REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN P4-400
Washington, D.C., 20433
U.S.A
Fax: +1 (202) 522-3240/5
Email: afbsec@adaptation-fund.org

ADAPTATION FUND

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	REsilience to NEgative impacts of climate-aggravated Water scarcity in the Agriculture sector in Libya (RENEWAL)~~Increasing resilience to climate-aggravated water scarcity in the agriculture sector in Libya~~
Country:	Libya
Thematic Focal Area:	Agriculture
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	IFAD
Executing Entities:	UNOPS
Amount of Financing Requested:	9,~~997~~995,~~758~~156 (in U.S Dollars Equivalent)

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Letter of Endorsement (LOE) signed: Yes ☒ ☐ No ☐ ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐☒ This proposal has been submitted before including at a different stage (concept, fully developed proposal)

☐☐ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: ~~92~~/~~56~~/~~2022~~2023.

Please note that fully developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

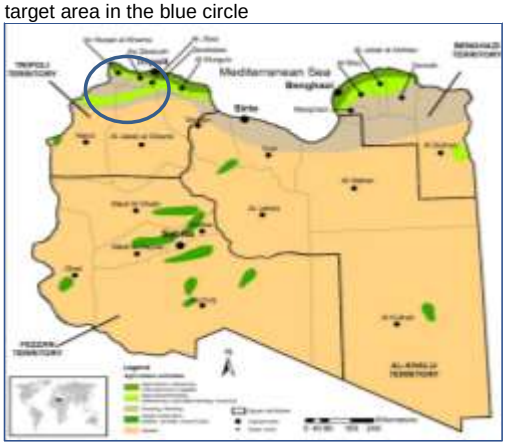
Project Background and Context:

Introduction project approach

1. **Main problem:** Libya has an existing water problem that will be exacerbated by climate change and water demand in the agriculture sector. To avoid the depletion of water resources, heavy investment in desalination and wastewater treatment may be needed. However, this will take time and major funding sources, and the country needs to stabilize its electrical grid first. Until then, fossil water and rainfall in the north will remain Libya's primary sources of water, including for the agriculture sector, and its lifespan needs to be lengthened.

2. **Project aim:** the aim of this project is to support maximizing the lifespan of water resources ~~(i.e., increasing the sustainability) of available water resources~~ by using water as efficiently as possible in the agriculture/ livestock sector, which is the sector consuming most water, while also being the most heavily impacted by and vulnerable to climate change.

Figure 1: Agriculture areas (in green) in Libya and project target area in the blue circle



Source: Zurqani, Hamdi & Mikhailova, Elena & Post, Christopher & Schlautman, Mark & Elhawej, Azzeddin. (2019). A Review of Libyan Soil Databases for Use within an Ecosystem Services Framework. 10.3390/land8050082.

Geographic, social, economic, and environmental context

~~1.~~3. **Population:** Libya has a total population of about 6.8 million (2020),[1] of which only 21 percent is rural.

Geography: 90 percent of Libya is desert. Over four regions can be distinguished in Libya: (i) the coastal plains; (ii) the northern mountains that run close to the coastal plains and include the Jabal Nafusah in the west and the Jabal al Akhdar in the east; (iii) the internal areas that cover the center of Libya and include several oases; and (iv) the southern and western mountains. Only the coastal plains are not regarded as desert areas.

~~2.~~4. **Politics:** The political situation in Libya has been complex since the fall of Muammar Qaddafi in 2011. There have been recent transitions, but the UN-brokered road map agreed upon at the Libyan Political Dialogue Forum in 2021 has faced serious challenges and obstacles. In the short to medium term, the country's political institutions are likely to remain divided and unstable.

~~3.~~5. **Economy:** A combination of political volatility, military conflict, and oil output fluctuation have created insuperable challenges in devising and carrying out economic policy. These factors have led to a chronic imbalance between supply and demand for goods and foreign exchange. This was exacerbated by the pandemic in 2020-21 and currently with the crisis in Ukraine, which raises concerns about high food prices and food security. According to the EIU[2], oil and gas output will remain the main driver of economic growth in 2022-26.

[1] World Bank data
[2] Economist Intelligence Unit: Global Insight

4.6. **Poverty:** It is estimated that the proportion of the population living in multidimensional poverty increased over the past decade while social protection systems remain inadequate to support those most in need. An estimated 800,000 people need humanitarian assistance in Libya in 2022, which is a decrease compared to 2021.

5.7. **Agriculture:** 90 percent of Libya's land area is desert while just one percent is arable (about 2 million ha – see **Figure 1**), which is further threatened by soil erosion and desertification.[3] The agricultural sector in Libya suffers from several problems, including the lack of government funding, high prices of production inputs such as fertilizers, pesticides and improved seeds, declining areas of arable land due to population growth and the expansion of the cities, weak agricultural mechanization, the lack of trained manpower, fluctuation in supplies electricity supply due to instability and, finally, the impact of climate change, **especially droughts, sea-level rise and saltwater intrusion and high temperatures**. **Soil salinity along the coast is already high and is expected to increase in the future due to increasing sea levels.** Permanent pastures account for 13.3 million ha, annual crops for 1.72 million ha and permanent crops for only 0.34 million ha.[4] In rural areas, 20 percent% of the households are engaged in the agriculture sector[5], often producing crops only for household consumption. Approximately 47 percent of households reported cultivateing areas of land of less than one ha; another 45 percent reported areascultivate land of 1–10 ha. Tomatoes, peppers, onions, and leafy greens are the most grown crops. Olives and pulses citrus and stone fruits predominate in Al Jabal Al Gharbi (close to Tripoli). In the Fezzan Region (southwestern Libya), barley, date palm and fodder cultivation are notable, reflecting the relevance (although modest) of livestock in those regions. Livestock production predominates in some areas of the interior of the country with 12 percent of the population engaged in the sector, while it is less common along the more urbanized coast. Small ruminants are the most common livestock, with sheep being most frequent, followed by goats. Most of the households involved in livestock production own fewer than 10 small ruminants.

6.8. **Rangelands**: rangelands in North Africa are subject to severe degradation, primarily because of cropping encroachment, which is responsible for 50 percent of rangeland degradation, versus 26 percent accounted for by overgrazing and 21 percent by fuel wood utilization.[6] In the semiarid steppes, vegetation is sparse. The most found species are saltwort (a plant used in making soda ash) and spurge flax (a shrubby plant), while goosefoot, wormwood, and asphodel also are widespread. Annual grasses grow in the rainy season, and leguminous plants appear in years of good precipitation. Only 0.1 percent of the land in Libya is forest. These forest areas are located along the coast, mainly in the eastern parts of the country due to the adequate annual precipitation.

7.9. **Water Resources:** With very limited perennial water resources, Libya relies almost completely on non-renewable groundwater resources. There are no permanent rivers in Libya, only ephemeral rivers, or wadis. The total renewable water resources are 700 million m³/year constituting 111.5 m³/year per capita in 2015 **making Libya an extremely water-scarce country**. Around 95.2 percent of water is extracted from groundwater resources and **irrigation takes up around 83.2 percent**. Libya has five major aquifers, namely Al Hamada, Al Jefara, Al Jabal Al Akhdar, Murzuq and Al Sarir-Kufra. The coastal aquifer Al Jefara in the north-west is shallow and naturally recharged from the rainfall. **Water scarcity and the population concentration along the north coast** triggered the Great Man-made River Project (GMRP) in 1984 aiming to transfer 5-6 million m³/day to the northern cities through over 500 wells. In terms of other water infrastructure, Libya currently has 19 dams in operation with a total storage capacity of about 390 million m³. However, their average annual storage is estimated at less than 61 million m³ due to lower flow records or damage to some dams. In addition, Libya has many desalination plants and the total desalinated water produced in Libya in 2012 was estimated at 70 million m³/year aimed at municipal and industrial water demands and using both thermal and membrane technologies.[7]

[3] EU, UN, World Bank, Supporting Peace, and Stability in Libya: A Compilation of Existing Analysis on Challenges and Needs, 2019.
[4] FAO (2016). AQUASTAT Profile: Libya.
[5] FAO Libya Humanitarian Response Plan, 2020
[6] Youngh, S. And Silvern, S. International perspective on global environmental change - Agricultural Technological and Institutional Innovations for Enhanced Adaptation to Environmental Change in North Africa
[7] FAO (2016). AQUASTAT Profile: Libya.

Table 1 Water use for agriculture in Algeria, Tunisia, and Libya

Country	Total amount used, million m^3/year	Agricultural area irrigated (hectares)	Water used per hectare, m^3
Algeria	313	170,000	10,000
Tunis	95	40,000	15,000
Libya	57	40,000	12,275

Source: Source: African Development Bank (2014) Libya Water Sector M&E Rapid Assessment Report

8.10. **Water Quality**: Since 2011, the quality and general availability of water services have declined notably due to serious damages caused by armed conflict and lack of security, aggravated by political, economic, and institutional instability, along with continuous cuts in power supply and fuel. There is massive leakage in all parts of the system, illegal connections, unstable supply patterns and poor maintenance. Network losses are estimated to be in the range of 50-70%[8]. In 2020, nearly 438,000 people needed access to safe water, hygiene and sanitation services including displaced personseople, returnees, migrants, and refugees[9].

Table 2 Libya water budget in 2012

Water Resources	Quantity (Mm^3/yr)	Sector	Water consumption (Mm^3/yr)
Groundwater (Gefara plain, Jabal Akhdar, Kufra, Murzuk, Sarir, Hamada)	3,650 (3,000 Non-Renewable, 650 Renewable)	Agriculture	4,850 (83%)
Surface water (Dams, springs)	170	Industry	280 (5%)
Desalination	70	Domestic	700 (12%)
Green water estimate	2,350		
Total	**6,240**	**Total**	**5,830**

Source: Source: African Development Bank (2014) Libya Water Sector M&E Rapid Assessment Report

9.11. Libya had 79 wastewater treatment plants in 2010 for a total capacity of 74 million m^3 designed to produce effluents suitable for irrigation. However, out of the 504 million m^3 municipal wastewater produced in 2012, only 40 million m^3 were treated and directly used in irrigation for 2,900 ha[10]. It is reported that in 2020 only 10 wastewater treatment plants were functioning[11]. Deterioration of the water quality due to untreated municipal wastewater exists. **However, the main concern regarding water quality is related to saline intrusion in the coastal aquifers, where both population and agricultural activities are concentrated. The uncontrolled use of groundwater for agriculture and falling water tables in the coastal aquifers, result in seawater intrusion, with an interface progressing up to two kilometers inland in the Jefara plains and salinity levels increasing from 150 ppm to over 5000 ppm during the period 1950-1990[12].**

10.12. **Gender and Youth:** In 2019 the Gender Development Index (GDI) for Libya was 0.98. The index score in the country increased annually from 2015 onwards, indicating worsening gender equality in the fields of education, health, and wealth. The GDI measures the levels of gender parity within societies. It ranges from zero (perfect gender equality) to around one (no gender parity).[13] Due to the crisis, women are now playing a

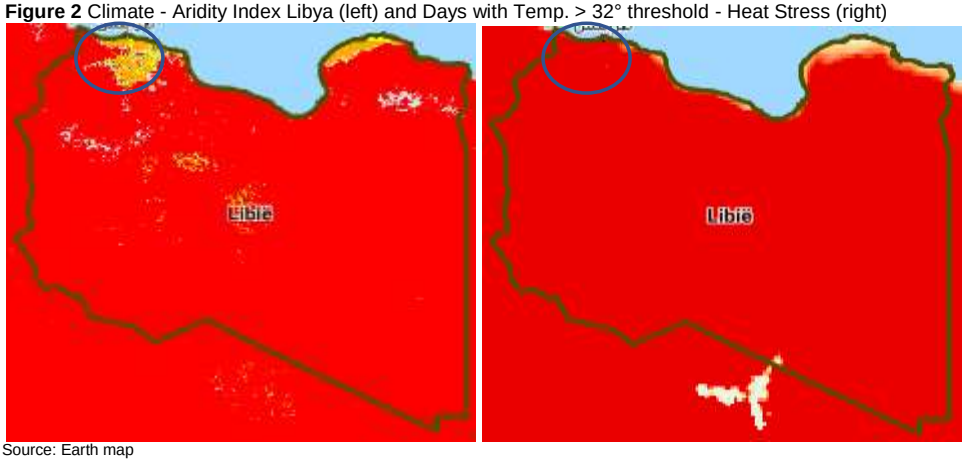
[8] UN (2018). Libya Joint Country Assessment 2018. *Pathways towards a Stable and Resilient Libya.*
[9] OCHA (2020). Humanitarian Needs Overview 2021: Libya.
[10] FAO (2016). AQUASTAT Profile: Libya.
[11] OCHA (2020). Humanitarian Needs Overview 2021: Libya.
[12] FAO (2016). AQUASTAT Profile: Libya.
[13] Statista

more prominent role in agriculture, one-third of households are now estimated to be female headed.[14] Given the relatively high threshold of the official governmental youth category (39 years, compared to 17-35 used by the UN) two thirds of the population is considered as youth[15]. Youth unemployment rates are high, particularly for females (41 percent).

Climate Change

~~11.~~13. **Current climate:** Libya is one of the driest countries in the world; less than 2 percent of the country receives enough rain to support agriculture, and only 5 percent of the country receives more than 100 mm of rainfall per year. Libya's climate ranges from a temperate Mediterranean climate in isolated areas on the Mediterranean coast to a tropical desert climate in the vast majority of the country's interior (i.e., high aridity – see **Figure 2**). The mean annual temperature is 22.67 °C and the mean annual precipitation is 42.46 mm.[16] Heat stress (number of days with + 32°C) is already high in Libya (see **Figure 2).**

Figure 2 Climate - Aridity Index Libya (left) and Days with Temp. > 32° threshold - Heat Stress (right)



Source: Earth map

~~12.~~14. **Trends**: While global temperatures have already increased 1.02°C by 2020 above pre-industrial levels in 1880, temperatures in the southern Mediterranean have increased by 1.5ºC.[17] Precipitation has decreased to 20.92 mm per month since the 1950's.[18]

~~13.~~15. **Projections**:[19] The faster-than-average warming trend is set to continue. By 2040 the increase of temperature will likely be 2.2ºC and could reach approximately 4ºC by the end of the century.[20] The annual precipitation is also expected to reduce, and Libya may lose 7 percent of its rainfall by 2050.[21]

Mean Annual Temperature is expected to rise mid-century (2040-2059)

- SSP1-1.9 Ensemble
  23.69 °C (22.86 °C TO 24.29 °C)
- SSP5-8.5 Ensemble
  24.92 °C (24.27 °C TO 25.58 °C)

[14] UNFPA, Libyan Female-headed households – hoping to survive.
[15] UN Libya (2022), Common Country Analysis. Link: here
[16] World bank climate knowledge portal
[17] NASA, 2021; Union of the Mediterranean, 2019 in Adelphi (2021) Climate-Fragility Risk Brief: Libya
[18] Idem
[19] Idem
[20] Adelphi (2021) Climate-Fragility Risk Brief: Libya
Idem
[21] Idem

Annual precipitation is expected to reduce mid-century (2040-2059)

- SSP1-1.9 Ensemble
  37.29 mm (10.78 mm to 67.93 mm)
- SSP5-8.5 Ensemble
  37.84 mm (10.78 mm to 67.30 mm)

Main hazards

Droughts: The agricultural areas that depend on rain fed systems (in the north of the country are the areas most affected by climate change. Yields of rainfed agriculture, which are located in the north-/ along the coast, are already low but risk to be even lower due to increasing risks of droughts (see **Figure 3**), Libya is also faced with desertification, mainly in the Jefara Plain, Ajabal Algharbi (western mountains about 100Km from Tripoli)located **in the north-western part of the country**. Drought aggravates soil degradation resulting from a combination of climate change, vegetation cover loss from overgrazing, groundwater depletion, over-cultivation, and population growth. To give an example: recently, the western highlands of the country were affected by a drought that lasted for four seasons, which led to a severe shortage in the production of the main grains such as wheat and barley (**Picture 1**), degradation of natural pastures (**Picture 2**.) It also led to the drying of the olive trees fields which are the main component of the cropping system in those areas (Pictures 3). As shown **Figure 4**, the likelihood of droughts will increase is the future, as well as heat waves.

Picture 1 A field under the rain-fed system, two months after it was planted with barley and wheat (no germination) due to the lack of rain.

Picture 2 An image in the Western Mountain region showing the deterioration of natural pastures.

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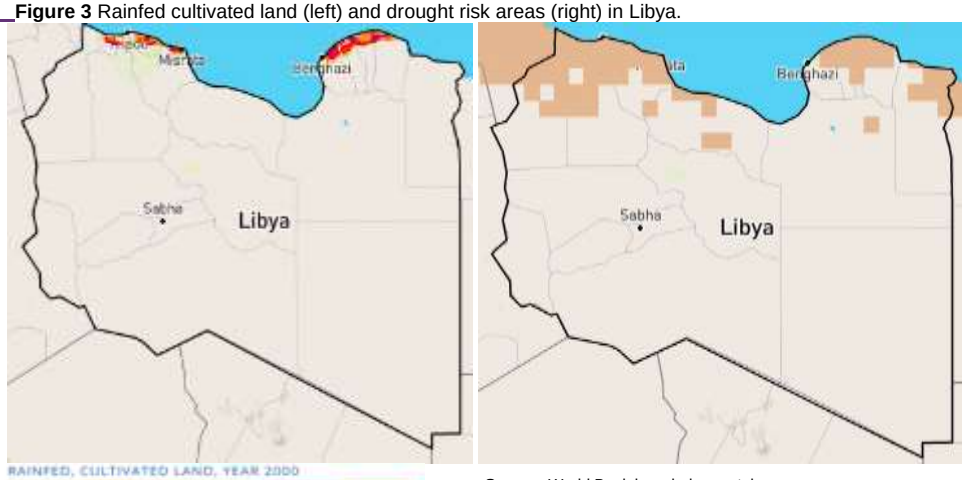
Figure 3 Rainfed cultivated land (left) and drought risk areas (right) in Libya.

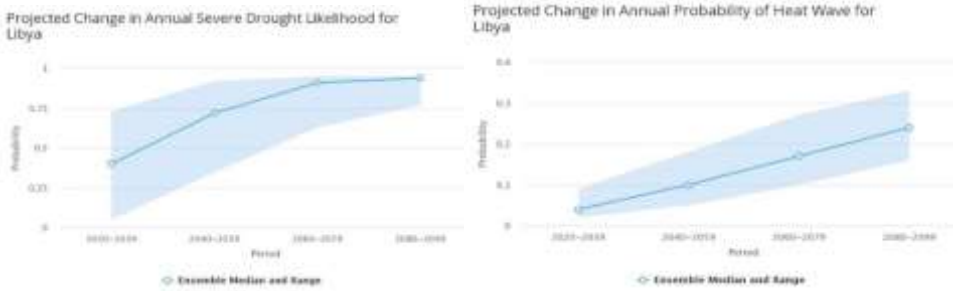


Source: World Bank knowledge portal

~~14.~~16. **Sandstorms and Dust Storms**: Strong dry wind blowing over the desert raises and carries along clouds of sand and dust that are often so dense that it obscures the sun and reduces visibility to almost zero. Wind speeds are high, often moving dunes and sometimes wiping out roads in flat, dry regions and halting air and road transportation. Sand and dust storms are also responsible for health-related illnesses resulting from the inhalation of dust and chemical contaminants.

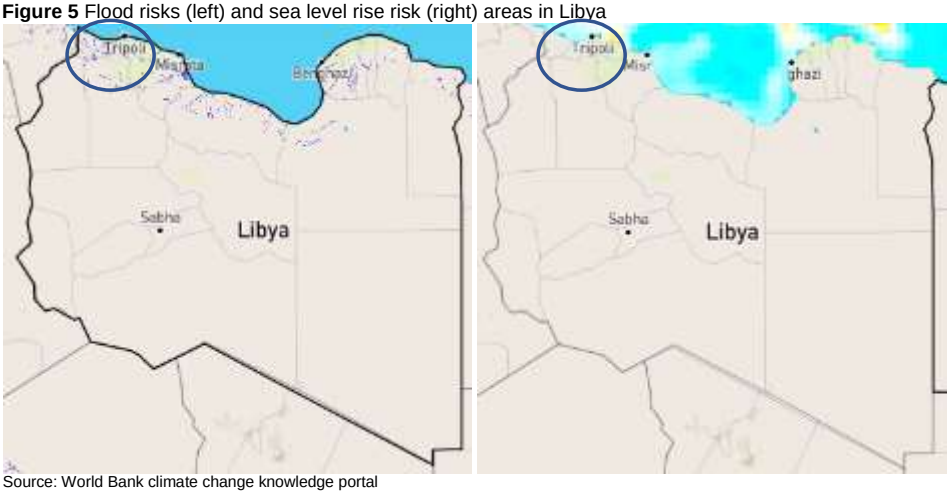
~~15.~~17. **Floods**: Flooding is not very common in Libya although flash flooding can be disastrous. In terms of spatial distribution, Libya is considered a flood-prone country with potentially large economic losses[22]. Heavy rainfall during winter often causes flooding in roads and streets within city centers, mostly due to poor infrastructure. Occasionally, floods cause loss of life, significant economic damage, and loss of crops. Flood damage is aggravated by Libya's poor drainage infrastructure. As shown in **Figure 5**, flood risk areas are along the coast of northern Libya.

Figure 4 Projected Change in Annual Severe Drought Likelihood (Left) and Probability of Heat Wave (Right) in Libya under RCP 8.5 between 2020 and 2099.



[22] Suwihli, S. (2020). Geospatial Analyses of Seismic Hazards and Risk Perception in Libya. *Theses and Dissertations: University of Arkansas.*

Figure 5 Flood risks (left) and sea level rise risk (right) areas in Libya



Source: World Bank climate change knowledge portal

~~16.~~18. **Sea Level Rise:** while global sea levels rose between 20 and 24 cm in the 20th century, the rate of sea level rise in the Mediterranean was faster than global averages.[23] Whereas global sea levels rise 2.5 mm a year, in the Mediterranean it is 6.8 mm per year.[24] Depending on how quickly climate change occurs, the sea could rise over 1 meter by the end of the 21st century.[25] As most Libyans live along the coast, most of the population will be affected, as well as agriculture strips along the coast. Sea level rise risk areas are shown in **Figure 5**.

~~17.~~19. **Decline in water availability and quality:** As mentioned above, Libya already suffers from severe water scarcity and its water demand is far greater than its renewable supply. Climate change is expected to cause a decline in annual precipitation thus decreasing water availability. An anticipated increase in annual drought days on the coast from the current 101 to as many as 224 within the next four decades is expected to also put significant stress on all water sources. Saltwater intrusion into renewable aquifers due to sea level rise also will affect the water quality in those aquifers. The water from the Great Man-Made River project, which feeds Libya's agriculture, cities, and industry, is from non-renewable aquifers that cannot be recharged by rain[26] and are over 500 meters below the surface, leading to high pumping costs.

~~18.~~20. **Lower agricultural and livestock productivity:** Agricultural productivity is already hindered by the limited renewable water resources and poor soil quality. Projected annual temperature increases and reduced precipitation and water availability may lead to crop yield reduction of 30 percent in 2060. According to FAO[27], managed pasture (i.e., grass) and wheat may reduce between 2020 and 2032 as follows:

- ☐ Managed pasture (i.e., grass) from -6% (2020) to -26% (2032)
- ☐ Wheat from -6% (2020) to -9% (2032)

~~19.~~21. While rain-fed cultivation is dominant in sparsely populated (semi)arid areas, larger-scale agriculture in the Mediterranean region is dependent on irrigation from non-renewable aquifers. The expected increase in both temperatures and the number of drought days will lead to higher extraction rates from these aquifers while rain-fed agriculture and pastoralism may no longer be viable for the rural populations of semiarid Libya. Projected increases in the frequency of extreme weather events such as **floods, sandstorms, and dust storms are**

[23] Adelphi (2021) Climate-Fragility Risk Brief: Libya
[24] Idem
[25] Idem
[26] USAID (2017). Climate Change Risk Profile: Libya. *Fact Sheet*.
[27] FAO CARD

likely to damage fields and irrigation infrastructure and further reduce crop yields. Seawater intrusion due to sea level rise is also expected to increase soil salinity and thus affect agricultural production[28].

~~20.~~22. **Deterioration in coastal areas:** With around 86 percent of the population of Libya living in coastal cities, many Libyans are vulnerable to even slight sea level rise. Due to rising sea levels, Libya could lose between 3.2 and 12.8 km^2 due to submergence and between 0.31 and 1.9 km^2 due to erosion by the end of the century. The number of people affected by flooding would vary between 3.7 and 131.2 thousand per year. Floods due to increased rain intensity on the coast may increase the rate of coastal erosion and damage drainage and piping infrastructure. Flooding from sea level rise and storms could also salinize soils and renewable aquifers along the coast. As most of the population, agriculture, and industrial activity are centered on the coast, salinization of soils, freshwater contamination and infrastructure damage pose a great risk to the economy. The sea level rise projected by 2100 could cost the country an estimated $1.7 billion.[29]

~~21.~~23. **Increase in diseases:** Health service capacity in Libya has deteriorated due to the ongoing conflict and already suffers from dependence on foreign health workers, an insufficient primary care network, neglected services in rural areas and damage to or inaccessibility of existing health facilities. The projected increase in temperature coupled with the damage to critical water infrastructure will likely increase cases of water-borne illness. In addition, the increase in frequency and duration of heat waves could also lead to heat-related deaths. Increases in dust storms and sandstorms could increase the prevalence of illnesses resulting from increased exposure to sand, chemical contaminants, or related particulates, as well as further aggravate existing respiratory conditions. Although Libya is reliant on imports for much of its food, the predicted decline in agricultural productivity due to climate change as mentioned above could result in increased food insecurity and malnutrition and thus negatively impact human health[30].

~~22.~~24. In short, Libya is already water-stressed and rising temperatures, saltwater intrusion, and the fact that the National Strategy for Integrated Water Resources Management (2000 – 2025) (NSIWRM) is quite old leads to inter-communal competition over water resources. Libya may be unable to provide water to its population in the future with the prospect of water exhaustion threatening the agricultural sector.[31]

~~23.~~25. Thus, Libya has a major water problem. It will need to invest heavily in desalination and wastewater treatment to have any chance of managing its future water needs. This will take time and the country first needs to stabilize its electrical grid. Until then, fossil water will remain Libya's primary source of water and its lifespan needs to be lengthened. The most effective way to do so is to rationalize water use in agriculture and to adapt to the dryer and saltier conditions, including by introducing salt and drought-resilient crops.

~~24.~~26. Livestock already faces challenges due to a lack of veterinary services, vaccines, and medicines as well as lack of access to fodder and animal feed. The livestock sector will be negatively affected by climate change due to rising temperate and related declining water availability and an increase in animal diseases. Therefore, increasing the adaptive capacity of the sector through climate-resilient rangeland interventions benefitting pastoralists will be key in supporting the livelihoods of the target communities.

Climate change adaptation options in Libya

~~25.~~27. Libya has not developed any national strategies on climate change or any national communications to the UNFCCC. Hence, the climate change adaptation and mitigation priorities in **Table 3** are adapted from the United Nations Strategic Framework for Libya 2019-2020 and the United Nations Sustainable Development Cooperation Framework 2023-2025 with a focus on increasing climate change resilience to water scarcity and environmental degradation. The proposed project is also in line with IFADs country strategy note for Libya and IFADs Adaptation framework. Activities identified as being relevant to this project are shown in the right column of **Table 3.**

Table 3 Possible climate change adaptation measures in Libya

Proposed adaptation measures from the United Nations ~~Strategic~~ Framework~~s~~ for Libya	Relevant for this project

[28] Ibid.
[29] UN (2019). United Nations Strategic Framework for Libya 2019-2020.
[30] USAID (2017). Climate Change Risk Profile: Libya. *Fact Sheet*.
[31] Adelphi (2021) Climate-Fragility Risk Brief: Libya

Build capacity in terms of data generation and utilization with direct link to disaster risk reduction and climate change action.	Conduct a climate change risks and vulnerability assessment in vulnerable areas (i.e., areas with high share of agriculture / livestock land and vulnerable groups)
Support the development of a National Climate Change Adaptation Framework;	Support the development of a National Climate Change resilient agriculture strategy
Advocate for the mainstreaming of disaster and climate risk management into Libya's national development framework;	Mainstream climate change risks and vulnerabilities into the National Climate Change resilient agriculture strategy
Mobilize policy expertise for orientation and guidance in terms of policy design and technical interventions, also including disaster risk reduction-related support;	See above. Include research institutions / universities
Promote Climate Smart Agriculture (CSA) practices across agricultural areas;	Promote the use of heat / drought resilient crops and salt resistant crops and efficient ~~irrigation technology and climate smart rangeland interventions~~use of water and sustainable management of land, including efficient technologies for soil and water conservation and management to minimize runoff and soil erosion and improve water retention and infiltration. ~~Identify hazard risk areas and avoid further development in these risk areas; Shift to heat and drought resilient and salt resistant crops~~
Strengthen the management of natural resources, particularly water, land, and biodiversity;	
Enhance the protection of arable land and shifting to crops that can resist heat waves / droughts is required;	
Increase resilience of vulnerable populations to environmental risks and climate change.	Target smallholder farmers / pastoralists, women (female headed households) and youth and support; ~~income generation activities~~.

Box 1 Details of main climate change adaptation relevant for this project.

- ☐ **Soil and water conservation / harvesting and use:** 'in arid areas, rainfall is rare, unpredictable, and sometimes comes in unexpected violent bursts causing erosion and floods, and quickly evaporating under the dry and hot conditions of the arid environment. Based on experiences in the region, options exist to revive, enhance, and promote an old indigenous practice of collecting (harvesting) the runoff water for subsequent use. To retain water, farmers generally use small circular or semi-circular basins or bunds around the trees or the plants. Soil is assembled and raised in such a way as to make a barrier to hold the water, which is therefore collected and made available for agricultural or domestic uses. Water harvesting (WH) proved effective for replenishing the soil water reserve and for the establishment and maintenance of vegetation cover, trees, shrubs, or other crops for various uses. Larger catchments are similarly arranged to harvest water and exploited in arid areas by sheep herders to sustain rangeland species. Water harvesting not only provides a much-needed additional source of water for drinking or growing plants for feed and food, but it also raises soil moisture, reduces soil erosion, and contributes to Carbon sequestration and improved soil quality.' This approach can be combined with supplemental irrigation, when only used during critical times.
- ☐ **Salt resistant crops: '**while water harvesting and supplemental irrigation are effective technologies for augmenting and enhancing the value of freshwater resources, these resources are still too limited to cope with the increasing rural and urban user demands that are further exacerbated by unabating climate change. However, there is a potential for other avenues for additional water sources, including brackish water, saline water, and treated wastewater.[1] As wastewater treatment and desalination is not a feasible option under this project due to high costs and potential risks of pollution, using salt resistant crops is a feasible and cost-effective way to address the issues. Where possible, salt resilient crop varieties will be introduced of crop species already in use.
- ☐ **Drought and heat resilient crops:** where feasible, drought and heat resilient crop varieties will be used to reduce water demand.
- ☐ **Integrated crop-livestock-rangeland production systems:** Where feasible, this project will support an approach of integrated systems of crop-livestock-rangeland production systems, including consideration of mobile or transhumant grazing practices that reduce the risk of having insufficient forage in any location, investment in water conservation / harvesting and diversification of crops and livestock (agropastoralism)**.** This could include **e.g., cactus to rehabilitate degraded rangelands.** In some countries in North Africa, cactus is successfully associated with water harvesting structures. In combination of well-designed ridges and cactus, farmers can meet a large proportion of their fodder requirements. Cactus crop is easy to establish and to maintain and has various utilizations. It produces good quality fruits; it is an excellent fodder; cactus young cladodes (nopalitos) are used as vegetable.
- ☐ **Promoting community or farmer / pastoralists-based organizations and empowerment:** The project intends to fully involve relevant institutions and various groups and to empower these. This will be done by supporting community or farmer / pastoralists-based planning and decision-making by organizing farmers, pastoralists, and women and by involving representatives from authorities and, where possible, researchers. The objective is to develop community/ farmer / pastoralists development plans which include agreements about operation and maintenance of project activities. The plans should allow for the recognition of local and specific groups present in the areas now-how and equal distribution of project benefits.

