation areas through long tunnels where it is protected from evaporation.

12. These *karez* systems in 1978 supplied 168,000 ha with irrigation water. FAO in 2004 reported 9,370 *karez* of which 3,404 or 36% had dried out and the remaining with flow reduced since the multiyear drought that began in 1998.²⁴ So, currently there might still be at least 150,000 ha, possibly more than 200,000 ha, of arable lands depend on *karez*.²⁵ The *karez* irrigation suffers from poor maintenance and neglect, but is also impacted by climate change, leading to insufficient recharge of the groundwater. This has caused economic losses calculated by the Chief Advisor Office on Agriculture & Development as 44.3 million lost value of *karez* construction and annually 81.7 million USD from missed opportunity of cultivated yield (if wheat were cultivated). Projects under MRRD from 2002-2016 have addressed 2,204 *karez*.²⁶ and the Government of Afghanistan has established a program²⁷ for the full rehabilitation of all suitable *karez* systems, including aquifer recharge, *karez* rehabilitation and water distribution.
13. The Afghanistan government declared drought as of April 2018, spotting the light on the vulnerability of the local agriculture sector, and the massive impact that climate change can have on local population. In the year 2018, based on current statistics, nearly 12 million Afghans and their livelihoods were directly affected by the drought. As an example, the cultivation of wheat declined in 2018 by 6% compared to the previous year, 71 % in rain-fed areas and over 6 % in irrigated areas.²⁸ The reduced yield directly impacts on the shrinking cereal stock for household consumption, which has reduced by over one third compared to the 2017.²⁹
14. Farmers and especially vulnerable families are highly exposed to impacts of precipitation deficiency, resulting in water scarcity and loss of their income generation assets. The 2018 drought is estimated to reduce farmers' income by 18 percent as reported by 66 percent of farmers interviewed in a recent FAO assessment.³⁰ Based on the recently conducted Emergency Food Security Assessment (EFSA), over 1.2 million inhabitants are severely and 5.4 million moderately food insecure in the 20 drought affected provinces.³¹ In total, over 12 million inhabitants and their livelihoods have been directly affected by the drought. With nearly 100% of population in the affected areas having food consumption score poor or borderline, over half of interviewed households identified that over 75% of their expenditures are used to cover solely food items. Diminishing labour opportunities (especially seasonal agricultural work) and a high number of applied negative copings strategies were registered, such as spending

¹⁹ <http://projects.worldbank.org/P122235/irrigation-restoration-development-project?lang=en>

²⁰ <http://mof.gov.af/en/news/adb-100m-grant-to-help-afghanistan-revive-war-torn-irrigation>

²¹ <https://2012-2017.usaid.gov/results-data/success-stories/rehabilitation-irrigation-systems-afghanistan-0>

²² <http://www.fao.org/news/story/en/item/122556/icode/>

²³ <https://www.adb.org/projects/36222-013/main>; <https://www.adb.org/countries/afghanistan/overview>

²⁴ Islamic Republic of Afghanistan Chief Advisor Office on Agriculture & Development. Karez Action Plan 2018-2030.

²⁵ Based on 25 ha/karez, in Islamic Republic of Afghanistan Chief Advisor Office on Agriculture & Development 2017. Karez irrigation system in Afghanistan (Challenges and Opportunities)

²⁶ Islamic Republic of Afghanistan Chief Advisor Office on Agriculture & Development 2017. Karez irrigation system in Afghanistan (Challenges and Opportunities).

²⁷ Islamic Republic of Afghanistan Chief Advisor Office on Agriculture & Development 2017. Karez Action Plan 2018-2030.

²⁸ MAIL 2018. Agriculture Prospect Report.

²⁹ MAIL 2018. Agriculture Prospect Report.

³⁰ Afghanistan Food Security and Agriculture Cluster 2018. Emergency Food Security Assessment in Rural Afghanistan - Key Findings. Draft version, August 2018.

³¹ Afghanistan Food Security and Agriculture Cluster 2018. Emergency Food Security Assessment in Rural Afghanistan - Key Findings. Draft version, August 2018.

overall household savings (48% of cases), selling animals (45%), significant reduction of expenditures for agricultural inputs (41%), selling productive assets (26%) or selling property (21%). Over 4.5 million heads of livestock were identified as vulnerable, counting additional 1 million heads of livestock lost, as a result of disease and/or malnutrition.³²

15. Climate induced disasters exacerbate an already existing situation of fragility and instability within Afghanistan, being impacted by ongoing conflict and limited economic growth and has further implication on the ongoing socio-economic status of Afghan society. Climate change is likely to compound existing chronic and acute food security issues. Direct effects of this will be more pronounced on populations who depend on agriculture for their livelihood and economic activities, but increases in food prices will also affect other vulnerable groups. More than 1.7 million Afghans are internally displaced³³, and more than 2 million have been returning to Afghanistan (mostly from Pakistan and Iran) since 2015, generating high humanitarian needs. The number of people displaced by the drought is estimated to be 249,000 people, with largest concentration of drought induced IDPs in the Western Region.³⁴
16. Based on the latest indicators, poverty has increased from 38 percent in 2011/12 to 55 percent in 2016/17³⁵. Protracted conflict for almost thirty-five years and continued insurgency in parts of the country both have taken a serious toll on Afghanistan's development process. Disputes over land and water are already a major cause of local insecurity, and the situation is set to deteriorate. Since 1978, the arable area has declined by about 60 percent, leaving only 12% of the land now suitable for farming.³⁶ There has been a trend of decreasing land size of households engaged in irrigation farming. Based on the analysis of the Afghanistan Living Condition Survey, "the limited availability of arable land in combination with very high population growth inevitably results in increasing pressure on farm land and fragmentation of land holdings and is a likely contributor to the observed increasing poverty in the country". Unless action is taken to strengthen the resilience of communities and reduce disaster risk, Afghanistan risks to lose recent development gains and see more people pushed into poverty.

Overview of the project areas

17. The project activities will be implemented in five provinces of Afghanistan. Out of these, the province Herat is located in the country's northwest and belongs to the drainage areas of Hilmand and Harirod-Murghab. The provinces Kabul, Lowgar, Paktia and Wardak are in the eastern part and belong mainly to the Kabul drainage area, which is part of the Indus catchment. Smaller sections of Paktia and Wardak drain into the Hilmand drainage. The exact location of intervention sites and targeted communities will be determined during the development of the full proposal.
18. In **Herat province** more than half of the land area is classified as bare soil. Among the productive landscapes, rangelands dominate. Arable areas are mainly rain-fed lands. Irrigated lands are concentrated along the Harirod river and in smaller extent in Kharumrod basin. They have typically one crop per year. Some irrigated lands are intermittently cultivated.
19. The largest areas in **Kabul province** are rangelands. Arable lands make up a high proportion with irrigated intensively cultivated areas with one crop per year and irrigated intermittently cultivated areas dominating. Rain-fed areas are less important. Kabul province the most urbanized province in Afghanistan and the groundwater resources in Kabul basin are particularly affected by abstraction above the natural recharge.

³² Afghanistan Food Security and Agriculture Cluster 2018. Emergency Food Security Assessment in Rural Afghanistan - Key Findings. Draft version, August 2018.

³³ <https://www.unocha.org/afghanistan>

³⁴ OCHA 2018. Humanitarian Snapshot November 2018

³⁵ Islamic Republic of Afghanistan Central Statistics Organization 2018. Afghanistan Living Conditions Survey 2016-17

³⁶ Ibid.

20. Land cover in **Lowgar province** is dominated by rangelands in all catchment areas. Rain-fed and irrigated lands make up about the same share of arable lands, with approximately the same area used as intensively cultivated areas with one crop per year and as intermittently cultivated areas and smaller areas classified as gardens. Irrigated areas are located in the valleys of the rivers Murghab and Djudsa.
21. While **Paktia province** is also dominated by rangelands, there are as well larger forested areas, open woodlands and degraded forests in the eastern part of the province. Rain-fed arable lands cover much smaller areas than irrigated lands, among these dominating intermittently cultivated areas and a smaller share of intensively cultivated areas with one crop per year.
22. **Wardak province** is dominated by rangelands. Some rain-fed arable lands are cultivated in the western part of the province. There also many comparably small areas with irrigated lands, mainly intermittently cultivated can be found, which depend on small and medium scale irrigation schemes, many of them supported by *karez*. Substantial irrigated intensively cultivated areas with one crop per year are found in larger river valleys along the rivers Lalandar and Djudsa and their tributaries the east of the province.

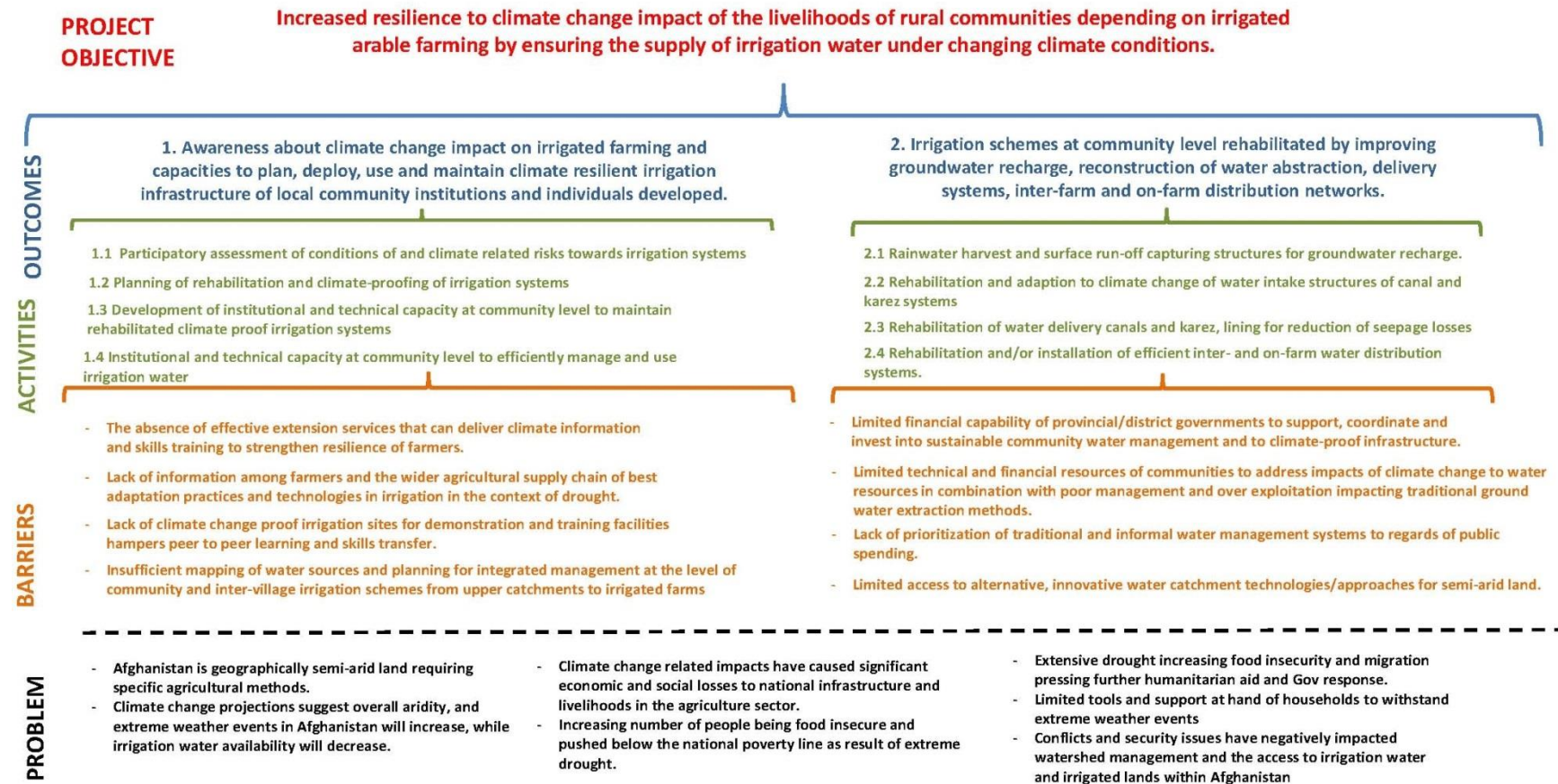
Project / Programme Objectives:

23. Both government and local communities play a key role in addressing climate change impact in Afghanistan. The capacity of decision makers must be developed to allow them to take informed decisions and to implement immediate and long-term solutions. Rural communities need greater awareness of the impacts of climate change and the degradation of their environment from unsustainable land-use practices. They need assistance in the development of livelihoods, which are sustainable under the conditions of climate change.
24. Figure 4 sets out the theory of change for the proposed project.

Project objective:

25. This project's overall objective is the increased resilience to climate change impact of the livelihoods of rural communities depending on irrigated arable farming by ensuring the supply of irrigation water under changing climate conditions. The project will achieve this in selected rural communities by implementing two interrelated components resulting in two outcomes:
 1. Building individual and institutional capacity of rural communities to assess, plan, maintain and use climate change adapted irrigation infrastructure; and
 2. Rehabilitation of irrigation schemes at community level by improving groundwater recharge, reconstruction of water abstraction, delivery, inter-farm and on-farm distribution systems.
26. In the long term, it is expected that lessons learnt will be applied to other parts of Afghanistan and result in improved adaptive capacity there as well.