Main National barriers identified to adapt to climate change.

~~26.~~28. **Table 4** provides an overview of the main National barriers identified[32] to adapting to climate change in Libya. In the right column it is explained whether addressing these barriers will be the focus of this project.

Table 4 Main National barriers to adapt to climate change in Libya.

Main issues / national level barriers identified	Focus of this project	Explanation / Justification for project focus
☐ Lack of available information on climate change risks and vulnerabilities, especially in the agriculture sector. ☐ Limited government and population awareness to understand climate-related		☐ The project will provide information on climate change risks and vulnerabilities in the ~~Focus on vulnerable~~ agriculture / livestock sector. ☐ The project will raise awareness and share knowledge on risks and adaptation options. ~~with~~

[32] IFAD Country Strategy Note for Libya 2022 – 2024

hazard risks and vulnerabilities and capacity to respond. ☐ Non-existing policy framework / strategies on climate change.		~~identification of hazard risks and how to adapt to these~~ ☐ ☐ The project will develop a climate change resilient agriculture strategy to guide climate change-sensitive development in the agriculture sector.
☐ Weak government coordination on climate change.		☐ Coordination is already the focus of FAO programming with coordination mechanism to be established.
☐ Limited funding capacities to implement adaptation options. ☐ High poverty rate. ~~☐ Dependency on oil economy.~~ ☐ Dependence on fresh water from aquifers and the Man-Made River project (with high pumping costs, potential depletion, and saltwater intrusion) and underdevelopment desalination and wastewater treatment. ☐ Low agriculture production.		☐ The project will focus on poor and vulnerable groups. ☐ The project will strengthen the agriculture / livestock sector, which is the most important sector after oil, while a high-water consuming sector, with no regret interventions. ☐ The project will support lengthening the lifespan of available fresh water sources through efficient water use for the agriculture and livestock sector.
		☐ The project will not focus on ~~Potential~~ desalination and wastewater treatment activities ~~to be done by~~as these are too costly and will be done by development banks and after improvement of the national power grid.
☐ Limited technical capacities to implement and maintain adaptation options.		☐ The project will focus on increasing capacities to implement (operate, maintain, and sustain) and replicate adaptation options.
☐ Limited generation and dissemination of relevant knowledge and learning on climate change resilient practices, products, and technologies and ~~of to their~~ replication ~~e these~~ at national, district and community level.		☐ The project will focus on establishing a mechanism to capture and disseminate relevant knowledge and learning on climate change resilient practices, products, and technologies and to replicate these as well as developing a National Climate Change resilient agriculture strategy.

Climate change vulnerabilities and justification to select project target area.

~~27.~~29. Libya is ranked 125 (out of 182) on the country ND Gain index, which summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience, 93 (out of 182) on the vulnerability index and 170 on the readiness ranking. [33]

~~28.~~30. Although the proportion of households in Libya engaged in agriculture is the highest in the districts Wadi Ashshati and Sebha (see **Figure 6**), some of the districts most food insecure are in the north-west of Libya (see **Figure 7**), besides those in the south (Marzug and Alkufrah). The districts in the north-west can be regarded as highly vulnerable because they are not only highly food insecure, but also face climate change-related risks/ impacts of droughts (see **Figure 3**), floods, sea level rise (see **Figure 5),** including saltwater intrusion, while being the area's most dependent on rainfed agriculture (see **Figure 3**). The northwestern districts are also the most populated districts, as shown in **Figure 8**. Further, the districts in the northwest are relatively safe and well-accessible.

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[33] https://gain.nd.edu/our-work/country-index/rankings/

Figure 6 Proportion of Households in Libya Engaged in Agriculture (2019)

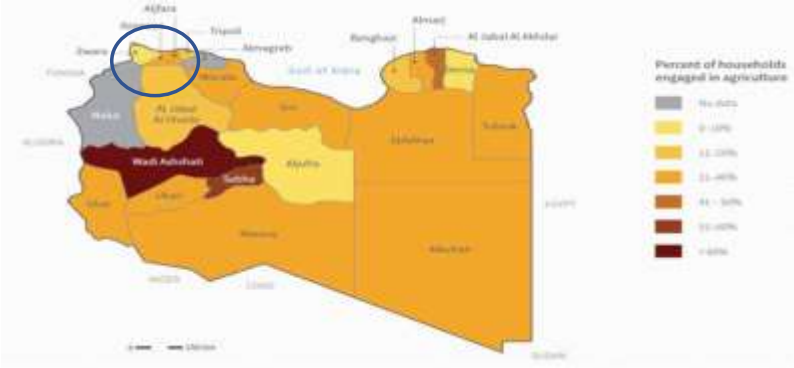
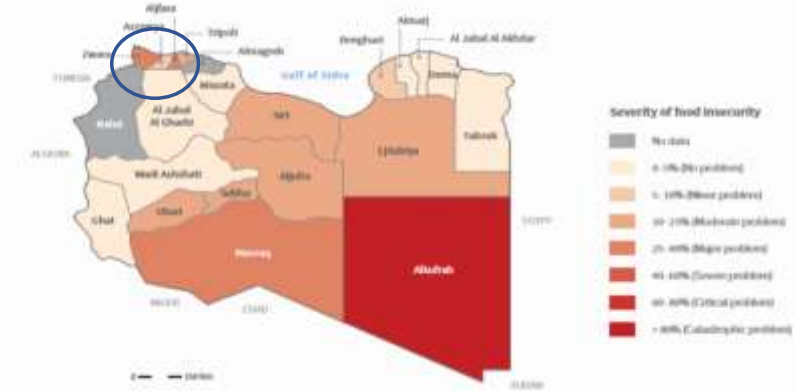
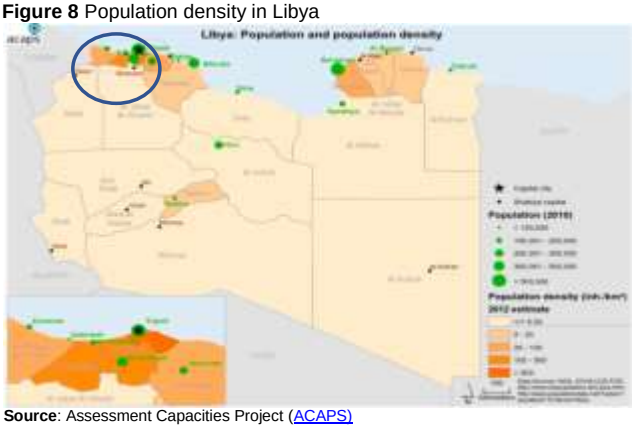


Figure 7 Prevalence of household in Libya with food insecurity



Source: FAO Libya Humanitarian Response Plan 2020

Figure 8 Population density in Libya



Source: Assessment Capacities Project (ACAPS)

29.31. The final selection of target districts is those in the north-west of Libya, including:

Table 5 Selected project target districts.

Target districts	Focus concrete interventions
Zuwara	Climate change resilient crops
Aljfara	
Nalut	Climate change resilient rangeland interventions
Al Jabal al Gharbi	

30.32. For the climate change vulnerability assessment and climate change resilience strategy (component 1), the districts with main agriculture areas as shown in **Figure 1** are included as well. These are: Benghazi, Al Marj, al Jabal al Akhdar and Dernahamah in the northeast (4 districts) and Wadi al Shale, Wadi Al Hay, Sabha and Murzug in the south (4 districts).

31.33. A rapid climate change vulnerability assessment has been conducted in four target districts in the north-west of Libya. As further described in section II.H. districts and municipal-level representatives have been surveyed, including women, youth, and farmer representatives. A summary of the results is shown in **Table 136**. The table provides insight into population / beneficiary numbers, including the percentage of women, youth and farmers and their economic situation (i.e., poverty and average income). Besides that, the main climate change stressors / hazards have been identified, the main effects of these on the communities, barriers for adaptation action and adaptation options.

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32.34. A detailed climate risk analysis including the predicted impact on some crops in the target areas is available in annex 65.

Detailed information on the project target areas

33.35. **Table 6** provides an overview of the number of farm areas (hectares) and number of farmers in the project target areas. The average size of owned land per farmer is estimated at 4.72 ha and the percentage of female farmers is estimated at 13 percent. For details on cultivated and produced trees and crops, see annex 4.

Table 6 Farm area (hectares) and number of farmers (male and female) affected by the saltwater intrusion and drought in the districts of Nalut, Al-Jabal Al-Gharbi, Zwara, Al-Jafara, Al-Zaweya.

Name of the district	Area of Farms (ha)	Number of Farmers (own private farmland)		
		Male	Female	Total
Nalut	30074	4932	256	5188
Al-Jabal Al-Gharbi	89096	14069	954	15023
Zwara	72299	14976	1220	16196
Al-Jafara	154349	33647	3185	36832
Total	**345818**	**67624**	**5615**	**73239**

Source: - Bureau of Statistics and Census, 2007.

34.36. **Table 7** provides an overview of the farm animals in the project target areas. Sheep are by far the animals most held, followed by goats and camels.

Table 7 Numbers of farm animals in the districts affected by the saltwater intrusion and drought in the districts of Nalut, Al-Jabal Al-Gharbi, Zwara, Al-Jafara, Al-Zaweya

Name of the district	Sheep	Goats	Camels
Nalut	148430	70802	6161
Al-Jabal Al-Gharbi	268807	98550	5843
Zwara	200316	40329	10523
Al-Jafara	612642	53194	10211
Total	**1230195**	**262875**	**32738**

Source: - Bureau of Statistics and Census, 2007.

35.37. **Table 8** provides an overview of the water requirements for agricultural crops and fruit trees in Libya. Chickpeas consume the least, followed by fresh beans, dry peas, winter tomatoes, wheat, and barley. Alfalfa and citrus trees consume most water.

Table 8 Water requirements for agricultural crops and fruit trees (cubic meters per hectare per year)

Crop	Ministry of Agriculture estimates	Estimates from other sources.	Mean
Wheat	4800	7000	5900

Barley	4800	7000	5900
Corn	10000	11000	10500
Millet	8000	11000	9500
Tobacco	7000	-	7000
Peanuts	9000	11000	10000
Alfalfa	12000	23500	17250
Sesame	7000	-	7000
Chickpeas	4000	-	4000
Fresh beans	4800	-	4800
Dry Peas	4800	-	4800
Spring potatoes	4800	8000	6400
Onion	8000	-	8000
Cabbage	8000	-	8000
Water Mellon	10000	12000	11000
Pepper	10000	-	10000
Winter tomatoes	4800	6000	5400
Summer tomatoes	9000	10000	9500
Eggplant	10000	-	10000
Citrus trees	13800	18500	16150
Olive trees	8000	-	8000
Date Palm trees	10000	-	10000
Grapevine trees	9000	-	9000

Source: Ministry of Agriculture.

~~36.~~38. **Table 9** and **Figure 9** provide an overview of the areas / municipalities most affected by saltwater intrusion in the regions of Zuwara and Al-Jafara. Out of the 16 municipalities affected, the most affected ones are highlighted in green due to proximity to the sea.

Table 9 Municipalities most affected by the problem of saltwater intrusion in Zuwara and Al-Jafara regions

Number on the map	Name of the municipality	Number on the map	Name of the municipality
1	Zelten	9	Al-Zaweya
2	Zuwara	10	Al-Nasereya
3	Regdaleen	11	Al-Amereya
4	Al-Jamail	12	Al-Zahra
5	Al-Ajailat	13	Al-Mamora
6	Sebrata	14	Al-Maya
7	Sorman	15	Ganzur
8	Al-Zaweya Al-Gharb	16	Al-Sawani

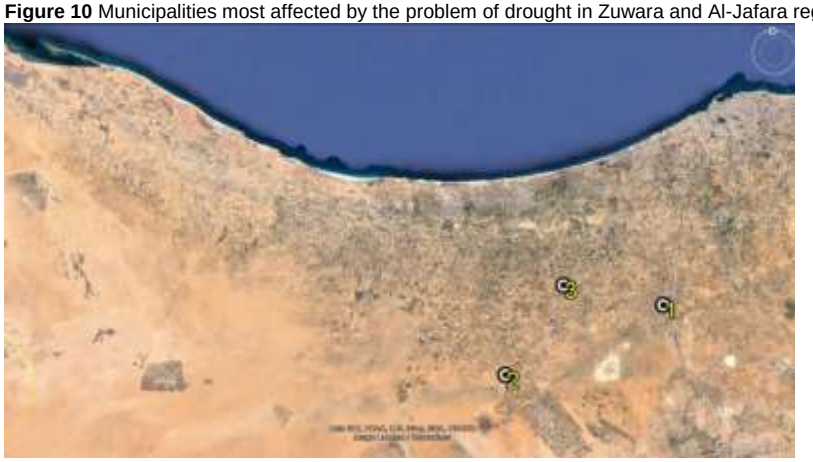
Figure 9 Municipalities most affected by the problem of saltwater intrusion in Zuwara and Al-Jafara regions.

~~37.~~39. **Table 10** and **Figure 10** provide an overview of the areas / municipalities most affected by drought in the regions of Zuwara and Al-Jafara. The ones highlighted in green are most affected due to low levels of rain and groundwater.

Table 10 Municipalities most affected by the problem of drought in the Zuwara and Al-Jafara regions.

Number on the map	Name of the municipality
1	Al-Azezeya
2	Al-Zaweya Al-Janub
3	Al-Jalaida

Figure 10 Municipalities most affected by the problem of drought in Zuwara and Al-Jafara regions.

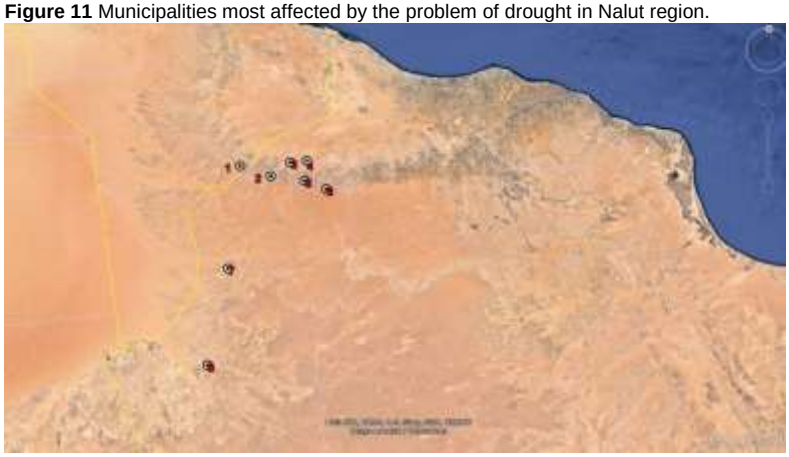


~~38.~~40. **Table 11** and **Figure 11** provide an overview of the areas / municipalities most affected by drought in the region of Nalut. The ones highlighted in green are most affected due to low levels of rain and groundwater.

Table 11 Municipalities most affected by the problem of drought in the Nalut region.

Number on the map	Name of the municipality
1	Wazen
2	Nalut
3	Al-Hawamed
4	Baten Al-Jabal
5	Kabaw
6	Al-Haraba
7	Seanawen
8	Derj

Figure 11 Municipalities most affected by the problem of drought in Nalut region.

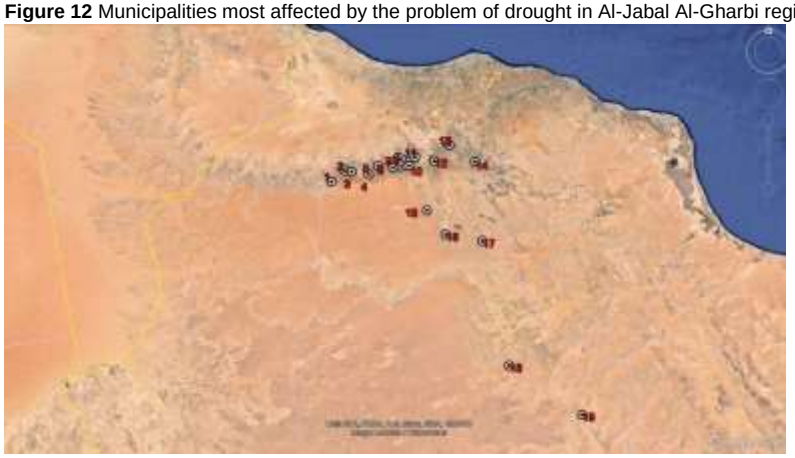


~~39.~~41. **Table 12** and **Figure 12** provide an overview of the areas / municipalities most affected by drought in the region of Al-Jabal Al Gharbi. The ones highlighted in green are most affected due to low levels of rain and groundwater.

Table 12 Municipalities most affected by the problem of drought in the Al-Jabal Al-Gharbi region.

Number on the map	Name of the municipality	Number on the map	Name of the municipality
1	Al-Rohaibat	11	Kekla
2	Jadu	12	Al-Assabaa
3	Al-Rujban	13	Gerian
4	Al-Zentan	14	Al-Orban
5	Al-Rayayena	15	Al-Shagaiga
6	Al-Owaineya	16	Mezda
7	Dhaher Al-Jabal	17	Nessma
8	Yefren	18	Al-Garyat
9	Al-Gelaa	19	Al-Shwairef
10	Al-Gawaleesh		

Figure 12 Municipalities most affected by the problem of drought in Al-Jabal Al-Gharbi region.



Outcomes of the rapid climate change vulnerability assessment conducted.

Table 13 Outcomes of Rapid climate change vulnerability assessment in target districts

Baladiyats	Population	% women rural	% youth	% farmers	% poverty	% income / Mo	% Agri-cult	% Lives tock	% Other Income / specify	Stressors and Hazards	Main problems due to stressors / hazards	Barriers	Adaptation actions needed
Zuwara	269 553 Avg HH: 5.3 with approx. 6 for rural Beneficiary nr. under comp 2: 13275 (2212,5 HH) with 30 % women	49.41	40	**32** of which 7.5 % women	30	200 USD	40	15	1% of people can benefit from financial services (savings, credit, insurance, remittances)	1. Droughts 2. Reduction of rain **3.** Sea level rise (~~salt water~~saltwater intrusion)	- Decreased access to safe drinking water. - Lack of water for cattle	- Lack of knowledge - Lack of skills - Poverty / lack of money - Dependence on agri for income - Lack of plans	- Water harvesting / storage - ~~Drought resilient~~CC resilient crops - Rangeland management - Early warning systems
Aljfara	693 750 Avg HH: 5.7 with ~~approx~~approx. 6 for rural Beneficiary nr. under comp 2: 13275 (2212,5 HH) with 30 % women	49.03	35	30 of which 8.7 % women	20	115 USD	40	4	5% government Jobs + self-employees (privet trade and marketing) and 33% free business	1. Droughts 2. Reduction of rain 3. Extreme heat 4. Sea level rise (~~salt water~~saltwater intrusion)	- Overall decreased agriculture - Lack of water for cattle - Decreased access to safe drinking water	- Lack of knowledge - Lack of skills - Poverty / lack of money - Dependence on agri for income - ~~Lack of money/ poverty~~ - Lack of plans	- Water harvesting / storage - CC resilient crops~~Drought resilient crops~~ - Rangeland management (erosion control) - Trainings
Nalut	87 772 Avg HH: 5.9 with approx. 6 for rural Beneficiary nr. under comp 2: 4425 (737,5 HH) with 30 % women Beneficiary nr. Under comp 3: 10800 (1800 HH) with 30 % women	48.88	35	35 of which 5 % women	30	150 USD	35			1. Droughts 2. Reduction of rain 4. Extreme heat	- Loss of arable land or degradation rangeland due to desertification - Damage to crops - Reduced groundwater	- Lack of knowledge - Lack of information - Lack of skills - Poverty / lack of money - Dependence on agri / livestock for income	- Well water quality protection. - CC resilient crops~~Drought resilient crops~~ - Better plans - Efficient irrigation and land management
Al jabal al Gharbi	288 944 Avg HH: 5.9 with ~~a~~approx~~p~~prox. 6 for rural Beneficiary nr. Under comp 2: 4425 (737,5 HH) with 30 % women	49.48	25	30 of which 6.3 % women	10	150 USD	25	20	55% private business	1. Droughts 2. Reduction of rain 5. Extreme heat	- Lack of water for cattle - Loss of arable land or degradation rangeland due to desertification - Reduced groundwater - Decreased access to ~~safe drinking~~safe drinking water	- Lack of knowledge - Lack of skills - Poverty / lack of money - Dependence on agri / livestock for income	- W~~ell w~~ater quality protection - CC resilient crops~~Drought resilient crops~~ - Better plans

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	Beneficiary nr. under comp 3: 10800 (1800 HH) with 30 % women											~~Lack of money/ poverty~~ - Lack of plans	- Efficient irrigation and land management
Total	1 340 019 Total direct beneficiaries under components 2 and 3: 57000 (9500 HH) of which 30 percent women												

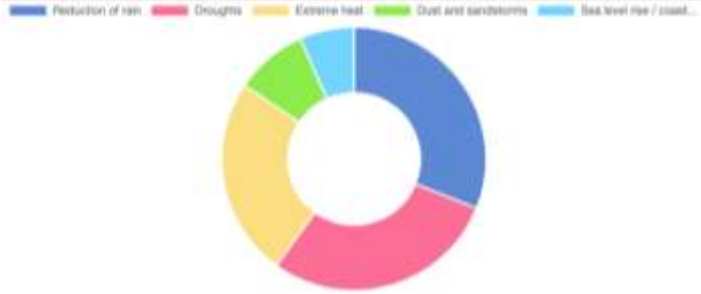
~~40.~~42. ~~*Remark: In some areas (in the municipalities of Janzour and Suani Ben Adem, People have noticed a change in the taste of drinking water, which is believed due to the rise in sea level. Fresh water sources are gradually becoming salty~~The number of farmers is especially high in Nalut, while the percentage of female farmers is highest in Aljfara. The percentage of people living in poverty ranges between 10 and 30 percent, while the average income is around USD 150 per month. In Nalut it was noticed that a large percentage of the households is ~~female-headed~~female headed. This shows an opportunity to target female-headed households as one of the main beneficiary groups.

43. The technologies currently used for irrigation are immersion, sprinkler, and drip irrigation, while relying on rainwater and ~~sea water~~seawater (desalinated). In Al jabal al Gharbi region, agriculture practices are rain fed; irrigation only exists along the coastal areas such as Jafara plain or in the south in Fezzan region.

~~41.~~44. The type of crops cultivated ~~include~~ are mainly wheat and barley. Tree types include olive, ~~figs~~figs, and palms. Onions, cucumbers, tomatoes, peppers, citrus, stone fruits, etc. and animal feed are also grown.

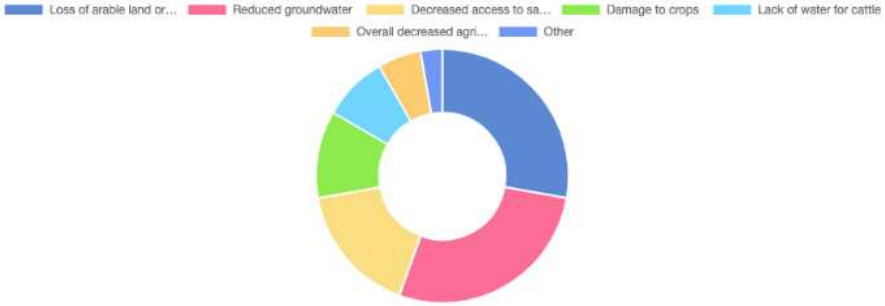
~~42.~~45. As for organizations, there are agricultural and animal breeders' associations, ~~women~~women, and youth associations as well as a cooperative specialized in the field of olives.

Figure 13 Main climate change stressors / hazards experienced.



~~43.~~46. The main climate change stressors / hazards identified are droughts, reduction of rain, extreme heat, and sea-level rise (resulting is saltwater intrusion), and dust / sandstorms. There has been some reporting on floods. Droughts and a reduction of rain are the main issues, while saltwater intrusion due to rising sea levels (and over-extraction of groundwater) can be linked to reduced water quality and water availability for drinking and agriculture.

Figure 14 Main problems experienced due to climate change hazards.



~~44.~~47. The main problems experienced due to the climate change stressors / hazards include loss of arable land, reduced groundwater, decreased drinking water, damaged crops, lack of water for cattle and an overall decrease in agriculture production.

Commented [NWN1]: Any reference for these charts or are they prepared by the team?

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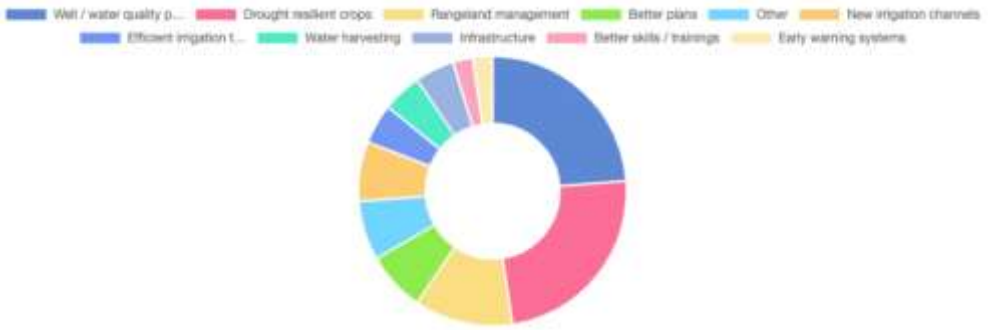
Figure 15 Main barriers for taking adaptation action.

45.48. The main barriers for taking adaptation action include a lack of knowledge and data, a lack of plans, a lack of information, a lack of money / poverty, ~~, a lack of land tenu~~a lack of awareness and a lack of skills. There is a need for knowledge and skills to respond to the main climate change hazards, including risks (areas) and options to respond. A lack of tenure is an issue for people who want to grow crops but don't own the land.

Figure 16 Priority adaptation actions.



46.49. Adaptation actions required include well / water quality protection / improvement, drought resilient crops, rangeland management, better plans, efficient irrigation, water harvesting, ~~training~~training, and early warnings. The main priorities are introducing drought resilient crop varieties (of already existing crop varieties), rangeland management and dealing with contaminated water. This contamination can be saltwater intrusion or pollution. As for water getting saltier, the introduction of salt resilient crops (of already existing crop varieties) could be a solution besides protecting clean wells.

Figure 17 Possible concerns when adaptation actions would be implemented.

~~47.~~50. The main concerns respondents have included interventions lacking maintenance ~~arrangements~~, possible conflict over access of services, potential non-equal access to service, a lack of participation /_involvement. ~~and safety issues during construction. The main maintenance arrangements have been agreed upon.~~ There is a clear concern about unequal access and participation. Therefore, community-based organization or society / association-based plans are needed, where all group are involved and agree upon operation and maintenance roles. This will be combined with grant packages specifically allocated to vulnerable groups in an equal manner.

~~48.~~51. Based on the outcomes of the rapid climate change vulnerability assessment and outcomes of additional consultations (see section II.H), ~~In short,~~ the main issues in the project target areas ~~include:~~can be summarized as follows:

- Increasing droughts / fluctuation in rainfall / water scarcity / lack of (underground) water resources
- Dependence on agriculture while having low productivity.
- Degradation of land and ~~low quality~~low-quality soil (light soil, high salinity, esp. close to the coast) caused by droughts, sea-level rise, wind erosion, overgrazing, lack of management of land and cattle, wrong type of plowing.
- Poverty / limited money for actions needed and sometimes need to migrate.
- Limited adaptive capacity (awareness / knowledge / skills)
- Specific impacts on farmers~~framers~~: droughts and saltwater intrusion leads to crop failure and degradation of lands, which in turn leads to higher poverty level and sometimes need to migrate.
- Specific impacts on pastoralists: droughts lead to land degradation and increase the need to migrate in search of ~~for~~ water and food for their cattle, which in turn leads to higher poverty. These pastoralists can be regarded as migrants or climate induced Internally Displaced Persons.[34]
- Specific impacts on women: droughts affect women by forcing them to drop out of school to help the family with securing food for the household. Also, women's health is most affected by drought as they might resort to canned and less nutritious food.
- Specific impacts on youth: drought affects young people by increasing unemployment and forcing them to migrate from their villages.
- Farmer-specific concerns regarding proposed project activities: non-equal participation in the process and access to project benefits; crops should be suitable local environment; not enough knowledge / skills to use other crops; appropriate maintenance / sustainability arrangements required, including to obtain seeds again.
- Pastoralists-specific concerns regarding proposed project activities: non-equal participation in the process and access to project benefits; lack of maintenance arrangements for interventions; high cost of alternative animal feed.

[34] The project proposal considers Internally Displaced Persons (IDPs) as 'migrants' which are forced to migrate due to climate or climate change. These are mostly pastoralists migrating in search for water and food for their cattle. This 'migration' is a common practice but increases when droughts occur. Migration can be within a smaller area but also from one region to another region in Libya. Most of the IDPs in Libya ~~there~~ are ~~also~~ war/crisis related IDPs. ~~Most moved to urban areas.~~ Some may be working in the agriculture sector, but this number is limited with other professions (~~e.g.~~e.g., transport) more dominant.

- Women-specific concerns regarding proposed project activities: non-equal participation and benefits (as women experienced unequal distribution of seeds previously; difficulty in dealing with merchants and access to markets (resulting in higher prices compared to men) due to their position)
- Youth-specific concerns regarding proposed project activities: non-equal participation in the process and access to project benefits.

49.52. Possible solutions include below. For detailed information on solutions for this project see Annex 5.

- Focus on already common and locally available drought resilient crops and winter crops.
  - Field crops: barley, wheat, oat, chickpea, lentils.
  - Fruit crops: olive, date palm, fig, pomegranate, grapes.
- Focus on already common and locally available salt resistant crops.
  - Field crops: barley, wheat, soybeans, beans, and sweet sorghum.
  - Vegetable crops: tomatoes, spinach, cabbage, cantaloupe, broccoli.
  - Fruit crops: date palms, olive, figs, pomegranate, grapes.
- Use (traditional) water conservation and harvesting techniques.
  - Contour ridges.
  - Semicircular bunds.
  - Contour bench terraces.
  - ~~Underground~~ Water tanks (underground or mobile).
- Efficient, sustainable and climate change resilient management of soil and irrigation.
  - Drip irrigation.
  - ~~Construction of soil dams~~
  - Contour plowing, plowing before start of the winter, use of chisel plows.
  - Use of organic fertilizer.
  - Pest management.
  - Management by cooperative societies / associations / organizations (for operation and maintenance; to avoid conflict over water; to ~~impropve~~improve ~~well~~ management; to protect natural pastures, including manage grazing). Existing societies / associations / organizations need to be strengthened or new ones, including specifically for women, set-up. If not women-specific, terms for women involvement and say should be agreed upon.
- Sustainable (~~Specific for~~ range) land management for livestock.
  - Rotational grazing system.
  - Use cacti for animal feed or alternative feed and improve animal health.
  - Food / milk processing support.
- Equal participation and access and ~~to maintain and sustain~~arrangements for maintenance.
  - Involvement community leaders and quotas~~quatas~~ for women, youth, and vulnerable groups.
  - Involvement cooperatives / associations / ~~and~~ organizations.
  - municipalities to be involved (i.e., supervise) in operat~~at~~ation and maintenance.
- Awareness and capacity strengthening.
  - Improve awareness of climate change impacts and vulnerabilities and adaptation options, also specific for farmers, pastoralists, women, and youth.
  - Provide relevant trainings on operation and maintenance of project interventions, tailored to the needs of farmers, pastoralists, women, and youth. Trainings for women will also include marketing skills as well as use of e-platforms for marketing and encourage the creation of women marketing associations.

Project objectives

50.53. As mentioned earlier, Libya has an existing water problem that will be exacerbated by climate change. To avoid the depletion of water resources, heavy investment in desalination and wastewater treatment is needed. However, this will take time and major funding sources, and the country needs to stabilize its electrical grid first. Until then, fossil water and rainfall in the north will remain Libya's primary sources of water and its lifespan needs to be lengthened for drinking water and food security.

51.54. The aim of this project is to support maximizing the lifespan (i.e., increasing the sustainability) of available water resources by using water as efficiently as possible in the agriculture / livestock sector, which is the sector consuming most water, while also being the most heavily impacted by and vulnerable to climate change.

~~52.~~55. **Overall goal:**

- ☐ Increasing the climate change resilience of the agriculture sector to water scarcity in Libya.

~~53.~~56. **Overall objective:**

- ☐ Enable the government and vulnerable groups to adapt to climate change in the agriculture/ livestock sector, and especially to water scarcity and land degradation.

Table 14 Main climate change adaptation issues/ barriers and proposed project response/ sub-objectives

Main issues / ~~national level~~ barriers identified [35]	Proposed response / sub-objective	Proposed project component
☐ Lack of available data / information on climate change risks and vulnerabilities, especially in the agriculture sector. ☐ Limited government awareness to understand climate-related hazard risks and vulnerabilities and capacity to respond. ☐ Non-existing policy framework / strategies / plans on climate change.	1. Increase the awareness of public institutional staff, farmers / pastoralists and women groups of relevant climate change hazard risks and adaptation options and priorities for the agriculture / livestock sector and improved mainstreaming of this information into planning processed. In line with AF outcome 1.	**Component 1**
☐ Limited funding capacities to implement adaptation options. ☐ High poverty rate. ~~☐ Dependency on oil economy.~~ ☐ Dependence on fresh water from aquifers / the Man-Made River project (with high pumping costs and potential depletion and saltwater intrusion) and underdevelopment desalination and wastewater treatment. ☐ Low agriculture production. ☐ Limited technical capacities to implement and maintain adaptation options.	2. Increase the climate change resilience and sustainability of agriculture livelihoods, including strengthened sources of income and ownership of adaptation measures, benefitting farmers, women, and youth in four (4) districts in the northwest of Libya. 3. Increase the climate change resilience and sustainability of pastoralist livelihoods, including increased natural / asset resource production system resilience and ownership of adaptation measures, benefitting pastoralist and women in two (2) districts in the northwest of Libya. In line with AF outcome 3 and 6.	**Component 2 and 3**
☐ Limited generation and dissemination of relevant knowledge and learning on climate change resilient practices, products, and technologies and to replicate these at national, district and community level.	4. Climate change resilient practices and products piloted in the four (4) districts in the northwest of Libya and encouraged / supported for replication in one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south through a national – district – community replication mechanism. ~~*~~In line with AF outcome 8.	**Component 4**

~~54.~~57. **Key assumptions:** Achieving these objectives is based on ~~a number of~~several assumptions. The main assumption in the Libyan context is that any emerging issues related to the political and security situation do not negatively impact the project's execution or cause instability in the project target areas. Similarly, the project assumes that targeted communities have the incentive to collaborate with the project to increase their adaptive capacity and no intra-communal conflict would interfere with the project's progress based on win-win solutions provided by the project. The project also assumes that the political will to develop the climate change policy environment and institutions in the agriculture sector will remain. To achieve gender mainstreaming throughout the project, the project is assuming that traditional views of women's role in family and society can be changed through tailored interventions and a strict targeting strategy.

~~55.~~58. The project assumes that despite capacity challenges in the country, sufficient and capable executing service providers trusted by communities and able to operate in the target districts after obtaining the necessary security clearances. Given the current global macro-economic situation and predictions, the project assumes that the budget provided for each output will remain sufficient to reach the number of beneficiaries estimated during the project's lifetime. This includes inflation, tax changes, exchange rate and other economic and financial factors.

[35] IFAD Country Strategy Note for Libya 2022 – 2024

Project / Programme Components and Financing:

Table 15 Overview project components and financing

Project Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
Component 1 Participatory prioritization of climate change adaptation options into national, district and community planning for agriculture / livestock development.	**Output 1.1.** Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women.	**Outcome 1** Increased awareness of public institutional staff, farmers / pastoralists and women groups of relevant climate change hazard risks and adaptation options and priorities for the agriculture / livestock sector and improved mainstreaming of this information into planning processed. In line with AF outcome 1.	$384,600.00 ~~633,000~~
	Output 1.2. National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women.		$117,000.00 ~~140,500~~
	Output 1.3. Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.		$143,360.00 ~~Insert~~
Component 2 Climate resilient investment in concrete activities in the agriculture sector.	**Output 2.1.** ~~Climate change resilient crops (i.e., drought /heat resilient and salt resistant crop varieties) implemented in four (4) districts in the northwest of Libya, including through Climate change resilient crops (i.e., drought /heat resilient and salt resistant crop varieties) implemented in four (4) districts in the northwest of Libya, including through~~ Aaround 5900 grant packages (of USD 560 each) provided to~~o~~ farmers, ~~women~~women, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation.	**Outcome 2** Increased climate change resilience and sustainability of agriculture livelihoods to droughts and saltwater intrusion, including strengthened sources of income and ownership of adaptation measures, benefiting~~benefitting~~ farmers, women, and youth in four (4) districts in the northwest of Libya. In line with AF outcome 3 and 6.	$3,699,785.00 ~~3,800,000~~
	Output 2.2. Relevant public ~~i~~institutional staff, farmers and women trained to implement, ~~maintain~~maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans.		$4~~4~~655.005.00 ~~467,500~~
Component 3 Climate resilient investment in concrete activities in the livestock sector.	**Output 3.1.** Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural asset~~s~~ / resource~~s~~ (i.e. rangeland~~s~~ ~~management~~) production system~~s~~. Support will focus on the use of (traditional) water conservation and harvesting techniques, and ~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and~~	**Outcome 3** Increased climate change resilience and sustainability of pastoralist livelihoods to droughts, including increased natural / asset resource production system resilience and ownership of adaptation measures, benefitting pastoralist and women in two (2) districts in the northwest of Libya. In line with AF outcome 3 and 5.	$2,~~338,585~~32 9,585.00 ~~2,385,600~~

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	~~women groups~~sustainable rangeland management for livestock.		
	Output 3.2. Relevant public ~~i~~institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans.		$363,805.00 ~~351,500~~
Component 4 Capturing and disseminating relevant knowledge and learning on climate change resilient practices, products, and technologies and to replicate these at national, district and community level.	**Output 4.1.** Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, products, and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.	**Outcome 4** Climate change resilient practices and products piloted in the four (4) districts in the northwest of Libya are encouraged / supported for replication in one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south through a national – district – community replication mechanism. In line with AF outcome 8.	$845,~~502~~478.00 ~~560,542~~
5. Total components			8,338,~~642~~618
6. Project/Programme Execution cost			87~~35,327~~952
7. Total Project/Programme Cost			9,212~~3,969~~570
8. Project/Programme Cycle Management Fee charged by the Implementing Entity			783,~~187~~188
Amount of Financing Requested			9,995~~7~~,75~~8~~15~~6~~

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Projected Calendar:

Table 16 Project calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	January~~July~~ 2024~~3~~
Mid-term Review (if planned)	
Project/Programme Closing	January~~July~~ 2028~~7~~ (6 month after project completion)
Terminal Evaluation	September~~March~~ 2027 (2 months after project completion)

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PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project components

~~56.~~59. To achieve the overall project goal to "increase the climate change resilience of the agriculture / livestock sector to water scarcity in Libya" and the overall project objective to "enable the government and vulnerable groups to adapt to climate change in the agriculture / livestock sector and especially to water scarcity and land degradation," it is proposed to generate, mainstream and share relevant climate change hazard risks information for the whole agriculture / livestock sector in Libya (components 1) and to strengthen capacities of project beneficiaries to implement, maintain and sustain climate change resilient agriculture and livestock interventions (component 2 and 3) and encourage replication of activities (component 4). It is proposed to have a set of concrete 'no-regret' climate change adaptation activities in the agriculture / livestock sector in four (4) target districts in the northwest of Libya, including the introduction of drought and heat resilient crops, salt

resistant crops, water conservation / harvesting and rangeland production system improvements. For more info on the main concrete climate change adaptation interventions considered see **Box 1**, ~~and~~ the outcomes of the rapid climate change vulnerability assessment, paragraph 52, and annex 5. Over 2/3 of the funds will be distributed to concrete adaptation measures.

~~57.~~60. The specific needs and possible concerns of smallholder farmers, pastoralists and women have been identified during the project proposal development phase (for more info see paragraph 51 and part II.H). Engagement with these groups will continue during project implementation through the four proposed project components.

~~58.~~61. The above approach will be achieved through the following proposed components.

Component 1: Participatory prioritization of climate change adaptation options into national, district and community planning for agriculture / livestock development.

~~59.~~62. In line with AF outcome 1 and government priorities (see section H), this component will focus on:

- ~~Increasing the awareness of public institutional staff, farmers / pastoralists and women groups of relevant climate change hazard risks and adaptation options and priorities for the agriculture / livestock sector and improved mainstreaming of this information into planning processed~~
- ~~Improving the mainstreaming of climate change information generated into national, district and community-level planning processes for agriculture / livestock development.~~ Increasing the awareness of public institutional staff, farmers / pastoralists and women groups of relevant climate change hazard risks and adaptation options and priorities for the agriculture / livestock sector and improved mainstreaming of this information into planning processed.

~~60.~~63. This will be done through the following outputs:

Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women
Output 1.2. National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, ~~prioritized~~prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women.
Output 1.3. Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.

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~~61.~~64. Project activities to reach output 1.1 include:

- Conducting district and community-level participatory climate change vulnerability assessment with key stakeholders and project beneficiaries in target districts through field consultations / interviews and focus groups, including with women, youth, local authority representatives (incl. women councilors at municipalities), community leaders, farmers, pastoralists / herders, including those who are migrating (who could be considered as climate-induced Internally Displaced Persons). ~~and Internally Displaced Persons (IDPs).~~ The consultations will be led by technical specialists in agriculture and livestock alongside a community engagement experts (including women experts to ease outreach and engagement of women beneficiaries), a gender and social inclusion expert as well as a climate change expert. Women consultations will be led by women and carried out in dedicated focus groups to ensure that women's concerns are reflected in the assessments.
- Drafting the consultation reports including all the climate change risks identified as well as the priority adaptation measures (linked to output 1.2) by the different groups during the focus groups.
- Creating maps with the identified climate change hazards and vulnerability risks.
- Publication of climate change risks and vulnerability maps and assessment reports, including specific risks and vulnerabilities identified for farmers, pastoralists, women, and youth.

~~62.~~65. Project activities to reach output 1.2 include:

- Preparation of the district and community-level plans focused on climate change adaptation options for the agriculture/ livestock sector, based on the results from the prior assessment as stipulated in the consultation reports, including specific needs identified for farmers, pastoralists, women, and youth.
- Focus groups with national and local institutions representatives to consult them and gather inputs for the national strategy led by a technical specialist in agriculture and livestock alongside a gender and social inclusion expert as well as a climate change expert.

- ☐ Preparation of the national climate resilient agriculture/ livestock strategy based on the results from the assessments and institutional consultations including specific needs identified for farmers, pastoralists, women, and youth.
- ☐ Endorsement of the national climate resilient agriculture / livestock strategy by relevant national authorities (Ministry of Environment and Ministry of Agriculture).

66. Project activities to reach output 1.3 include:
    - ☐ 13 training workshops at the district level specific to the respective climate hazard and risk assessment in each district, the implementation of the national strategy at the local level. These will be led by a technical specialist in agriculture and livestock alongside a gender and social inclusion expert as well as a climate change expert. The target audience are the relevant local governmental staff and other relevant stakeholders.
    - ☐ 1 national training workshop in Tripoli on the national climate resilient agriculture/ livestock strategy. The target audience are the relevant Ministry of Environment and Ministry of Agriculture governmental staff and other relevant stakeholders. The national government will be further engaged through the planned '5 sustainability-focused workshops' under component 4.

~~63.~~67. This component is needed to respond to the issues / barriers identified to adapt to climate change:
- ☐ Lack of available data / information on climate change risks and vulnerabilities, especially in the agriculture sector.
- ☐ Limited government awareness to understand climate-related hazard risks and vulnerabilities and capacity to respond.
- ☐ Non-existing policy framework / strategies on climate change.

Through the proposed outputs under this component, information on the climate change hazard risks and vulnerabilities and possible adaptation options in the agriculture sector will become available to public institutional staff, farmers / pastoralists and women groups, making it possible for these groups to respond / adapt to climate change-related droughts and sea-level rise, etc., also in districts in Libya not targeted under project component 2 and 3. Moreover, through the development of a National climate resilient agriculture / livestock strategy, a policy framework will be available for the government to take action on climate change in the agriculture sector.

~~64.~~68. Climate change vulnerability assessments will be conducted in agriculture / livestock areas in 5 target districts in the northwest, 4 target districts in the northeast and 4 target districts in the south, totaling 13 districts. By targeting these 13 districts, almost all major agriculture / livestock areas in Libya will be covered. During the project proposal preparation phase, a rapid climate change vulnerability assessment and beneficiaries consultations were~~are~~ already conducted to identify the main climate change vulnerabilities in 4 ~~out of the 5~~ target districts in the northwest, with the purpose of identifying concrete adaptation activities needed as proposed under components 2 and 3. During the project implementation phase, comprehensive climate change vulnerability assessments in the 4~~5~~ target districts in the northwest are needed in addition~~al~~ to the rapid climate change vulnerability assessment already conducted to institutionalize the planning process at the district and national level. The assessments will follow the same participatory approach that was applied in the rapid climate change vulnerability assessment. Dedicated consultations with women, youth and vulnerable groups will ensure that the voices of these groups are heard and their priorities and possible are taken into consideration in the assessments. Mainstreaming of climate information from the national climate-resilient agriculture/ livestock strategy into the district and community-level processes will be facilitated by outlining the governance process at the local level in the strategy and by using 1-2 district in the north-west of Libya as case studies for this mainstreaming. Considering the traditional systems still in place in Libya, community leaders will be involved in the process. The mainstreaming process will also be facilitated through the knowledge management activities proposed under component 4. The objective of the capacity building (output 1.3) is to ensure that the local public officials as well as relevant stakeholders can operationalize climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.

~~65.~~69. The climate change hazard risks to be assessed include droughts, extreme heat, coastal flooding/inundation, salinization, and inland flooding, and adaptation options include processes, ~~practices~~practices, and products. The risk profile/ mapping should include identified areas to be avoided for development due to high risks and safe areas. Besides that, vulnerability profiles will be developed per district

Commented [NWN3]: Given the timeline of the project, budget availability, and the need to build awareness and capacities you may need more than one workshop in every district and more than one national workshop

Commented [JO4R3]: Further engagement national gov and districts online and through 'sustainability workshops' under comp 4. I now explicitly mentioned the national strategy in comp 4.

with possible climate change adaptation measures and priorities. This will be done with the participation of government staff and smallholder farmers, pastoralists, and women.

Component 2: **Climate resilient investment in concrete activities in the agriculture sector**

~~66.~~70. In line with AF outcomes 3 and 6, and government priorities (see section H), this component will focus on:

- ☐ Increasing the climate change resilience and sustainability of agriculture livelihoods to droughts and saltwater intrusion, including strengthened sources of income and ownership of adaptation measures, benefiting~~benefitting~~ farmers, women, and youth in four (4) districts in the northwest of Libya.

~~67.~~71. This will be done through the following outputs:

Output 2.1. ~~Climate change resilient crops (i.e., drought /heat resilient and salt resistant crop varieties) implemented in four (4) districts in the northwest of Libya, including through A~~around 5900 grant packages (of USD 560 each) provided to farmers, women, and youth ~~groups~~groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater~~salwater~~ intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation
Output 2.2. Relevant public Institutional staff, farmers and women trained to implement, maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans

~~68.~~72. Project activities to reach output 2.1 include:

- ☐ Verification of beneficiaries through the organization of district and community level planning sessions (through farmer / pastoralist / women societies / associations / youth centers) to fairly distribute the packages, involving community leaders and vulnerable groups. Where suitable and feasible, e~~E~~xisting societies / associations / organizations including marketing associations will be selected and involved~~need to be strengthened or new ones~~, including specifically for women~~, set up~~. If not women-specific, terms for women involvement and say should be agreed upon.
- ☐ Procurement of items for the 5900 grant packages.
- ☐ Distribution of 5900 grant packages to farmers, including women and youth farmers. Targets for women and youth will be used in line with the results framework, as well as quotas used for involvement where needed.
- ☐ Preparation of district and community-level plans to include operation and maintenance arrangements, to increase the sustainability of the project interventions (through farmer / pastoralist / women societies / associations).

~~69.~~73. Project activities to reach output 2.2 include:

- ☐ Organization of training and capacity building sessions (around 118 sessions) for project beneficiaries on the handling of agriculture climate change resilient crops/ solutions. The grant beneficiaries will be further engaged for capacity strengthening through the farmer field schools and visits of demo plots.
- ☐ Organization of tailored training and capacity building sessions (around 2) for public institution staff on how to support set-up and growth of community/ farmers organizations and the creation of community development plans to operate and maintain piloted solutions over time.
- ☐ Developing a roadmap for local seed multiplication of drought, heat, and salinity resistant varieties in cooperation with ICARDA and the National Centre for Improved Seeds (i.e., the Agriculture Research Centre, ~~Libyan Seed Bank~~ as well as other relevant local organizations (such as the cereal production authority) building on ICARDA's Gene Bank Programme. The roadmap will detail how the Agriculture Research Centre and local stations (3-4 active in the target area) can be used for the multiplication and dissemination of seeds locally among smallholder farmers.

~~70.~~74. This component is needed to respond to the issues/ barriers identified to adapt to climate change, including:

- ☐ Limited funding capacities to implement adaptation options.
- ☐ High poverty rate.
- ~~Dependency on oil economy.~~
- ☐ Dependence on fresh water from aquifers / the Man-Made River project (with high pumping costs and potential depletion and saltwater intrusion) and underdevelopment desalination and wastewater treatment.
- ☐ Low agriculture production.
- ☐ Limited technical capacities to implement and maintain adaptation options.

Commented [NWN5]: Components one and two are solely implemented through the small grants. No core main activities conducted by the project? The risk may be high with regards to the demand of these grants and their proper implementation (just a thought for discussion)

Commented [AMT6R5]: Already discussed.

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Commented [NWN7]: The dependency on oil economy is major, I do not think it can be tackled by this or any other agricultural project, particularly that the agricultural productivity is low in Libya

Commented [AMT8R7]: Agreed, removed.

- Through the proposed outputs under this component, grants will be provided to farmers, including women, which will enable these groups to plant heat / drought resilient and salt resistant crops, as well as harvesting / storing water and managing their lands in a way water will be used efficiently. Moreover, to ensure effective use and sustainabilitysustaibaility of these, operation and maintenance plans will be prepared and relevant capacitiescapcities / skills strengthened. Dependency on oil economy
- Dependence on fresh water from aquifers / the Man-Made River project (with high pumping costs and potential depletion and saltwater intrusion) and underdevelopment desalination and wastewater treatment

Specific for target areas:

- a lack of knowledge and data
- a lack of plans, a lack of information
- a lack of money /poverty and funding capacities to implement adaptation options
- a lack of awareness
- Limited technical capacities to implement and maintain adaptation options

71.75. As water pumping costs are high, water depletion and saltwater intrusion are serious threats to water availabilityle and agriculture production and food security. Therefore,, water demand needs to be reduced. Desalination and wastewater treatment are options but require large investments. Therefore, this proposal focuses on no-regret concrete adaptation interventions, including the use of drought resilient crops / seeds, salt resistant crops / seeds, the use of (traditional) water conservation, harvesting and storage techniques and efficient management of soil and irrigation introducing drought and heat resilient crops and salt resistant crops. These practices and techniques (see details in paragraph 52 and annex 5) are introduced to deal with climate change hazards and to reduce water consumption. Under component 4 a mechanism to replicate these adaptation measures to other areas in Libya is proposed.

72.76. The grant packages that will be distributed as inputs as part of component 2 will include one or more of the following (see more details in paragraph 52):

a. Seeds of drought and heat resilient crop varieties.
b. Seeds of salinity resistant crop varieties.
c. Water conservation/ harvesting / storing equipmentequipment.
d. Soil management and irrigation equipment.

If beneficiaries are interested in joining their grant packages into groups, thesesuch initiatives can be supported by the project.

Possible options for beneficiaries to pool respective grant packages and/ or to bring an individual/ joint co-funding to increase the impact of the grant packages (e.g. receiving higher quantities of seeds or more complex equipment) will be assessed and provided to the extent possible.I beneficiaries wish to

73.77. The project will apply specific criteria / conditions for the final selection of beneficiaries and conditions for providing the grants. The criteria for being selected as beneficiary include:ing high exposure to climate change hazards (esp. droughts and saltwater intrusion), poverty (income level), farm size (i.e. small land size), minimum percentages for the involvement of women (30%) and youth (30%) and community agreement.,, and previous experience with cultivating proposed crops. Conditions for receiving the grants include: previous experience with cultivating proposed cropsAdditional conditions related to expected project results / performance, and avoiding the use of environmentally harming and unsustainable practices and techniques, integrity (based on UNOPS checklist) and a commitment to participate in planning processes, including for maintaining / sustaining the interventions and developing maintenance / sustainability plans. will be discussed during inception. Thuis, Tthe final set of criteria / conditions will be agreed upon / may be adjusted during the inception of the project by IFAD and the Executing Entity.

74.78. Training curriculums will be designed by agriculture and climate change technologies expert. Trainings will be led by trainers, community engagement and gender experts and will focus on climate change adaptive (dryland) agriculture processes, practicespractices, and techniques, including on using/ managing, maintaining, and replicating:

a. Drought resilient crop varieties.
b. Salt resistant crop varieties.

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Commented [NWN9]: This statement is not clear.

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Commented [NWN11]: Having integrity as a condition is hard to assess

Commented [AMT12R11]: Removed.

c. The use of (traditional) w~~W~~ater conservation, ~~and~~ harvesting and storage techniques (incl. establishment of contour ridges, buns or bench terrace~~scontour ridges, semicircular bunds, contour bench terraces~~, ~~underground~~ water tanks).
d. Efficient, sustainable and climate change resilient m~~M~~anagement of soil and irrigation (incl. drip irrigation, plowing before start of the winter, use of chisel plows, use of organic fertilizer, pest management, management by cooperative societies / associations (to protect natural pastures and manage grazing and wells, etc.).

79. Equal participation and access to project benefits, as well as sustainability will be ensured through:
a. Involvement of community leaders and quotas~~quatas~~ for women, youth, and vulnerable groups.
b. Involvement of cooperatives / associations / organizations.
c. M~~m~~unicipalities to be involved (i.e., supervise) in operation and maintenance.
The project will guarantee that seeds included in the grant packages can be sustainably obtained locally (not imported) through the roadmap developed in consultation with ICARDA and the Agriculture Research Centre.~~Libyan Seed Bank as well as other relevant local organizations.~~
d.
~~e. drip irrigation, management through cooperatives / organizations~~
~~f. Soil management (incl. construction of soil dams, contour plowing, plowing before start of the winter, use of chisel plows, use of organic fertilizer, pest management~~

Component 3 Climate resilient investment in concrete activities in the livestock sector

~~75.~~80. In line with AF outcome 3 and 5, and government priorities (see section H), this component will focus on:
- ☐ Increasing the climate change resilience and sustainability of pastoralist livelihoods to droughts, including increased natural / asset resource production system resilience and ownership of adaptation measures, benefitting pastoralist and women in two (2) districts in the northwest of Libya.

~~76.~~81. This will be done through the following outputs:

Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e. rangelands ~~management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and ~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock.~~Climate change resilient natural asset / resource (i.e. rangeland management) production system protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages to pastoralists and women groups~~
Output 3.2. Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural asset**s** / resource**s** (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans

~~77.~~82. Project activities to reach the outputs and outcomes of 3.1 include:
- ☐ Verification of beneficiaries through the organization of district and community level planning sessions (through farmer / pastoralist / women societies / associations / youth centers) to fairly distribute the packages, involving community leaders and vulnerable groups. Existing societies / associations / organizations including marketing associations will be selected and involved ~~need to be strengthened or new ones~~, including specifically for women~~, set-up~~. If not women-specific, terms for women involvement and say should be agreed upon.
- ☐ Procurement of items for the 3900 grant packages.
- ☐ Distribution of 3900 grant packages to pastoralists and women herders. Targets for women and youth will be used in line with the results framework, as well as quotas used for involvement where needed.~~:~~
- ☐ Preparation of district and community-level plans to include operation and maintenance arrangements, to increase the sustainability of the project interventions (through farmer / pastoralist / women societies / associations).

~~78.~~83. Project activities to reach output 3.2 include:
- ☐ Organization of training and capacity building sessions (around 100~~72~~) for project beneficiaries on the management of climate change resilient assets / resource production system improvements. The grant beneficiaries will be further engaged for capacity strengthening through the farmer field schools and visits of demo plots.

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- ☐ Organization of tailored training and capacity building sessions (around 2) for public institution staff on how to support set-up and growth of community/ farmer / pastoralist organizations and the creation of community development plans to operate and maintain piloted solutions over time.

79.84. This component is needed to respond to the issues/ barriers identified to adapt to climate change, including:
Overall:

- ☐ Limited funding capacities to implement adaptation options.
- ☐ High poverty rate.
- ~~Dependency on oil economy.~~
- ☐ Dependence on fresh water from aquifers / the Man-Made River project (with high pumping costs and potential depletion and saltwater intrusion) and underdevelopment desalination and wastewater treatment.
- ☐ Low ~~agriculture~~livestock ~~production~~productivity.;
- ☐ Limited technical capacities to implement and maintain adaptation options.

Through the proposed outputs under this component, grants will be provided to pastoralists, including women, which will enable these groups to harvest / store water and managing their lands in a way water will be used efficiently. Moreover, to ensure effective use and sustainability~~sustaibaility~~ of these, operation and maintenance plans will be prepared and relevant capacities~~capcities~~ / skills strengthened. ~~Dependency on oil economy~~

~~☐ Dependence on fresh water from aquifers / the Man-Made River project (with high pumping costs and potential depletion and saltwater intrusion) and underdevelopment desalination and wastewater treatment~~

~~Specific for target areas:~~

- ~~☐ a lack of knowledge and data~~
- ~~☐ a lack of plans, a lack of information~~
- ~~☐ a lack of money /poverty and funding capacities to implement adaptation options~~
- ~~☐ a lack of awareness~~
- ~~☐ Limited technical capacities to implement and maintain adaptation options~~

80.85. As water scarcity is a serious threat to livestock production and food security, rangeland needs to be improved from a climate change resilience point of view. This proposal focuses on no-regret concrete adaptation interventions, including the use of (traditional) water conservation, harvesting and storage techniques and efficient management of soil and irrigation ~~water conservation / harvesting~~ and integrated crop-livestock-rangeland production systems improvement. These practices and techniques (see details in paragraph 52 and annex 5) ~~These~~ are introduced to deal with climate change hazards and to reduce water scarcity and land degradation. Under component 4 a mechanism to replicate these adaptation measures to other areas in Libya is proposed.

81.86. The grant packages that will be distributed as inputs as part of component 3 will include one or more of the following (see more details in paragraph 52):

a. Water conservation / harvesting and storage equipment. ~~(if needed~~
b. Soil management and irrigation equipment. ~~(if needed)~~
c. Equipment and support with mobile or transhumant grazing practices.
d. Cacti / alternative animal feed.
e. Food processing and milk production packages.

If beneficiaries are interested in joining their grant packages, these can be supported by the project. ~~Possible options for beneficiaries to pool respective grant packages and/ or to bring an individual/ joint co-funding to increase the impact of the grant packages (e.g. receiving higher quantities of seeds or more complex equipment) will be assessed and provided to the extent possible.~~

87. The project will apply specific criteria ~~/ conditions~~ for the final selection of beneficiaries and conditions for providing the~~se~~ grants. The criteria for being selected as beneficiary include: ~~, including~~ high exposure to climate change hazards (esp. droughts), poverty (income level), herd size (i.e., small ~~l~~size), minimum percentages for the involvement of women (30%) and youth (30%) and community agreement. Conditions for receiving the grants include previous experience with techniques, avoiding the use of environmentally harming and unsustainable practices and techniques, integrity (based on UNOPS checklist), and a commitment to participate

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in planning processes, including for maintaining / sustaining the interventions and developing maintenance / sustainability plans. ~~will be discussed during inception. Thuis,~~ Tthe final set of criteria / conditions will be agreed upon / may be adjusted during the inception of the project by IFAD and the executing Entity.

~~Additional conditions related to expected project results / performance and avoiding the use of environmentally harming and unsustainable practices and techniques will be discussed during inception. Thuis, the final set of criteria / conditions may be adjusted during the inception of the project.~~

~~82.~~88. Training curriculums will be designed by livestock and climate change technologies expert. Trainings will be led by trainers, community engagement and gender experts and will focus on climate change adaptive crop-livestock-rangeland production systems / processes, practices and techniques, including on using~~-~~/ managing and maintaining and replicating:~~Trainings will focus on climate change adaptive crop-livestock-rangeland production systems / processes, practices and techniques, including on using / managing and maintaining and replicating:~~

a. The use of (traditional) water conservation, harvesting and storage techniques (incl. establishment of contour ridges, buns or bench terraces, water tanks).
b. Efficient, sustainable and climate change resilient management of soil and irrigation (incl. drip irrigation, plowing before the start of the winter, use of chisel plows, use of organic fertilizer, pest management, management by cooperative societies / associations ~~(~~to protect natural pastures and manage grazing and wells, etc.).
~~a.~~c. Integrated crop-livestock ~~-rangeland -~~systems.
~~b.~~d. Rotational grazing.
e. Better feed practices (~~e.g.~~e.g., using cacti) and animal health.

89. Equal participation and access to project benefits, as well as sustainability will be ensured through:

a. Involvement of community leaders and quotas~~quatas~~ for women, youth, and vulnerable groups.
b. Involvement of cooperatives / associations / organizations.
c. municipalities to be involved (i.e., supervise) for operation and maintenance.