Figure 4: Theory of Change for the proposed project



Project / Programme Components and Financing:

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
1. Capacity of local community institutions to develop climate resilient irrigation infrastructure..	1.1 Participatory assessment of conditions of and climate related risks towards irrigation systems 1.2 Plans for climate-proofing of irrigation systems formulated. 1.3 Institutional and technical capacity at community level to maintain rehabilitated and climate proofed irrigation systems 1.4 Institutional and technical capacity at community level for efficient management of use of the water .	Awareness about climate change impact on irrigated farming and capacities to plan, deploy, use and maintain climate resilient irrigation infrastructure of local community institutions and individuals developed.	\$2,000,000
2. Rehabilitation and climate proofing of irrigation schemes at community level.	2.1 Rainwater harvesting and surface run-off capturing structures for water collection and groundwater recharge. 2.2 Water intake structures of canal and <i>karez</i> systems rehabilitated and climate proofed. 2.3 Rehabilitation of water delivery canals and <i>karez</i> , lining for reduction of seepage losses 2.4 Rehabilitation and/or installation of efficient inter- and on-farm water distribution systems	Irrigation schemes at community level rehabilitated by improving groundwater recharge, reconstruction of water abstraction, delivery systems, inter-farm and on-farm distribution networks.	\$6,000,000
3. Project/Programme Execution cost			\$693,600
4. Total Project/Programme Cost			\$8,693,600
5. Project/Programme Cycle Management Fee charged by the Implementing Entity			\$738,956
Amount of Financing Requested			\$9,432,556

Projected Calendar:

Indicated dates for the milestones in the proposed project/program is given in the below table.

Milestones	Expected Dates
Start of Project/Programme Implementation	Nov-2019
Mid-term Review (if planned)	Nov-2021
Project/Programme Closing	Nov-2023
Terminal Evaluation	Dec-2023

PART II: PROJECT / PROGRAMME JUSTIFICATION

- A. Describe the project / programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.**

27. Insufficient availability of irrigation water is a key factor limiting the area size of irrigated farming and the yields from actually irrigated lands. The availability of irrigation water and the amounts of irrigation water needed are influenced by climate change in various ways, causing shortage and/or shifting and unreliable

availability of irrigation water. The background has been explained in paragraphs 8 til 16. Direct impacts of climate change on availability of water include: an overall aridification, changing seasonal patterns of precipitation with erratic and unreliable rainfall, insufficient infiltration from heavy rainfalls during dry periods caused by hardened, impermeable soils, reduced snow cover, accelerated melting of glaciers, which all affect patterns and amounts of surface runoff and groundwater replenishment. These changes will have a tremendous impact on availability of irrigation water resulting in severe water shortages as well as flood events threatening irrigation infrastructure. In 2011, the area actually irrigated was an estimated 1,896,000 ha³⁷ counting for 24% of Afghanistan's arable lands of 7,793,000 in 2009³⁸. Due to the compared to rain-fed agriculture much higher yields (estimated threefold) the importance of irrigated arable lands for livelihoods and food security is much higher than their share in the land surface area. Pre-war, irrigated land produced 77 percent of all wheat and 85 percent of all food and agricultural crops. Sustaining and increasing productivity on irrigated land is essential for the overall food security of Afghanistan³⁹.

28. Irrigation systems can be divided into small or medium scale schemes (sometimes called “informal”) and large scale (“formal”) schemes. “Formal” systems are large-scale irrigation schemes that have been developed with central government assistance, financing, management, operation and maintenance. At present, there are twelve large-scale schemes totaling an area of 330,000 ha⁴⁰. They are not to be addressed under this project due to the typically high investment needs, which are typically provided by projects of international financial institutions. By focusing on small or medium scale schemes at community and inter-village level, the proposed project will complement the rehabilitation of large scale irrigation systems by other donors, like World Bank, Asian Development Bank, USAID, FAO and others.
29. Centuries-old and traditionally developed and managed by local communities “informal” systems within the constraints of local resources have undergone social and physical changes. They expand or contract based on water availability or other challenges. These local small and medium scale systems account for 88 percent of the country's irrigated area^{41,42}. These systems can be divided into four categories⁴³ by the way water is sourced:
30. *Surface water systems*: These are the most common systems. They capture water from rivers and streams and use it on adjacent arable lands, usually along river terraces and alluvial plains. Their key infrastructure typically includes:
 - diversion structures (*sarband*); main, secondary and tertiary canals (predominantly made of unlined earth);
 - control structures (weirs, *sehदारک* bifurcators, offtakes and spillways);
 - conveyance structures (siphons, aqueducts, superpassages and culverts);
 - protection structures (embankments as well as gabion and retaining walls); and
 - access and ancillary structures (water mills, bridges and access points).
31. Some schemes include small retention dams and waterharvesting structures. Many of these systems have been established for centuries and their operation and maintenance was institutionalized in the communities and between villages.

³⁷ FAO Aquastat 2012. Irrigation in Central Asia in figures.

³⁸ FAO Aquastat 2012. Irrigation in Central Asia in figures.

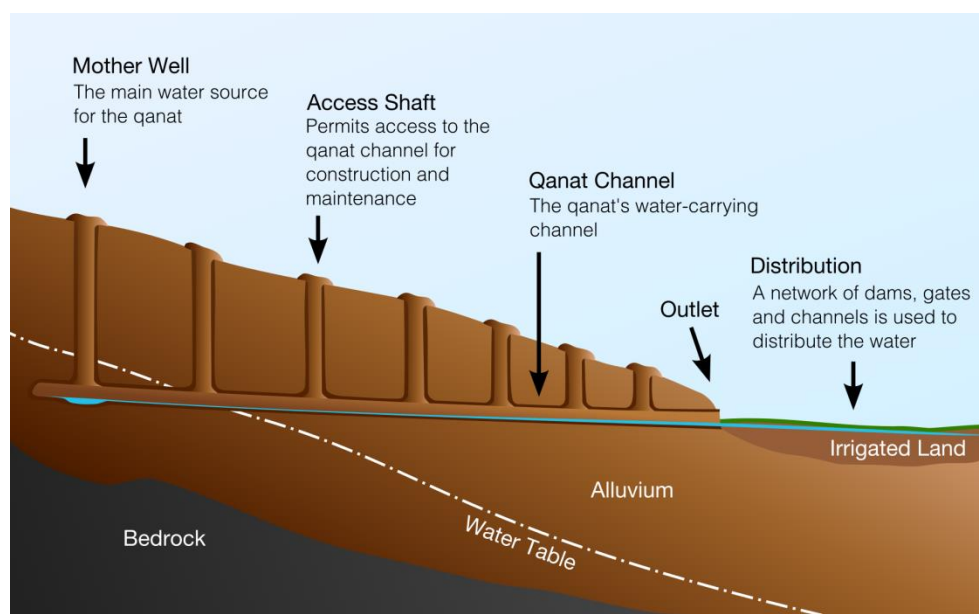
³⁹ FAO Aquastat 2012. Irrigation in Central Asia in figures.

⁴⁰ National Irrigation Strategy 2017-2030 – 90% of all irrigation systems.

⁴¹ Rout, B. 2008. Water management, livestock and the opium economy. How the water flows: a typology of irrigation systems in Afghanistan. Afghanistan Research and Evaluation Unit Issue Paper Series.

⁴² National Irrigation Strategy 2017-2030 – 90% of all irrigation systems.

⁴³ FAO Aquastat 2012. Irrigation in Central Asia in figures.



Schematic drawing of karez⁴⁴

32. *Karez*: The 9,000+ *karez* in Afghanistan have the potential of supplying 168,000 ha⁴⁵ with irrigation water and provide domestic water supply to villages there. These systems date back several millennia. They comprise an unlined underground gallery in the hillside that brings water by free flow from underground aquifers to be used for surface irrigation. Although most are shorter than 5 km, the length of the *karez* can run up to 16 km; the longest Afghanistani *karez* is 70 km long. Average irrigated area per *karez* is 25 ha, but ranges from less than 10 ha to more than 200 ha. *Karez* irrigation is common in the south and southwest of the country and less in the north. Most *karez* systems are located within the Helmand river basin⁴⁶. The *karez* provides sustained perennial flow and good quality water and has the advantage of being relatively immune to natural disasters and human destruction in war. *Karez* are operated by local communities, traditionally under a *karezkan* specialist responsible for construction and maintenance of subsurface sections; a *mirab* (water master) oversees surface distribution operations.
33. *Springs*: Many rural communities depend on the nearly 5,558 spring-fed systems estimated to irrigate approximately 187,000 ha. The relatively low flow rate of springs means that the systems are often supplemented by diverted surface water flows when available. The systems are commonly found in upper and tributary catchments and are concentrated in the more mountainous central and southeastern provinces⁴⁷. When the groundwater level falls such as during drought years, the result is reduced outflow from springs. This is why some of the worst drought-stricken areas of the country are located in regions where farmers depend heavily on spring water for irrigation.
34. *Wells*: The total number of shallow wells in Afghanistan is 8,595, which irrigate around 12,000 ha of land. Groundwater is lifted from large diameter shallow wells with the help of a wheel (*arhad*), animal power supplies irrigation water to an individual farmer's fields. The irrigated land does not exceed 3 ha. In recent years, however, the use of modern well-drilling and pumping technology has been more widespread,

⁴⁴ By Samuel Bailey (sam.bailus@gmail.com) - Own work, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=8650678>

⁴⁵ Islamic Republic of Afghanistan Chief Advisor Office on Agriculture & Development 2017. Karez Action Plan.

⁴⁶ Rout, B. 2008. Water management, livestock and the opium economy. How the water flows: a typology of irrigation systems in Afghanistan. Afghanistan Research and Evaluation Unit Issue Paper Series.

⁴⁷ Rout, B. 2008. Water management, livestock and the opium economy. How the water flows: a typology of irrigation systems in Afghanistan. Afghanistan Research and Evaluation Unit Issue Paper Series.

considerably increasing the number of wells and their capacity^{48,49}, but causing in some areas large scale ground water depletion⁵⁰. In the development of groundwater systems for irrigation and other uses precaution must be taken to avoid adversely affecting users of existing systems.

35. The functioning of many of these irrigation system is threatened by a combination of awareness, capacity and institutional factors and by technical problems of over-use of water resources and deterioration of irrigation infrastructure. These problems are exacerbated by the impact of ongoing and predicted climate change.
36. Years of conflict, displacement and social change combined with population increase, in some areas exacerbated by influx of internally displaced people and returning refugees, have affected the functionality of traditional irrigation management institutions. Awareness about the factors impacting functioning, resilience and sustainability of irrigation water supply is often weak and new challenges caused by land degradation in watersheds and by climate change are insufficiently understood. Also technical knowledge about construction, operation and maintenance of infrastructure and water efficient irrigation techniques is insufficient.
37. Many of the small and medium irrigation systems are in technically poor shape, causing insufficient water supply and substantial losses. Canals are typically not lined and have substantial seepage losses. The *karez* have no mechanism to stop water flowing during winter, or when there is no need for irrigation, causing about 25% of total annual volume of water being wasted. Many *karez* face problems such as collapse of subsurface infrastructure, water flow in underground galleries being blocked by sediment, water losses and insufficient groundwater recharge. Also springs and wells are heavily affected by groundwater depletion. The reduction of available ground water is caused by insufficient infiltration of water from precipitation and by overdrafting in some areas. Recharge of groundwater can be insufficient because of different factors, which often occur in combination – reduced overall precipitation, reduced share of snow in the precipitation and higher share of rain, which less contributes to recharge, degradation of vegetation and soil causing higher surface runoff and others. An estimate shows that 3,406 (36%) out of 9,370 *karez* have dried up with the remaining experiencing a water flow reduction by up to 83%⁵¹.
38. The ongoing and predicted climate change additionally adversely affects the irrigation systems. Reduced snowmelt and shrinking glaciers cause changes in amount and dynamics of waterflow in rivers and streams. In the result during critical periods of the vegetation season water availability can be insufficient, diversion and intake structures can become dysfunctional and/or damaged by irregular floods. Canals and other irrigation structures are affected by landslides, erosion and siltation, which become more severe as result of changing precipitation patterns, accelerated melting of snow and glaciers and vegetation degradation. Groundwater recharge is particularly affected by climate change impacts: trends of temperature increase and resulting higher evaporation cause an increasing overall aridity, less snow and faster snowmelt shortens the time of water infiltration in the ground and shorter periods of waterflow in riverbeds lead to reduced contribution to aquifer recharge.
39. The proposed adaptation project will address these climate change related problems at different levels. AF funds will support the rehabilitation and climate proofing of existing and the construction of new climate change resilient irrigation systems. These interventions cover all components of the irrigation systems, starting in the catchment areas to increase aquifer recharge, improve water retention and reduce disaster risk by the rehabilitation of the upper catchments, addressing the functionality of canals and *karez* to reduce losses and improving the on-farm water supply and use to ensure highest efficiency of use of limited water resources. In the result the farmers' operations will become less prone to climate change induced droughts and more

⁴⁸ ICARDA. 2002. Needs assessment on soil and water in Afghanistan. Future Harvest Consortium to rebuild agriculture in Afghanistan. International Center for Agricultural Research in the Dry Areas.

⁴⁹ Rout, B. 2008. Water management, livestock and the opium economy. How the water flows: a typology of irrigation systems in Afghanistan. Afghanistan Research and Evaluation Unit Issue Paper Series.

⁵⁰ ADB (2015). Preparation of the Afghanistan Water Resource Sector Development Strategy. Volume 2 Annexes. TA-7994 AFG.

⁵¹ Islamic Republic of Afghanistan Chief Advisor Office on Agriculture & Development 2017. Karez Action Plan.

resilient to disaster risk, increasing due to climate change, thus stabilizing and improving the livelihoods, social-economic and health conditions for the beneficiary population.

Target areas:

40. The project interventions will be implemented in over 40 communities and inter-village irrigation schemes in the provinces Herat, Kabul, Lowgar, Paktia and Wardak.

Proposed Activities:

41. The proposed project activities are grouped into two components: 1) Building individual and institutional capacity of rural communities to assess, plan, maintain and use climate change adapted irrigation infrastructure; and 2) Rehabilitation and climate proofing of irrigation schemes at community level. The activities under these components are summarized below. Each of the activities will include knowledge management and dissemination. All activities will be documented in a manner, which allows for understanding approaches, technical detail and lessons learnt. Dissemination materials will be prepared in local languages and in a style and content accessible for target groups in national and sub-national government structures, CDCs and implementing organizations. Knowledge management and dissemination will use existing web-based platforms, a project website, printed materials, videos, radio and tv broadcasts and special dissemination events at national and sub-national level. Additionally the project will facilitate and support study and exchange visits.

1) Building individual and institutional capacity of rural communities to assess, plan, maintain and use climate change adapted irrigation infrastructure;

i. Participatory assessment of conditions of and climate related risks towards irrigation systems

This activity will be used to raise awareness about the interrelations between climate change impact and other factors influencing local livelihoods, based on irrigated farming. The assessment will include non-climate related barriers, such as insufficient institutional and individual capacity to maintain irrigation systems, unsustainable practices of land use in catchment areas, such as overgrazing, deforestation, expansion of rain-fed farming into unsuitable areas at the expense of rangelands, which in addition to the climate change impact all additionally reduce water retention and groundwater recharge capacity and contribute to irrigation water shortage. It will also take into consideration the risk of natural hazards and disasters and the way current land use contributes to them and climate change is expected to increase these risks. Through the participatory Climate Vulnerability and Risk Assessment (CVRA) local people will understand better the impact of climate change to manage disaster risk within their socioeconomic and environmental context. The assessment will inter alia include the groundwater and storage recharge potential of upper catchments and related aquifers, current and predicted availability, use and losses of irrigation water, the conditions and efficiency of technical elements of irrigation systems and their vulnerability to climate change impact and the efficiency of on-farm irrigation water use. This process will further analyse how rural communities take decisions, build (maintain) their resilience and react to stress. Keeping in mind that the occurrence of natural disasters is cyclical, it is important to further understand the behavioural aspects of affected population, applying traditional coping mechanisms at the area of their origin. This information will help communities to strengthen their coping mechanisms to climate change risks and also focus on local based solutions. The project will support awareness raising campaigns with specific sessions for women and children.

This understanding will provide one basis for the participatory planning of climate proofing activities. Furthermore, technical assessments will be conducted of potentials, risks, requirements and the feasibility of construction of new and rehabilitation of existing irrigation infrastructure, which will be resilient against climate change.

ii. Planning of rehabilitation and climate-proofing of irrigation systems

Based on the participatory assessment, local communities, assisted by a group of technical experts, will participate in the planning process for construction, rehabilitation, climate proofing of irrigation infrastructure. The planning process will consider traditional knowledge, modern technical and ecosystem based (EbA) adaptation approaches. The planning approach will aim at addressing entire catchment-irrigation area systems. It will take into consideration the current potentials and risks in form of availability, seasonality and reliability of irrigation water supply and the catchment area specific changes, which are to be expected under climate change scenarios in the near and medium future. This planning will also include the review of not climate change related barriers identified in the participatory assessment under the previous activity, including, but not limited to institutional and individual capacity to manage catchment areas and irrigation systems, equitable irrigation water distribution between and within communities, sustainable land-use (rangeland and woodland management, reduction of unsustainable, erosion prone rain-fed farming) to ensure optimum storage and availability of irrigation water from surface and groundwater, including the enhanced recharge of groundwater aquifers, and regular maintenance of technical elements of irrigation systems. The project will make use of lessons learnt from respective previous and ongoing activities implemented by other projects and organizations such as the *Afghan Villagers Learn Sustainable Irrigation Practices through On-Farm Water Management Project* (OFWMP) funded by Afghanistan Reconstruction Trust Fund (ARTF)

iii. Development of institutional and technical capacity at community level to maintain rehabilitated climate proof irrigation systems

This activity will improve the capacity of rural people to maintain climate proofed irrigation infrastructure. The maintenance of climate proof irrigation systems also includes the protection of vegetation and soil and the construction and maintenance of erosion prevention and water retention structures in the upper catchment areas. The development of capacity will refer to traditional community institutions of irrigation infrastructure maintenance like the *karezkan* and *mirob* as elected community representatives in charge and community voluntary work for construction and maintenance activities. These traditional institutions are to be integrated into the current community decision making and organization structures, in particular in the Community Development Councils (CDC) at village level and for inter-village systems the District councils. They further need to be coordinated and linked with the respective government institutions, in particular the district and province level representatives and offices of MRRD and MAIL.

iv. Institutional and technical capacity at community level to efficiently manage and use irrigation water

Under this activity the capacity of target communities to efficiently manage and use irrigation water will be developed. Awareness in the entire community will be developed about the limitations and expected trends of irrigation water availability. The farmers will get knowledge how to prevent irrigation water losses, how to avoid damage caused by oversupply of irrigation water, how to cope with the risk of natural disasters, opportunities of water saving cultivation and crops and how to apply irrigation water best on their crops for sustainable, climate resilient livelihoods. Improved on-farm water management, reducing the current practice of over-irrigation, will leave more water in the canals for the benefit of users located in the middle and tail end of the canals.

2) Rehabilitation of irrigation schemes at community level by improving groundwater recharge, reconstruction of water abstraction, water delivery, distribution system inter-farm and on each farm .

This component will consist of activities, which will directly improve the efficiency and resilience of rural productive infrastructure to better withstand to climate change induced droughts and floods. Following the approved Afghan National Irrigation Policy, National Comprehensive Agricultural Development Priority Programme (2016-2021) together with the MRRD Water Supply, Sanitation and Irrigation Program innovative and synergetic community-based techniques will be introduced and tested by the communities. The program has planned to rehabilitate the dysfunctional community irrigation canals and *karez* systems through the participatory irrigation management (PIM) approach by involving CDCs to speed up the rehabilitation process and reduce the gap between government and rural communities. Besides reducing the existing costs of rehabilitation (approximately USD 600/ha in fully donor funded projects), the local communities' involvement will eliminate

or substantially reduce security risks and will spread the program to all parts of the country. The proposed activities include:

i. Rainwater harvest and surface run-off capturing structures for water collection and groundwater recharge

The upper catchments are of key importance for the functioning of irrigation systems. At the same time these areas are heavily affected by degradation of vegetation and soil caused by deforestation, overgrazing and climate change driven aridification. This causes reduced water retention and infiltration and accelerated surface runoff, leading to erosion, flash-floods, landslides and insufficient replenishment of groundwater aquifers. Climate change impact in form of more frequent and prolonged droughts, shift from snow to rain, reduced period of snow cover and loss of glaciers exacerbate these effects. Upper catchment interventions aiming at capturing, diverting, and storage of rainwater for later use are therefore required to maximize the use of available precipitation to stabilize water flow in rivers and streams supplying surface irrigation systems, to recharge aquifers supplying *karez* systems, springs and wells and to reduce disaster risk.

Upper catchment interventions for rainwater harvesting, enhancement of groundwater recharge and erosion control would include:

- Revegetation and reforestation with native climate change resilient shrubs and trees that will reduce surface runoff, improve retention of water from rain and snow and will improve infiltration into the soil and subsoil;
- Regulation of grazing and wood harvest for preservation and rehabilitation of vegetation, which improves water retention and infiltration;
- Construction of percolation ponds, small earthen dams, check-dams, mini-dams, weirs, etc. will all contribute to an increasing percentage of rainwater being temporarily stored or infiltrated for recharging aquifers;
- Terracing where suitable to reduce surface runoff and to increase infiltration;
- Adaptation measures such as changes to the cropping calendar and adjusting cropping methods to match agricultural needs with changing availability of irrigation water.

The implementation and operation of the rain harvesting will be community-based to ensure commitment and long-term sustainability of the interventions. The following workflow will be adopted by the program to implement simple, small-scale and low cost rainfall-snowmelt harvesting schemes through community involvement to capture, store and redirect rainfall water to raise water table, reduce surface runoff and improve irrigation:

1. Developing site selection criteria based on:

A) Ground water situation B) Population C) Poverty & D) Crop Status;

2. Reviewing the initial list of harvesting schemes, provided by regional offices;

3. Contact respective CDCs in the region of prioritized harvesting structures and arrange a site visit to carry out following activities:

I. Confirm site suitability through visit;

II. Conduct technical/topographic survey including assessment of climate change vulnerability;

III. Digging of test pits;

IV. Estimating water storage capacity / potential of aquifer recharge;

V. Estimation of design flood.

4. Implementation: Preparation of Topographic maps, investigation of sub-surface data, doing hydrological analysis and water balance studies;

5. Preparation of supervision & maintenance plan;

6. Contracting with CDCs & handing over the projects.

ii. Rehabilitation and climate proofing of water intake structures of canal and *karez* systems

Many water intake structures at rivers and streams are in technical poor shape and require rehabilitation for becoming effective. Riverbed and lateral erosion and sedimentation have caused intake structures

becoming dysfunctional. Climate change causes changes in the amounts and seasonal dynamics of river discharge and thus of water availability at the intakes. This activity will therefore include the reconstruction of diversion weirs, headworks and other intake structures under consideration of current and future (climate change impacted) flow dynamics of the respective rivers and taking into account the water needs of downstream located users. Headworks will be strengthened to withstand anticipated flood events, which may increase in frequency and intensity due to climate change. Locating the canal headwork at a distance of at least 50 metres downstream of the braided river intake protects the structure from the worst erosional effects of large floods. Headworks will enable a better control of water inflows into the canals. This will protect the canals from excessive flows during floods, while allowing a more equitable distribution of available water resources during low flows and droughts.

Disrepair and changing groundwater tables at the heads of many *karez* have caused a reduction of water intake into these irrigation systems. Furthermore, *karez* drain groundwater from aquifers independent of the actual need for the water, including in winter time. The rehabilitation of the mother wells of the *karez* as main intake structures will be required for the improved water supply. To avoid water losses from aquifers outside of the irrigation system, the integration of water-tight gates or other water blocking structures in the mother wells to prevent 25% wastage of *karez* water in the winter season will be considered depending on technical feasibility. For making use of existing knowledge, experience and best international practice, project will seek support and collaboration in research, training and technology transfer with UNESCO's International Centre on Qanats and historic Hydraulic Structures.

iii. Rehabilitation of water delivery canals and *karez*, lining for reduction of seepage losses

The seepage and irregular discharge losses from canals and *karez* are substantially impacting on the availability of water on farm. Reduced water availability caused by climate change impact will exacerbate this shortage. To achieve an efficiency that allows for meeting current and future irrigation needs under conditions of predicted reduced water availability, the targets are to control more than 50% losses, improve efficiency up to 70%, reduce time for water to reach to the farm and prevent overtopping of side banks by irrigation water. Different technical approaches will be applied based on the results of the participatory planning process implemented under Component 1, all taking into account and preventing potential negative impact of climate change and related increased disaster risk:

- Earthen improvement of canals will include the partly or complete demolishing of inefficient and leaking canals and their reconstruction as per engineering standards (straightness & shaping) with clean compacted soil to enhance conveyance efficiency & optimize water use;
- Lining of canals will be implemented by applying different lining technologies such as brick lining, PCPS (Pre-cast Parabolic Segment), in-site concrete lining and clay lining
- *Karez* (mid-section) rehabilitation includes cleaning and proper lining through community participation;

iv. Rehabilitation and/or installation of efficient inter- and on-farm water distribution systems

Efficient inter- and on-farm water distribution and use requires the installation of necessary water control structures, which reduce the impact of future climate change related water shortage on irrigated farming, its agricultural production and resulting food security and economic situation:

- Field turnouts, culverts, drop structures, siphon/aqueducts to ensure control flow throughout the irrigation network;
- Lower Section Interventions at *karez*: At the *karez* outlet the construction of small ponds or storage tanks will enable the storage of water flow during for more efficient supply, e.g. of drip irrigation systems.

Irrigation Demonstration Sites will be established to determine productivity per amount of irrigation water ("More Crop per Drop") by using laser land levelling, raised-bed cultivation, drip irrigation and others in close coordination with MAIL Extension Department.

Describe how the project / programme provide economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund.

Economic benefits

42. Climate variability and change is expected to have an impact on Afghanistan's performance in the agricultural sector, which accounts to almost a quarter of the Afghan national economy. According to World Bank data, drought causes an average of US\$280 million in damages to agriculture each year, and an extreme event such as a continuous drought could cost over US\$3 billion. Approximately 80% of the Afghan population is engaged in agriculture directly or in secondary or tertiary activities, with the estimated ratio of irrigation and rainfed farming around 3:2. Irrigated land produces 85% of the total Afghanistan agriculture production and almost 80-85% of the land is irrigated by canal systems.
43. Farmers and especially vulnerable families are highly exposed to impacts of precipitation deficiency, resulting in water scarcity and loss of their income generation assets. Also, other climate change impacts affect farming and rural livelihoods in general. The results are diminishing labour opportunities in the agricultural sector and food processing. Other sectors of the rural economy are indirectly affected by reduced purchasing power of the rural population. Increasing food prices and influx of rural people in search of labour into urban areas cause social and economic distortions and increase tension. An estimated 263,330 people have been displaced by the recent drought, with largest concentration of drought induced IDPs in the Western Region.⁵²
44. The proposed project will enhance the resilience of communities and ecosystems to the impacts of climate change by making the supply of irrigation water more climate change resilient and increase the efficiency of its distribution and use. The farmers will benefit from an increased yield and income. Livelihood chains such as sorting, packaging, processing and transportation of vegetables, fruits, and their products will enhance the living standard of indirect beneficiaries, by the creation of additional jobs for the rural population. Furthermore, the entire communities in the target areas will benefit from reduced disaster risk achieved by the implementation of upper catchment management with erosion prevention measures. The stabilized and increased productivity of irrigated agriculture will contribute to the prevention of excessively growing food prices and reduce the migration from rural areas into urban places in search of income. This will contribute to a general stabilization of the social and economic situation and reduce tension and conflict beyond the immediate intervention areas.