~~c. Animal health~~
~~d. Water harvesting techniques (incl. contour ridges, semicircular bunds, contour bench terraces~~
~~e. Soil management (incl. construction of soil dams, contour plowing, plowing before start of the winter, use of chisel plows, use of organic fertilizer, pest management~~
~~f. Management by communities, cooperatives / organizations~~

Figure 18 example of water harvesting through contour ridges (left) buns (middle) and bench terraces~~)~~ (right).~~/ ridges~~

Contour ridges

Semicircular bunds

Contour bench terraces

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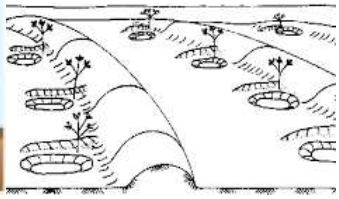

Component 4: Capturing and disseminating relevant knowledge and learning on climate change resilient practices, products, and technologies and to replicate these at national, district and community level.

~~83.~~90. In line with AF outcome 8 and government priorities (see section H), this component will focus on:

- Climate change resilient practices and products piloted in the four (4) districts in the northwest of Libya and encouraged / supported for replication in one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south through a national – district – community replication mechanism.

~~84.~~91. This will be done through the following output:

Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, ~~products~~products, and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots and a website

~~85.~~92. Project activities to reach output 4.1 include:

- ☐ Set up of national-level mechanism, ex. w~~W~~ebsite and online tool (e.g., whatsapp or Facebook groups) for remote support, to ease the capturing and sharing of the National climate resilient agriculture / livestock strategy, knowledge and training lessons, through the involvement of national and district-level key stakeholders.
- ☐ Organization of nine (~~8~~9) Training of Trainers (ToT), two in each district with sessions for 20-25 trainers. The sessions will be held at societies / associations locations, which will be one-stop-shops for knowledge related to the project.
- ~~☐~~ Organization of nine (379) Farmers Field Schools (FFS), on improved agriculture practices, minimum tillage, use of organic fertilizers, rainwater harvesting and drip irrigation techniques and Integrated Pest Management (IPM), also including ~~). The FFS will be divided as follows:~~
  - ~~Four (4) FFS on crops.~~
  - ~~Four (4) FFS on livestock.~~
  - ☐ ~~One (1) specifically for~~specific support to women on livelihood diversification, such as food processing, packaging, marketing, poultry, sewing, and handcrafts. The FFS will be 5 days each with approximately 50 people invited for each day.
- ☐ Selection of beneficiaries of FFS based on the same procedures as for 2.1 ad 3.1.
- ☐ Development of partnerships with universities and research centers across the country, for example through MoUs, to foster research in climate change adaptation in crops and livestock subsectors to ensure the sustainability of component 2 and 3 interventions.
- ☐ Conduct ~~4~~5 field visits to demo plots on some of the best agricultural and livestock practices.
- ☐ Organization of 5 sustainability-focused workshops with national and district / local government, community leaders, societies / associations, representatives of the academia/ research organizations and ministry representatives to discuss the implementation of the national strategy at the local level, lessons learnt from the project and identify project sustainability actions.
- ☐ Support to the preparation and production of guidelines on mainstreaming climate resilience into local planning for crops and livestock sub-sectors. This will be based on the outcomes of component 1 and will help in the operationalization of the national strategy.
- ☐ A website and online tool will be developed by the project to further disseminate the the National climate resilient agriculture / livestock strategy and all the guidelines and publications produced by the project. Social media will also be used to share information and training materials with farmers and pastoralists.
- ~~☐ Support to the preparation and production of guidelines on mainstreaming climate resilience into local planning for crops and livestock sub-sectors.~~

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~~86.~~93. This component is needed to respond to the issues/ barriers identified to adapt to climate change:

- ☐ Limited generation and dissemination of relevant knowledge and learning on climate change resilient practices, ~~products~~products, and technologies and to replicate these at national, district and community level.

Through the proposed outputs under this component, knowledge on climate change hazard risks, vulnerability and adaptation options will be shared among key stakeholders in Libya at the national and local levels.

~~87.~~94. There is a huge potential to replicate no-regret concrete adaptation activities to other agriculture / livestock areas with the same needs. Based on the outcome of component 1 and lessons from component 2 and 3, knowledge and learning will be captured on climate change resilient practices, products and technologies and promoted for replication. This will be done through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.

B. Project economic, social, and environmental benefits

~~88.~~95. The proposed project aims to maximize benefits to the most vulnerable groups while maximizing the positive environmental impact and reducing any potential social risk due to sensitivities among the local communities. Target groups under this project include:

- ☐ Small-scale farmers and pastoralists (poor households and female-headed households prioritized and pastoralists migrants, who could be considered as climate-induced Internally Displaced Persons).)
- ☐ Youth willing to engage in agriculture production and have no other income source.
- ~~☐ Internal Displaced Persons – IDPs and returnees~~

~~89.~~96. For an overview of project beneficiary numbers see table **Table 13** ~~and~~ and **Table 38**. Needs and possible concerns of farmers / pastoralists, women and youth and other relevant groups have been identified through a rapid climate change vulnerability assessment and consultations conducted (see summary of outcomes also in Table 13) in 4 ~~northwestern~~north-western target districts. The total number of indirect beneficiaries in the target districts is 1 340 019, of which between 30-35 percent farmer, 49 percent women and 25-40 percent youth, depending on the district. Under outcome 1 (output 1.1 and 1.2) the whole country will benefit and specifically the farmer communities (around 20 % of a total population of 6.8 million). Under the concrete interventions (outcome 2 and 3) around 9 500 grant packages will be provided (5900 under component 2 and 3600 under component 3) which, with an average household size of at least 6 in rural areas, will benefit approximately 57 000 people. The cost of each grant package (USD 560/household) will be the same in component 2 and 3 and for each type of beneficiary. Female-headed farmer and pastoralist households will be prioritized with a target of at least 30 percent of the total population targeted. The same target is set for youth participation: 30 percent. Heads of all households will be involved in capacity strengthening activities, while also ministry and local government staff will be targeted for trainings. The total number of direct beneficiaries of the project is estimated at 57 840. For detailed beneficiary numbers see **Table 37** and **Table 38**, which present the results framework and core indicators, including targets for women.

~~90.~~97. The inhabitants of the project target areas are not indigenous people, but rather ethnic groups namely: Arab-Berber and Berber. However, the Amazigh people live in many areas including the town of At-Wilul at Zwara district which the project is not targeting specifically (the district is targeted but not the town). As almost all inhabitants belong to ethic groups, ethnic groups were already involved in consultations.

~~91.~~98. In addition to the target groups mentioned, the direct beneficiaries of each proposed project activity are selected based on vulnerability selection criteria / conditions (see more info in section II.A) to ensure that the programme is targeting:

a. the most vulnerable households among those who fulfil the technical requirements of the proposed activity.
b. to ensure equity and avoid any social tensions in the local communities.

~~92.~~99. Beneficiaries have been identified through consultations at the ministry, ~~district~~district, and municipal level. Also, a mapping of ethnic groups has been done, to make sure these are equally involved per target area. Such direct engagement of the target local community will ensure communities contribution and participation in applying the criteria to their committees and suggest beneficiaries who are eligible.

Commented [NWN17]: Are these IDP s identified in Libya and linked to climate?

Commented [AMT18R17]: Discussed.

~~93.~~100. As part of project compliance to the AF ESP and GP, possible negative environmental and social risks and impacts will be avoided/ mitigated, through participatory assessment, planning and decision-making processes, also during project implementation. Below is a summary of the project benefits.

Table 17 Economic, Social and Environmental benefits

Component	Baseline	With/after project (economic, social, environmental)
Component 1	Beneficiaries have limited awareness of climate change hazard risks and response options. Agriculture / livestock production is threatened by climate change hazard risks and limited water resources. Water pumping is expensive due to high energy prices and low water table. Populations are vulnerable due to high poverty rates and dependence on vulnerable sectors. Women and youth participation can be regarded as low.	❑ Economic: development in climate risk areas (with risk of losses due to sea-level rise, floods, etc.) can be avoided; climate change cost-effective measures will be identified through assessments to stabilize/increase production and reduce risk of losses in a climate constraint context. Once implemented, these can support increase of income of farmers and especially women (women-headed households). In addition to this, other non-quantifiable economic benefits include the empowerment of farmers, and more particularly women and youths, that will be benefited from the project support, not only allowing the realization of economic benefits mentioned above, but also better preparing them to face climate-change challenges in selected activities. ~~❑~~ Social: participatory approach will ensure benefits to women, youth and other vulnerable groups through their inclusion in the process and the National climate resilient agriculture/ livestock strategy will pay specific attention to the differentiated impact of climate change on most vulnerable groups (including farmers, pastoralist (with migrants among these) ~~internally displaced people~~ and women and youth) and the suitable adaptation options for the areas they live in. This will enable these groups to adapt to changinge climate conditions. Emphasis will be put on addressing gender inequalities and empowering women to reduce the negative impacts of climate change. This will be done in three ways: (i) recognition of gender differences in adaptation needs and capacities; (ii) gender-equitable participation and influence in adaptation decision-making processes; (iii) and other benefits resulting from investments in adaptation (e.g. support for climate adaptive businesses). ~~In addition, special attention will be given to promoting a more equitable balance in workloads and in the sharing of economic and social benefits between women and men, for example by introducing time and labor-saving technologies. In addition, rural youth will be targeted by the project. Emphasis will be put on promoting their economic empowerment (e.g. by giving them priority for accessing the climate adaptive grants and strengthening their business skills) and enabling them to have an equal voice and influence in rural institutions and organizations.~~ ❑ Environmental: the national climate resilient agriculture strategy will provide decision-makers with priority adaptation options for the agriculture sector in the target areas and will identify potential threats to biodiversity, natural habitats, and people.
Component 2		❑ Economic: climate change resilient cost-effective measures implemented will support increase of income through 9,500 grants with the objective to stabilize/increase incomes and reduce losses, in particular post-harvest losses. The cost per grant beneficiary is estimated at US$560/household, which is comparable to similar AF and IFAD projects' investments in the region of North Africa and has a potential to generate sufficient income for smallholders with a substantial benefit-to-cost ratio ensuring their resilience and adaptive capacity to climate change. The adaptation technologies that will be adopted through these grants are expected to be upscaled and/or adopted at a wider scale.
Component 3		❑ Social: Targeting strategy will focus on the poorest and most vulnerable farmers/pastoralists. The Participatory approach will ensure benefits to women, youth, and other vulnerable groups. Women-headed households will be prioritized for grant packages. Displaced person may also benefit as the migration trend is from the south to the north. This project may involve migrants from the north willing to work in agriculture. In addition, special attention will be given to promoting a more equitable balance in workloads and in the sharing of economic and social benefits between women and men, for example by introducing time and labor-saving technologies. In addition, rural youth will be targeted by the project. Emphasis will be put on promoting their economic empowerment (e.g., by giving them priority for accessing the climate adaptive grants and strengthening their business skills) and enabling them to have an equal voice and influence in rural institutions and organizations. ❑ Environmental: Agriculture / livestock activities implemented will apply good practices strengthening resilience against climate change, reducing the adverse effect of land degradation, avoiding any increase in use of pesticides in comparison to baseline scenario, and improving water use efficiency. This will also demonstrate adaptation options that would be adopted and upscaled by the wider community in the target areas and other areas.

Component 4		❑ Economic: information on climate change resilient cost-effective measures will be available/ accessible which will yield economic benefits at scale. This will fill a gap at the national level which will save the costs of different pilots at the local level to identify adaptation solutions. ❑ Social: information on climate change resilient cost-effective measures will be available/ accessible to women and youth and other vulnerable groups and specific lessons on gender and youth mainstreaming strategies will be captured. The National climate resilient agriculture/ livestock strategies will pay specific attention to the differentiated impact of climate change on most vulnerable groups (including farmers, pastoralist (with migrants among these) ~~internally displaced people~~ and women and youth) and the suitable adaptation options for the areas they live in. ❑ Environmental: knowledge and information in avoiding negative environmental impacts will also be shared helping the country to fill in the current knowledge gap in the climate change policymaking process.

C. Cost-effectiveness of the proposed project

~~94.~~101. The cost-effectiveness of the project can be seen in comparison with business as usual (or without-project) scenario and the value added resulting from its activities, which outweighs the costs. The proposed activities are primarily focused on maximizing impact while being cost-effective. The adaptation technologies that will be adopted by the project will capitalize on the existing best and cost-effective practices in the region. Currently, due to low agricultural yields, the country ~~has to~~ imports 75 percent of the food to satisfy the domestic demand, which is exacerbated by the fact that 95 percent of the country is desert and 70 percent of the population lives in the coastal area prone to floods[36]. According to the World Bank estimates, on average every US$1 invested in adaptation to climate change brings US$4 in benefits[37], which justifies the project investments. The table below demonstrates the cost-effectiveness rationale within each output of the project. For detailed of costs of project interventions see section III.G and for details of items / techniques, such as seeds, water tank, etc., see **Table 71.**

Table 18 Proposed interventions cost-effectiveness rationale

Project output/ activity	Costs	Alternative interventions and rationale why priority interventions/activities have been selected from a cost-effectiveness perspective
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women. 13 climate change vulnerability assessments with priority adaptation actions. Directly involved 570. ○ Women: 30 % Indirect: 6,8 million of which about 30 percent farmers	$384,600.00 ~~633,000~~	In the absence of any climate-related policies and the lack of institutional arrangement to address climate risks as the district level, climate vulnerability assessments are much needed to prioritize the most cost-effective adaptation options in the agriculture/livestock sector. Without the climate change vulnerability and hazards risks assessment and National agriculture / livestock strategy to be developed there would be no identified and prioritized climate change adaptation options for agriculture/ livestock areas in Libya. This is needed to make people aware of these options, but also to identify / attract and prioritize funding for adaptation activities, also within small communities. Alternative scenario for Output 1.1.: ~~The alternative to act without prior assessment would lead to costly and not adapted interventions without positive outcomes~~Top-down climate vulnerability assessments for 13 districts without community consultations. These assessments will cost USD 259,500 which is less than the current cost. However, these assessments will not include the concerns of most vulnerable groups, ranking of climate change impacts and adaptation priorities for each district. In addition, buy-in from communities cannot be guaranteed and thus jeopardizing the operationalization of the adaptation actions. ~~This is needed to make people aware of these options, but also to identify / attract and prioritize funding for adaptation activities, also within small communities.~~
Output 1.2. National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women. 1 strategy Directly involved 570 ○ Women: 30 % Indirect: 6,8 million of which about 30 percent farmers	$117,000.00 ~~140,500~~	Alternative scenario for Output 1.2: conventional practices such as development in ~~high risk~~high-risk areas, expensive water pumping, use of high-water consumption crops, etc. will continue and are more expensive compared to the adaptation outcome. Cost-efficient adaptation options are not identified in a strategy at the national level and thus the knowledge generated at the district level is not upscaled. Selection of interventions is not done in a participatory manner and thus the adaptation options might not be suitable to the context or not sustainable due to lack of ownership. Combined with the absence of NDC, NAP or other climate change strategies, the risk of maladaptation becomes inevitable.
Output 1.3. Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.	$143,360.00 ~~Insert~~	Alternative scenario for Output 1.3: climate change vulnerability assessments for additional 5 districts costing USD 147,923. However, these assessments in addition to the original 13

[36] "Climate change threatens Libya's economic development and sustainability", UNOCHA situation report, 26 August 2021, https://reports.unocha.org/en/country/libya/card/2r82XSjHkw/

[37] "Hallegatte, Stephane; Rentschler, Jun; Rozenberg, Julie. 2019. Lifelines: The Resilient Infrastructure Opportunity. Sustainable Infrastructure, World Bank.

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		assessments will not be effectively operationalized due to lack of institutional capacity.
Output 2.1. ~~Climate change resilient crops (i.e., drought /heat resilient and salt resistant crop varieties) implemented in four (4) districts in the northwest of Libya, including through A~~around 5900 grant packages (of USD 560 each) provided to~~to~~ farmers, ~~women~~women, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation. Farmers: 5900 households / 35400 people (6 persons / household) o Women: 30 %	$3,699,785.00 ~~3,800,000~~	Using heat and drought resilient crops and salt resistant crops are cost-effective in comparison with conventional crops, as these crops will grow better, ~~, and~~ survive extreme conditions and will use less of pumped water. This should be combined with efficient irrigation technology and landscape interventions to capture and store available water to avoid potential cost of water depletion. ~~Sustainable rangelands~~Land management is key to ensuring the livestock sector remains productive and communities ~~are able to~~can benefit from them while contributing to their management. Grant packages are cost-effective approaches to involve beneficiaries and ensure they do part of the works against (relatively) low fees. Alternative scenario for Output 2.1: ~~m~~More expensive options such as water pumping, desalination or wastewater treatment are used, but these are costlier interventions, also per person, and feasibility is limited with existing conditions and available funds. For a mobile wastewater treatment plant for instance the cost estimation is USD 1000 per 1m3 water/day. And this is only the ~~contrsuction~~construction cost, without an irrigation system. Thus, it will cost around USD 1 million to have 1000 m^3 of clean water /day. The cost for desalination is~~are~~ similar. The number of farmers targeted under this project cannot be reached when going for such a solution. Alternative scenario for Output 3.1: Current practices of water pumping or buying animal feed is not only unsustainable but is also getting costlier, while water quality cannot be assured. ~~Rangeland rehabilitation could cost up to USD 400 per hectare which could add up to USD 5,400,000 for the desired target of 13,500 hectares. In addition, rangeland rehabilitation without rangeland management trainings will threaten the sustainability of these rangelands beyond a few years from the project's completion.~~ Capacity strengthening to operate and maintain implemented activities~~ates~~ is needed to avoid loss of investment if activities are not sustained. Alternative scenario for Output 2.2~~b~~: Additional packages (around 796834 packages for USD 4~~4~~4655~~67~~,050~~0~~) for an additional 796834 households. However, ~~Activities~~ activities ~~are~~ implemented without capacity building for communities and institutions to be able to manage these technologies ~~jeopardizing~~ jeopardize~~s~~ the sustainability of these investments and thus will have a much lower economic return in~~at~~ the long run. Alternative scenario for Output 3.2: Additional packages (around 64927 packages for USD 363,805~~51,500~~) for an additional 64927 households. However, activities implemented without capacity building for communities and institutions to be able to manage these technologies jeopardizes the sustainability of these investments and thus will have a much lower economic return in~~at~~ the long run.
Output 2.2 Relevant public Institutional staff, farmers and women trained to implement, maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans. Institutional staff: 60 o Women: 30% Farmers: 5900 Women: 30 %	$4~~4655~~,005.00 ~~467,500~~	
Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e., rangelands ~~management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and ~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock. Pastoralists: 3600 households / 21600 people (6 persons / household) Women: 30 %	$2,3~~38~~29,585.00~~2,385,600~~	

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Output 3.2. Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans. Institutional staff: 40 ○ Women: 30% Pastoralists: 3600 ○ Women: 30 %	$363,805.00 ~~351,500~~	
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, ~~products~~products, and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots. - Guidelines: 1 - Farmer field schools: ~~8~~9 - ToT: ~~8~~9 - Visits to demo plots: ~~4~~9	$845,~~502~~478.00 ~~560,542~~	Making knowledge / lessons of tested activities available / accessible to inhabitants of other districts is a cost-effective way to replicate the activities. Alternative scenario: Number of awareness beneficiaries decline drastically thus increasing the cost per beneficiary and then other funding sources will need to be sought to implement adaptation activities in other areas. Duplication of pilots/knowledge generation could occur. The other option ~~in order to~~to ensure that knowledge reaches the other districts is that concrete activities will need to be replicated in 5 more districts (for component 2) and 7 more districts (for component 3). This will cost another USD 14,000,000 which is not available for the project. ~~Number of awareness beneficiaries decline drastically thus increasing the cost per beneficiary and then other funding sources will need to be sought to implement adaptation activities in other areas. Duplication of pilots/knowledge generation could occur.~~

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~~95.~~102. Altogether, the project will be cost-effective by:

- ☐ Avoiding cost of inaction associated with damage and loss due to climate change impacts (especially droughts, sea inundation and saltwater intrusion, floods) and to ensure the interventions are sustainable.
- ☐ Community involvement with development ~~/construction~~ of concrete interventions and because of community capacity building which will also ensure the sustainability of investments.
- ☐ Having selected the technical / concrete adaptation options based on cost-feasibility and resilience/sustainability criteria, including:
  - Location suitability (Location + suitability).
  - Cost-effectiveness (cost per beneficiary).
  - Comparison to alternative solutions.
  - Beneficiaries' vulnerabilities and needs (direct and indirect) + benefits.
  - Operation + maintenance needs and arrangements feasibility.
  - Sustainability needs and arrangements, incl. replication, upscaling and exit strategy feasibility.
  - Limited / manageable environmental and social risks / impacts.

D. Project consistency with national or sub-national sustainable development strategies

~~96.~~103. The proposed project is designed to be consistent with international, national, and sub-national development strategies, plans and goals. From an international perspective, the project directly supports targets under SDG 13 (climate change adaptation & DRR) and indirectly under environmental-related SDG 6 (increasing safe and clean water) and SDG 15 (reducing land degradation and improve sustainability of natural resource management). The project also indirectly supports targets under SDG 1 (reducing poverty), SDG 2 (increasing food security) SDG 3 (improving good health and well-being), SDG 5 (improving gender equality), SDG 9 (improving innovation and infrastructure), SDG 10 (reducing inequalities), SDG 11 (increasing the sustainability of communities) and SDG 16 (enhancing social cohesion).

~~97.~~104. As per below, the project directly supports IFADs priorities:

Strategic Objective 3 (IFAD Strategic framework 2016-2025)	Strengthen the environmental sustainability and climate resilience of poor rural people's economic activities.
Strategic Objective 1 (IFAD Strategic framework 2016-2025)	Increase poor rural people's productive capacities.
Development result (IFAD11 Results Management Framework)	By 2025 – 24 million people with greater resilience

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~~98.~~105. Libya is party to the United Nations Framework Convention on Climate Change. In 2016, Libya has signed the Paris Agreement but has not yet ratified it. Libya did not develop any national strategies on climate change or any national communications to the UNFCCC.

~~99.~~106. The Libyan Environment General Authority (EGA) has attempted to work with international partners to improve its reporting capacity and, in 2020 the first inter-ministerial climate change committee was established. However, there is still no communication to the UNFCCC and function of the committee questionable.

~~100.~~107. Due to the lack of relevant national policies and strategies, the UN follows the United Nations Sustainable Development Cooperation ~~Strategic~~ Framework (UNSDCF) for Libya 2023 – 2025, which identified adaptation measures as shown in **Table 3.** Besides that, **Table 1~~9~~2** provides a brief overview of the available government policies and strategies and how this project aligns with these. The project also aligns with the ~~forthcoming United Nations Development Cooperation Framework for Libya (UNSDCF) 2023 – 2025~~ IFADs country strategy note for Libya and IFADs Adaptation framework.

Table 19 Project alignment with National priorities

Strategies and plans	Year submitted / ratified	Relevant priorities the project is aligned with
☐ The government follows the SDGs and African Water vision 2025 as a vision / framework for the water sector		☐ The project will support reducing water demand while increasing the use of efficient water use technologies.
☐ National Strategy for Sustainable Development	2008	☐ The project will support sustainable approaches, products, and technologies.
☐ National Strategy for Integrated Water Resources Management (2000 – 2025) (NSIWRM) and annual sector plans	2006	☐ The project will support the ultimate objective of the strategy, which is to stop continuing water deficits and quality deterioration and set a base for sustainable development

~~101.~~108. As shown above, the existence of national policies and strategies is limited. In fact, Libya has not had a national development plan since 2011, which impedes coherent national planning and hampers the ability of international development partners to align their support to national priorities. There is also no national agriculture strategy or plan. However, there is a plan to formulate a national food security plan. Therefore, the project aligns with the UNSDCF for Libya 2023-2025 and identified national priorities in key sectors and alignment with these, through consultations with key actors from the national government and local authorities.

E. Project compliance with relevant national technical standards

~~102.~~109. The proposed project is designed to meet all relevant international and national technical rules, regulations, standards, and procedures. During the preparation phase, all the relevant rules, regulations and standards have been identified, including steps / procedures to comply per proposed activities / interventions.

~~103.~~110. Regarding any environmental and social risks screening and impact assessments and related approvals required by Libyan law, the following mechanism is in place to obtain environmental approvals for projects.

~~104.~~111. The ~~E~~environment ~~G~~general ~~A~~authority (EGA) is an independent autonomous institution which exercises its duties in accordance with the environmental law no. 15 of 2003 to protect and improve the

environment. The law specifies public duties and the other related parts towards preserving the environment in the following fields:

- ☐ General Provision (Articles 1 – 8)
- ☐ Air Pollution (Articles 10 – 17)
- ☐ Protection of Sea and Marine wealth (Articles 18 – 38)
- ☐ Protection of Water Sources (Articles 39 – 47)
- ☐ Protection of Foodstuffs (Articles 48 – 50)
- ☐ Environmental Hygiene (Article 51)
- ☐ Protection from Common Animal Diseases (Article 52)
- ☐ Protection of Soil and Plants (Article 53 – 55)
- ☐ Protection of Wildlife (Article 56 – 57)
- ☐ Biological Safety (Article 58 – 63)
- ☐ Penalties (Articles 64 – 76)
- ☐ Final Provisions (Articles 77 – 79)

~~105.~~112. Process of EIA: The Environment Impact Assessment includes the following stages:

Table 20 Steps Environment Impact Assessment in Libya

Steps	Responsibilities
1. Project preparation	Usually made by the developer (owner) and the consultant.
2. Notification to EGA	The developer will notify EGA about the plan (field survey, activity type, etc.)
3. Screening and scoping	The field survey (data acquisition) and the data arrangement in the office will be made by the consultant according to the owner plan
4. Environmental studies	The studies will be achieved and completed.
5. Submission to EGA / EIA department	EIA, EBS studies are submitted to EGA.
6. Reviewing and evaluation of studies	The evaluation is done by the EIA dept. staff
7. Consultation with EIA manager	Discussion with the manager about the permission condition depending on the evaluation of the introduced study
8. Final decision	The final decision will be issued by EIA Manager or EGA secretary

~~106.~~113. According to EGA, Environmental Impact Assessment report should include the following:

- ☐ Executive Summary
- ☐ General information
- ☐ Legislation
- ☐ Description of the proposed project
- ☐ Description of the surrounding environment and current situation
- ☐ Description of the environmental impacts of the proposed project
- ☐ Description of environmental impact assessment
- ☐ Description of mitigation actions
- ☐ Description of alternatives
- ☐ Environmental Management Plan

114. All proposed project activities fall below the threshold where environmental and social impact assessments (ESIAs) are required by national law. Thus, there are no EIA required by national law during the preparation or implementation of the project. Although ESIA are not required by national law, a risk~~s~~ screening and impact assessments will be conducted in line with the Environmental and Social Policy (ESP) and Gender Policy (GP).

~~107.~~115. International conventions Signed by Libya:

- ☐ Convention on Preservation of Fauna and Flora in their Natural State (London, 1933)
- ☐ African Convention on the Conservation of Nature and Natural Resources (Algeria, 1968)
- ☐ Convention on Wetlands (Ramsar, 1971)
- ☐ World Heritage Convention (Paris, 1972)
- ☐ Convention on International Trade in Endangered Species of Fauna and Flora (CITES Washington, 1973)
- ☐ Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona, 1976)
- ☐ Convention on the Conservation of Migratory Species of Wild Animals (Bonn, 1979)
- ☐ United Nations Convention on the Law of the Sea (UNCLOS) (Montegoby, 1982)
- ☐ The Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal (Basel, 1989)

- ☐ Bamako Convention on the Ban of the import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa (Mali,1991)
- ☐ Convention on Biological Diversity (Rio, 1992)
- ☐ 16th November 1994. Libya has signed but not yet ratified the convention.
- ☐ Cartagena Protocol on Biosafety to the convention on biological diversity (Montreal, 2000)
- ☐ Framework Convention on Climate Changes (FCCC).

~~108.~~116. **Gender.** Libya is party to several international instruments that provide for gender equality under the law, including the Cconvention on the Eelimination of all forms of Ddiscrimination Aagainst Wwomen (CEDAW~~cedaw~~), which Libya ratified in 1989. In practice, however, much of women's legal status is defined by the pre-2011 previous political system's family and personal status laws that are in part derived from the Mmaliki school and include provisions for marriage, divorce, and inheritance. Article 7 of the 2017 constitutional proposal represents a strong step forward for gender equality in Libya. Nevertheless, the Libyan legal system does not adequately protect women against domestic violence, honor crimes or rape[38]

~~109.~~117. **Youth.** The legal and policy environment for youth is mixed. The draft constitution of 2017 has not been ratified, so Libya operates without a legitimately enacted constitution. Some laws, if they were implemented, might have positive effects on youth. These include the legal right to equal pay for men and women ("law 12"), the 10 percent quota for women in elective office proposed in the draft election law, and the decentralization law ("law 59").

Table 21 Overview project compliance with relevant national technical rules, regulations, and standards

Project output/ activity	Relevant rules, regulations, standards (to comply to AF principle 1)	Authorizing offices and procedure / steps to comply and authorizing offices
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women. 13 climate change vulnerability assessments with priority adaptation actions. **Output 1.2.** National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and ~~women~~women. **Output 1.3.** Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy. Relevant activities ~~fro~~for compliance include: - Preparation of the district and community-level plans - Preparation of national climate resilient agriculture / livestock strategy	~~Libya national and local governance and planning processes~~The process of approving new strategies/policies by the ministries of Environment and Agriculture.	Authorizing authority: - In coordination with ministry of environment, ministry of agriculture, and ministry of water resources. Required process to comply. - ~~Libya governance and planning processes~~Submission of the draft 13 assessments to the Mministry of agriculture ~~and~~ ;Mand Mministry of environment for review. - Finalizing the 13 assessments and submitting them to both ministries for approval. - Submission of the draft national strategy to the Mministry of environment, Mministry of agriculture, Mministry of water resources and the different stakeholders (including relevant civil society organizations and international partners) for review. - Finalizing the national strategy and approval by the Mministry of environment and Mministry of agriculture. Approvals required: - Endorsement of strategy by above authorities~~d~~ and district authorities (though workshops)

[38] UN Women (2020). The economic and social impact of conflict on Libyan women.

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- Endorsement of the national climate resilient agriculture / livestock strategy		

Output 2.1.
~~Climate change resilient crops (i.e., drought /heat resilient and salt resistant crop varieties) implemented in four (4) districts in the northwest of Libya, including through~~ Aaround 5900 grant packages (of USD 560 each) provided to~~to~~ farmers, ~~women~~women, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and salt~~water~~ intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation.
 	
Output 2.2
Relevant public Institutional staff, farmers and women trained to implement, maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans.
 	