Social benefits

45. Stakeholders from all parts of the water system will benefit from increased community awareness, social capital and increased capacity of their water management institutions. The beneficiaries of the project interventions will be all rural community members in the target areas, which are directly or indirectly dependent on irrigated agriculture, use upper catchment areas for grazing and harvest of wild-growing plants and wood, and are potentially affected by natural disasters. All target provinces are multi-ethnic and the project will facilitate equitable access to its benefits independent of ethnicity with special attention that marginalized minorities are adequately addressed. Marginalized minorities may include internally displaced persons, returning refugees, families of war victims, nomadic groups and others. Minority groups need to be identified during proposal development and their specific vulnerabilities, needs and potentials for inclusion in the project activities assessed. Social cohesion will be strengthened by joint work and community contributions to the construction and rehabilitation of irrigation systems, benefiting the entire community. This experience of successful joint community action can be a powerful catalyst for further action to improve the livelihoods of local groups. Addressing water distribution within communities and between villages, with

⁵² Afghanistan Food Security and Agriculture Cluster 2018. Emergency Food Security Assessment in Rural Afghanistan - Key Findings. Draft version, August 2018.

improved and stabilized water supply for downstream users, by joint assessment, planning and action will improve collaboration within and between communities and reduce conflict over resource access. The improved dialog, networking and collaboration among stakeholders will be a major contribution to local development.

46. The construction and rehabilitation of irrigation systems is expected to prevent internal displacement of the local people with resulting adverse social impact, as more people will be able to make a living in the areas where their land is. Additionally stored groundwater will reduce impacts from droughts. Revitalized *karez* systems and stable flow from springs and wells also provide reliably clean household water. Reduced frequency of crop failure and increased yields improve food security. Better yields together with short and long term job opportunities will allow for increased rural income. Reduced environmental degradation has direct and indirect positive impact on the people's wellbeing and health. Prevention of natural disasters and coping with their effects avoids losses of property, health and lives.
47. Despite these expected generally positive effects, it is likely that in some areas the gap between available water and land resources and the needs of the growing population cannot fully be overcome. It can also not be excluded that uneven access to irrigated land may cause inequality and tension, and possibly powerful stakeholders may execute their interest in previously marginal lands with due to the project intervention improved productive potential.
48. The project will implement a facilitated communication and coordination process to minimize conflicts potentially arising from discrepancies between expectations and needs on the one hand and achievable results on the other hand. Realistic participatory assessments at early stages will be used to identify resource limitations and to develop coping strategies. The current level of use of water and land resources, including arable land and rangelands, is clearly not sustainable and the rural population and their needs already several times exceed the capacity of the land, which is predicted to be further reduced by climate change impacts. Furthermore, the project will work with provincial and national government staff in order to facilitate equal access to benefits to the extent possible.

Gender

49. Preliminary climate change assessments predict GDP losses of as much as 6% per year based on current climate projections (NAPA). Reductions of this order of magnitude would substantially undermine the Government's ability to invest in the nation's development, increasing the responsibility for adaptation on society as a whole. As explained above, the rural population will be affected most, but urban populations will be affected indirectly. In such a situation, it will be the poorest communities who will be the least able to adapt. Amongst these groups, it is recognized that women are the most vulnerable. Afghanistan's Policy on Women acknowledges that women have lacked the opportunities provided to men and as a result they fall behind men in all fields of self-advancement. Climate change will affect the socially constructed gender roles between men and women and may undercut efforts to build more equitable access to development. These role dynamics will likely need to evolve to enable men and women to improve their responsive and adaptive capacity. If under climate change-induced stress, institutional structures place unequal emphasis on responding to the needs of men and women, they risk weakening the adaptive capacity of one group over another.
50. The proposed project seeks to fully align with the Adaptation Fund's Gender Policy, thus the project aims to build community self-reliance; so that dependence on the state for adaptation resources is reduced as communities themselves – both men and women – tailor adaptation technologies and techniques to their own needs. The project will aim to directly improve adaptation capacity of approximately 100,000 people from approximately 10,500 households. Generally, 50 percent of the target beneficiary population (50,000) will be women and 50 percent youth (including young women). Different categories of vulnerable and or marginalized beneficiaries (people with disabilities, female headed households and IDP households) will be targeted. The socio-economic profile of the beneficiary groups will be further analysed and disaggregated by gender during the development of the full proposal through a Gender Assessment and Action Plan (GAAP).

51. Sustained and increased availability of water is key to social development. Improved access to irrigation water specifically supports the livelihoods of women and children through improved food security and quality, e.g. by the opportunity to grow fruits and vegetables on household plots. It is also linked to access to clean household and drinking water from springs, wells and *karez*, which will alleviate adverse health effects and allow for the reallocation of time dedicated to fetching water towards engaging in other activities including education. The reduction in time spent collecting water can improve the participation of youths (especially girls) in school, thus improving the level of education in the target communities.

Environmental Benefits

52. The project areas are affected by ecosystem degradation in catchment areas and on irrigated lands. Vegetation in upper catchments has degraded because of overgrazing caused by increase of stocking densities of livestock, reduced or lacking pasture rotation and out of season grazing. Harvesting of trees and shrubs beyond regrowth rates while rejuvenation is hampered by livestock, increasing frequency and intensity of droughts and other factors have led to large scale degradation and destruction of tree and shrub vegetation. An additional factor adversely impacting upper watersheds is the expansion of rain-fed arable farming on the expense of rangelands. This leads to the loss of vegetation cover. The degradation of vegetation cover and changes in soil structure from grazing and ploughing cause an increase in surface runoff, reduced infiltration of water into the soil and into aquifers, erosion, mudslides and flash floods. These processes are exacerbated by the impact of climate change – increase in annual temperatures, changing precipitation patterns and amounts, reduced snow pack, accelerated snow melt and the shrinking of glaciers, which in many catchments act as natural buffer of water flow against inter-annual variation of precipitation.
53. In the irrigated areas environmental degradation is driven by local factors and by the downstream effects of the above described environmental degradation in the upper catchments. Local elements are abandonment of arable lands due to insufficient water supply or salinization, but also the expansion of irrigated agricultural lands on the expense of remnants of natural riparian ecosystems. Downstream areas are also affected by flash floods, destructive mudslides and the siltation of streams and canals from material eroded in the upper catchments.
54. Overall, the project will provide environmental benefits by addressing ecosystem degradation in upper catchment areas and on downstream irrigated lands. It will lead to improved water retention, preservation and restoration of vegetation cover and seasonal waterbodies in form of percolation ponds. Positive impacts will include reduced soil erosion, flash flood and mudslide risks in upper catchment areas and thus also reduced downstream adverse impact of these factors and events. Groundwater recharge and retention of surface water through vegetation and constructive measures in the upper catchments will contribute to more stable discharge in rivers, streams, wells, springs and *karez* systems. This more stable water supply and reduced drought impact will in downstream irrigated areas support the growth of moisture dependent vegetation, like trees, shrubs, forbs and meadows. This will also positively influence local microclimate by evapotranspiration from crops and natural vegetation. In addition, irrigated agricultural lands with a mosaic of annual and perennial crops, shrubs, trees and accompanying natural vegetation will continue to support local biodiversity and connectivity among diverse habitats and ecosystem.
55. The project very unlikely has adverse environmental impacts. Identified impacts are of low impact, probability and significance and/or can easily be avoided, mitigated or compensated. The lining of canals and resulting reduction of seepage losses may cause reduced growth of tree, shrub and forb vegetation accompanying unlined canals. More effective water diversion from rivers, streams and springs will also reduce the potential for natural moisture dependent vegetation in valleys. Agricultural intensification and possibly expansion may reduce (mostly already degraded) rangeland vegetation and secondary vegetation on abandoned arable lands, but can potentially also take place on the expense of riparian vegetation. The potential conversion of rangelands and abandoned lands is expected to provide net environmental benefits, while the conversion of valuable riparian ecosystems, if any are found in the project areas, will be avoided by inclusion of their conservation in the local development plans.

B. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme.

56. The long-term benefits of the project by securing livelihoods of rural communities in climate change affected irrigated agriculture areas and the benefits for indirect beneficiaries have been assessed to outweigh by far the costs of the project. Full costing for interventions in targeted area is done and the projects were deemed cost effective. The alternative of no action with resulting distortion of livelihoods, migration and related economic, social and environmental costs is considered more costly. Large-scale technical interventions would also be less cost-efficient. A detailed analysis of costs and benefits of the proposed project and of potential alternatives will be carried out during the planning stage of the project.

The following factors contribute to the cost-effectiveness of the proposed project:

- The preparatory and design phase focused on project implementation principles and approaches that will meet the objectives of the project in the most cost-effective way. The project will be implemented through government agencies responsible for rural development, climate change adaptation and multi-sectoral task teams drawing expertise from the departments responsible for planning and implementing climate resilience enhancing practices with involvement of the CDCs as this was considered the most cost-effective approach.
 - Cost effectiveness is further ensured by building upon the current baseline projects in the target areas, ensuring the long-term viability of the activities and investments under conditions of climate change.
 - The project will include cost-efficient ecosystem-based adaptation approaches, in particular in its upper catchment activities and in reducing disaster risk of all elements of the irrigation systems and rural infrastructure.
 - The applied approaches build on traditional systems of knowledge and institutions, which will contribute to their cost effectiveness. Fully donor-funded costs of rehabilitation of irrigation systems are typically approximately USD 600/ha. The community involvement and contributions will reduce these costs. The beneficiaries in the project areas will be involved through the provision of labour, which will reduce the costs and incentivise long-term maintenance and thus contribute to the cost-effectiveness of the program.
 - By providing technical training and financial support to community organizations and improving livelihoods the project will engender ownership of the project and enhanced capacity within these communities. This reduces the overhead for monitoring and maintenance of the activities and constructed/rehabilitated infrastructure and will promote sustainability of project benefits beyond the project lifespan.
 - Building upon current national development programmes and enhancing capacity within the management structures mandated by government further strengthens the cost effectiveness of the project.
57. The output 2.1 Rainwater harvesting and surface run-off capturing structures for water collection and groundwater recharge is cost-effective compared to other options of providing irrigation water, like, e.g., pumping from lower located surface sources, long-distance canals and pipelines. It is sustainable in the long-term as it uses renewable source in contrast to systems relying on fossil groundwater. The output 2.2 Water intake structures of canal and *karez* systems rehabilitated and climate proofed will in the detailed design make choices of the most cost-effective options and ensure sustainability by considering all climate change related and other potential impacts on these structures. The Output 2.3 Rehabilitation of water delivery canals and *karez*, lining for reduction of seepage losses is cost effective as it makes use of existing systems, makes these functional or increases their efficiency. Alternatives, like construction of new systems will be considered, where no existing systems are available or their reconstruction is less cost –effective. The use and rehabilitation of existing systems is combined with capacity development for their maintenance, ensuring the sustainability of the interventions. The Output 2.4 Rehabilitation and/or installation of efficient inter- and on-farm water distribution systems may have higher investment costs compared to the continued use of inefficient systems and compensation of losses by delivering higher amounts of water. However, with irrigation water being in shortage within the communities and between the communities, this investment is justified. Predicted further increase in water demand and reduced availability will stimulate the maintenance

and replication of effective systems and accompanying training activities will develop awareness and the required institutional and technical capacities to ensure the sustainability of the output.

C. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

58. Afghanistan became a signatory to the United Nations Framework Convention on Climate Change on 12 June 1992, but ratified it on 19 September 2002 and ratified the Kyoto Protocol on 13 April 2013 and entered into force on 23 June 2013. It is a least developed country (LDC) and highly vulnerable to climate change. Afghanistan's National Adaptation Programme of Action (NAPA) was adopted in 2009. This project will build the capacity for climate change adaptation planning and implementation by addressing four NAPA priorities that are inter-connected:

NAPA Priority Rank	Activity
1	Improved water management and use efficiency
5	Improved food security
6	Rangeland management
7	Creation of off-farm Employment

59. The link between this project strategy and the NAPA is centred on a common goal of informing climate resilient development planning and sector management through improved national and local systems that generate better agriculture, livelihoods and food security. The NAPA identifies a number of existing national policy initiatives, sectoral policies, programs and strategies that may directly or indirectly address climate change adaptation. Accordingly, the most important policy and program documents that have relevance to climate change adaptation include the Afghanistan National Development Strategy, Strategic Policy Framework for the Water Sector, Policy and Strategy for the Forestry and Range Management Subsectors, Strategic National Action Plan (SNAP) for Disaster Risk Reduction, and the National Capacity Needs Self-Assessment (NCSA) for Global Environmental Management and National Adaptation Programme of Action (NAPA).
60. The NAPA indicates that from the policy perspective, the ultimate goal is to reduce climate change impacts through development programmes and projects that contribute towards the alleviation of the worsening natural resource depletion and environmental deterioration. Therefore, programmes that address climate change impacts (drought, flood, famine, etc.), vulnerability and adaptation measures are treated as an integral component of the overall development programmes that involve all the relevant sectors through short and long-term programmes particularly in the areas of natural resource management, utilization, development and conservation. This project directly contributes to the above policy approach. In particular, the Government plans that canals and intakes can bring new land under irrigation in line aiming at bringing 5 million ha of land under irrigation by 2030 thus ultimately increasing crop production and contribute to improved food security. The construction and rehabilitation of community-based irrigation systems will contribute to this plan.
61. There are currently no sub-national (i.e. at provinces level) development plans or strategies relevant to the proposed project.
62. Additionally, Afghanistan is one of the UN member countries who have adopted the SDGs. The project is contributing to the following Sustainable Development Goals:

Goal 1: End poverty in all its forms everywhere
 Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
 Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
 Goal 10: Reduce inequality within and among countries
 Goal 13: Take urgent action to combat climate change and its impacts
 Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

D. Describe how the project/programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

63. The project meets the following national standards, complies with the Environmental and Social Policy of the Adaptation Fund and with UNDP Social and Environmental Standards.