Relevant activities for compliance include:
- Procurement of items for the 5900 grant packages.
- Preparation of district and community-level plans to include operation and maintenance arrangements, to increase the sustainability of ~~the project~~the project interventions.
	National ~~P~~procurement policy
	
	~~Libya national and local governance and planning processes~~
	
	Agriculture
	- Law No.15 of 1992 on the protection of agricultural land.
	- Resolution No. 176 of the Secretary of the General popular Committee for Agrarian Reform implementing the Pesticides Regulation.
	- Resolution No. 740 regulating the use of pesticides.
	- Resolution of the General Popular Committee No. 308 of 1987 on measures for facing agricultural diseases and epidemics.
	- Law No. 9 of 1985 on the establishment of Tasharukiat;
	- Law No.2 of 1974 on Cooperative Farms.
	- Law No.17 of 2015 amending a provision of the Law No.2 of 1974 on the Cooperative Farms.
	- ~~Resolution No. 740 regulating the use of pesticides.~~
	- Law No 27-plant protection law 1968 (esp. article 10, 12, 14 and 15)
	
	Water allocation:
	- Law 3-year 1982 on regulating the utilization of water resources.
	- General People's committee memo no 612 / year 1993 on Manmade River water allocation
	- Law 15-year 2003 on environmental protection and enhancement
	
	Water quality and national drinking Water
	- Law 3-year 1982 on regulating the utilization of water resources.
	  - Libyan standard 82-year 1992 drinking water standards
	  - Law 106 / 1976 on health
	- Law 15-year 2003 on environmental protection and enhancement
		National, UNOPS and IFAD policies will be followed.
		
		~~See points under output 1.1. and 1.2~~
		
		Authorizing authority:
		- Ministry of ~~a~~Agriculture;Agriculture.
		- Ministry of Health
		- Ministry of ~~e~~Environment
		- Ministry of Water Resources
		
		Required process to comply (Output 2.1)
		- ~~Check / control~~Verify if targeted lands ~~is~~ are dedicated to agriculture through the General Popular Committee for Agrarian Reform.
		- Verify that water sources are licensed by the General Popular Committee for Agrarian Reform (in addition to trainings and geological surveys, see ESMP)
		- ~~Check / control use~~Ensure that the ~~of pesticide and species~~pesticides used by beneficiaries are registered within the General Popular Committee for Agrarian Reform.
		- Support cooperatives and obtain any needed licenses by local authorities as stipulated in the Tasharukiat law.
		- ~~Set-up of cooperatives in line with national guidance~~
		- Obtain Permit / health ~~certificate~~certificate for import of plants from the plant protection department in the Ministry of Agriculture.
		- Obtain permit ~~F~~for seeds from the plant protection department in the Ministry of Agriculture and ensure the following:
		1- To attach with the seeds complete information in terms of country of origin, harvest date and germination rate.
		2- The seeds must not be genetically modified.
		3- It must be free of impurities, weed seeds, and seeds of other crops.
		
		Required process to comply (Output 2.2)
		- Roadmap for seed multiplication must be developed in consultation with the plant protection department in the Ministry of Agriculture to include licensed seeds only.
		
		Approvals required:
		Approval of ministries required through steering / technical committees, the General Popular Committee for

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		Agrarian Reform, and the plant protection department~~Authorizing authority:~~ ~~- Ministry of Water Resources~~ ~~- Ministry of Environment~~ ~~- Required process to comply~~ ~~- Check / control water quantity and quality and source if used~~ ~~Approvals required:~~ ~~- Approval of ministries required through steering / technical committees~~ - ~~See above~~
Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e. rangelands ~~management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and ~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock. **Output 3.2.** Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans.	National ~~P~~procurement policy ~~Libya national and local governance and planning processes~~ Agriculture - Law No.15 of 1992 on the protection of agricultural land. - Resolution No. 176 of the Secretary of the General popular Committee for Agrarian Reform implementing the Pesticides Regulation. - Resolution of the General Popular Committee No. 308 of 1987 on measures for facing agricultural diseases and epidemics. - Law No. 9 of 1985 on the establishment of Tasharukiat; - Law No.2 of 1974 on Cooperative Farms. - Resolution No. 740 regulating the use of pesticides. - Law No 27-plant protection law 1968 (esp. article 10, 12, 14 and 15) Livestock and Rangeland management - Law No.5 of 1982 on the protection of grasslands and forests	National, UNOPS and IFAD policies will be followed. Authorizing authority: - Ministry of Agriculture. - Ministry of Health - Ministry of Environment - Ministry of Water Resources Required process to comply (Output 3.1) - Verify if targeted lands are dedicated to agriculture through the General Popular Committee for Agrarian Reform. - Verify that water sources are licensed by the General Popular Committee for Agrarian Reform (in addition to trainings and geological surveys, see ESMP) - Ensure that the pesticides used by beneficiaries are registered within the General Popular Committee for Agrarian Reform. - Support cooperatives and obtain any needed licenses by local authorities as stipulated in the Tasharukiat law. - Obtain the necessary license for building traditional water conservation and harvesting systems from the General Popular Committee for Agrarian Reform.

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Relevant activities for compliance include: - Procurement of items for the 365900 grant packages. - Preparation of district and community-level plans to include operation and maintenance arrangements, to increase the sustainability of ~~the project~~the project interventions.	- Law No.15 of 1989 on Animals and Trees Protection. Water allocation: - Law 3-year 1982 on regulating the utilization of water resources. - General People's committee memo no 612 / year 1993 on Manmade River water allocation - Law 15-year 2003 on environmental protection and enhancement Water quality and national drinking Water - Law 3-year 1982 on regulating the utilization of water resources. - Libyan standard 82-year 1992 drinking water standards - Law 106 / 1976 on health Law 15-year 2003 on environmental protection and enhancement~~Agriculture, water allocation and water quality standards~~ ~~-~~ ~~- Rangeland management~~ ~~- Law No.5 of 1982 on the protection of grasslands and forests~~	- Ensure that project beneficiaries have the required permits for grazing from the General Popular Committee for Agrarian Reform. - Ensure that no slaughtering of female camels occurs by project beneficiaries except if a license is obtained from the General Popular Committee for Agrarian Reform. Required process to comply (Output 3.2) - N/A Approvals required: Approval of ministries required through steering / technical committees and the General Popular Committee for Agrarian Reform~~See points under output 1.1. and 1.2~~ ~~See points under output 2.1 and 2.2~~ ~~Authorizing authority:~~ ~~F. Ministry of environment~~ ~~Required process to comply~~ ~~- Check / control if land is protected~~ ~~Approvals required:~~ ~~- Approval of ministry is required through steering / technical committees~~
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and	~~Libya national and local governance and planning processes~~Agreements with	Authorizing authority: - In coordination with M~~m~~inistry of environment, M~~m~~inistry of

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learning of climate change resilient practices, products, and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots. Relevant activities for compliance include: - None	farmers on land use for FFS and demo plots.	agriculture, and Mministry of water resources Required process to comply. - ~~Libya governance and planning processes~~Memorandum of Understandings with lead farmers on the implementation of FFS/demo plots on their lands. Approvals required: - N/A

110. ~~Potential foreign approaches, products and technologies may be introduced. These should comply with national laws / standards.~~

~~G.~~F. Duplication of project with other funding sources

Table 22 Other projects in Libya, avoidance of overlap and lessons used.

Relevant projects/programme (incl. amount and imply agency)	Summary / focus	Geographical focus (i.e., avoiding overlap)	Thematic overlap, complimentary or potential synergies
GCF readiness project Libya 2017: Preparation of Libya to climate finance through GCF country programming and the establishment of the GCF designated national authority.	Strengthen focal point and Strategic Engagement Framework with the Fund	No geographical focus	No thematic overlap as the GCF project was limited to NDA/ focal point team set-up and strengthening and to the development of the Strategic Engagement Framework with the GCF.
FAO and AICS and MoWR 2021-23 (USD 1,004,843$) Towards efficient agriculture water use in Libya / Monitoring, ~~evaluation~~evaluation, and rationalization of water use for the agriculture sector in Libya.	Build national capacities for Monitoring, evaluation, and rationalization of water use for the agriculture sector	Country-wide capacity building with focus Fezzan region.	The project has recently started and is underway. There is some thematic overlap with capacity strengthening for water management. Therefore, this project can build on capacities strengthened at national level to rationalize water. As FAO is an executing partner to this project, there is strong coordination already. Any outcomes of any assessment conducted by FAO will feed into this project (esp. agriculture strategy) while made available. Any overlap in activities will be avoided.
FAO 2021-24 (USD 288,000$) Evaluation of irrigation, infrastructure crop mapping and estimation of agricultural water use-ICAWU.	Method developed and tested to evaluate 'performance' of irrigation infrastructure and water consumption crops	Nation-wide with some test locations in the south	There is a partial thematic overlap as the FAO project addresses agriculture water management and irrigation. However, the FAO project does not draw attention to climate change risks nor to adaptation. As FAO is an executing partner to this project, there is strong coordination already. Any effective method used, or assessment conducted by FAO will feed into this project (esp. agriculture strategy and selection of crops) while made available. Any overlap in activities will be avoided.
WFP Facilitation of the Agriculture Information Networking among smallholder farmers in eastern and southern Libya (including Sebha) through WhatsApp groups.	Providing agriculture information	Eastern and Southern Libya	There is a partial thematic overlap as the WFP initiative addresses food production. However, it does so from a humanitarian aid perspective aimed at fostering food security; efficient water use, and climate change adaptation are not a primary concern. Possible complementarities/ synergies: information sharing on good practices that could be replicated. Coordination is already established through the food security coordination cluster in Libya.
IFAD – AF "Economic, Social and Solidarity Insertion for Resilience in the Governorate of Kairouan- IESS-Adapt" in Tunisia.	Includes rangeland management with the purpose of avoiding land degradation and efficient water use	Tunisia (No geographical overlap but similar	There is a thematic overlap regarding rangeland management, grant packages and the involvement of women and vulnerable groups. Lessons learnt from the Tunisia project are being used and tailored in the present AF project, especially

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		geographical context)	related to rangeland interventions with the purpose of avoiding land degradation and efficient water use is used.
IOM regional research project in Libya and Sudan with the purpose to get a better understanding of the linkages between climate change and environmental degradation, community cohesion, gender dynamics and mobility decisions from a regional perspective.	Research in Libya focuses on water use	Research project so no concern of overlap	The project just started. Coordination is already established. Thematic overlap is climate change assessments being conducted, although the focus is on mobility / migration. Possible complementarities/ synergies: using the outcomes of the study findings on climate change impacts on community cohesion and mobility to ensure project interventions can contribute to reinforce cohesion and stability in target districts and integrating these findings in the climate change vulnerability assessments.

~~H.~~G. Learning and knowledge management component to capture and disseminate lessons learned.

~~111.~~118. Effective knowledge management – including the collection, ~~generation~~generation, and dissemination of information – is an important component of climate change adaptation. Learning from adaptation activities and being able to transform knowledge into products that are targeted at various audiences is essential to effective climate change adaptation. Component 4 will compile and disseminate project information, ~~experiences~~experiences, and results on an on-going basis. Dissemination of information will be through field visits, workshops and seminars, guidelines, a website, social media (YouTube, Facebook, Instagram etc.), posters and leaflets. In addition, engagement with relevant academic and research institutions will be explored ~~in order to~~to capitalize on their technical knowledge and ensure they absorb the lessons learned/best practices from the project. Finally, the project will ensure that knowledge management responsibilities are included in the Terms of Reference of at least one of the project staff.

~~112.~~119. As part of project component 4, eight~~nine~~ Farmer Field Schools (FFS) are proposed. ~~The nine FFS sessions will be divided into 4 FFS on crops, 4 FFS on livestock and 1 on livelihood diversification for women and youth.~~ The beneficiaries' selection will follow the same criteria as the grant packages and the same quota for women and youth will apply. The topics to be covered include:

~~113.~~120. Climate change adaptive (dryland) agriculture processes, ~~practices~~practices, and techniques, including on using / managing, ~~maintaining~~maintaining, and replicating:

a. Drought resilient crop varieties.
b. Salt resistant crop varieties.
c. The use of (traditional) water conservation, harvesting and storage techniques (incl. establishment of contour ridges, buns or bench terraces, water tanks).
d. Efficient, sustainable and climate change resilient management of soil and irrigation (incl. drip irrigation, plowing before the start of the winter, use of chisel plows, use of organic fertilizer, pest management, management by cooperative societies / associations (to protect natural pastures and manage grazing and wells, etc.).

~~114.~~121. Climate change adaptive crop-livestock-rangeland production systems / processes, practices, and techniques, including on using / managing and maintaining and replicating:

a. The use of (traditional) water conservation, harvesting and storage techniques (incl. establishment of contour ridges, buns or bench terraces, water tanks.
b. Efficient, sustainable and climate change resilient management of soil and irrigation (incl. drip irrigation, plowing before start of the winter, use of chisel plows, use of organic fertilizer, pest management, management by cooperative societies / associations (to protect natural pastures and manage grazing and wells, etc.).
c. Integrated crop-livestock systems.
d. Rotational grazing.
e. Better feed practices (e.g., using cacti) and animal health.

~~115.~~122. The topic targeting women would focus on the same topics but will also include off farm diversification practices including but not limited to food processing, packaging, marketing, etc.

~~116.~~123. The project will develop partnership with universities and research centers across the ~~countries through~~country through MoUs to foster research in climate change adaptation in crops and livestock subsectors to ensure sustainability of component 2 and 3 interventions. The project will also conduct a ToT programme of ~~8~~9 sessions for 20-25 trainers (at least 8 women and 8 youth) selected with the help of universities and research centers who would then manage the ~~8~~9 Farmer Field Schools (FFS) sessions envisaged under this component project. These experts will then ensure that a knowledge base is built that will create a multiplier effect across the target communities. In addition, the project will conduct ~~4~~5 field visits to demo plots on some of the best agricultural and livestock practices discussed at the FFS across the different locations. The beneficiaries of the field visits will be the FFS graduates who have expressed their willingness to participate while additional beneficiaries can be accommodated if the budget suffices.

~~117.~~124. To ensure that the national climate resilient agriculture/ livestock strategy reaches the local level, the project will produce guidelines on mainstreaming climate resilience into local planning for crops and livestock sub-sectors. The guidelines will explain the steps towards vertical integration in planning where target districts can align with the national strategy and ensure climate resilience mainstreaming is sustained after the project ends.

~~118.~~125. In component 4, ~~T~~the project will run 5 sustainability-oriented workshops ~~in total~~ that will be mainly focused to address sustainability and maintenance concerns. In component 1, o~~O~~ne national workshop will bring together policymakers from MoA, MoE and other government stakeholders to discuss the adoption of the national climate resilient agriculture/ livestock strategy as well as ensure municipal responsibility and strengthen farmer organizations to ensure sustainability. The national workshop will also bring together academia and research institutions to build partnerships and discuss filling the knowledge gap in the climate change and agriculture discourse in Libya. The beneficiaries of ~~the~~ these workshops will be nominated by the relevant government, local government, ~~academia~~academia, and research institutions. As a complement to the national workshop, ~~In addition, in~~ component 1 envisages 13 training workshops at the district level. These will bring ~~in each district (venue renting, materials, other logistics...) (lump sum per workshop) 4 workshops will take place in 4 districts to bring~~ together the national and local government, community leaders and other relevant stakeholders~~ministry representatives~~ to present and discuss respective climate hazards and risks identified in each district, ~~the~~ the adoption of the guidelines and the implementation of the national strategy at the local level. The nomination of the participants of the workshop will be carried out in consultation with local ~~the~~ government and community leaders.

~~119.~~126. The project will also produce a range of knowledge products to capture best practices and lessons learned. It will also produce 2-3 videos of success stories and stories from the field and will rely on social media content to raise awareness on climate change adaptation practices in the agriculture to ensure wider dissemination.

Table 23 Learning objectives and knowledge products

Project output/ activity	Learning objectives (lo) & indicators (i)	Knowledge products
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women. 13 climate change vulnerability assessments with priority adaptation actions.	Learning objectives: - Identify and understand climate change hazards risks. - Identify adaptation measures and priorities. Indicators: - No of assessment conducted (in districts) - No of maps	- 13 Climate change vulnerability and hazards risks assessment - Risk maps - Vulnerability maps and data

Output 1.2. National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, ~~prioritized~~prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women.	Learning objectives: - Accessible information on climate change hazard risks, vulnerabilities, and adaptation options Indicators: - No of Climate change resilient agriculture strategy	- Climate change resilient agriculture strategy
Output 1.3. Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.	Learning objectives: - Key actors to be able to support and conduct assessment. Indicators: - No of trainings	- Training reports / guidelines
Output 2.1. A~~a~~round 5900 grant packages (of USD 560 each) provided to~~to~~ farmers, ~~women~~women, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation.	Learning objectives: - Understand feasible, cost-effective climate change adaptation options in the agriculture / livestock sector. - Understand operation and maintenance requirements and practices. Indicators: - No of training workshops to support above. - No of community and / or maintenance plans	- Training sessions ~~workshops~~ - ~~Vocational trainings~~ - Community and / or maintenance plans - Road map for seeds distribution and multiplication
Output 2.2 Relevant public Institutional staff, farmers and women trained to implement, maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans.		
Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e. rangelands ~~management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and ~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock.		
Output 3.2. Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans.		
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and	Learning objectives: - Understand replication techniques of above.	- FFS - TOT sessions - Field visits

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learning of climate change resilient practices, products and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, Farmer Field Schools (FFS), a ToT programme and field visits to demo plots.	Indicators: - No of tools / supporting products for replication	- Workshops - Guidelines - Website - Social media (YouTube, Facebook, Instagram etc.) - Posters and leaflets.

~~I.~~H. Consultative process

~~120.~~127. The proposed project has been designed based on inputs from key stakeholders in Libya and project beneficiary groups, including farmers, pastoralists, women, and youth. During project preparation, five types of consultations / inputs shaped the proposal:

1. To align with National priorities, including with the ministry of environment, the ministry of agriculture and the ministry of water resources. The target areas and project activities have been selected together.
2. To align with District-level and community priorities, including with district representatives and vulnerable groups, women, and youth.
3. To collect data and information on climate change risks, vulnerabilities of potential ~~, and target~~ beneficiaries, including farmers, pastoralists, women, and youth (through research and individual/ focus groups consultations). ~~surveys and university involvement.~~
4. To avoid duplication with other projects, including with ~~the government~~the government, UN agencies, etc.
5. To identify potential environmental and social risks and impacts, in line with AF and IFAD policies.

~~121.~~128. During the concept note preparation phase, a technical working group was established to support the preparation of this proposal. Representatives from the following institutions ~~intuitions~~ / organizations were part of the working group: the ministry of environment; the ministry of agriculture; the ministry of water resources; UNOPS; FAO; universities. Also, a rapid climate change vulnerability assessment was conducted through consultations / surveys with the purpose to collect data in the four ~~northwestern~~north-western target districts. For a summary of the outcomes see **Table 13~~6~~**.

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~~122.~~129. As part of the rapid climate change vulnerability assessment, representatives of the following were surveyed / consulted.

Table 24 Surveyed / consulted as part of the rapid climate change vulnerability assessment.

Zuwara	Zuwara Municipality	Sanousi Hamoud
	Zuwara Municipality (including farmers representative)	Ali NZDIF
Aljfara	Ministry of Youth Branch Janzour	Mahmoud Ghnidi
	Municipality of Janzour	Farai Aban
	Women's Support and Empowerment Office	Huda Al Hadi Shuwaikh
	Agriculture and Livestock Sector (Suani Ben Adem)	Abdul Mawla Abu Ghanima
Nalut	Nalut Municipality, including the authority of youth, the municipality's youth office)	Muhammad Omar Abu Saw
	Nalut Municipality	Abdulwahab Al-Hajam (the mayor)
	Agriculture and Livestock Office	Mohamed Kunis
	For You Libya Group, which is a euro-Mediterranean women's foundation	Najua Eiad Elhijam
Al jabal al Gharbi	Ghiryan munciplity	Yosef Bediri (Ghiryan mayor)
	Ministry of Agriculture & Farmers' Welfare Gharyan	Osama Al-Tayeb Al-Qunfud
	Agriculture office	Ashur Swiss
	Agriculture Bureau	Haitham Abdullah Arhouma
	Women's Support and Empowerment Office	Saeda Alamr

~~123.~~130. In total, the following group representatives were consulted:

a. 6 Associations of farmers/breeders in the districts of Al jabal al Gharbi, Zuwara, Nalut and Jafara.
b. 2 Youth Organizations in Nalut and Aljfara districts.
c. 3 women's organizations in the districts of Jabal al Gharbi, Nalut and Aljfara.
d. 4 municipalities Gharyan, Nalut, Janzour and Zuwara.
e. 1 young climate change activist from the Mulan Project.

~~124.~~131. The above consultations were conducted in June, ~~July~~July, and August 2022. Consultation questions focused on identifying main climate change hazards experienced, impact of hazards, adaptive capacity, and barriers to adapt, possible adaptation measures and possible concerns if potential measures would be implemented. Impacts, adaptive capacity, ~~barriers~~barriers, and concerns would be specific per group. The technique used for the consultations was a survey / interview.

~~125.~~132. During the full proposal preparation phase, further consultations were conducted with representatives from the~~and in~~ target area municipalities and with potential project beneficiaries, including farmers, pastoralists (including internal migrants), women and youth. The topic was the same as above with a focus on locating specific climate change impacts / issues and response needs and identifying possible risks / concerns of ~~possible~~ the proposed project interventions and operation and maintenance arrangements required. The technique used for the consultations were~~as~~ interviews and focus groups discussion. **Table 25** provides an overview of the interviews conducted between ~~in~~ December 2022 and ~~and Jauary~~April 2023. The main concerns of the potential project beneficiaries are indicated in **Figure 17** and paragraph 51. Details of concerns are mentioned in **Table 26**, as well as how inputs of consulted people and groups are incorporated in the proposal.

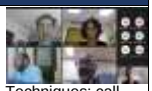
~~126. During the project implementation stakeholders' views and concerns will be heard through the participatory assessment and planning process as national, district and community level with quotas for participation of specific groups where needed.~~

Table 25~~24~~ C ~~Surveyed / c~~onsultations held~~ed~~ during the full proposal preparation phase.

Description	Service	Quantity	Location
Interviews with municipalities	In-depth Interviews	6	Zuwara
Interviews with Municipalities	In-depth Interviews	6	Alji~~u~~fara
Interviews with Municipalities	In-depth Interviews	6	Al jabal al Gharbi~~Jabul Gharbee~~
Interviews with Municipalities	In-depth Interviews	6	Nalut
Interviews with Ministries	In-depth Interviews	2	Tripoli
Interviews with potential farmer beneficiaries	In-depth Interviews	4	In target areas
Interviews with potential livestock herder beneficiaries	In-depth Interviews	2	In target areas
Interviews with agriculture experts	In-depth Interviews	2	Tripoli
Focus group discussions with farmers, incl. youth	Focus group discussions	3	In target areas
Focus group discussions with pastoralists, incl. internal migrants and youth	Focus group discussions	1	In target areas
Focus group discussions with women only	Focus group discussions	2	In target areas

~~127.~~133. **Table 26** provides an overview of the main actors consulted and how outcomes have been incorporated in the project proposal design.

Table 26 overview of outcomes of consultations and how these have been incorporated in the project ~~design~~design.

Stakeholder		Outcome / conclusion	Incorporation in project design	Proof
Main	Sub			
Ministry of E~~e~~nvironment	Ahmed Abdulqader Alsoudani AF NDA	- Different ministries have different geographical priorities. To ensure the involvement of all three ministries, activities covering not only the north-west, but also the~~the north,~~ east and south should be~~are~~ included. - Agreed project target area and interventions in line with ministry priorities.	- Components 1 and 4 cover the northwest, northeast and south, ensuring the involvement of all three ministries	 Techniques: call and in-depth interview Data: July 2022 and Jan 2023. Detailed report available on request

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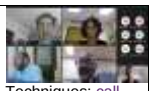
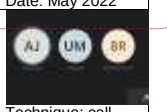
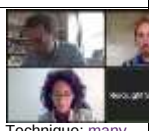
Ministry of Wwater Rresources	Fathe Abubker Director of International cooperation Office Rep: Rashid elfutaisi Mr. Muhammad Hamila. Director of Information Technology Department.			 Techniques: call and in-depth interview Data: July 2022 and Jan 2023. Detailed report available on request
Ministry of Agriculture, Livestock and Marine Resources	Hana Aghel, Director of International cooperation Office Rep: Sadiq Kamuka Dr. Amal Aborakhees.director of women support and empowerment office			 Techniques: call and in-depth interview Data: July 2022 and Jan 2023. Detailed report available on request
Embassy of Libya in Rome	Dr. Ali Kafu	- Support coordination between IFAD and ministries in Libya		Multiple e-mails and meetings in Rome
Target districts considered west of Tripoli	Zwara Azzawya	- For details see description about the rapid climate change vulnerability assessment outcomes in Table 13 and the text below it and Table 24, and Table 25 and Table 26	- A planning and decision-making mechanism / process to ensure participation and equal distribution of project benefits to women, youth and other vulnerable groups is put into placeplace. - Climate change impacts on different groups have been identified, as well as specific needs and concerns	Detailed reports are available on request
Target districts considered South-west of Tripoli	Nalut (focus on north) Al jabal al Gharbi (focus on north)			
FAO	Helen Sow Faycel Chenini	- FAO uses an innovative methodology to analyze water consumption of different crop systems and damage of irrigation infrastructure through current projects and will test the methodologymethodology. - FAO is establishing a national coordination mechanism between Ministry of agriculture, water, meteorological center. Lessons learned: - Reached only 3 % women of targettarget. - Limited farmer association; women unions	- Ensure women involvement targets are feasiblefeasible. - Support strengthening or establishment of associations / organizations.	 Technique: call Date: May 2022

Germany / GIZ	Anke Scholtz Emami Morteza	- Youth (17-35) centers have been established in selected municipality – - Main challenges of projects o Involvement government o Travel / logistics with companions required for women	- Involve youth centers where possible. - Minimize travel as much as possible	 Technique: call Date: May 2022
IOM	David Arnold Masako Ueda Raffaele Bertini Genevieve Lavoie	- IOM will have a regional research project targeting Sudan and Libya focusing on linkage between climate change and mobility / displacement. Expected result: baseline info on the topics	- Coordinate on data production and sharing. - Use-baseline information / tool / report for CCVA and visa-versa	 Technique: call Date: June 2022
UNDP	Mathew Brubacher	- According to UNDP, project priority should be water rationalization (as aquifers may run out and pumping is very costly) Challenges: - Limited maintenance and funding desalination plants and wastewater treatment	- Focus on efficient water use. - Avoid focus on desalination plants and wastewater treatment as this is not feasible (to costly and basic infrastructure not present)	 Technique: call Date: May 2022
UNFPA	Salman Khalid	- UNFPA focuses on the following activities in Libya: - Sexual and reproductive health - Gender-based violence (GBV) prevention and response - Youth - Covid-19 response		Technique: e-mail exchange Date: June 2022
UN Women	Ghada Kannou	- Libya is conservative / traditional if it comes to women (~~e.g.~~ e.g., women don't own land; women engineers not allowed to work in the field), but young women increasingly active. - Use women traditional knowledge on water resource use. - Terminology of gender equally is avoided as negative in Libya. - Use quota for women involvement at ministerial level (through women empowerment units in each ministry – esp. Ministries of planning, social affairs) - Access to women at local / municipal level through women councilors	- Conduct analysis of opportunities and risks of women to be involved in agriculture / livestock (incl. using women knowledge on water) as part of CCVAs planned. - Use quota at ministerial level to have women reps in steering committee. - Work with women ~~councilors~~councillors at municipal level and through families - Consider working in yards of houses	 Technique: call Date: Nov 2022
UNOPS	Claudia Rosano Nathalie Angibeau Sylvain Cote	- Partnership with IFAD in Libya	- UNOPS to support proposal preparation on the ground and execute ~~interventions~~project interventions	 Technique: many calls Date: May 2022- April 2023

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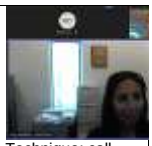
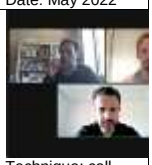
USAID	Kelsey Dunn Rabab Shamayleh	- USAID focuses on economic growth and some climate change mitigation measures through support of renewable energy.		 Technique: call Date: May 2022
WFP	Shaker Alozzi	- IFAD became member of the Food security Cluster, which coordinates on food security in Libya: WFP activities include: - Food distribution - Response to seasonal flooding in the south and east - Post humanitarian agriculture and fishery activities in Fezzan region.		 Technique: call Date: May 2022
World Bank	Henriette von Kaltenborn-Stachau Lyad Rammal	WB main focused is on the water sector and (future) activities include: - Nationwide desalination and institutional capacity building – coordinate on desalination for salt resilient crops - Improving data management (and help the water and wastewater company to prepare and a request for Bid), water emergency plan for Tripoli and capacity building and training on the procurement and contract management.	- Avoid focus on desalination plants and wastewater treatment	Technique: E-mail exchange Date: May 2022
University of Tripoli Faculty of Engineering	Dr Khaled Dedesh Solar Energy and Climate change	- Proposed target areas and interventions are relevant and priorities. - Suggestions were made to include other areas as well.	- Expert from university supported the development of the full proposal	 Technique: call Date: July 2022
University of Tripoli Soil and Water Department, Agriculture Faculty	Prof Ahmad Ibrahim Kamaj Water Sci, Irrigation and Water resource management			
Climate change activist working at Mulan project	Nissa Bek Derna	- There is no clear national plan of environmental management / cc or leadership. - There is a need for ~~waste water~~wastewater treatment and waste management but no national funding. - Olive harvest worst in 2021 - Low awareness climate change - Issues in project target areas: groundwater pollution; inefficient irrigation. - Potential risk around scarce resources	- Involve president council, if possible - Support awareness about climate change - Involve community leaders to ensure acceptance on working on climate change and with women. - Request Nissa to participant in national-level meetings	Technique: Call Date: July 2022

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SANAD Organization for development and humanitarian Assistance – NGO SANAD works all over Libya and has many offices across the country. ~~Insert interview with NGO~~	Phone Interview with Ms. Thuraya Khalifa Al-Joweily. Director	- IDPs currently present are mainly due to conflict, only a small percentage can be considered climate-induced DPs. - Most of the IDPs come from the south and east as well as Misrata governorate. - Most of the climate-induced DPs come from mountains where no groundwater wells can be drilled. - IDPs vary in their economic status, but mostly live in cheaper areas (more rural). - Challenges: No social network, loss of assets, loss of financial means, potential tension with other tribes (e.g., Tarhuna) and lack of skills. - Some IDPs work in agriculture and livestock but most in other professions handicrafts. They mainly rely on aid. - Involving IDPs in planning should not be a problem, no tension if transparency is ensured. - Involving IDPs in the project should be very useful because they are very much in need, they are not investors they are just looking for livelihoods.	- Integrate IDPs in planning as part of the most vulnerable group and do not exclude them as beneficiaries. - Develop conflict resolution mechanisms for involving IDPs to avoid tensions with host communities. - Focus on climate induced IDPs who are working in the livestock sector	
Youth of Tokta for Voluntary and Humanitarian Work - NGO	Phone Interview with Mr. Mohamed Salem President	- IDPs are mainly due to political/conflict reasons. - IDPs are mostly from Sahel (mid-Libya) and moved to north and south. Many IDPs have already returned now to where they came from. - Movement is not easy, so not it is unlikely that a lot of people will migrate due to climate reasons. - People tend to adapt with climate change through their own means including putting pressure on the government to build dams, deeper wells, water harvesting from roofs and water harvesting ponds. - No data available for the north-west. Taking statistics from Ghdames as an example: 30% of IDPs are in government positions, 40% work in different professions (transport, handicrafts, etc.) and 30% are unemployed or illegal stuff. There is no water for IDPs to engage in agriculture. - Challenges/barriers: Access to electricity, access to education, unemployment, no access to water due to lack of means/financial resources to access groundwater. - IDPs can be integrated in project planning and activities but there is a need for psychological support and conflict resolution mechanisms. -	- Develop separate planning sessions with IDPs in addition to conflict resolution mechanisms to avoid tensions with host communities. - Focus on climate induced IDPs who are working in the livestock sector.	
Al-Rohaibat Agricultural Association	Focus group discussion with farmer (project beneficiaries) with focus on droughts issues and adaptation	- Drought most severe in decades (and currently five consecutive seasons) - Droughts are getting worse. - Agriculture issues: lack of improved seeds; no capacities to deal with droughts, incl. lack of storing water, lack of efficient irrigation, lack of	- Focus on adaptation to droughts. - Support addressing agriculture issues mentioned (esp. seeds, water storage)	 Technique: focus group discussion

	options (14 farmers) Abubaker Muhammad Khetreesh; Abdallah Ali Altomi; Abdalraheem Salem Ibrahim; Aboajaila Amro Abualgasem; Ahmad Ramadan Zemmi; Muhammad Ahmad Zedan; Ibrahim Amro Musa; Dhaif-Allah Mhhammad Ateya; Ramadan Solaiman Almalty; Abdalhafeed Muhammad Abushanna; Ahmad Ali Saeed; Ali Emhemmed Tarboush; Muhammad Buajaila Albujadedi; Farhat Emhemmed Majed	pumps, lack of appropriate plowing equipment, lack of awareness. - Impact droughts: damage to crops (esp. olive fields) and processing of seasonal crops (esp. barley, wheat), leading to high prices for animal feed (due to dry pastures) - Other issues: conflicts over water resources due to scarcity; no income with threat of needing to migrate / leave the farm. - Main obstacles: lack of awareness; lack of data / information; lack of skills; lack of money for better seeds and installation of tanks; no government plans; land tenure security was not mentioned as an issue. - Main needs: drought / heat resilient crop seeds; installation water tanks; reduce erosion; improve information, skills, and plans. - Equipment needs drought / heat resilient crop seeds; equipment for making contour lines and barriers; chisel plows, etc. - Main concerns: non-equal participation and benefits (need cooperate farmer societies for this); knowledge / skills for using techniques; limited maintenance (maintenance plans through cooperates needed); equal distribution water from tanks (need to be on public land if shared);	- Improve drought / heat resilience of crops. - If shared water tanks, these should be on public land, planning through cooperative societies. - Improve awareness, info and skills through trainings, grants for seeds, tanks, etc. - Provide grants for drought / heat resilient crop seeds, water tanks, equipment for contour lines and barriers and chisels. - Planning and maintenance (plans) through cooperate farmer societies; trainings on skills; tanks on public land (decided by societies)	Date: 15 March 2023  Dead olive trees  Dry fields (without contour barriers)  Healthy tree because of contour barrier
Joudaim Agricultural Association	Focus group discussion with farmer (project beneficiaries) with focus on saltwater intrusion issues and adaptation options (16 farmers) Sofian Alshawesh; Khaled Alahrash; Mosbah Alkhaboli; Altaher Gandeel; Nagmi Almarhoun; Salem Alkharmani; Omran Abukhdair; Esam Alshawesh; Khayri Almarhoun; Yousof Alahrash;	- Drought main issue combined with high percentage salt in groundwater. - Droughts and saline intrusion into wells are getting worse (in the last ten years); wells from 30 meters to over 100 meters now and salinity sometimes over 4000 ppm. - Agriculture issues: not sustainable due to above issues - Impact saline intrusion: damage of crops (esp. orange fields); low production - Other issues: no income with threat of needing to migrate / leave the farm; no conflicts over water in this area. - Main obstacles: lack of awareness; lack of data / information; lack of skills; lack of money for better seeds or use of desalination devices installed in wells; no government plans; land tenure security was not mentioned as an issue. - Main needs: salt resistant crop seeds; installation water tanks; rooftop harvesting (for garden); reduce erosion trough appropriate plowing, fertilizers, and modern irrigation; improve information (esp. on status wells), skills / trainings (on seeds, fertilizers, soil management and irrigation and plans.	- Focus on adaptation to droughts and saltwater intrusion. - Support addressing agriculture issues mentioned (saltwater intrusion) - Improve salt resistance of crops. - Improve awareness, info and skills through trainings, grants for seeds, desalination devices not feasible due to cost and maintenance. - Provide grants for salt resistant crops, water tanks (only in hilly areas), harvesting equipment, equipment for appropriate plowing, fertilizers, and irrigation. - Planning and maintenance (plans) through	 Technique: focus group discussion Date: 20 March 2023  Dry orange trees  Sprinkler irrigation method (which uses a lot of water)  More salt resistant varieties used

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	Ezalddeen Bashir Belhaq; Nori Muhammad Alshtaiwi; Beleed Abdalsalam Alshawesh; Essam Alagaimi; Kamal Ali Hamza; Hajer Ali Milad (female)	- Equipment needs soil and water analyzers, desalination devices. - Main concerns: unequal distribution (entity should supervise); maintenance arrangements (through cooperative societies) and challenge to obtain seeds again; no concerns regarding safety mentioned.	cooperate farmer societies, trainings on skills. - Need to ensure option to obtain seeds again (sustainability)	
Al-Haraba Association for Pastoralists	Focus group discussion with pastoralists (project beneficiaries) with focus on droughts issues and adaptation options (5 pastoralists) Younos Salem Yerghesh. Muhammad Mahmoud Alsag. Yekhlaf Solaiman Madi. Yousof Salem Shagalag. Reda Salem Altorki.	- Drought impacting natural pastures due to consecutive dry seasons. - Droughts are getting worse leading to lack of fodder for animals during dry seasons and deterioration of natural pastures. - Impact droughts: shortage of water for animals and drinking water; deterioration of natural pastures (also due to overgrazing, increase of planted areas) - Other issues: some conflicts over water resources due to scarcity; no income with threat of needing to migrate or sell animals. - Main obstacles: lack of awareness; lack of data / information; lack of skills (esp. on animal nutrition, infectious diseases, and pastoral cycle); lack of money to purchase animal feed or vaccinations; acquisition land for farms. - Main needs: maintenance water tanks; reduce grazing by providing alternative animal feed (barley, oats, cacti); reduce plowing of land; improve information and skills on climate / droughts, warnings on outbreaks infectious diseases, animal feed and managing natural pastures; plans to manage pastures. - Equipment needs: (mobile) water tanks; animal watering basins; mobile clinics for animals. - Main concerns: non-equal participation and benefits and possible conflicts over water (need cooperate societies for this); limited maintenance (maintenance plans through cooperates needed).	- Focus on adaptation to droughts. - Support addressing pastoralist issues mentioned (esp. lack of fodder and deterioration of natural pastures. - Improve awareness, info and skills through trainings, grants for animal feed and improving management of natural pastures. - Also consider animal nutrition and health in trainings - Support maintenance of existing water tanks or mobile tanks; alternative animal feed (e.g., cacti); planning and maintenance (plans) through cooperate societies	 Technique: focus group discussion Date: 18 March 2023  Deterioration of natural pastures.  Underground water reservoir  Well with pump in Al Haraba (with dept of 550 meters)   Pastoralists preparing for migration.  Some bales of dry barley and rubber water tank
Women farmer focus group discussion in Zawiya (mostly impacted by saltwater intrusion)	Focus group discussion with women farmers (project beneficiaries) with focus on droughts and saltwater intrusion issues	- Droughts and seawater intrusion are among the biggest problems facing the country in general and specifically along the western coast. - Impact sea-level rise and saltwater intrusion: the problem is getting worse in the last 10 years. Impacts include damage of crops (mostly orange fields and some vegetables),	- Focus on adaptation to droughts and saltwater intrusion. - Support addressing agriculture issues mentioned.	 Technique: focus group discussion Date: 3 April 2023

	and adaptation options (10 women) Jazeya Alkhair Hamdo. Nadeya Muhammad Alkharbash. Hajar Ali Milad. Asma Aljali Omar. Zainab Mawloud Rashed. Rowaida Ramadan Mera. Khaireya Masoud Moftah. Sabreya Masoud Moftah. Nada Altaher Almegrahi. Amira Mahmoud Alkarmaji;	reduced productivity, reduced groundwater, decreased drinking water (due to saltwater intrusion in wells) - Main obstacles: lack of information, knowledge, skills, money and plans to respond to the problems while they are fully aware of the problems). They had never seen any guidelines and currently get most of their information from social media such as Facebook. There was no risk identified related to land tenure security. - Main needs: drought resilient and salt resistant crop verities; ensure to have clean (not salty water); providing relevant information and trainings; prepare plans, esp. to deal with high salinity; prepare rooftop water harvesting is not preferred. - Equipment needs water desalination devices, efficient irrigation networks, greenhouse equipment, fencing and other equipment used in raising farm animals. - Main concerns: non-equal participation and benefits (as women experienced unequal distribution of seeds previously - need cooperate farmer associations for this. This could be women specific associations or through a way women have an equal say); difficulty in dealing with merchants and access to markets (resulting in higher prices compared to men) due to their position) lack of government technical implementation and maintenance skills and arrangements; safety was not identified as a risk.	- Provide information / knowledge and skills and develop plans, also considering specific needs women; use social media for communication. - Grants to focus on providing drought resilient and salt resistant crop verities. - Ensure equal participation and benefits through farmer associations (with ToR describing role and rights of women and quotas or women specific associations; use women associations for negations with merchants and market access; prepare operation and maintenance plans	
Representatives (24) of target municipalities in Zuwara, Aljufara, Jabul Gharbee and Nalut	Ali Soltan Mazdef, director agri sector Zuwara. Bolgasem Salem (Zuwara): Jalal Omar Al-Tayeb (Zuwara): Amer Boajaila Bojlaida. Director agric sector Sorman (Zuwara): Tarek Ben-Nwer. Director agri sector Sobrata (Zuwara): Khaled Ammar. Director agri sector Regdaleen (Zuwara): Khalifa Karrud. Nalut. Muhammad Mahmoud (Nalut).	Droughts: - Droughts more than 4x in last 10 years - Droughts are getting worse. - Damages related to droughts: loss / degradation arable land; crop damages. - Obstacles: lack of financial resources, awareness, and plans - Preferred interventions: heat/ drought resilient crop; water storage / harvesting, incl. contour lines - Concerns: lack of participation; demand unknown crops Saltwater intrusion - Sea-level rise and saltwater intrusion are issue in Zuwara. - Issue is getting worse. - Saltwater intrusion leads to lower agriculture production. - Obstacles: lack of awareness and knowledge about dealing with saltwater intrusion - Preferred interventions: salt resistant crops; well, protection. - Concerns: non-equal access to project benefits	- Focus on adaptation to droughts and sea-level rise-related saltwater intrusion. - Preferred solutions: heat / drought resilient crops seeds and salt resistant crop seeds; water storage / harvesting - Ensure equal participation and access to project benefits through planning and decision-making through farmer organizations / societies	Technique: interviews Date: January 2023

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	Masaod Muhammad, Director agri sector Al-Hawamed (Nalut). Khaled Yaqub. Director agri sector Al-Haraba. Muhammad Koseen. Director agri sector Nalut; Khaled Abuallah (Jabul Gharbee). Abu-baker Mosbah (Jabul Gharbee). Emhemmed Abdussalam. Director agri sector Al-Zentan (Jabul Gharbee). Muhammad Al-Faitori. Director agri sector Al-Rujban (Jabul Gharbee). Yousef Gedwar. Director agri sector in Jado (Jabul Gharbee). Abd-Alhafeed Bushanna. Director agri sector Al-Rohaibat (Jabul Gharbee). Yousef Alahrash (Aljufara). Ateya Ali Shwehat (Aljufara). Husain Alrazegi. Director agri sector Al-Azezea (Aljufara); Almabruk Muhammad. Director agri sector Al-Zaweya Al-Janub (Aljufara). Salah Shiwa. Director agri sector Al-Zaweya (Aljufara). Melod Bakkar. Director agri sector Al-Maya (Aljufara);			

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Ministry of agriculture	Dr. Amal Aborakhees. Ministry of agriculture; Director of women supports and empowerment office	- Observing increasing level of saltwater intrusion and increasing levels of desertification - Possible solutions: desalination plants; drought-resistant crops - Governance and planning: there is a new national committee to address drought-related challenges;	- Focus on adaptation to droughts and sea-level rise-related saltwater intrusion. - Feasible solutions: heat / drought resilient crops seeds and salt resistant crop seeds - Engage with the national committee to address drought-related challenges	Technique: interviews Date: insert
Ministry of Water Resources	Mr. Muhammad Hamila. Director of Information Technology Department.			Technique: interviews Date: insert
Farmers focus group discussion in Zuwara (male)	Mr. Youssef Saleh Helmy Mr. Emad Aly Al-Tweiny Mr. Youssef Fteis Mr. Mohamed Al Azaby	- Droughts more than 4x in last 10 years - Droughts are getting worse. - Saltwater intrusion is getting worse. - Crop productivity reduced due to above, increased land degradation. - Obstacles: lack of skills; lack of financial means; lack of awareness. - Concerns: crops should be suitable for local environment; limited skills for new crops	- Focus on adaptation to droughts and sea-level rise-related saltwater intrusion. - Preferred solutions: heat / drought resilient crops seeds and salt resistant crop seeds. - Provide relevant trainings and maintenance plans. - Seeds for crops already cultivated	 Technique: focus group discussion Date: March 2023
Farmers focus group discussion in Zawiya (female)	Ms. Aisha Mohamed (producer and works in a nursery) Ms. Khaireya Al-Kherbash (farmer) Ms. Intessar Mohamed (farmer) Ms. Aisha Aly (food processor)	- Droughts more than 4x in last 10 years - Droughts are getting worse. - Saltwater intrusion is getting worse. - Crop productivity reduced due to above. - Negative economic impact (increased poverty), including need to import goods and unemployment. - Obstacles: increasing cost agriculture products; lack of awareness of new seed types; resistance by some farmers to new seeds; lack of financial means for women; and lack of government support - Needs: knowledge and training for implementing project interventions	- Focus on adaptation to droughts and sea-level rise-related saltwater intrusion. - Preferred solutions: heat / drought resilient crops seeds and salt resistant crop seeds (to be locally traded); water storage. - Provide relevant trainings, promotion for new seeds.	 Technique: focus group discussion Date: March 2023

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Interviews with farmers and livestock breeders	Tarek Nasr Ali Farmer in Zintan Adel Bousify Farmer and livestock breeder in Al Rajban Ramadan Al-Malty Farm owner in Rahibat Ali Mohamed Kridan Livestock breeder and vet in Daraj city Tarek Nasr Ali Livestock breeder in the city of Rajban Mohamed Ali Tripoli Farm Owner	- Droughts more than 4x in last 10 years - Droughts are getting worse; negative impact especially on youth (unemployment) and some families migrate. - Saltwater intrusion is getting worse (in the last 12 years) and continuous consumption of groundwater pushes the water table higher and increases salinity (not in Rajban since it is a mountainous area) - Crop productivity and livestock count reduced due to above and increased conflict over natural resources. - Obstacles: increasingly dependent on transporting water by trucks, for which prices are increasing; high-cost animal feed (resulting in reduction of livestock numbers) - Concerns: high cost of alternative animal feed and animals are used to current feed - Lack of knowledge, awareness, and skills. - Forced migration due to drought.	- Focus on adaptation to droughts and sea-level rise-related saltwater intrusion. - Preferred solutions: heat / drought resilient crops seeds and salt resistant crop seeds; (rain)water harvesting; protecting groundwater sources. - Provide relevant trainings; improved scientific research; access to climate information and maintenance guidelines. - Animal feed should be acceptable. - Engage youth.	   Technique: interviews Date: March 2023
Agriculture Expert	Name From Al Azizizeya Mourad Mohamed From Tripoli	- Droughts more than 4x in last 10 years - Droughts are getting worse. - Saltwater intrusion is getting worse. - Crop productivity reduced due to above. - Drought affects women by forcing them to drop out of school to help the family with securing food for the household. Also, women's health is most affected by drought as they might resort to canned and less nutritious food. - Drought affects young people by increasing unemployment and forcing them to migrate from their villages. - Drought increases pastoralists need to migrate in search for water, food, and shelter. - Eventually, drought and saltwater intrusion can increase conflict over natural resources.	- Focus on adaptation to droughts and sea-level rise-related saltwater intrusion. - Preferred solutions: heat / drought resilient crops seeds and salt resistant crop seeds - Provide grants to women and youth specifically and tailor trainings also specifically. - Ensure migrants working at farms are not negatively impacted by project interventions	Technique: interviews Date: March 2023

134. During the project implementation phase, project beneficiaries and key actors will be further involved through a participatory planning process and related activities under the various project components.

~~J.~~I. Justification for funding requested.

Table 27 Overview of impact of AF funding compared to no funding (baseline) related to expected project outcomes.

Project output/ activity	Baseline (without AF)	Additional (with AF) and alternative adaptation scenario	Budget (USD
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and	It is projected that climate change will results in more droughts and water scarcity, negatively impacting the agriculture sector and people working in it.	Public institutional staff, farmers / pastoralists and women groups throughout Libya will be able to make decision on agriculture and livestock in a clime change resilient way.	$384,600.00 ~~633,000~~

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south (4), with the participation of vulnerable groups and women. 13 climate change vulnerability assessments with priority adaptation actions. Directly involved 570. o Women: 30 % Indirect: 6,8 million of which about 30 percent farmers **Output 1.2.** National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women. **Output 1.3.** Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy. 1 strategy Directly involved 570. o Women: 30 % Indirect: 6,8 million of which about 30 percent farmers For activities under these outputs see section II.A	~~Beneficiaries~~ People in the project target areas are not aware of climate change hazard risks (especially drought / water scarcity and sea-level rise-related saltwater intrusion) and ~~response~~ possible adaptation measures that could be taken.~~options~~. There is no evidence-based and policy framework at the national and local level to respond to climate change impacts / vulnerabilities in the vulnerable agriculture / livestock sector.	In the absence of any climate-related policies and the lack of institutional arrangement to address climate risks as the district level, climate vulnerability assessments are much needed to prioritize the most cost-effective adaptation options in the agriculture/livestock sector. Without the climate change vulnerability and hazards risks assessment and National agriculture / livestock strategy to be developed there would be no identified and prioritized climate change adaptation options for agriculture/ livestock areas in Libya. This is needed to make people aware of these options, but also to identify / attract and prioritize funding for adaptation activities, also within small communities. ~~The climate change vulnerability and hazards risks assessment (total of 13 for each agriculture area in Libya) and the National climate resilience agriculture / livestock strategy will allow all farmers / pastoralists in the country to identify climate risks and adaptation options and act within a relevant policy framework.~~ ~~Full climate change vulnerability and hazards risks assessment are needed in all agriculture areas, including those that were already covered by the rapid assessment as the assessments need to be institutionised (involvement of key government stakeholders and outcomes) to feed into the national climate resilience strategy.~~ Alternative scenario for Output 1.1.: Top-down climate vulnerability assessments for 13 districts without community consultations. These assessments will cost USD 259,500 which is less than the current cost. However, these assessments will not include the concerns of most vulnerable groups, ranking of climate change impacts and adaptation priorities for each district. In addition, buy-in from communities cannot be guaranteed and thus jeopardizing the operationalization of the adaptation actions. Alternative scenario for Output 1.2: conventional practices such as development in high-risk areas, expensive water pumping, use of high-water consumption crops, etc. will continue and are more expensive compared to the adaptation outcome. Cost-efficient adaptation options are not identified in a strategy at the national level and thus the knowledge generated at the district level is not upscaled. Selection of interventions is not done in a participatory manner and thus the adaptation options might not	$117,000.00 ~~140,500~~ $143,360.00

		be suitable to the context or not sustainable due to lack of ownership. Combined with the absence of NDC, NAP or other climate change strategies, the risk of maladaptation becomes inevitable. ~~**Alternative:** conventional practices such as development in high risk areas, high water consumption for crops, wrong crops in saline environments, etc. will continue, which may result in a loss of yields, income and threated food security, while conventional practices are also more expensive and will be even more in the future.~~ Alternative scenario for Output 1.3: climate change vulnerability assessments for additional 5 districts costing USD 147,923. However, these assessments in addition to the original 13 assessments will not be effectively operationalized due to lack of institutional capacity.	
Output 2.1. A~~a~~round 5900 grant packages (of USD 560 each) provided to~~to~~ farmers, women, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and salt~~t~~water intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation. Farmers: 5900 households / 35400 people (6 persons / household) Women: 30 % **Output 2.2** Relevant public Institutional staff, farmers and women trained to implement, maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans. Institutional staff: 60 o Women: 30% Farmers: 5900 Women: 30 % For more activity details~~ies~~ under these outputs see section II. A	Agriculture / livestock production and related income and food security is threatened by climate change hazard risks, including conventional / high water consuming crops, irrigation methods and technologies and management of land. Populations are vulnerable due to high poverty rates. Women and youth participation can be regarded as low. There is limited capacity to operate and maintain climate change resilient agriculture / livestock approaches, products, and technologies. If nothing is done, agriculture and land will further degrade and agriculture and herder yields will reduce, resulting in higher poverty and threatening food security.	Farmers, pastoralists, and women groups in the project target areas will have received support to increase the clime change resilience of their farms and livestock, ultimately increasing food security. Using heat and drought resilient crops and salt resistant crops are cost-effective in comparison with conventional crops, as these crops will grow better, survive extreme conditions, and will use less of pumped water. This should be combined with efficient irrigation technology and landscape interventions to capture and store available water to avoid potential cost of water depletion. Land management is key to ensuring the livestock sector remains productive and communities can benefit from them while contributing to their management. Grant packages are cost-effective approach to involve beneficiaries and ensure they do part of the works against (relatively) low fees. Alternative scenario for Output 2.1: More expensive options such as water pumping, desalination or wastewater treatment are used, but these are costlier interventions, also per person, and feasibility is limited with existing conditions and available funds. For a mobile wastewater treatment plant for instance the cost estimation is USD 1000 per 1m3 water/day. And this is only the construction cost, without irrigation system. Thus, it will cost around USD 1 million to have 1000 m3 of clean water /day. The cost for desalination is similar. The number of farmers targeted under this project cannot be reached when going for such a solution.	$3,699,785.003~~,800,000~~ $4~~46~~55,005.00~~467,500~~
Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e. rangelands ~~management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and			$2,3~~38~~29,585.00~~2,385,600~~ $363,805.00~~351,500~~

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~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock. Pastoralists: 3600 households / 21600 people (6 persons / household) Women: 30 % **Output 3.2.** Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans. Institutional staff: 40 ○ Women: 30% Pastoralists: 3600 Women: 30 % For more activity details~~ies~~ under these outputs see section II. A		Alternative scenario for Output 3.1: Current practices of water pumping or buying animal feed is not only unsustainable but is also getting costlier, while water quality cannot be assured. Capacity strengthening to operate and maintain implemented activities is needed to avoid loss of investment if activities are not sustained. Alternative scenario for Output 2.2: Additional packages (around 796 ~~834~~ packages for USD ~~4467~~455,005~~00~~) for an additional 796~~834~~ households. However, activities implemented without capacity building for communities and institutions to be able to manage these technologies jeopardizes the sustainability of these investments and thus will have a much lower economic return in~~at~~ the long run. Alternative scenario for Output 3.2: Additional packages (around 64~~92~~7 packages for USD 36~~35~~1,805~~00~~) for an additional 64~~92~~7 households. However, activities implemented without capacity building for communities and institutions to be able to manage these technologies jeopardizes the sustainability of these investments and thus will have a much lower economic return in~~at~~ the long run. ~~Using heat and drought resilient crops and salt resistant crops are cost-effective and sustainable solutions in comparison with conventional crops, as these crops will grow better and survive extreme conditions.~~ ~~Efficient irrigation technology and landscape interventions to capture and store available water will allow farmers / pastoralist to have a more sustainable approach towards water use, reducing risks.~~ ~~**Alternative:** conventional practices such as the use of high-water consumption crops and limited water storage, etc. will continue, which may result in a loss of yields, income and threated food security. Desalination and wastewater treatment solutions are possible but are not feasible from a timeline and cost-effective perspective~~ ~~Capacity strengthening to operate and maintain implemented activities is needed to avoid loss of investment if activities are not sustained.~~	
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, products, and technologies and	Knowledge and learning of climate change resilient practices, products and technologies and replication of these is limited	Public institutional staff, farmers / pastoralists and women groups throughout Libya will have access to information about increasing the	$845.~~50~~247 8.005~~60~~,~~542~~

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to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots. - Guidelines: 1 - Farmer field schools: ~~8~~9 - ToT: ~~8~~9 - Visits to demo plots: ~~4~~9 For activities under these outputs see section II. A		climate change resilience of agriculture and livestock. Making knowledge / lessons of tested activities available / accessible to inhabitants of other districts is a cost-effective way to replicate the activities. Alternative scenario: Number of awareness beneficiaries decline drastically thus increasing the cost per beneficiary and then other funding sources will need to be sought to implement adaptation activities in other areas. Duplication of pilots/knowledge generation could occur. The other option to ensure that knowledge reaches the other districts is that concrete activities will need to be replicated in 5 more districts (for component 2) and 7 more districts (for component 3). This will cost another USD 14,000,000 which is not available for the project. ~~Making knowledge / lessons of tested activities available / accessible to inhabitants in other districts will support the replication of these activities~~ ~~**Alternatively**, other funding sources need to be sought to implement adaptation activities in other areas.~~	

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~~K.~~J. Sustainability of the project/programme

~~128.~~135. Long-term sustainability of the project is ensured by i) emphasizing the active participation of communities in the implementation and management of project interventions; ii) strengthening the community-level technical capacity to ensure stakeholders have adequate knowledge and skills to maintain the benefits of the project interventions; iii) training communities extensively on used techniques; and iv) the maintenance of technology and basic business management skills.

~~129.~~136. The project ensures sustainability through the participatory approach promoted throughout all project activities, that allow local communities and authorities to build ownership of the project results. Long-term sustainability will be ensured through institutional development and capacity building programmes designed to create a critical mass of efficient practitioners, and among all actors – both institutional and grassroot. Where possible, the project will encourage the formation of (informal) groups or ~~organization or~~organization or cooperatives of farmers/pastoralists to manage agriculture lands and natural resources (i.e., water resources and rangelands). Community leaders will also be involved. Moreover, the project will support (informal) groups, organizations or cooperatives, and households, to develop operation and maintenance plans for the proposed ~~project interventions~~project interventions. This will be done together with municipal authorities. As the involved groups have a stake in maintaining and sustaining the interventions, it is assumed that they will respect the needed operation and maintenance arrangements (identified by themselves, as well as agreed upon). In addition, the development of the National Climate Resilient Agriculture strategy will ensure that these practices are integrated into the policy process which ensure sustainability of these interventions and upscaling at the national level. The involvement of the Ministry of Agriculture and the other relevant ministries in the development of this strategy will ensure the political endorsement of the document and act as a guiding note for the government and other development partners when ~~channeling~~channeling climate finance into the agriculture sector.

~~130.~~137. Replicability will be further ensured through the dissemination of lessons learnt in the field demonstration sites in the four north-western districts. The dissemination of climate-resilient agricultural practices, products and technologies will be supported through workshops, guidelines, farmer field schools, a ToT programme and ~~t~~demo plots. This will ensure that there will be scope for extensive training opportunities for the local communities and will support the continuous transfer of knowledge between trainers and farmers.

It will also foster collaboration between local farmers attending the field schools, further supporting the transfer of knowledge and skills throughout local communities. The project aims for farmers to continue to have access to drought resilient and salt resistant crops after the project. This will be done by identifying options and mechanisms to stall and multiply the seeds with the support of a national research institute (ICARDA) and / or to teach farmers how to purchase seeds from inside Libya or from abroad through groups / cooperatives.

Table 28 Maintenance / sustainability arrangements

Project output/ activity	Maintenance / sustainability arrangements
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women. 13 climate change vulnerability assessments with priority adaptation actions.	○ Institutionalization of assessment and strategy through involvement of kay actors and government planning process. ○ Government endorsed national climate resilient agriculture / livestock strategy. ○ Mainstreaming of climate information and the use of the national climate-resilient agriculture/ livestock strategy at district and community-level processes will be facilitated by outlining the governance process at local level in the strategy and by using 1-2 district in the north-west of Libya as case studies for this mainstreaming and use. Considering the traditional systems still in place in Libya, community leaders will be involved in the process. The mainstreaming process will also be facilitated through the knowledge management activities proposed under component 4.
Output 1.2. National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, ~~prioritized~~prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women.	
Output 1.3. Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.	
Output 2.1. A~~a~~round 5900 grant packages (of USD 560 each) provided to~~to~~ farmers, ~~women~~women, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation.	○ Operation and maintenance plans developed by target households, organizations / associations and government authorities supported by the national climate resilient agriculture strategy under component 1. ○ Guidelines to be developed under comp 4. ○ The Training of trainers under comp 4 will ensure that resource people are available for continued adoption and upscaling of adaptation technologies in the agriculture sector. Success of the grant packages to generate income combined with demo plots under comp 4 will also ensure wider adoption. ○ Trainings on operation and maintenance (see 2.2.) and replication. ○ The project will guarantee that seeds included in the grant packages can be sustainably obtained locally (not imported) through the roadmap developed in consultation with ICARDA and the agriculture research center.
Output 2.2 Relevant public Institutional staff, farmers and women trained to implement, ~~maintain~~maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans.	
Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e. rangelands~~ management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and ~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock.	○ Operation and maintenance plans developed by target households, organizations / associations and government authorities supported by the national climate resilient livestock strategy under component 1. ○ Guidelines to be developed under comp 4. ○ The Training of trainers under comp 4 will ensure that resource people are available for continued adoption and upscaling of adaptation technologies in the livestock sector. Success of the grant packages to generate income combined with demo plots under comp 4 will also ensure wider adoption.

Output 3.2. Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans.	○ Trainings on operation and maintenance (see 3.2) and replication.
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, ~~products~~products, and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.	○ Guidelines. ○ Farmer field schools (also to support operation and maintenance and replication). ○ ToT programme (also to support operation and maintenance and replication). ○ Demo plots. ○ Sustainability-oriented workshops.

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~~L.~~K. Overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

~~131.~~138. The proposed project seeks to fully align with the Adaptation Fund's Environmental and Social Policy (ESP), and its 15 safeguard areas, as well as its Gender Policy (GP). Further to Section II.E on compliance with regulations/ standards, outlined below is a summary of the findings of the initial screening process to identify and evaluate potential environmental and social risks and impacts of proposed interventions and based on that, of the entire project. With this information, the entire project has been categorized.

~~132.~~139. Because of the scope of the proposed project activities, which are numerous and localized, and, where possible, managed by communities who have a stake in avoiding environmental and social risks and impacts, potential direct impacts will be minimal and indirect impacts and transboundary impacts are highly unlikely. Given this, cumulative impacts are also unlikely. As a result, the entire project is regarded as a **medium risk (Category B)** project. Under IFAD categorization this would match 'Moderate.' The project is also categorized as High Climate Risk as per IFAD's 2021 SECAP guidelines.