1. Afghanistan Environmental Law Standards:

The Environment Law (2007) has been developed under consideration of international best practices. It sets forth national administrative roles and coordination with provincial authorities; establishes management frameworks for natural resource conservation, biodiversity, drinking water, pollution control, and environmental education; and defines enforcement tools. The law is executed through a set of regulations, which specify the provisions of the law, among these the Environmental Impact Assessment Regulations (2008; amended 2017). The National Environmental Protection Agency (NEPA) is in charge of controlling and enforcing these regulations, provides and cross-checks environmental data; the NEPA impact assessment expert team analyses the data and they will provide the license if the project meets the standards. Administrative Guidelines for the Preparation of Environmental Impact Assessments (2008) – accompany these Regulations to guide proponents on interacting with the National Environmental Protection Agency, on public consultation, and roles and responsibilities of stakeholders. The activities under the proposed project fall into Category 2, i.e. activities with potentially adverse impacts: means those activities that have potentially significant adverse on human environment or on environmentally sensitive areas that less adverse than those in Category 1 and are site specific and in most instances not irreversible.

Of further relevance is the Water Law (2009), according to which water is owned by the public and Government is responsible for water protection and management; assigns responsibilities to government institutions for management and protection of water resources, water ownership, and regulates water ownership fees, rights, permits, and usage. The determination of irrigation norms in different river basins, irrigation drainage systems and other related research for water use for agriculture and irrigation are the main responsibility of the Ministry of Agriculture, Irrigation and Livestock with the cooperation from Ministry of Energy and Water, Ministry of Transport and Aviation, Ministry of Public Health and National Environmental Protection. A usage license or activity permit, including for government projects, is necessary for the following activities relevant under the proposed project:

1. Surface and groundwater use for newly established development projects.
6. Digging and installation of shallow and deep wells for the commercial, agricultural, industrial and urban water supply purposes.
7. Construction of dams and any other structures for water impoundment, when the storage capacity exceeds 10,000 cubic meters.
8. Construction of structures that encroach the banks, beds, courses or protected rights-of-way of streams, wetlands, *karez*, and springs.

The proposed project will comply with these standards by conducting the required Environmental Impact Assessments in accordance to the established procedures. The CDC or other local partners will be assisted in obtaining or renewal of permits or licenses under the water law.

2. Adaptation Fund and UNDP Standards:

In regard to environmental and social risk assessment and mitigation, the project is committed to comply with the AF's Environmental and Social Principles (ESP) by applying UNDP's Social and Environmental Standards (SES), as well as with applicable national policies, laws and regulations. Overall, 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>).

64. Consistent with the above national regulations, the Adaptation Fund's ESP and UNDP Social and Environmental Standard, an environmental and social impact assessment shall be conducted to assess the potential risks that may be associated with the proposed adaptation project's interventions. During the full proposal development this will be accompanied by an environmental and social management plan (ESMP) that would elaborate the mitigation measures that will be taken to ensure consistency with the ESP Principles and Afghanistan's laws and regulations. a detailed Safeguards Assessment and Management Plan (SESP,) will be developed. NEPA shall approve the EIA/ESMP and issue the required license and permit prior to the implementation of the associated activities in accordance with Afghanistan's environmental legislation.

E. Describe if there is duplication of project / programme with other funding sources, if any.

65. There is no duplication of the project with other funding sources. The proposed project is designed to complement the rehabilitation and expansion of Afghanistan's large and medium irrigation systems, which have in the last decade been addressed by international financial and technical assistance projects, e.g. by The World Bank, Asian Development Bank (ADB), USAID, FAO, and others. The ADB implemented project on community-based irrigation rehabilitation and development is restricted to four target provinces in Northern Afghanistan.
66. The proposed project addresses the large portion of small-scale village and inter-village irrigation schemes, which are in urgent need of being adapted to the expected climate change and will not been addressed by any other ongoing or planned project. The line ministry MRRD is coordinating all activities in this sphere and avoids duplication. The proposed project complements other projects in the sector by its focus on climate change adaptation in the context of small-scale irrigation infrastructure, addressing issues from the upper catchment and groundwater recharge to the inter-farm and on-farm distribution.

F. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

67. Project information will be strategically disseminated through media at main milestones including grant signing, contract awards and project completion. Complaint redressal mechanism will be established at the Project Management Office (PMO), by phone and email, and through public consultation events. Lessons learnt will be systematically documented and be shared and discussed at board meetings, technical advisory group meetings, knowledge exchange visits and other stakeholder meetings, incorporated in the annual work plans. The lessons learnt will be synthesized to include knowledge based on implementation processes, impacts of the project activities and best practices. Success stories/beneficiary stories as well as documentation of difficulties experienced will be developed and disseminated to stakeholders.
68. The PMO is responsible for:
- Designation of a focal point for regular contact with project people and other stakeholders;
 - Identification of mechanisms for feedback during design and implementation;
 - Documentation of all aspects of implementation (including identification, planning, construction, training, institutional development etc.) and impact (including awareness, capacity, changes in water availability, social and environmental impacts) of both components; and

- Decision making of the details of types of information to be disclosed, mechanisms for public notice including language and timing, and responsibility for implementing and monitoring disclosure and dissemination.

69. Concretely, in order to enhance learning and knowledge management, the project will prepare a strategy for the documentation, dissemination and communication of lessons learned from the project implementation and impacts. The communication strategy will be developed in the full proposal. The strategy will ensure that lessons learned reach the target audience in the appropriate format. The target audience will include policy makers at national and provincial levels, line ministries, technical agencies and their local representations, CDC and District councils as well as key development partners across the country, which are actively involved in agricultural development, water management, disaster risk reduction and/or adaptation to climate change.

G. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund.

70. The key stakeholders of the proposed project are as follows:

- Ministries: MRRD, NEPA, MAIL;
- UNDP;
- CDCs of targeted communities taking into consideration both men and women for their respective roles and responsibilities; and
- other stakeholders that provide data.

71. During preparation of the present project Concept Note there was consultation with local groups such as Community Development Council (CDCs), Community elders and relevant government organizations such as the line ministry MRRD, and its subnational branches, the PRRD and RRD. The developers of this concept also consulted with NEPA and MAIL. Local stakeholders, in particular CDCs, their water management institutions, community elders and land-users were approached by MRRD and UNDP during past years to discuss the project idea.

72. The consultation process included meetings, and working sessions that encompassed various stakeholders including technical staff and beneficiaries:

- Technical Working Sessions: Technical experts of MRRD at the national, province and district levels were involved in the identification of target areas and the determination of potential interventions guided by the needs and potentials in these areas.
- Field visits and Meetings: These were conducted in a broad range of irrigated areas across the country to engage with local governments; CDCs and beneficiaries to establish their level of concern about the current situation, their awareness of environmental and climate change issues affecting irrigated agriculture and water sources. During the meetings local district governments, CDCs and farmers expressed demand for the proposed interventions and indicated an overwhelming interest in the proposed project, which was deemed critical to address irrigation water scarcity and other water and agriculture related concerns particularly amongst women who spend time collecting water and caring for their families.

73. Consultation processes in all specific target areas with particular emphasis on focus group discussions and interviews with marginalized and vulnerable groups, including minority groups, will continue once the specific target areas are determined and shall remain at the core of the development of the full project proposal. Furthermore, in the frame of activities 1.1. and 1.2 the project itself will continue the consultation process at community level through participatory assessment and planning.

H. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

74. Afghanistan is among the median countries in the world when it comes to GHG emissions. It is however among the most vulnerable countries to the effects of climate change, particularly in relation to vulnerability to droughts, floods, landslides/avalanches. This is due to some extent to its level of exposure but it is also the consequence of a very high sensitivity of its population to the stimulus of climate shocks. The sensitivity is multidimensional and is based on socio-economic, cultural and political factors. Women are among the most severely affected as climate change often affects a number of daily tasks that are culturally associated with women's responsibility such as household water supply or collecting resources for heating and cooking, gardening and others.
75. The small and medium scale irrigation schemes serving single communities, or several villages are of key importance for the livelihoods of these people, and beyond this for the country's agricultural production and food security. At the same time these irrigation schemes have been identified as being already affected by ongoing climate change and will be more affected by predicted future climate change under all GHG scenarios. At the other hand the expansion, rehabilitation and resilience against climate change impact of many of these schemes can only be achieved in combined efforts by the line ministry MRRD, local communities (via CDCs) and with technical and financial donor assistance.
76. The total funding required for this project is \$9,432,556 including project management and project execution fees. The funding requested is based on the available estimates of the cost of proposed technologies for climate change proof irrigation systems, related watershed management measures, technology transfer and awareness ad capacity building activities in 40 communities and inter-village irrigation schemes.
77. Without external assistance only in a limited scale physical maintenance and rehabilitation of small-scale irrigation schemes would be possible, but neither awareness on climate change impact on the functioning and sustainability of these irrigation systems nor would capacity be developed to address these impacts. The costs for these activities could not be met and necessary knowledge for capacity development of local level institutions and individuals and for technical implementation in compliance with the state of the art and impact of predicted climate change would not be possible.
78. The project is structured to allow funds to flow into capacity building and institutional activities associated with the promotion of climate resilience for the communities. The currently inadequate conditions of irrigation systems and the insufficient consideration of climate change related impacts on their effectiveness and sustainability have significant reasons in the lack of adequate awareness and weak institutional frameworks at local (community, inter-community and district) levels. This requires investment in these enabling aspects to change behavior, and build awareness of best practice, both among local authorities and communities. The awareness and capacity development related activities, for which funding is requested, are expected to result in a significantly higher adaptation benefit and sustainability than standalone physical rehabilitation works would achieve.
79. Without the requested funding rehabilitation and construction of new irrigation systems would take place in a very limited scale, mainly addressing single elements of irrigation systems, but would not cover entire systems from the water collection and groundwater replenishment, over water delivery systems to inter-farm and on-farm distribution systems. The impacts of climate change would not adequately be addressed, and no climate change proofing of the irrigation systems would take place. The proposed activities under the component on rehabilitation and construction of new irrigation infrastructure are based on a holistic approach, which addresses the entire system, including the adequate management of the upper catchment to increase water availability, the rehabilitation of delivery and distribution systems to reduce water losses and the efficient use of irrigation water by the farmers. The proposed approach includes climate change proofing of all elements of the irrigation systems, in contrast to limited and isolated rehabilitation works, which might potentially be implemented without the requested funding.

80. During the development of the full proposal further details on the funding available in each of the project areas will be determined, indicating the very limited availability of resources at this level, further justifying the full provision of funding. Locally available resources will be mobilized for the implementation of climate change proof rehabilitation and development of the irrigation schemes and by this sustainability and local ownership will be strengthened (section J). The programme costs are additional to other costs associated with community level irrigation scheme rehabilitation and development, but the success of the intervention from an adaptation perspective is not dependent on co-financing activities by other parties.
 81. The project will strengthen climate resilience among rural communities through climate-proof infrastructures, diversified livelihoods, and strengthen capacity of institutions and communities to support the irrigation sector in targeted areas in Afghanistan. The funding of the proposed project is well justified by its direct outcomes and the economic, social and environmental benefits explained in section B and its cost-effectiveness. (section C). Beyond the described immediate outcomes and benefits, the proposed project will allow adaptation to be mainstreamed into local communities and implemented actions to address specific threats and barriers will be replicated.
- 1. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme.**
82. **Institutional sustainability and strengthening of capacities:** The project outcomes are closely aligned and coordinated with efforts already underway within Afghanistan to promote development and SDG targets. The project focuses on strengthening the capacity of national and sub-national entities to adapt with climate change impacts. To ensure the sustainability of the project interventions beyond the project lifetime, ownership of the project by government structures (primarily MRRD, NEPA and MAIL) is of paramount importance.
 83. The project builds on traditional institutions (see para 32) for irrigation infrastructure construction and maintenance and regulation of water supply, which functioned for centuries, still exist in some extent in rural areas with irrigated lands, or have been functioning until recently. Such institutions include, e.g., people elected by the communities, which are in charge of *karez* and canal systems and regulate water distribution in the communities. There are also elders' councils of village and local councils *shura*, which deal with the maintenance and allocation of resources, including irrigation water. The project will assist in reviving or newly establishing suitable institutions and their integration in the CDCs, inter-village and district institutions, which is an explicit policy of the government. These institutions will be sustainable due to their function for involved stakeholders and their integration in official local governance structures. The detailed ways how such traditional and newly developed institutions are managed will be developed in participatory processes in the frame of the Component 1, taking into consideration policy and legal requirements as well as economic viability to provide long term sustainability of the investment. Structures and processes will be documented and lessons learnt will be shared to provide that institutions for climate proofing and maintenance of irrigation infrastructure can be adopted in future irrigation schemes.
 84. Additionally, an extensive programme of capacity building will accompany the climate change adaptation techniques and practices in a learning-by-doing approach. This will build a cadre of skills and experience at sub-national level that will be able to support ongoing adaptation beyond the project period.
 85. **Ownership:** This initiative will work, because the preparation phase focused on community participation, engagement at the design and planning, and this project will take a holistic approach. The absence of community participation has been a major reason for previous agricultural projects to fail. This project aims at building community-based institutions and organization which will ensure longer term sustainability, and take an ecosystem approach to ensure that issues of water availability are addressed in a whole and not in a fragmented way. Afghanistan's rural communities have a long tradition of self-governance through community institutions like elders' councils and water management institutions. The government aims at the

integration of such traditional structures in the Community Development Councils (CDCs). The CDCs⁵³ were first established under the National Solidarity Programme (NSP). They are tasked with planning, negotiating, and managing development investments. The Councils are trained in financial management and bookkeeping, and in basic principles of transparency, participation, and accountability. Under the Citizens Charter National Priority Programme the existing thematic committees *shuras*, such as health, education, and agriculture committees are to be integrated as subcommittees to the CDCs. They will carry out technical functions and coordinate with line ministries, while providing CDCs with their full financial and planning information, allowing rural and urban communities to manage and implement a single and transparent budget and development plan. Traditionally water users contribute labour and materials to the construction and maintenance of irrigation infrastructure in form of labour. However, resources of communities and households are insufficient to cover the investment needs for rehabilitation, expansion and climate proofing of irrigation infrastructure. Under the proposed project a 10% community contribution to the costs of the improvement of irrigation infrastructure will contribute to the ownership among the beneficiaries.

86. **Financial sustainability:** There is high political will and demand for stable irrigation water supply in small and medium-scale irrigation schemes in Afghanistan, due to the high importance of the irrigated agriculture depending on such schemes for local livelihoods and food security. However, the budget allocation by Government towards activities aimed at increasing resilience of rural communities to climate change effects in relation to sustained availability of irrigation water, in particular during droughts exacerbated by ongoing climate change is insufficient. This funding request under preparation is expected to help foster interventions geared at protecting rehabilitating and expanding selected irrigation schemes, including their catchments and strengthening community adaptation measures. Continuous catchment protection interventions and the operation and maintenance of the established or rehabilitated climate-proof irrigation infrastructures will be ensured by labour, in-kind and financial contributions by the water users in the frame of the institutions revived and adapted or newly established at community and inter-village levels. The institutions in charge of irrigation infrastructure operation and maintenance and water management and distribution will be assisted in the establishment of proper mechanisms ensuring accountability and transparency of their revenues and spending.
87. **Sustainability of groundwater use:** There are no local groundwater management plans in the target areas. The project in its activities 1.1. and 1.2 related to participatory assessment and planning will establish groundwater replenishment potential and sustainable rates of ground water use. The project will not lead to the installation of equipment, like tube wells and pumps, which are risky in terms of overdraft of limited groundwater resources. The reliance on *karez* systems capturing the natural flow reduces the risk of overuse of groundwater resources.

J. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

88. The proposed project seeks to fully align with the Adaptation Fund's Environmental and Social Policy (ESP) and National Environmental Protection Agency (NEPA) established environmental screening standards. Based on current assessment of UNDP's Social and Environmental Screening the project may be deemed to be a moderate risk (Category B) project. According to the UNDP's Social and Environmental Standards Procedure Category B includes impacts of low magnitude, limited in scale (site-specific) and duration (temporary) that can be avoided, managed and/or mitigated with relatively uncomplicated accepted measures. Also based on NEPA's environmental Impact Assessment regulation similar projects deemed to be under Category 2.
89. Overall, the project will have significant positive environmental and social impacts through improving the ecosystems and promoting sustainable water and land management practices within the catchments of the selected rivers. Proposed activities under Component 2 (including construction of rainwater harvesting and

⁵³ Government of Islamic Republic of Afghanistan Citizens' Charter National Priority Programme December 2016

erosion control structures, construction of small-scale flood management structures, reconstruction of existing and construction of new intake structures, reduction of seepage from canals and reclamation of non-irrigated lands for irrigated farming may portend some negative risks; however, these will be largely small-scale and localized risks, which can be readily managed with the application of mitigation measures and will be outweighed by the positive environmental and social impact. An environment and social impact assessment and management plan will be completed in line with the safeguard policies of the Government of Afghanistan and the ESP.

90. During preparation of the full project proposal, detailed assessment will be undertaken to elaborate the scale, scope and location of these activities, identify targeted communities while considering the Adaptation Fund principles. In addition, the fully developed project document will examine the necessity for a grievance mechanism, which could be used by target beneficiaries. The mechanism will be designed to receive and facilitate grievances in a transparent manner to allow for adequate monitoring, evaluation and response to address complaints in a timely fashion.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
1. <i>Compliance with the Law</i>	The project will comply with all regulation as mandated by the Afghanistan national laws and the ESP. This includes compliance and/or guided implementation in alignment with the Environment Law (2007), Environmental Impact Assessment Regulations (2008, amended 2017), Water Law and other applicable laws and regulations.	Low to none - During the preparation of the full proposal and EIA/ESMP for UNDP SESP Category B and Afghanistan EIA regulations Category 2 projects, all stakeholders (including NEPA, MAIL, MEW, district councils, CDCs, and community members) will be consulted to ensure all legal requirements are met.
2. <i>Access and Equity</i>	The project hinges on a participatory stakeholder engagement process. The proposed project's activities are designed to provide equal and fair access to benefits by communities in highly vulnerable areas, in particular to irrigation water and to arable land suitable for irrigation. In addition, the project will be designed and implemented in a way that it will not impede access of any group to essential resources. The CDCs will facilitate the selection of project sites and activities as per adaptation needs of the intervention area. For ensuring future equitable access, the development of community institutions for water management and distribution will ensure involvement of all stakeholders at community and inter-village level comprising women, men, youth, and all vulnerable groups.	None
3. <i>Marginalized and Vulnerable Groups</i>		Low risk - The project will target the participation of women and youth to enhance their opportunities for improved livelihoods. The socio-profile and needs of all beneficiary groups will be further assessed during the development of the full proposal. The project will ensure these aspects are fully integrated through focus group discussions and interviews with beneficiary populations including ensuring all groups are well represented in the proposed water and environment committees that will be established for each target catchment area.
4. <i>Human Rights</i>	The project has no potential human rights risks	None The project will respect and where applicable promote human rights.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
5. <i>Gender Equity and Women's Empowerment</i>	Women issues are compromised by cultural hindrances and limited low economic status. The project will address gender issues and ensure the project design is inclusive and in compliance with Afghanistan's and Adaptation Fund's Gender Policies. The project will particularly facilitate gender equity and women's involvement all project activities. At least 50% of target beneficiaries are women. Component 2 activities will include livelihood improvement and lead to income creation for women and youth; women will be engaged in activities that support the project.	Low – Gender Assessment and Action Plan (GAAP) will be developed during proposal development.
6. <i>Core Labour Rights</i>	The project will be managed in accordance with Afghanistan's Labour Law, which prohibits forced labour, child labour and discrimination, and allows freedom of association. Component 2 (catchment and irrigation system rehabilitation) may require recruitment of specialized labour force to complement community effort and undertake the restoration works requiring special skills. Payments to labour under the project will be made as per Government approved norms duly following minimum wage rate and hence ensuring core labour rights.	None to low risk – Civil works related to restoration of irrigation systems, in particular <i>karez</i> tunnels riverbanks might expose individuals involved to occupational safety risk. This occupational safety risk will be mitigated through the selection and effective use of appropriate mechanical equipment and personal protective gear. Work procedures, training, and awareness creation/sensitization will also be done for everyone involved in the project. These issues will be further elaborated in the ESIA/ESMP
7. <i>Indigenous Peoples</i>	The project will not create any negative impact on the indigenous people. As there are no indigenous people in the project areas.	None
8. <i>Involuntary Resettlement</i>	The project does not include voluntary or involuntary resettlement. Project sites for the adaptation activities under Component 2 will be take place on community lands of the communities benefiting from these activities and there will be no land acquisition, resettlement or disruption of stakeholder's access to land.	None
9. <i>Protection of Natural Habitats</i>	The project will take place in area without critical habitats and protected areas. It will facilitate the rehabilitation and protection of natural habitats in upper catchment areas and the maintenance and development of habitats in cultural landscapes of small and medium-scale irrigated areas. The project activities will enhance recharge and restoration of water systems including groundwater.	Low risk – The activities for the expansion and rehabilitation of irrigation systems under Component 2 may in a limited amount cause the conversion of degraded rangelands, abandoned arable lands and possibly small sections of natural riparian ecosystems. The ESIA/ESMP and the participatory assessment and planning processes will ensure that no valuable and sensitive habitats are affected and negative impact is offset by development of new habitats.
10. <i>Conservation of Biological Diversity</i>		Low risk - Overall, the planned interventions (catchment and irrigation system rehabilitation and resilience) will have only localized and temporary impact on biodiversity conservation. Reduced water losses from seepage and leakage of canals due to lining and capturing of springs may locally affect the growth of trees, shrubs and forbs along these structures. Consultations and environmental assessment as part of the development of the full proposal will further highlight the ecosystem services of biodiversity available for beneficiary populations in

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
		the project area and in the frame of participatory planning determine mitigation and compensation measures to offset any expected losses.
<i>11. Climate Change</i>	The proposed project is designed to integrate climate resilience into the project activities to develop climate proof irrigation systems and ensure long-term sustainability of infrastructures. The project is aligned with the climate change adaptation plans at the national and community levels. None of the interventions are likely to result in an increase in greenhouse gas emissions. On the contrary, the upper catchment activities of the proposed project will have positive climate change mitigation benefits.	None
<i>12. Pollution Prevention and Resource Efficiency</i>	The proposed project will not require (during or after implementation) significant amounts of water, energy, materials or other natural resources. None of the activities under the proposed project will result in the production of significant quantities of wastes, especially of hazardous or toxic wastes. The project will not produce significant volumes of effluents or air pollutants, including greenhouse gases. All applicable international standards will be met for maximizing material resource use and minimising the production of wastes and the release of pollutants.	Low to none – The project ESMP will elaborate measures to mitigate potential localized risks that may be associated with construction activities such as noise and dust pollution.
<i>13. Public Health</i>	The project's core objective of improving irrigated agriculture will improve food security; irrigation water availability will improve the diversity of crops and reduce malnutrition. In some areas also access to safe drinking water will reduce waterborne diseases and improve hygiene. Water quality will be improved as a result of environmental / catchment protection.	None
<i>14. Physical and Cultural Heritage</i>	The project activities will not be implemented in an area known for having cultural sites and sites with unique natural values. Site selection process will ensure there is no interference on areas of physical and cultural heritage. Despite there is no national physical and culture heritage related legal and regulatory framework that would apply to all or specific <i>karez</i> , the <i>karez</i> are generally considered as historical and cultural heritage and their preservation and revitalization under this project will be in accordance to this status.	Low to none – If cultural heritage is discovered, the relevant technical ministry will be notified. The project ESMP will assess the historic relevance of <i>karez</i> considered for rehabilitation and elaborate measures for the preservation of their authenticity during the restoration of <i>karez</i> and other elements of irrigation systems of particular historic relevance. Some springs are considered cultural and religious sites and such springs will be integrated into irrigation systems fully securing their cultural and spiritual values.
<i>15. Lands and Soil Conservation</i>	The project interventions will support sustainable soil and land management practices in upper catchments and in the irrigated areas. Project activities will promote practices that will reverse land degradation in the selected catchments, improve vegetation cover, enhance soil stability and reduce runoff, thereby promoting soil fertility. The project will also facilitate the adoption of good land-use and irrigation practices to support soil	None

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
	conservation and prevent waterlogging and salinization.	

Following the preliminary environmental and social risks identified and screened in the Environmental and Social Risks Matrix table here above, a detailed environmental and social screening is also proposed to take place during the implementation stage. In view of this, by applying the Adaptation Fund ESP the project is categorized as “Category B”. Under national EIA legislation of Afghanistan the project falls into Category 2.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project / programme implementation.

91. The Ministry of Rural Rehabilitation and Development (MRRD) will be the executing agency. The project will be implemented following MRRD\RPCO administrative and financial regulations as agreed with the Adaptation Fund.
92. UNDP’s National Implementation Modality (NIM) will be applied for this project. The Ministry of Rural Rehabilitation and Development (MRRD) will be the Implementing Partner and will appoint a project task team (paid for by project resources) to coordinate operations and manage the project. The relevant stakeholders will be the Ministry of Agriculture, Irrigation and Livestock (MAIL), National Environmental Protection Agency (NEPA) and their provincial and district level offices in targeted provinces of Afghanistan. Implementation oversight at the country level will be provided by the UNDP Afghanistan Country Office, supported at the regional and global level by UNDP-GEF.