~~133.~~140. The project is designed to generate positive economic, social, and environmental impacts, using inputs from especially farmers/ pastoralists women and youth in target communities and by incorporating best practices from other projects. The adaptation measures proposed will be selected in full agreement with all beneficiary groups, making sure they are culturally appropriate and local.

~~134.~~141. The environmental and social risks screening presented in the table below provides a brief overview of the risk screening conducted during the project proposal concept note development phase.

~~135.~~142. An Environmental, Social and Climate risk Management Plan (ESCMP) has been prepared to manage any risks and impacts identified then. The same accounts for the gender approach and baseline / plan.

~~136.~~143. In addition, the project will comply to IFAD's updated 2021 SECAP guidelines including the development of the Environmental, Social and Climate Management Plan (ESCMP) and a Grievance and Redress Mechanism (GRM).

~~137.~~144. **Table 29** provides an overview of the potential project risks and if any further assessment is required. **Table 30~~21~~** describes these risks and proposed mitigation measures associated with AF Social and Environmental Principles to avoid or reduce these potential risks.

Table 29 Checklist of environmental and social principles

Checklist of environmental and social principles	No further assessment required for compliance (during project implementation)	Potential impacts and risks – further assessment and management required for compliance
1. Compliance with the Law		X
2. Access and Equity		X
3. Marginalized and Vulnerable Groups		X

4. Human Rights			X
5. Gender Equality and Women's Empowerment			X
6. Core Labor Rights			X
7. Indigenous Peoples			X
8. Involuntary Resettlement		X	
9. Protection of Natural Habitats		X	
10. Conservation of Biological Diversity			X
11. Climate Change			X
12. Pollution Prevention and Resource Efficiency			X
13. Public Health			X
14. Physical and Cultural Heritage		X	
15. Lands and Soil Conservation		X	

Table 30 Overview of the potential environmental and social impacts and risks and mitigation measures

Checklist of environmental and social principles	**Potential risks**	Explanation	Mitigation measures to avoid / reduce any potential risks
1. Compliance with the Law	There is a small risk of sub-contractor non-complying with national laws / standards.	Relevant national standards and laws have been identified, as well as project compliance with these. No impact assessment is required by national law (see part II.E) for proposed interventions. However, there is still a small risk of sub-contractor non-complying with national.	The project complies with all identified relevant national and international standards and laws. For an overview, see part II.E. Include standard clause in all project contracts with reference to laws / standards as described in this proposal (Part II.E) with the condition to comply with these standards / laws.
2. Access and Equity	There is a small risk of inequitable participation in project decision making and access to project benefits. This is mainly due to traditions related to gender roles and the tribal culture that could exclude certain groups.	Inputs and potential concerns of potential project beneficiaries have already been heard. These groups include small-holder farmers, women, youth, and ethnic groups.	The project will ensure equal opportunities in participation and decision-making concerning project benefits of women, youth, ~~ethnic groups~~ and other vulnerable groups by using quotas and by agreeing on representation in decision-making processes through organizations / associations and the use of ToRs, agreements, etc. The targeting strategy will take into consideration the different needs of the different groups for each activity and will apply strict criteria for selection of beneficiaries. A Grievance and Redress Mechanism (GRM) will be put in place to receive complaints and solve them. If shared water tanks will be installed these should be on neutral / public land.
3. Marginalized and Vulnerable Groups	There is a small risk of vulnerable groups being excluded from project implementation processes and benefits. This is mainly due to traditions related to gender roles and the tribal culture that could exclude certain groups.	Inputs and potential concerns of potential project beneficiaries have already been heard. These groups include small-holder farmers, women, youth, and ethnic groups.	The project will ensure equal opportunities in participation and decision-making concerning project benefits of women, youth, ~~ethnic groups~~ and other vulnerable groups by using quotas and by agreeing on representation in decision-making processes through organizations / associations and the use of ToRs, agreements, etc. The targeting strategy will take into consideration the different needs of the different groups for each activity and will apply strict criteria for selection of beneficiaries. A Grievance and

			Redress Mechanism (GRM) will be put in place to receive complaints and solve them.
4. *Human Rights*	There is a small risk that human rights will not be respected by project partners and sub-contractors	Treaties not ratified in Libya include: - CAT-OP - optional protocol of the convention against torture - CCPR-OP2-DP - second optional protocol to the international covenant on civil and political rights aiming to the abolition of the death penalty. - CED - convention for the protection of all persons from enforced disappearance - CED, art.32 - interstate communication procedure under the international convention for the protection of all persons from enforced disappearance Ratified or not, there is a potential risk that treaties will ~~n~~ot be respected by all project partners and sub-contractors. There is no immediate concern for this to ~~happen~~happen, but mitigation measures should be in place to avoid this.	Any agreement / contract for the project will include reference to human rights treaties and to respect these. As per principle 8, the project will not allow any involuntary resettlement, even if there is no risk for this. The IE will monitor and report on human rights risks and opportunities and adjust activities if necessary if risks occur. Project partners and sub-contractors will be made aware of the treaties and clauses related to these in their contracts. A Grievance and Redress Mechanism (GRM) will be put in place to receive complaints and solve them.
5. *Gender Equity and Women's Empowerment*	There is a risk of local cultures / traditions blocking women's voices, exclude them from decision making or related to that, a risk of women being negatively affected due to existing sexual harassment or similar. women beneficiaries being negatively treated because of their involvement in the project.	Women are not well represented in local government authorities. An initial gender analysis has been included in the annex 2.	The project will ~~i~~increase local engagement to work with local leaders and female and male-household's members and sensitize on gender equality and against gender biases. The project will also conduct gender-sensitive and participatory consultations while executing the various activities. These ~~have to~~must include safe spaces/ women-only focus groups to encourage women's meaningful ~~participation in consultations.~~involvement in the project. As needed, the project will create female only spaces for women to receive trainings and services. The project has specific gender targets and budget allocations. Quotas will be used ensure their participation in planning processes under component 1 and for equal access to grants.
6. *Core Labor Rights*	There is a small risk of labor standards not being respected in project-related contracts with sub-contractors. Potential risks may include: ● Non-compliance with safety standards ● Non-compliance for worker rights	ILO conventions and protocols currently not ratified: Relevant standards not ratified in Libya include: Fundamental: **C155** - Occupational Safety and Health Convention, 1981 (No. 155) **C187** - Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187) Governance: **C129** - Labor Inspection (Agriculture) Convention, 1969 (No. 129) Technical: **C184** - Safety and Health in Agriculture Convention, 2001 (No. 184)	The project follows ILO core labor standards. Looking at the conventions and protocols not ratified, the project will be particularly attentive to any health and safety and ~~inspections~~inspections. Any agreement / contract for project works signed will include reference to compliance with ALL ILO labor standards, also not ratified relevant standards in Libya. ~~Also~~Also, inspections will be carried out for work under the grants and for the set-up of the farmer field schools etc.

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7. *Indigenous Peoples*	There is a small risk of non-integration of ethnic groups' needs, cultural considerations, and possible concerns. 	Initial consultations with ethnic groups have already been conducted to identify specific needs and possible concerns. The inhabitants of the project target areas are not indigenous people but rather ethnic groups namely: Arab-Berber and Berber. However, the Amazigh people live in many areas including the town of At-Wilul at Zwara district which the project is not targeting specifically (the district is targeted but not the town).	The project recognizes the rights of all ethnic groups. Free, Prior, informed Consent (FPIC) will be applied by 1) mapping all ethnic groups and potential impacts of the project on these groups and 2) involving ethnic groups in planning and decision-making processes, including not going ahead with activities if not agreed by ethnic groups (including having written consent. The engagement of ethnic groups will be monitored.
8. *Involuntary Resettlement*	There is no risk of involuntary resettlements.	It is not foreseen that land other than agriculture land will be targeted under this project.	Resettlement because of project activities will be always avoided. Owners of private land or people with informal livelihoods that may affected by the project will need to agree with project interventions before they start. People without land title can be selected as project beneficiaries without risk of losing investment / land.
9. *Protection of Natural Habitats*	There is no risk of Natural Habitats being negatively impacted by project activities.	As per Ramsar there are no vulnerable natural habitats in the five north-western target districts. There are only two in Marj and Derna districts. As per UNESCO there is one biosphere reserve (Ashaafean) in the Nafusa mountains in the target districts of Nalut and Al jabal al Gharbi. No project interventions will take place in this reserve.	Natural habitats in Marj and Derna districts will be considered in the CCVAs.
10. *Conservation of Biological Diversity*	There is a very small risk of biodiversity being negatively impacted by the project activities under component 2.	As per IUCN Red List From the 21 critically endangered and 24 endangered species, 3 are potentially located in the five north-western target districts: the Thorectes puncicollis, the saker Falcon and the Egyptian Vulture.  Drought and heat resilient and salt resistant crop varieties will be varieties of crops already in use	Although it is highly unlikely, the Thorectes puncicollis, the saker Falcon and the Egyptian Vulture may be impacted by project activities. Before any work on the ground (as part of the grant) can start, it will be checked if any of the above are nesting. If so, works on these locations cannot take place. Otherwise, works should take place during the non-nesting season. This will be part of the geological surveys to be conducted as proposed under principle 12.
11. *Climate Change*	There is a small risk of increased energy use due to project activities and thus a negligible increase in GHG emissions.	There could be a negligible increase in GHG emissions due to works on the ground related to the grant packages and livestock practices.	The project will not support any activities that will increase energy use, such as an increase of water pumping, unless energy use is

Commented [NWN19]: Can we double check if ethnic minorities are considered IPs? If we include them under IPs, this will trigger SECAP and other measures to be taken. If they are not IPs, usually we put this category (7) as Not Applicable

Commented [AMT20R19]: Discussed.

Commented [NWN21]: FPIC is applied for IPs not ethnic minorities, no?

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			compensated with renewable energy use. The grants will be provided with conditions for avoiding GHG emissions~~emisions~~. The exact condition will be agreed upon during ~~inception~~inception. Trainings on low emissions livestock practices will be included in FFS under component 4 and trainings under component 2 and 3.
12. *Pollution Prevention and Resource Efficiency*	There is a small risk of inefficient resource use.	There could be a small risk that the grant packages will not be used in the most optimum way and water could be exploited in an unsustainable manner. Also, there is a risk that grant packages will increase the use of agriculture inputs (e.g., pesticides, fertilizers, etc.).	The project is designed to efficiently use energy and materials and to avoid any produce of additional waste. Trainings will be provided on avoiding these risks and the use of sustainable agriculture practices, including on resource efficiency and pollution prevention. These will be included in FFS under component 4 and trainings under component 2 and 3. Also, geological surveys will be conducted as part of components 2 and 3. The grants will be provided with conditions for not using environmentally harmful~~harmfull~~ and unsustainable practices / techniques. The exact condition will be agreed upon during inception.
13. *Public Health*	There is a small risk of health risks, which may include: - Vector borne and communicable diseases, theft and/or stolen items. - Covid-19 transmission.	The project is expected to have an overall beneficial impact on the public health with improved access to climate-proofed yields and increase quality of produce; Any increase of the use of pesticides as part of project activities will be avoided (see above). However, there is a small risk of beneficiaries attracting diseases during works related to the grants.	Measures to reduce the potential impact of COVID-19 (and other emerging health risks) situation on project activities will be further assessed as proposed under section III.B (financial and project/programme risk management). These may include a flexible approach to having some activities 'online' and mitigation applying health and safety measures to keep people involved in the project safe. Mitigation measures regarding protecting public health from spreading infections will also be incorporated into the project's ESCMP. Any increase of the use of pesticides as part of project activities will be avoided. ILO health and safety standards will be applied.
14. *Physical and Cultural Heritage*	There is no risk of project activities negatively impacting heritage sites.	As per UNESCO there are 5 cultural heritage sites in Libya • Archaeological Site of Cyrene (1982) • Archaeological Site of Leptis Magna • Archaeological Site of Sabratha (198 • Old Town of Ghadamès (1986) • Rock-Art Sites of Tadrart Acacus (19 Although two are in the five north-western target districts, these are protected structures and there is no	

		risk of project activities negatively impacted these. 	
15. Lands and Soil Conservation	There is no risk of project activities negatively impacting lands and soils.	In the five north-western target districts there are some soils at the margin of a desert area and coastal soils. These are at risk of degradation under the current circumstances in the country.	The project is designed to avoid any negative effects on any soil or lands and only have positive effects through improvement of soil or reducing degradation.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Arrangements for project implementation

~~138.~~145. The following arrangements for project implementation have been agreed upon with the AF DA (Ministry of Environment) and the Execution Partner (UNOPS) in Libya.

Figure 19 Project Organigram (simplified).

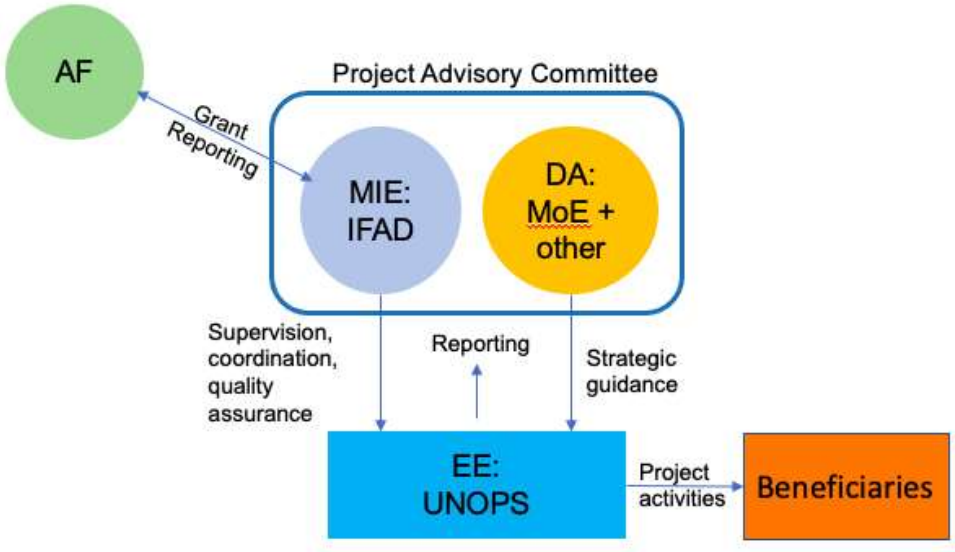

Table 31 Key project stakeholders and roles and responsibilities.

Stakeholder	Roles and responsibilities
IFAD	Multilateral Implementing Entity (MIE) - Received the grant / fund from the AF. - Project supervision / oversight - Contracting of executing entity (UNOPS) - Quality assurance, incl. ensuring project compliance with AF and IFAD policies and reporting / M&E requirements, incl. safeguarding system (AF Environmental and Social Policy (ESP) and Gender Policy (GP) and IFAD SECAP) - Co-chair of the Project Advisory Committee (PAC)
Ministry of Environment	Adaptation Fund Designated Authority (DA) - Chair of the Project Advisory Committee (PAC) - Strategic guidance to the execution entity (i.e., alignment with priorities and laws)
UNOPS	Executing Entity: - Execute project activities (i.e., work with project beneficiaries) - Report to IFAD and the PAC - Member of the PAC and involved in decision-making process (especially concerning field operations and project execution) - Gender responsiveness
Project Advisory Committee (PAC)	- Definition of the project strategy - Supervision on smooth implementation of the project from start to completion, including ensuring alignment with the agreed upon timetable and compliance with National plans and laws. - Validate deliverables/ outputs. - Provide technical expertise and coordination. - Conduct regular meetings

Figure 19 and **Table 31** above show in a simplified way how the project will be managed / implemented, including the key stakeholders' main roles and responsibilities.

~~139.~~146. As IFAD is the Multilateral Implementing Entity (MIE) of the project, IFAD will be responsible for the oversight / supervision of the project, including reporting to the AF, and contracting of the execution entity (UNOPS) and coordination with the Designated Authority of the project. IFAD will ensure the project complies with AF and IFAD policies and reporting / M&E requirements, incl. safeguarding systems (i.e., AF ESP and GP and IFAD SECAP). IFAD will be the co-chair of the PAC.

~~140.~~147. The Ministry of Environment is the Designated Authority of the AF. The Ministry will chair the PAC. It will also provide strategic guidance to the execution entity to ensure the project aligns with the agreed upon timetable and compliance with the National laws and plans.

~~141.~~148. UNOPS will be the Executing Entity of the project. It will be responsible for executing all project activities. It will therefore work with the project beneficiaries. UNOPS will take part in the PAC and report to IFAD and the DA in line with AF and IFAD reporting requirements. As the operational arm of the UN system, UNOPS is mandated to expand partners' implementation capacity across peace and security, humanitarian, and development efforts. Through its project services — including infrastructure, procurement, project management, human resources, and financial management — UNOPS supports governments, the United Nations, and other partners in achieving national development goals, and local objectives for people and countries. Moreover, UNOPS has both: i) a consolidated field presence in Libya, an office based in Tripoli, and prior experience in implementing projects across the entire Libyan territory working with national and local authorities; ii) sound experience in managing and implementing agriculture projects in remote, rural areas, also in partnership with IFAD. To name the most recent experiences:

a. Libya - The Solidarity Bridge project ($13 million, 2020-2023~~2~~, funded by the Italian Ministry of Foreign Affairs and International Cooperation), where UNOPS is supporting 20 Libyan municipalities to fight the COVID-19 pandemic by strengthening municipalities' hospitalization capacity of COVID+ patients; fulfilling municipalities needs for medical equipment, ambulances, waste management trucks; improving municipalities' healthcare systems capacity of surgery, emergency, resuscitation and laboratory services. This is achieved through procurement of +250 medical machineries, +10 ambulances, medical equipment and general medicines, trucks for medical waste collection.
b. Libya - Financial Audit Review of the Central Bank of Libya (CBL) in Tripoli and the Central Bank Branch in Beyda ($ 4,2 million, 2019-2021, funded by the Government of the State of Libya): Following Prime Minister Faiez Serraj's request to the Security Council for support on a financial audit review of the CBL in Tripoli and the branch in Bayda on 10 July 2018, the UN mandated the United Nations Support Mission in Libya (UNSMIL) to support the requested Financial Review process of the banking system in Libya. UNSMIL requested UNOPS' support to carry out the procurement of the services for the Financial Audit Review of the two CBL and to manage the services contract.
c. Libya - Urban solid waste management for the city of Tripoli ($ 2,3 million, 2017-2023, funded by Italian Agency for Development Cooperation (AICS)): The project aims to support Libyan authorities in improving the hygienic and environmental conditions of Tripoli's population through a more efficient solid waste management system. UNOPS has facilitated the procurement of equipment (containers and vehicles) for waste collection and transportation, ~~and also~~and enhanced the planning capacities of local authorities in managing solid waste. UNOPS provides Libyan authorities with technical support to launch an international call for tenders for a new landfill and a waste treatment plant, compliant with international standards.
d. Guinea - Support Project for Farming, Resilience and Markets in Upper and Middle Guinea (AgriFarm) ($12,8 million, 2019-2024, funded by IFAD): UNOPS supported the rehabilitation and construction of 1,584 hectares of irrigated land at 9 sites in the Middle Guinea regions (Labé, Boké, and Mamou), as well as the acquisition of vehicles to strengthen the capacity of the Ministry of Agriculture and family farms through training, advisory support, and the High Labor Intensity Public Works (HLIW) approach.
e. Niger - Support for the development and implementation of the Compact for Sustainable Environment and Water in Niger ($15,6 million, 2017-2023, funded by the MCC): Irrigation and Market Access Project, which aims to increase rural incomes through improved agricultural productivity and increased sales resulting from modernized irrigated agriculture and improved access to inputs and markets (road rehabilitation, development of hydro-agricultural facilities, management services and market facilitation, policy reforms). Thus, UNOPS is well placed to execute all activities. Lastly, as the Executing Entity, UNOPS will have the following internal governance structure:
f. UNOPS Decision-making role - **UNOPS Project Executive**, who will represent UNOPS within the PAC and be accountable for the project accomplishment in front of the MIE and the DA during the entire project lifespan. This role will be covered by the UNOPS Country Manager for North Africa. The Project Executive will assign a Project Manager to oversee the implementation of the Project and deliver the outputs determined by the PAC. The Project Executive will delegate day-to-day implementation to the UNOPS Project Manager, perform quality assurance of all activities, be regularly involved in all planning

and implementation steps to provide direction in accordance with strategic guidance received from the PAC, decide, and collaborate with the project team.

g. UNOPS Management role - **UNOPS Project Manager,** who will ~~be in charge of~~oversee guiding the team to implement the activities within the agreed scope, budget, and time. The Project Manager is responsible for the quality assurance of the project and for ensuring adherence to the project objectives and the agreed work plan. The Project Manager follows up on the implementation of the project with the support of the Project Team.

h. UNOPS Delivery role - **UNOPS Project Team and suppliers**, who will be delivering the outputs/activities assigned to them by the UNOPS Project Manager. This will include performing administrative and procurement functions and taking care of logistics arrangements to ensure proper outreach of relevant stakeholders and activities performance in target districts.

~~142.~~149. The Project Advisory Committee will guide the Executing Entity on the smooth implementation of the project from start to completion, including ensuring alignment with the agreed upon timetable and compliance with National plans and laws. The PAC may also provide technical expertise / inputs, when required. The PAC will consist of the members shown in **Table** 3~~21~~2 below. The target percentage of women is 30%. Representatives of the target districts will include women councillors.

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Table 32 Members of the PAC

Project Advisory Committee (PAC)		
Stakeholders		
Ministry of Environment (including national committee to address drought-related challenges)		Chair (2~~1~~)
Ministry of Agriculture, Livestock and Marine Resources		Member (1)
Ministry of Water Resources		Member (1)
Ministry of Finance/International Cooperation		Member (1)
Women representative from M~~in~~istriesy and / or NGO		Member (2)
Representatives of target districts	Zwara	Member (2, of which 1 women)
	Azzawya	Member (2, of which 1 women)
	Nalut	Member (2, of which 1 women)
	Al jabal al Gharbi	Member (2, of which 1 women)
IFAD		Co-chair (1)
UNOPS		Member (1)
Technical experts when required		By invitation
Civil society		By invitation

~~143.~~150. **Legal and financial arrangements**

IFAD will contract the Project Execution Entity (UNOPS) through an ~~UN to UN~~UN-to-UN **agreement.** Overheads for UNOPS will be deducted from the 9.5 percent execution fee. This means no double overheads are calculated. The financial proposal for this project has already been cleared by IFAD and UNOPS internally.

~~144.~~151. **Roles and responsibilities for environmental and social risks management / AF ESP and GP compliance and SECAP.**

IFAD will be responsible for the environmental and social risks management of the project, including implementation of the Project Environmental, Social and Climate Risks Management Plan (ESCMP). An IFAD expert on compliance with the AF ESP and GP and IFAD SECAP will be part of the IFAD project team (covered under the 8.5 % MIE fee). This expert will also supervise UNOPS on the implementation of the Project ESCMP. IFAD monitoring personproject staff will also require having expertise on environmental and social risk management and be familiar with the AF safeguarding system.

~~145.~~152. The project will actively support the participation of women, youth and any other vulnerable or marginalized groups as important stakeholders and will guarantee the inclusion of their needs, concerns and abilities in project planning, implementation and monitoring and evaluation. Women representatives (from the ministry and district ~~councilors~~councillors) will be members of the PAC. All project-related Terms of Reference (ToR) and contracts will include clauses stating contractors will need to comply to the AF ESP, highlighting all relevant principles, especially principle 1 (law), 4 (human rights), 5 (gender), 6 and 13 (labor and safety), 8 (involuntary resettlement, and to the AF GP.

~~146.~~153. **UNOPS compliance with AF ESP and GP**

UNOPS has mandatory Health & Safety and Social and Environment (HSSE) Management regulations in place that it applies to all activities and projects, including activities that UNOPS assigns to contractors. This is reflected in the UNOPS Executive Office Directive on Occupational Health & Safety and Social & Environmental Management, which were promulgated by the UNOPS Executive Director in November 2021, for the purpose of affirming UNOPS's commitment to occupational health & safety (HS) and social & environment (SE) management, and to set out the principles UNOPS shall follow in this regard. To underline this Directive, the Executive Office Instructions on Health & Safety and Social & Environmental Management (HSSE) were approved in November 2021, which describe the mandatory processes and performance requirements for the implementation of HSSE management within UNOPS.

~~147.~~154. Specifically, for project implementation this means that the Project Manager has the final responsibility to ensure compliance with HSSE standards and the IFAD ESCMP. Each project team has a HSSE focal point who is trained to identify, ~~mitigate~~mitigate, and report any incidents. Moreover, the Project Manager and Team are continuously assisted and accompanied by the HQ HSSE Team, should any issues arise.

~~148.~~155. For any ~~infrastructure~~ concrete intervention components, project team engineers are responsible for identifying HSSE risks on ~~construction~~ project sites. For procurement components, the Sustainable Procurement Framework provides additional guidance on how to include sustainability considerations into the process. Sustainable Procurement (SP) is defined as "practices that integrate requirements, specifications and criteria that are compatible and in favor of the protection of the environment, of social progress and in support of economic development, namely by seeking resource efficiency, improving the quality of products and services, and ultimately optimizing costs"[39]. UNOPS is generally considered a leading organization in SP within the UN, and effective sustainable procurement is integrated throughout the complete procurement cycle. UNOPS project teams that carry out procurement processes are primarily responsible and accountable, through their respective Procurement Authority, for the implementation of procurement processes in compliance with the SP Framework.

~~149.~~156. Other strategies and directives have been enacted to help support the implementation of HSSE considerations into projects. This includes for example the Gender Responsive Procurement (GRP) which ensures that the procurement process and the selection of goods, services and works have a positive, holistic impact on gender equality and inclusion. Moreover, the UNOPS Gender Equality and Social Inclusion (GESI) Mainstreaming Strategy in Projects 2022-2025 has been released to support GESI mainstreaming activities across UNOPS projects and seek to realize the human rights of all people and to achieve gender equality and the empowerment of women and girls.

~~150.~~157. **Gender-responsive** and **youth-focused** considerations will be ensured through hiring a gender and social inclusion expert for components 1, 2 and 3 (see detailed budget). The terms of reference of the gender and social inclusion experts will include ensuring the target for women and youth beneficiaries are achieved for each activity; creating safe spaces for women consultations; and accommodating needs for women and youth and ensuring their voices are heard. For component 4, the ToRs of the knowledge management expert will also include ensuring the target for women and youth beneficiaries are achieved for each activity; videos and knowledge products to have fair representation of women; and ensuring women are able to attend FFS/trainings. The four components will follow the project's gender and youth approach (see annex 2) and will contribute to the development of the detailed action plan at inception phase that will guide the whole project's gender and youth approach. IFAD will also provide technical backstopping to the project on implementing the gender action plan through the IE fees.

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~~151.~~158. Overall, UNOPS operates in alignment with the United Nations Core values of respect for diversity, ~~integrity~~integrity, and professionalism, which underpin and guide the actions and ~~behaviors~~behaviors of all United Nations personnel. UNOPS continuously strengthens its ability to ensure sustainability, safety, diversity, and inclusion throughout the project lifespan, regardless of the service line.

~~152.~~159. Please see Annex 3 for more details on UNOPS guiding frameworks and directives align with the AF ESP Guidance Principles

~~153.~~160. **Adaptive management**

[39] Sustainable Procurement Statement adopted by the HLCM Procurement Network meeting, Vienna, February 2009, and endorsed by UNOPS.

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When changes in project activities or additional activities are required, these will need to go through a new risks screening and impact assessment process in compliance with AF, IFAD and national policies and standards. When this is required, this will be led by IFAD and the PAC would need to approve the changes.

~~154.~~161. **Launch of the project**

At the launch of the project, IFAD and UNOPS will organize an **inception workshop** inviting members of the PAC~~, UNOPS~~ and other key stakeholders. The project approach and the proposed outputs and outcomes of the project will be presented and discussed with the purpose to solicit feedback and inputs in a participatory manner. Comments and feedback will be incorporated in project frameworks and workplans. The Inception Workshop aims to:

(i) Enhance participants' understanding of the project objectives and activities and take ownership of the project.
(ii) Discuss and confirm the organizational structure of the project, including roles and responsibilities.
(iii) Confirm / agree upon project monitoring framework and workplan.
(iv) Confirm / agree upon project risks management framework.
(v) Discuss and agree upon project knowledge management framework and plan.
(vi) Confirm / agree upon the project Environmental and social Risks Management Plan
(vii) Agree on the annual work plan for year one.

~~155.~~162. The inception workshop will be organized within three months after signing the project agreement between the Adaptation Fund and IFAD.

B. Measures for financial and project risk management

~~156.~~163. The table below gives an overview of overall potential project management and financial risks, an assessment of the significance of the pertaining risks in terms of likelihood and impact and outlines measures that have been embedded in the project design ~~in order to~~to manage and/or mitigate these risks.

Table 33 overview of financial and management risks and measures to mitigate these.

Potential risks	Likelihood (1-5)	Impact (1-5)	Mitigation measures	Indicator to verify
Institutional				
1 Delay of project start-up because critical staff is not in place and / or lengthy contracting process, incl. negotiations with execution entities	3 Med	3 Med	- IFAD has critical staff in place at regional / HQ level to start and manage the project, incl. preparing the inception workshop. - UNOPS has been identified as the executing entity and overhead and implementation arrangements have been agreed upon. UNOPS has an office presence in Libya with full time staff on the ground; the Libya office is overseen and supported by the UNOPS regional hub for North and West Africa, which provides quality assurance to all projects in the region. - IFAD commits to organize the inception workshop within three months of the signed project agreement between IFAD the AF - UNOPS works with Libyan recruitment agencies, such as Committed to Good, which specialize in identifying and recruiting necessary experts for development and humanitarian aid organizations operating in the country.	Inception workshop organized within three months of the signed project agreement between IFAD and AF UNOPS will be contracted within three months of the signed project agreement between IFAD and AF
2 Loss of government support (at ministerial and / or district level) for the project and activities due to political changes (e.g., elections; other priorities).	1 Low	3 Med	- The members of the project Advisory Committee (PAC) have already been agreed upon with the DA. - IFAD and the Ministry of Environment will sign a MoU, which states that the Ministry of Environment will be committed to support the implementation of the project.	Signed MoU between IFAD and the Ministry of Environment

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3 Communities may not adopt activities during or after the AF project, including maintenance	2 Low	3 Med	- A strong participatory approach at the community level is used and will be used during project implementation to ensure that activities are implemented in a way that is ~~culturally-sensitive~~culturally sensitive and appropriate, to ensure ownership and support of communities to the realized interventions in the targeted project areas. - Regularly consult direct beneficiaries to collect their satisfaction feedback, promptly identify their concerns regarding participation in some activities. - Capacity building and training of communities will be undertaken to improve their awareness and understanding of the benefits of the activities, including operation and maintenance	Community plans in place for project activities maintenance
Financial management and Requisite Institutional Capacity				
4 Complexity of financial management and procurement.	2 Low	2 Low	- Financial management arrangements with UNOPS have been agreed upon. - Activity specific procurement will be managed by UNOPS, which is the specialized procurement agency within the UN system, as agreed through ~~UN to UN~~UN-to-UN agreements (with relevant conditions, incl. evidence of recognized procurement policies and procedures and specific terms and conditions for timely disbursement of funds for project activities while at the same time ensure provisions on good financial management, hence minimizing the risk of fund mismanagement or corruption). - UNOPS has already extensive procurement experience in Libya (as shown by the Solidarity Bridge project described above) and has established Long Term Agreements (LTAs) with diversified suppliers that are able to deliver and transport goods all over the country.	Timely audit reports following international standards Timely evidence of recognized procurement policies and procedures provided by Execution Entities
5 Inflation and instability of the national currency leading to budget issues and increased prices for infrastructure delivery	3 Med	3 Med	- All budgets will be in US$ - Early/ preliminary verification of activities costs and potential suppliers to define the activities plan and related financial resources per activity. - Include clauses in all contracts, incl. with private sector, that they can't increase the costs after signing a contract	All budgets in US$ Clauses in all contracts, incl. with private sector, that they can't increase the costs after signing the contract
Physical				
6 Political instability and security issues in the target areas inhibits movement and execution of project activities	3 Med	3 Med	- One of the selection criteria for the project target districts was safety and limited need for travel. - Throughout the implementation of the project, UNOPS will continuously coordinate with the UN Department of Safety and Security (UNDSS) and national/ local authorities to reduce security risks to ensure staff safety and continuity of operations, to timely intercept deteriorating security risks and adapt/ re-plan project activities. - In case the target areas are not accessible, IFAD and UNOPS will identify alternative intervention locations and request approval from the Advisory committee and the AF	Contracting of local experts that can easily access project sites/ come from target areas~~Permanent field staff at project locations~~
Environmental				
7 Poor weather conditions affect implementation of activities	2 Low	1 Low	- IFAD and UNOPS have and will develop work plan in line with sowing season and to avoid work in the hot season, if possible. If unexpected weather patterns occur, the proposed activities and work plan will be reviewed to make practical adaptations.	Work plans in line with sowing season, etc.
8. Covid-19 spread, leading to inaccessibility of target area and / or delays of project activities	3 Med	3 Med	- See also Covid-19 risks response in annex 1 including procedures. - IFAD and UNOPS will only let field work proceed if agreed with the UN security unit; safety and potential instability will be monitored continuously. - If needed and possible, activities will proceed online.	Monitoring of Covid-19 risks response in annex 1, including procedures UN-security unit recommendations

			- If activities cannot be pursued due to Covid-19, alternative strategies and options will be considered	

C. Measures for environmental and social risks management

~~157.~~164. IFAD's Strategic Framework calls for ensuring that projects and programmes promote the sustainable use of natural resources, build resilience to climate ~~change~~change, and are based upon ownership by rural women and men themselves to achieve sustainability. The project design was assessed through the social, environmental and climate assessment procedures (SECAP) of IFAD, which are fully aligned with the AF Environmental and Social as well a Gender Policies, as shown in the ESCMP. Following the IFAD SECAP screening and the AF Environmental and social risks screening in annex 1 (ESCMP), the project has been categorized as a category B.