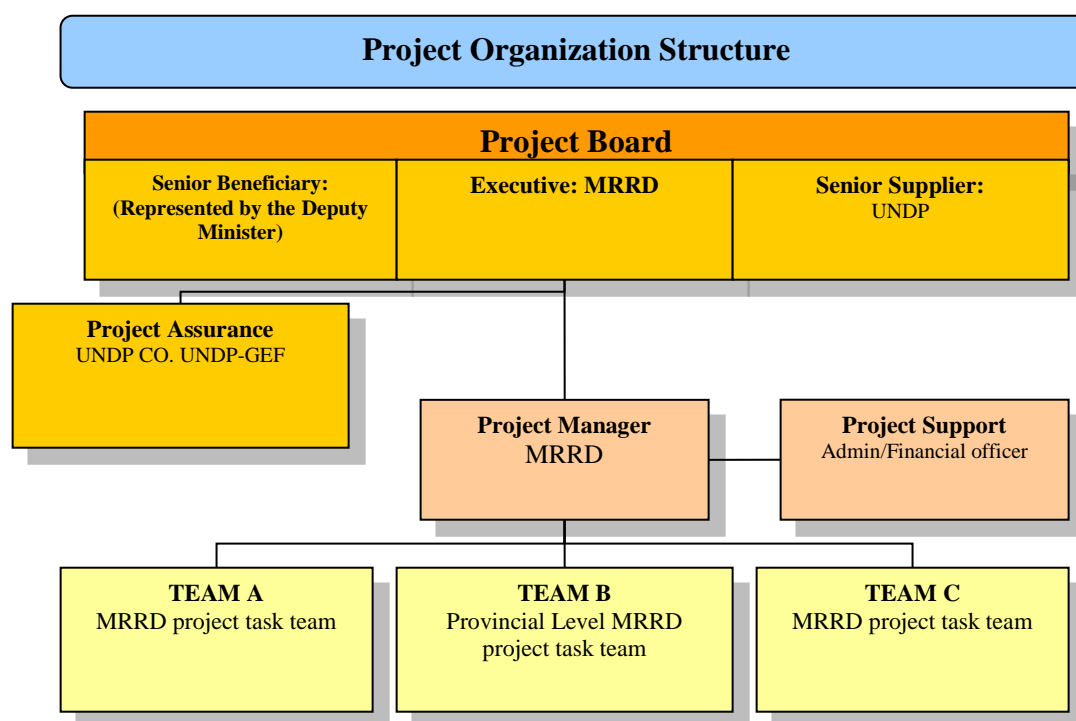


Figure: Proposed Project Operational Structure

93. A Project Board (PB) will be established to provide direction to the IP comprising of national and sub-national representatives. The PB will be chaired by the MAIL. The PB will convene quarterly to discuss project progress and approve annual work plans. The PB will comprise MAIL, NEPA, MRRD, UNDP, Provincial representatives of MAIL and MRRD, Kabul University. Additionally, other representatives from relevant Ministries may be represented on the Project Board: this will be determined at the inaugural meeting of the PB during the project inception period. It is proposed that UNDP will co-chair the PB. The Project Manager will be an ex officio member of PB responsible for taking minutes. Potential members of the Project Board are reviewed and recommended for approval during the Project Appraisal Committee (PAC) meeting. Representatives of other stakeholders can be included in the PB as appropriate.

B. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund.

94. During the preparation of the full proposal and EIA/ESMP for UNDP SESP Category B and Afghanistan EIA regulations Category 2 projects, all stakeholders (including NEPA, MAIL, MEW, district councils, CDCs, and community members) will be consulted to ensure all legal requirements are met. The NEPA will do the screening of each specific intervention based on the information provided by the project in accordance to the national regulations on environmental impact assessments. For those activities requiring an EIA, this will be prepared by the project and reviewed by NEPA.

95. To ensure the environmental and social objectives of the projects are met, the ESMP will be used by the project implementers to structure and control the environmental and social management safeguards that are required to avoid or mitigate adverse effects on the environment and communities. UNDP and the MRRD ensure that the ESMF and its associated plans are complied with through the life of the project as well as post the project and this is part of the O and M Plan. The ESMF also becomes part of any contract that is issued under the project and the IE and UNDP will ensure it is followed.

96. The environmental and social objectives of the ESMP are to:

- a. encourage good management practices through planning, commitment and continuous improvement of environmental practices;
- b. comply with applicable laws, regulations and standards for the protection of the environment;
- c. adopt the best practicable means available to prevent or minimise environmental impact, in particular:
 - i. prevent or minimise the pollution of land, air and water;
 - ii. prevent or minimise potential adverse impact on river dynamics, environmental flow and water use;
 - iii. prevent or minimize the destruction or degradation of vegetation and soil;
 - iv. protect native flora, fauna and important ecosystems from additional adverse impact;
- d. identify key environmental and social indicators;
- e. describe monitoring procedures required to identify impacts on the environment;
- f. provide an overview of the obligations of MRRD, UNDP, local partners and contractors in regard to environmental obligations; and
- g. provide a grievance system to manage potential complaints and/or grievances.

97. The ESMP will be updated from time to time by the implementing Project Management Unit (PMU)/contractor in consultation with the UNDP staff and MRRD to incorporate changes in the detailed design phase of the projects.

98. The ESMP will be assessed for each sub-project by the MRRD and UNDP prior to any works being undertaken. The National Environmental Protection Agency (NEPA) will be responsible for the supervision of the ESMF. The UNDP will gain the endorsement of NEPA and will ensure the ESMP is adequate and followed. The PMU will ensure timely remedial actions are taken by the implementer and contractors where necessary. The MRRD will be responsible for the revision or updates of this document during the course of

work. It is the responsibility of the person to whom the document is issued to ensure it is updated. The revision or update has to be endorsed by NEPA.

99. As the implementing agency, MRRD will be responsible for the implementation and compliance with the ESMP via the collaborating partners and contractors. The ESMP will be part of contractual agreements with the CDCs and of any tender documentation.
100. The UNDP and MRRD are accountable for the provision of specialist advice on environmental and social issues to the delivery organisations (e.g. contractors, CDCs and/or NGOs) and for environmental and social monitoring and reporting. The MRRD or its delegate will assess the environmental and social performance of the delivery organisations in charge of implementing activities throughout the project and ensure compliance with the ESMP. More specific elements of the ESMP administration will be identified and determined during the elaboration of the full proposal.

C. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

101. Project level monitoring and evaluation will be undertaken in compliance with standard MIE requirements as agreed with the Adaptation Fund. It is expected to prepare annual Adaptation Fund project performance reports that include the Adaptation Fund results trackers.
102. There will be an independent midterm review and a terminal evaluation to assess progress and lessons learned.
103. The budgeted monitoring and evaluation plan will be drafted during preparation of the full proposal.

D. Include a results framework for the project proposal, including milestones, targets and indicators.

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Means of Verification (MOV) Baseline	Assumptions/Risks	Grant Amount (USD)
Awareness about climate change impact on irrigated farming and capacities to plan, deploy, use and maintain climate resilient irrigation infrastructure of local community institutions and individuals developed.	<p><u>Indicator target 1.1:</u> Number of community or inter-village irrigation schemes, for which by end of 2019 assessments covering climate change related risks, current conditions of and water availability for irrigation systems are available. Target value: 40 community or inter-village irrigation schemes.</p> <p><u>Indicator target 1.2:</u> Number of community or inter-village irrigation schemes, for which by March 2020 in plans for rehabilitation and climate proofing of irrigation systems are available. Target value: 30 community or inter-village irrigation schemes.</p> <p><u>Indicator target 1.3.1:</u> Number of community or inter-village irrigation schemes, for which by end 2021 irrigation system maintenance mechanisms have been institutionalized in existing community-based organizations. Target value: 30 communities or inter-village irrigation schemes.</p> <p><u>Indicator target 1.3.2:</u> Number of people in number of community or inter-village irrigation schemes, which by end 2021 are technically capable of maintaining all elements of the irrigation systems. Target value: 10 people in each of at least 30 community or inter-village irrigation schemes.</p>	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level;	(6.1) Percentage of households and communities having more secure (increased) access to livelihood assets.	<p>Baseline study, progress reports and final project report</p> <p>Midterm and final evaluation reports</p> <p>Assessments (CRVA), catchment and irrigation system climate proofing plans and technical survey checklists and reports;</p> <p>Site visit reports;</p> <p>questionnaires;</p> <p>Satisfaction survey;</p> <p>Photos, videos</p>	Due to conservative communities the female participation might be limited.	2,000,000

	<p><u>Indicator target 1.3.3:</u> Percentage of constructed/ rehabilitated infrastructure, which is operational and maintained by 2022. Target value: 90%.</p> <p><u>Indicator target 1.4.1:</u> Number of communities or inter-village irrigation schemes, in which by end 2021 mechanisms for effective irrigation water management and its efficient and equitable use have been institutionalized in existing community-based organizations. Target value: 30 communities or inter-village irrigation schemes.</p> <p><u>Indicator target 1.4.2:</u> Percentage of household heads in number of community or inter-village irrigation schemes by end 2021, which are aware about the general technical issues, rules and mechanisms of effective irrigation water management and its efficient and equitable use. Target value: 80% in each of at least 30 community or inter-village irrigation schemes (at least 1,840 people).</p>					
Irrigation schemes at community level rehabilitated by improving groundwater recharge, reconstruction of water abstraction, delivery, inter-farm and on-farm distribution networks.	<p><u>Indicator target 2.1:</u> Number of upper catchments, in which by 2021 effective measures (e.g. grazing management, reforestation) are implemented and physical structures installed, which increase groundwater recharge and reduce water losses, erosion and floods caused by excessive surface run-off. Target value: 30 upper catchments</p> <p><u>Indicator target 2.2:</u> Number of community and inter-village irrigation schemes, in which by 2021 intake structures (diversion dams, headworks) at canals and mother wells of <i>karez</i> are rehabilitated under consideration of</p>	<p>Outcome 4: Increased adaptive capacity within relevant department and natural resource sectors.</p> <p>Outcome 6: Diversified and strengthened livelihoods and sources of income</p>	<p>(3.1) Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses; (4.1) Physical infrastructure improved to withstand climate change and variability-induced stress; (4.2) No. of physical assets strengthened or constructed to withstand</p>	<p>Baseline study, progress reports and final project report</p> <p>Midterm and final evaluation reports</p> <p>Assessments and technical survey checklists and reports;</p> <p>Site visit reports; questionnaires;</p>	<p>Experienced skilled laborers to carry out construction work may not be available in the target communities.</p> <p>Seasonal condition in winter time will slow down the construction work</p> <p>Deteriorating security situation in target areas.</p>	\$ 6,000,000

	<p>predicted climate change related water availability. Target value: 30 community and inter-village irrigation schemes</p> <p><u>Indicator target 2.3.1:</u> Number of community and inter-village irrigation schemes where rehabilitation of irrigation structures took place by 2021, and respective number of water delivery structures like main canals, <i>karez</i> and related structures, which are rehabilitated and seepage is reduced by lining with suitable materials. Target value: 30 communities, 19 main canals, 36 <i>karez</i> and related structures.</p> <p><u>Indicator target 2.3.2:</u> Percentage of seepage and leakage losses in rehabilitated irrigation water delivery systems by 2021. Target value: below 20% of flow at intake.</p> <p><u>Indicator target 2.4.1:</u> Number of community and inter-village irrigation schemes, where efficient inter- and on-farm water distribution systems are functioning by 2021. Target value: 30 community and inter-village irrigation schemes.</p> <p><u>Indicator target 2.4.2:</u> Number of households, which have improved livelihoods in number of community and inter-village irrigation schemes, where by 2021 yields from irrigated agriculture are in accordance to optimal irrigation water supply. Target value: 10,500 households in at least 30 community and inter-village irrigation schemes.</p>	for vulnerable people in targeted areas	conditions resulting from climate variability and change (by asset types).	<p>Satisfaction survey; Photos, videos</p>	Inflation in the exchange rates.	
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E. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s) ⁵⁴	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Strengthened institutional and community awareness/preparedness on climate resilience with a focus on supporting innovative measures to cope with climate induced impacts		Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses 6.1. Percentage of households and communities having more secure (increased) access to livelihood assets.	\$2,000,000
Improved productive climate-proof irrigation infrastructure.		Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	4.1. Physical infrastructure improved to withstand climate change and variability-induced stress 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	\$6,000,000
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Communities and institutions have been made aware/prepared to adopt with climate change induced impacts	Indicator target 1.1: Number of community or inter-village irrigation schemes, for which by end of 2019 assessments covering climate change related risks, current conditions of and water availability for irrigation systems are available. Target value: 40 community or inter-village irrigation schemes. Indicator target 1.2: Number of community or inter-village irrigation schemes, for which by March 2020 plans for rehabilitation and climate proofing of irrigation systems are available. Target value: 30 community or inter-village irrigation schemes.	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1.2 No. of news outlets in the local press and media that have covered the topic	\$2,000,000

⁵⁴ The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

	<p><u>Indicator target 1.3.1:</u> Number of community or inter-village irrigation schemes, for which by end 2021 irrigation system maintenance mechanisms have been institutionalized in existing community-based organizations. Target value: 30 communities or inter-village irrigation schemes.</p> <p><u>Indicator target 1.3.2:</u> Number of people in number of community or inter-village irrigation schemes, which by end 2021 are technically capable of maintaining all elements of the irrigation systems. Target value: 10 people in each of at least 30 community or inter-village irrigation schemes.</p> <p><u>Indicator target 1.3.3:</u> Percentage of constructed/ rehabilitated infrastructure is operational and maintained by 2022. Target value: 90%.</p> <p><u>Indicator target 1.4.1:</u> Number of communities or inter-village irrigation schemes, in which by end 2021 mechanisms for effective irrigation water management and its efficient and equitable use have been institutionalized in existing community-based organizations. Target value: 30 communities or inter-village irrigation schemes.</p> <p><u>Indicator target 1.4.2:</u> Percentage of household heads in in number of community or inter-village irrigation schemes by end 2021, which are aware about the general technical issues, rules and mechanisms of effective irrigation water management and its efficient and equitable use. Target value: 80% in each of at least 30 community or inter-village irrigation schemes (at least 1,840 people).</p>			
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<p>Rehabilitation and construction of climate-proof irrigation infrastructure</p>	<p><u>Indicator target 2.1:</u> Number of upper catchments in which by 2021 effective measures (e.g. grazing management, reforestation) are implemented and physical structures installed, which increase groundwater recharge and reduce water losses, erosion and floods caused by excessive surface run-off. Target value: 30 upper catchments.</p> <p><u>Indicator target 2.2:</u> Number of community and inter-village irrigation schemes, in which by 2021 intake structures (diversion dams, headworks) at canals and mother wells of <i>karez</i> are rehabilitated under consideration of predicted climate change related water availability. Target value: 30 community and inter-village irrigation schemes.</p> <p><u>Indicator target 2.3.1:</u> Number of community and inter-village irrigation schemes where rehabilitation of irrigation structures took place by 2021, and respective number of water delivery structures like main canals, <i>karez</i> and related structures, which are rehabilitated and seepage is reduced by lining with suitable materials. Target value: 30 communities, 19 main canals, 36 <i>karez</i> and related structures.</p> <p><u>Indicator target 2.3.2:</u> Percentage of seepage and leakage losses in rehabilitated irrigation water delivery systems by 2021. Target value: below 20% of flow at intake.</p> <p><u>Indicator target 2.4.1:</u> Number of community and inter-village irrigation schemes, where efficient inter- and on-farm water distribution systems are functioning by 2021. Target value: 30 community and inter-village irrigation schemes.</p> <p><u>Indicator target 2.4.2:</u> Number of households, which have improved livelihoods in number of community and inter-village irrigation schemes, where by 2021 yields from irrigated agriculture are in accordance to optimal irrigation water supply.</p>	<p><u>Output 4:</u> Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability</p> <p><u>Output 6:</u> Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability</p>	<p>4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types)</p> <p>6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individual- or community-livelihood strategies</p>	<p>\$6,000,000</p>
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	Target value: 10,500 households in at least 30 community and inter-village irrigation schemes.			
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F. Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

Note: Section F will be completed later at the Project Proposal stage.

G. Include a disbursement schedule with time-bound milestones.


Note: Section G will be completed later at the Project Proposal stage.

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government⁵⁵ *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:*

<i>Mr. Ezatullah Sediqi Deputy Director – General (Technical Affairs) National Environmental Protection Agency (NEPA)</i>	<i>Date: December 10th, 2018.</i>
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B. Implementing Entity certification *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
	
<i>Pradeep Kurukulasuriya Executive Coordinator, a.i. UNDP- Global Environmental Finance Bureau for Policy and Programme Support (BPPS) United Nations Development Programme Implementing Entity Coordinator</i>	
<i>Date: 4 January 2019</i>	<i>Tel. and email: Tel: +66 87 017 8667</i>

⁶. Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

	pradeep.kurukulasuriya@undp.org
Project Contact Person: Reis Lopez Rello	
Tel. and Email: +6623049100 ext.5286; reis.lopez.relo@undp.org	

Annex 1: Letter of Endorsement from Afghanistan Government

	<p>د افغانستان اسلامي جمهوري دولت د چاپيريال ساتنې ملي اداره دولت جمهوري اسلامي افغانستان اداره ملي حفاظت محيط زمين</p> <p>Government of the Islamic Republic of Afghanistan National Environmental Protection Agency International Environmental Affairs Division</p>	
<p>Date: 9/12/2018</p>		<p>9545 No:</p>
<hr/>		
<p>To: The Adaptation Fund Board (AFB) C/O Adaptation Fund Board Secretariat Email: Secretariat@Adaptation-Fund.org Fax: 202 522 3240/5</p>		
<p>Subject: <u>Endorsement for "Climate Change Resilient Livelihoods Advanced in Rural Afghanistan" project.</u></p>		
<p>In my capacity as, designated authority for the Adaptation Fund in Afghanistan I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Afghanistan.</p>		
<p>Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Development Programme (UNDP) and executed by the Ministry of Rural Rehabilitation and Development (MRRD)s.</p>		
<p>Sincerely,</p> <div style="text-align: center;"></div> <p>Ezatullah Sediqi Deputy Director General - Technical Affairs National Environmental Protection Agency Government of the Islamic Republic of Afghanistan</p>		
<hr/>		
<p style="text-align: center;">Address: National Environmental Protection Agency, Sanatorium Road, Dar-ul-Aman, 6th District, Kabul, Afghanistan Phone #: +93 (0) 749 88 00 25 Email: zolfagah@gmail.com Post Box #: 709</p>		

Annex 2: Social and Environmental Screening Template

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the [Social and Environmental Screening Procedure](#) and [Toolkit](#) for guidance on how to answer the 6 questions.

Project Information

Project Information	
1. Project Title	Climate change resilient livelihoods advanced in rural Afghanistan
2. Project Number	UNDP PIMS ID 6340
3. Location (Global/Region/Country)	South Asia/Afghanistan/Multiple Provinces

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

UNDP's application of the Human Rights Based Approach and its emphasis on gender equality in development programming will ground the implementation of the proposed Adaptation Fund project on these important development principles.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

Preliminary climate change assessments predict GDP losses of as much as 6% per year based on current climate projections (NAPA). Reductions of this order of magnitude would substantially undermine the Government's ability to invest in the nation's development, increasing the responsibility for adaptation on society as a whole. As explained above, the rural population will be affected most, but urban populations will be affected indirectly. In such a situation, it will be the poorest communities who will be the least able to adapt. Amongst these groups, it is recognized that women are the most vulnerable. Afghanistan's Policy on Women acknowledges that women have lacked the opportunities provided to men and as a result they fall behind men in all fields of self-advancement. Climate change will affect the socially constructed gender roles between men and women and may undercut efforts to build more equitable access to development. These role dynamics will likely need to evolve to enable men and women to improve their responsive and adaptive capacity. If under climate change-induced stress, institutional structures place unequal emphasis on responding to the needs of men and women, they risk weakening the adaptive capacity of one group over another.

The project aims to build community self-reliance; so that dependence on the state for adaptation resources is reduced as communities themselves – both men and women – tailor adaptation technologies and techniques to their own needs. The project will aim to directly improve adaptation capacity of approximately 10,000 people from approximately 1,500 households (3,500 people, 500 households targeted in each of the three catchments). Generally, 50 percent of the target beneficiary population (5,000) will be women and 50 percent youth (including young women). Different categories of vulnerable and or marginalized beneficiaries (people with disabilities, female headed households and IDP households) will be targeted. The socio-economic profile of the beneficiary groups will be further analysed and disaggregated by gender during the development of the full proposal.

Sustained and increased availability of water is key to social development. Improved access to irrigation water specifically supports the livelihoods of women and children through improved food security and quality, e.g. by the opportunity to grow fruits and vegetables on household plots. It is also linked to access to clean household and drinking water from springs, wells and *karez*, which will alleviate adverse health effects and allow for the reallocation of time dedicated to fetching water towards engaging in other activities including

education. The reduction in time spent collecting water can improve the participation of youths (especially girls) in school, thus improving the level of education in the target communities.
Briefly describe in the space below how the Project mainstreams environmental sustainability
<p>The project is integrated with the country's agricultural development and climate change adaptation policies and is supported by the key ministries responsible for rural development, agriculture and irrigation management, and environmental protection. Adaptation to climate change impact on irrigated agriculture and rural livelihoods have featured prominently in national development plans and the strong support from all the ministries (agriculture and irrigation, rural development, environmental protection) involved ensures that the project enjoys strong political support – a critical enabler for development efforts.</p> <p>The project will assist rural communities of five provinces in capacity building for adaptation to climate change and in rehabilitating and making climate proof their irrigation systems from upper catchment areas to on-farm water use efficiency. Improved management of upper catchment areas with application of rainwater harvesting techniques will foster the recharging of groundwater aquifers, reduce surface runoff and resulting erosion and flood events, thus contributing to the ecosystem resilience, reduced disaster risk and adaptation to climate change impacts like drought, unreliable and shifting precipitation patterns, reduced snow cover and shrinking glaciers.</p>

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any “Yes” responses). If no risks have been identified in Attachment 1 then note “No Risks Identified” and skip to Question 4 and Select “Low Risk”. Questions 5 and 6 not required for Low Risk Projects.</i>	QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i>			QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?
Risk Description	Impact and Probability (1-5)	Significance (Low, Moderate, High)	Comments	Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.
Risk 1.3: The project may potentially cause restrictions on access to resources, in particular to marginalized individuals or groups.	I = 1 P = 2	Low	Use of small rangeland or rain-fed arable areas in upper catchment and in irrigated areas may reduce open access pastures and fields.	To be considered and addressed in the frame of participatory assessment and planning process.
Risk 1.8: The project may exacerbate conflicts among -affected communities and individuals	I = 1 P = 1	Low	Where despite project implementation shortage of irrigation water and/or irrigated lands persist, conflict is possible about access to irrigation water and/or to newly irrigated or rehabilitated land.	To be considered and addressed in the frame of participatory assessment and planning process and in the frame of institutional capacity development on water use.

Risk 3.1.1: The project could potentially cause adverse impacts to habitats and/or ecosystems and ecosystem services	I = 3 P = 3	Moderate	Modification or conversion of habitats due to upper catchment management and irrigation, reduction of trees, shrubs, forbs along irrigation canals and at captured springs	, benefits from habitat improvements should outweigh losses. To be considered in ESMP and area-specific ESIA.
Risk 3.1.3: The project may cause changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods.	I = 2 P = 2	Low	(related to risks 1 and 2)	To be considered and addressed in the frame of participatory assessment and planning process, benefits from habitat improvements should outweigh losses. To be considered in ESMP and area-specific ESIA.
Risk 3.1.8: The project is aiming at significant extraction, diversion or containment of surface or ground water.	I = 3 P = 5	Moderate	The project's objective is the climate resilient use of surface and ground water for irrigation purposes.	To be considered in ESMP and area-specific ESIA.
Risk 3.2.2: The outcomes of the project would be sensitive or vulnerable to potential impacts of climate change.	I = 3 P = 5	Moderate	The project's objective is to increase the resilience of the irrigation systems, including their upper catchment areas towards the impact of climate changes. The severity of these impacts and thus the adaptation potential will depend on not fully predictable trends in GHG emissions and climate change.	In the frame of participatory assessment and planning process Climate Risk and Vulnerability Assessments will be integrated and for each site and proposed intervention the adaptation potential will be assessed for different scenarios and predicted climate change trends.
Risk 3.3.3: The project will involve some infrastructure development.	I = 3 P = 5	Moderate	The project will involve in addition to the planned rehabilitation of existing infrastructure (50 small-scale works) the development of 30 new infrastructure works (small-scale check dams and percolation ponds, possibly some minor canals) in all five provinces where it will be implemented.	To be considered in ESMP and area-specific ESIA.
Risk 3.3.5: The outcomes of the project would be susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions.	I = 3 P = 5	Moderate	Irrigation infrastructure can be damaged or destroyed by natural disasters. Such destruction would likely be local and reversible. Extreme drought can affect the functioning of irrigation system. The project aims at reducing risk likelihood and increasing resilience of infrastructure against such risks.	To be considered and addressed in the frame of participatory assessment and planning process.
Risk 4.1: The project may result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, traditional or religious values.	I = 3 P = 4	Moderate	Traditional irrigation systems, in particular karez will be revitalized. Potentially water use from springs of traditional cultural, spiritual and religious importance.	To be considered and addressed in the frame of participatory assessment and planning process. In case of possible impact on sites of recognize or not recognized national or international importance assessment and planning with involvement of the responsible department in the Ministry of Information and Culture of Afghanistan.
Risk 4.2: Project propose utilizing tangible and/or intangible forms of	I = 3 P = 4	Moderate	(Related to 4.1)	(Covered under 4.1)

cultural heritage for commercial or other purposes				
Risk 5.2: Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	I = 1 P = 2	Low	(Related to 1.3)	(Covered under 1.3)
QUESTION 4: What is the overall Project risk categorization?				
Select one (see SESP for guidance)			Comments	
<i>Low Risk</i> <input type="checkbox"/>				
<i>Moderate Risk</i> <input checked="" type="checkbox"/>			If the appropriate mitigation measures are put in place during the project, the project will have an extremely low environmental and social risk over the life of the project.	
<i>High Risk</i> <input type="checkbox"/>				
QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?				
Check all that apply			Comments	
<i>Principle 1: Human Rights</i>	<input checked="" type="checkbox"/>	The proposed project does not impact human rights. There might be a low risk of conflict about access to irrigation water and/or to newly irrigated or rehabilitated land		
<i>Principle 2: Gender Equality and Women's Empowerment</i>	<input type="checkbox"/>			
<i>1. Biodiversity Conservation and Natural Resource Management</i>	<input checked="" type="checkbox"/>	There might be localized transformation of existing biodiversity and ecosystems, which will be outweighed by the positive impact of the project on biodiversity and ecosystems.		
<i>2. Climate Change Mitigation and Adaptation</i>	<input checked="" type="checkbox"/>	The project contributes to climate change adaptation and does not cause any additional emission of greenhouse gases.		
<i>3. Community Health, Safety and Working Conditions</i>	<input checked="" type="checkbox"/>	The project positively impacts on community health by improving water supply and local microclimate. Safety and working conditions are addressed during construction, rehabilitation and operation of irrigation systems, in particular regarding the <i>karez</i> systems.		
<i>4. Cultural Heritage</i>	<input type="checkbox"/>			
<i>5. Displacement and Resettlement</i>	<input type="checkbox"/>	The proposed project does neither directly nor indirectly cause displacement and resettlement.		
<i>6. Indigenous Peoples</i>	<input type="checkbox"/>	There are no indigenous people in any of the project areas.		
<i>7. Pollution Prevention and Resource Efficiency</i>	<input checked="" type="checkbox"/>	The proposed project will only in a very limited extent during construction works cause minor pollution and require resources in		

			form of construction materials. Pollution will be minimized by applying the legal environmental standards of Afghanistan and using the cleanest available technologies and machineries. Resources for construction will be used as efficient as possible. The project will result in an increased efficiency of use of land and water resources.
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Final Sign Off

<i>Signature</i>	<i>Date</i>	<i>Description</i>
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have “checked” to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have “cleared” the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks		Answer (Yes/No)
Principles 1: Human Rights		
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? ⁵⁶	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	Yes
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6.	Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	Yes
Principle 2: Gender Equality and Women's Empowerment		
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4.	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	Yes

⁵⁶ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	Yes
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	Yes
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? <i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i>	No
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant ⁵⁷ greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	Yes
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No

⁵⁷ In regards to CO₂, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	Yes
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	No
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions? ⁵⁸	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? <i>If the answer to the screening question 6.3 is “yes” the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.</i>	No
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No

⁵⁸ Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	No
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No