~~158.~~165. Part II.K of this proposal summarizes the outcome of the environmental and social risks screening / impacts assessment that has been conducted for this project to comply to the AF ESP and GP and thus the outcome of the categorization (~~i.e.~~i.e., category B). In Annex 1, all the details of the risks screening, impact assessment, ESCMP, incl. the risks monitoring system and the budget~~budged~~ required for ~~managing the~~managing the ESMP are provided. In Part II.H it shows what consultations have been conducted to identify potential environmental and social risks and impacts, including with key stakeholders. Part III.A describes the allocated roles and responsibilities for environmental, social and climate risk management, including to implement the project ESCMP. A designated budget for environmental, social and climate risks management, including the implementation of the ESCMP, has also been included in the M&E budget (see **Table 36**).

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~~159.~~166. Below table provides an overview of the project requirements to the AF ESP and GP and what has been done to ensure this compliance.

Table 34 ESP and GP compliance requirements and how the proposal complies to these requirements.

ESP and GP compliance requirements	Project compliance to the AF ESP and GP	Reference / evidence
Have all potential environmental and social risks been identified for *all* project/programme activities prior to funding approval?	All potential environmental and social risks (incl. for gender and considering their significance) have been identified for all project/programme activities at the project preparation phase. An ESCMP report (annex 1) is in compliance with the AF ESP and GP and in line with national requirements for conducting ESIAs has been prepared; Outcomes have been consolidated in the proposal.	Part II.H Part II.K Annex 1 (ESP annex) Annex 2 GP annex)
Has the environmental and social assessment been completed before the project/programme proposal submission to the Adaptation Fund, and its findings included in the proposal document?	In compliance with the AF ESP and GP and national requirements for conducting ESIAs, environmental and social assessments have been completed.	
Has an ESCMP been developed and does this include safeguard measures to be implemented during a project/programme?	A project ESCMP has been developed, including safeguarding measures. The following has been included in the ESCMP: - Allocated roles and responsibilities environmental and social risk management / implement of the ESCMP. - Opportunities for adaptive management - Arrangements to supervise executing entities for implementation of ESCMP. - Budget provision to manage environmental and social risks / implement of the ESCMP. - Measures to avoid, minimize, or mitigate potential risks. - Risks monitoring system / indicators. - Grievance mechanism	Part III.A (roles and responsibilities for env. and social risk management) Annex 1 (ESP annex)
Will a grievance mechanism be put in place and how will it be made widely known to identified and potentially affected parties?	A project grievance mechanism will be put in place, as described in the ESCMP. It will be made widely known to identified and potentially affected parties through community mobilisers, posters, and online content	Annex 1 (ESP annex)

~~160.~~167. **Adaptive management:** due to the dynamic nature of the context in Libya, the ESMP takes an adaptive management approach. This means that, when changes in project activities or additional activities are required, these will need to go through a new risks screening and impact assessment process in compliance

with AF, IFAD and national policies and standards. When this is required, this will be led by IFAD and the PAC would need to approve the changes.

161.168. Also, the ESCMP allows for abiding by any new laws, amendment to current laws, regulations or technical standards that may emerge in Libya. Any new concerns around access and equity that may come up especially from vulnerable communities (including women, youth, disabled peoplepeople, and ethnic groups) during implementation will be accounted for and further consultations will be conducted to discuss solutions to address them. The ESCMP allows for adapting training activities into online/less crowded sessions in case any health concerns (e.g.e.g., COVID-19 like) emerge. Also, while the project avoids areas of important biodiversity abundance, the ESCMP allows for monitoring the before mentioned endangered species in case needed. In addition, Alreadyalready planned mitigation measures will also be evaluated to assess their effectiveness and then enhanced/changed accordingly. Mitigation measures and any updates with regards to environmental and social risks will be reported to the AF through the annual PPR.

D. Arrangements for monitoring, reporting and evaluation.

162.169. **M & E Framework and plan**

Monitoring and Evaluation (M & E) arrangements for this project will be in compliance with the AF M&E guidelines and ESP and GP and with IFAD and UNOPS M & E policies and guidelines. This means, as a minimum, the following will be monitored and evaluated: project Milestones, Financial data, Procurement data, Risks assessment, ESP Compliance, GP Compliance, Project indicators, Lessons learned, project Results. The M & E of progress in achieving project results will be based on targets and indicators (also for gender) established in the Project Results Framework (see Part III.E).

163.170. The annual project performance reports (PPRs) will include a section on the status of implementation of any environmental and social management plan, including those measures required to avoid, minimize, or mitigate environmental and social risks. The reports shall also include, if necessary, a description of any corrective actions that are deemed necessary. The terminal evaluation report will include an evaluation of the project's performance with respect to environmental and social risks.

164.171. IFAD will ensure timely and high-quality M & E by keeping oversight of the process by providing guidance to UNOPS and national government partners through full briefing of M & E requirements. Where possible, the M & E process will be participatory, involving key stakeholders at national, municipal and communities. The implementation of project activities will be monitored by the IFAD HQ with dedicated monitoring staff, which will require having expertise of M & E compliance to the AF ESP and GP. Audits of financial statements will follow acceptable international standards. The M&E plan will be implemented as proposed in the table below.

Table 35 M & E plan

Type of M&E Activities	Responsible Parties	Time Frame	Reporting
Inception Workshop and Report	~~IFAD Project manager~~ ~~Coordinated with:~~ UNOPS ~~and Advisory committee~~	Workshop: within first three months of signing between AF and IFAD Report: within one month after inception workshop	Inception Report, including 1st year workplan, monitoring framework and plan; project risks management framework and plan; environmental and social risks management framework and plan; knowledge management strategy
Periodic status/ progress reports	IFAD Project manager Coordinated with: UNOPS and auditors	Annually	Annual Report, mid-term, final
Compliance with ESP and GP		Annual, as well as upon receipt of complaints, grievances, or queries	Annual Report, mid-term, final
Audits		As per AF timeline	Audit Reports
Terminal project performance report		No later than project completion	Terminal project performance report
Final Evaluation	IFAD Project manager Coordinated with: UNOPS and External consultants	No later than project completion	Final Evaluation Report

Reports of Community consultations / workshops / trainings, etc.	UNOPS	Within one week after each event	Reports or other suitable dDocumentation
Visits to field sites	IFAD Project manager Coordinated with: UNOPS	At least every year	Field visit Report
Video with 'before' and 'after' the project	IFAD Project manager Coordinated with: UNOPS and PACAdvisory committee	Video one: before start of concrete interventions Video two: after completion concrete interventions	Video compilation of project results

165.172. For related data, targets, and indicators, please see the project proposal results framework (Part III.E). The M&E budget is below:

Table 36 M & E budget

M&E							
Type of M & E Activity	**Activity**	**Entity**	**Total**	**1**	**2**	**3**	**4**
Measurements of means of verification (baseline assessment and M & E plans) as part of inception	Inception Workshop	UNOPS	21020 000	21020 000			
	Baseline and completion assessment	UNOPS	30 000	15 000			15 000
Direct Project Monitoring and Quality Assurance including annual progress and financial reporting, project revisions, technical assistance and ESP and GP compliance (from execution fee M & E and safeguards)		UNOPS	11226 000	3036 000	306 000	306 000	2218 000
Overall project monitoring and evaluation (from cycle management fee)		IFAD	35 000	5 000	10 000	10 000	10 000
Financial audits (part of above)	In line with acceptable international standards	IFAD / UNOPS	18 000				
Final / Terminal external evaluation		Independent	25 000				25 000
Total			195236 000	6091 000	406 000	406 000	7253 000

166.173. **M&E Activities**

a) **Inception workshop and Project advisory committee meetings**
The first Project advisory committee meeting will be organized in conjunction with the project Inception Workshop. During the first Project advisory committee meeting, the following will be reviewed: the project organizational structure, includes roles and responsibilities, the project monitoring framework and workplan, the project risks management framework, the project knowledge management framework and plan, the project Environmental and social Risks Management Plan and annual work plan for year one. The Project advisory committee will meet every six months, and ad-hoc meetings will be held as needed.

b) **Periodic project monitoring and terminal project performance reporting**
Annual project performance monitoring will be conducted using the AF PPRs template. This will include monitoring of project: Milestones; Financial data; Procurement data; Risks assessment; ESP Compliance; GP Compliance; Project indicators; Lessons learned; Project Results

c) **ESCMP implementation monitoring**
The implementation of the project Environment, Social and Climate Management Framework / Plan (ESCMF/P) as described in annex 1 will be monitored. The ESMF/P includes monitoring indicators and responsibilities for identified potential risks, impacts, and mitigation measures. A dedicated budget for monitoring the compliance to the AF ESP and GP has been included in Part III.G

d) **Final Evaluation**
No later than project completion, a final evaluation will be conducted following AF and IFAD policies and guidelines. It will be conducted by an independent team of international and national experts in consultation

with executing entities and national stakeholders as a participatory process.

e) Community Level Participatory Monitoring

Part of the detailed project monitoring framework and plan will be identified through activities to involve Project Execution Entities and beneficiaries at the community level in monitoring activities. This would include community-level monitoring of Gender and Youth responsiveness and impact of the project.

f) Periodic Project Site Visits

Members of the Project advisory committee and representatives of IFAD will visit project sites and hold meetings with the local stakeholders to monitor the implementation of project activities.

g) Video with 'before' and 'after' the project

Also, as part of the knowledge management strategy and plan, a video recording project results will be produced using 'birds' eye' views and recording of project activities and beneficiaries.

~~167.~~174. **Reporting**

a) Inception Workshop and Report

Within one month after the inception workshop, an Inception Report will be submitted to the AF and project steering committees' members. Reports will include: (i) agreement on organizational structure of the project, including roles and responsibilities; (ii) monitoring framework and workplan; (iii) project risks management framework; (iv) knowledge management framework and plan; (v) Environmental and social Risks Management Plan; (vi) year one work plan.

b) Annual project performance reports, including final report.

The Annual project performance reports, which will be submitted to the AF, will include:

(1) Milestones
(2) Financial data
(3) Procurement data
(4) Risks assessment
(5) ESP Compliance
(6) GP Compliance
(7) Project indicators
(8) Lessons learned.
(9) Project Results to measure targets against baseline.

c) Community Level Meeting /Workshop / Training Reports and site visit

Reports on all community-level meetings, workshops, and training will be prepared by Project Execution Entities within one week of the event. Photo documented site visit reports, also to monitor women participation, will also be prepared by Project Execution Entities.

d) Financial Audits

A professional, certified, and independent organization will review the financial statements and adherence to required standards and regulations.

e) Final Evaluation Report

Independent consultants will prepare the Final Evaluation report in line with AF and IFAD evaluation policies and guidelines and norms and standards for evaluation in the UN system.

E. Project proposal results framework

Table 37 Project results framework with indicators, their baseline, targets, risks & assumptions, and verification means.

Expected Result	Indicators	Baseline data	Targets	Means of verification (Where and how)	Assumptions (external factors or risks)	Frequency	Responsibility
Component 1							
Outcome 1 Increased awareness of public institutional staff, farmers / pastoralists and women groups of relevant climate change hazard risks and adaptation options and priorities for the agriculture / livestock sector and improved mainstreaming of this information into planning processed. In line with AF outcome 1	Drought, flood and salinization hazard risks information and adaptation options for the agriculture / livestock sector generated and shared with: - Institutional staff at national level - Institutional staff at district level - Farmers / Pastoralists - % Women	Ineffective sharing 0 0 0	Effective sharing 50 130 (10 / district) 390 (30 / district) 30 %	Documentation of risk and adaptation information (published online and shared in person) Sharing of information in 13 districts with target beneficiaries before end of the project	Required to agree on how to assess effectiveness of sharing info	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women.	Number of climate change vulnerability and hazards risks assessments completed for the agriculture/ livestock sector at regional (i.e., district) level.	0	13 (1 / district)	Completed (~~i.e.~~i.e., documented / published) climate change vulnerability and hazards risks assessments	Ensure relevant risks and adaptation options are identified and prioritized, also for vulnerable groups, women, and youth	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Output 1.2 National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, ~~prioritized~~prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women.	Number of national climate resilient agriculture / livestock strategies developed.	0	1 (at national level)	Completed (~~i.e.~~i.e., documented / published) national climate resilient agriculture / livestock strategy	Ensure relevant risks and adaptation options are identified and prioritized, also for vulnerable groups, women, and youth	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Output 1.3. Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.	Number of capacities strengthening activities / trainings	0	~~Insert~~13 district level trainings 1 national level training	Completed training reports	Ensure relevant trainings with needs verified with beneficiaries	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Component 2							
Outcome 2 Increased climate change resilience and sustainability of agriculture livelihoods to droughts and saltwater intrusion, including strengthened sources of income and ownership of adaptation measures,	% of target population (households) implementing / applying appropriate adaptation responses such as drought/heat resilient crops and salt resistant crops. - % women-headed Household	0 0 0	80 30 5-10	Change in crops for each targeted household. Increased income versus baseline income	Baseline survey required at inception phase. Ensure targeting female-headed households	Baseline, mid-term, and end	IFAD in coordination with UNOPS

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benefitting farmers, women, and youth in four (4) districts in the northwest of Libya. In line with AF outcome 3 and 6	Increased income (%) vis-à-vis baseline from alternative agriculture crops (from households with increased income. - % women-headed Household **IFAD:** Number of households reporting adoption of environmentally sustainable and climate-resilient technologies and practices	0 0	30 4720 HH				
Output 2.1. Aaround 5900 grant packages (of USD 560 each) provided toto farmers, womenwomen, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation.	Number of grant packages distributed. **Core Indicator 6.1.2: Increased income or avoided decrease in income** - Number and % of target households with increased income or avoided decrease in income. Income level in USD **IFAD:** Number of hectares of farmland under water-related infrastructure constructed/rehabilitated.	0 0 0 Baseline 0	5900 4720 households 80 % Actual 22000 (assuming approx. 4.7 ha / HH and 80 % success rate)	Calculate number / % of targeted households with increased income versus baseline income. Calculate ha of farmland with new crops	Baseline survey required at inception phase. Ensure targeting female-headed households	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Output 2.2 Relevant public Institutional staff, farmers and women trained to implement, maintain, and sustain climate change resilient agriculture practices and techniquescrops and to support the strengthening or creation of community organizations and community development plans.	Number of people trained: - Public institution o % women - Farmers o % women Number of relevant organizations (i.e., farmer, water user, women) strengthened and or created. Number of community development and / or maintenance plans completed.	0 0 0 0 0 0	60 30 5900 30 3 (1 / target district) 3 (1 / target district)	Count people trained. Count relevant organizations supported. Count community development and / or maintenance plans developed	Plans should accurately target intervention sites and support maintenance of interventions	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Component 3							
Outcome 3 Increased climate change resilience and sustainability of pastoralist livelihoods to droughts, including increased natural / asset resource production system resilience and ownership of adaptation measures, benefitting pastoralist and women in two (2) districts in the northwest of Libya. In line with AF outcome 3 and 5	% of target population (households) implementing applying appropriate adaptation responses to increase to increase the climate change resilience of natural asset / resource production systems. - % women-headed Household Effectiveness of natural asset / resource production system improvement under climate change and variability-induced stress. **IFAD:** Number of households reporting adoption of environmentally sustainable and climate-resilient technologies and practices. **IFAD:** Number of groups supported to sustainably manage natural resources and climate-related risks.	0 0 Ineffective 0 0	80 30 % Effective 2880 HH 2880 HH	Change in effectiveness of natural resource improvement.	Baseline survey required at inception phase. Required to agree on how to assess effectiveness of improving land / water ecosystem production services	Baseline, mid-term, and end	IFAD in coordination with UNOPS

Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e. rangelands ~~management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and ~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock	Number of grant packages distributed. - % women **Core Indicator 5.1: Natural Assets protected or rehabilitated** - Ha of natural assets / resources (rangelands) protected or rehabilitated. Effectiveness of natural assets / resources (rangelands) protection / rehabilitation **IFAD**: Number of hectares of land brought under climate-resilient management	0 0 Ineffective 0	3600 13500 (assuming approx. 4.7 ha / HH and 80 % success rate) Effective 13500 (assuming approx. 4.7 ha / HH and 80 % success rate)	Calculate ha of natural assets / resources (rangelands) protected or rehabilitated. Change in effectiveness of natural resource protection / rehabilitation	Baseline survey required at inception phase. Required to agree on how to assess effectiveness of natural assets / resources (rangelands) protection / rehabilitation	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Output 3.2 Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans.	Number of people trained: - Public institution o % women - Pastoralists o % women Number of relevant organizations (i.e., pastoralist, water user, women) strengthened and or created. Number of community development and / or maintenance plans completed.	0 0 0 0 0 0	40 30 3600 30 2 (1 / target district) 2 (1 / target district)	Count people trained. Count relevant organizations supported. Count community development and / or maintenance plans developed	Plans should accurately target intervention sites and support maintenance of interventions	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Component 4							
Outcome 4 Climate change resilient practices and products piloted in the four (4) districts in the northwest of Libya are encouraged / supported for replication in one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south through a national – district – community replication mechanism. In line with AF outcome 8	No of innovative adaptation practices in food security encouraged at national and district level.	Not encouraged	Encouraged / accelerated	Sharing of relevant knowledge and learning in 9 other districts through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.	Agree on mechanism to share knowledge / learning in 9 districts	Baseline, mid-term, and end	IFAD in coordination with UNOPS
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient	Number of key findings on effective, efficient adaptation practices and products generated and shared. - Number of guidelines	0	1	Count of guidelines, farmer field schools, ToT, and visits of demo plots	Baseline survey required at inception phase.	Baseline, mid-term, and end	IFAD in coordination with UNOPS

practices, products, and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.	- Number of farmer field schools - Number of ToT - Number of visits to demo plots - % women of pParticipants ~~- % women~~ Effectiveness of sharing	0 0 0 0 ~~0~~ Ineffective	~~8~~9 ~~8~~9 ~~4~~9 30~~270~~ ~~30~~ Effective	Measure effectiveness of knowledge sharing	Survey to include questions to measure the effectiveness of sharing knowledge / learning		

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Table 38 Indicative Core Indicator Targets

Core indicator	Targets		Comment
	Direct	Indirect	
Number of beneficiaries Component 1	T: 570 W: 30 %	T: 6,8 million W: 30 %	
Number of beneficiaries Component 2	T: 35 400 (5 900 HH) W: 30 %	1 340 019	
Number of beneficiaries Component 3	T: 21 600 (3 600 HH) W: 30 %		
Number of beneficiaries Component 4	T: 270 W: 30 %	T: TBD W: 30 %	
AF Core Indicator: No. of beneficiaries **IFAD:** Number of people with greater resilience	T: 57 840 W: > 30 %	1 340 019	
AF Core Indicator 5.1: Natural Assets protected or rehabilitated - Ha of natural assets / resources (rangelands) protected or rehabilitated. **IFAD**: Number of hectares of land brought under climate-resilient management.	13500 (assuming approx. 4.7 ha / HH and 80 % success rate)		
AF Core Indicator 6.1.2: Increased income or avoided decrease in income - Number and % of target households with increased income or avoided decrease in income. **IFAD:** Number of people with increased income.	4720 households / 80 % of target households 5-10 % increase of income		

*Methodology to apply: https://www.adaptation-fund.org/wp-content/uploads/2016/04/AF-Core-Indicator-Methodologies.pdf

F. Project alignment with the Adaptation Fund results framework.

Table 39 Project alignment with the Adaptation Fund results framework.

Project Outcome(s)	Project Outcome Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Impact Increased resiliency in the agriculture / livestock sector to climate variability and change.	**Core Indicator**: No. of beneficiaries, incl. % farmers, pastoralists, women, with increased resilience indicated per target district and at national level.	**Impact:** Increased resiliency at the community, national, and regional levels to climate variability and change.	**Core Indicator: No. of beneficiaries**	
Outcome 1 Increased awareness of public institutional staff, farmers / pastoralists and women groups of relevant climate change hazard risks and adaptation options and priorities for the agriculture / livestock sector and improved mainstreaming of this information into planning processed.	Drought, flood and salinization hazard risks information and adaptation options for the agriculture / livestock sector generated and shared with: - Institutional staff at national level - Institutional staff at district level - Farmers / Pastoralists - % Women - Farmers / Pastoralist indirect	**Outcome 1:** Reduced exposure to climate-related hazards and threats.	**Indicator 1:** Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis.	$644,960.00 ~~773,500~~
Outcome 2 Increased climate change resilience and sustainability of agriculture livelihoods to droughts and saltwater intrusion, including strengthened sources of income and ownership of	% of target population (~~households)~~ ~~implementing~~households) implementing / applying appropriate adaptation responses such as drought//heat resilient crops and salt resistant crops.	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes.	**Indicator 3.1:** Increase in application of appropriate adaptation responses. **Indicator 3.2:** Percentage of targeted population applying appropriate adaptation responses.	$4,1454,790.00 4,267,500

adaptation measures, benefitting farmers, women, and youth in four (4) districts in the northwest of Libya.	- % women-headed households Increased income (%) vis-à-vis baseline from alternative agriculture crops (from households with increased income. - % women-headed Household	**Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.	**Indicator 6.2:** Increase in targeted population's sustained climate-resilient alternative livelihoods.	
Outcome 3 Increased climate change resilience and sustainability of pastoralist livelihoods to droughts, including increased natural / asset resource production system resilience and ownership of adaptation measures, benefitting pastoralist and women in two (2) districts in the northwest of Libya.	% of target population (households) implementing / applying appropriate adaptation responses to increase the climate change resilience of natural asset / resource production systems. - % women-headed Household Effectiveness of natural asset / resource production system improvement under climate change and variability-induced stress.	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes.	**Indicator 3.1:** Increase in application of appropriate adaptation responses. **Indicator 3.2:** Percentage of targeted population applying appropriate adaptation responses.	$2,~~702~~699,390.00
		Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.	**Indicator 5:** Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress.	
Outcome 4 Climate change resilient practices and products piloted in the four (4) districts in the northwest of Libya are encouraged / supported for replication in one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south through a national – district – community replication mechanism. ~~mechanism~~	No of innovative adaptation practices in food security encouraged at national and district level.	**Outcome 8:** Support the development and diffusion of innovative adaptation practices, tools, and technologies.	**Indicator 8.1:** No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated.	$845,~~502~~478.00 ~~560,542~~
Project Output(s)	**Project Outputs(s) Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the ~~for the agriculture/ livestock sector in Libya, specifically targeting districts~~ main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women.	Number of climate change vulnerability and hazards risks assessments completed for the agriculture/ livestock sector at regional (~~i.e.~~i.e., district) level.	**Output 1.1** Risk and vulnerability assessments conducted and updated.	**Indicator 1.1:** No. of projects/programmes that conduct and update risk and vulnerability assessments.	$384,600.00 ~~633,000~~
Output 1.2 National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, ~~prioritized~~prioritized, and promoted at national and district level, with specific attention to the needs of	Number of national climate resilient agriculture / livestock strategies developed.			~~140,500~~ ~~$384,600.00~~ $117,000.00

vulnerable groups and women.				
Output 1.3. Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.	Number of capacities strengthening activities / trainings.			~~Insert~~ $143,360.00
Output 2.1. A~~a~~round 5900 grant packages (of USD 560 each) provided to~~to~~ farmers, ~~women~~women, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation.	Number of grant packages distributed. **Core Indicator 6.1.2: Increased income or avoided decrease in income** - Number and % of target households with increased income or avoided decrease in income. Income level in USD	**Output 6** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability.	**Core Indicator 6.1.2:** Increased income or avoided decrease in income.	$3,699,785.00~~3,800,000~~
Output 2.2 Relevant public Institutional staff, farmers and women trained to implement, ~~maintain~~maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans.	Number of people trained: - Public institution o % women - Farmers o % women Number of relevant organizations (i.e., farmer, water user, women) strengthened and or created. Number of community development and / or maintenance plans completed.	**Output 3.2:** Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning.	**Indicator 3.2.1:** No. of technical committees/associations formed to ensure transfer of knowledge. **Indicator 3.2.2:** No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders.	$4~~4~~655,005.00~~467,500~~
Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e., rangelands ~~management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and ~~protection / rehabilitation~~	Number of Grant packages distributed. - % women **Core Indicator 5.1: Natural Assets protected or rehabilitated** - Ha of natural assets / resources (rangelands) protected or rehabilitated. Effectiveness of natural assets / resources (rangelands) protection / rehabilitation.	**Output 5:** Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability.	**Core Indicator 5.1:** Natural Assets protected or rehabilitated.	$2,3~~38~~29,585.00~~2,385,600~~

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~~improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock.				
Output 3.2 Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (~~i.e.~~i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of community organizations and community development plans.	Number of people trained: - Public institution o % women - Pastoralists o % women Number of relevant organizations (i.e., pastoralist, water user, women) strengthened and or created. Number of community development and / or maintenance plans completed.	**Output 3.2:** Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning.	**Indicator 3.2.1:** No. of technical committees/associations formed to ensure transfer of knowledge. **Indicator 3.2.2:** No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders.	$363,805.00 ~~351,500~~
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, products, and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.	Number of key findings on effective, efficient adaptation practices and products generated and shared. - Number of guidelines - Number of farmer field schools - Number of ToT - Number of visits to demo plots - Participants o % women ~~Effectivenss~~Effectiveness of sharing	**Output 8:** Viable innovations are rolled out, scaled up, encourages and/or accelerated.	**Indicator 8.2:** No. of key findings on effective, efficient adaptation practices, products and technologies generated.	$845,~~502~~478.00~~560,542~~

G. Detailed Budget

Table 40 Project budget

Outputs	Activities	Expenditure category	Year 1 (US$)	Year 2 (US$)	Year 3 (US$)	Year 4 (US$)	Total (US$)		Unit	Unit cost (US$)	Year 1 (q-ty)	Year 2 (q-ty)	Year 3 (q-ty)	Year 4 (q-ty)	Total (q-ty)
Component 1. Participatory prioritization of climate change adaptation options into national, district and community planning for agriculture / livestock development															
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the for the agriculture/ livestock sector in Libya, specifically targeting districts main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women	Research manager - UNOPS technical personnel	Technical Assistance	67 500	-	-	-	67 500	-	person-day	750	90	-	-	-	90
	Technical agriculture/ livestock expert - North-West	Technical Assistance	30000	-	-	-	36 000	-	person-day	600	50	-	-	-	60
	Technical agriculture/ livestock expert - North-East	Technical Assistance	30000	-	-	-	36 000	-	person-day	600	50	-	-	-	60
	Technical agriculture/ livestock expert - South	Technical Assistance	36 000	-	-	-	36 000	-	person-day	600	60	-	-	-	60
	Climate change expert	Technical Assistance	36 000	-	-	-	36 000	-	person-day	600	60	-	-	-	60
	Gender and social inclusion expert	Technical Assistance	18 000	-	-	-	18 000	-	person-day	600	30	-	-	-	30
	Community engagement expert(s)	Technical Assistance	36 000	-	-	-	36 000	-	person-day	600	60	-	-	-	60
	Final beneficiaries (farmers and herders) consultations	Training and Workshops	262 500	-	-	-	262 500	-	per beneficiary	175	1 500	-	-	-	1 500
	Focus groups (venue renting, transport costs for participants, etc.)	Training and Workshops	75 000	-	-	-	75 000	-	per focus group	5,000	15	-	-	-	15
	Geological surveys - according to ESMP requirements (per study)	Goods, Services and Inputs	12000				12000		per study	12000	1				1

	Editing/ publication of risks and vulnerability maps	Goods, Services and Inputs	-	15 000	-	-	15 000	-	Lumpsum	-	-	-	-	-	-
	Local transport costs	Operating Expenses	5 000	10 000	-	-	15 000	-	Lumpsum	-	-	-	-	-	-
Sub-total Output 1.1			**608 000**	**25 000**	**-**	**-**	**633 000**	-	-	-	-	-	-	-	-
Output 1.2. National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, prioritized and promoted at national and district level, with specific attention to the needs of vulnerable groups and women	Research manager - UNOPS teccchnical personnel	Technical Assistance	-	22 500	-	-	22 500	-	person-day	750	-	30	-	-	30
	Technical agriculture/ livestock expert	Technical Assistance	-	36 000	-	-	36 000	-	person-day	600	-	60	-	-	60
	Climate change expert	Technical Assistance	-	36 000	-	-	36 000	-	person-day	600	-	60	-	-	60
	Gender and social inclusion expert	Technical Assistance	-	18 000	-	-	18 000	-	person-day	600	-	30	-	-	30
	Focus groups (venue renting, transport costs for participants, etc.)	Training and Workshops	-	6 000	-	-	6 000	-	per focus group	2,000	-	3	-	-	3
	Editing/ publication of risks and vulnerability maps	Goods, Services and Inputs	-	7 000	-	-	7 000	-	Lumpsum	-	-	-	-	-	-
	National strategy presentation and dissemination workshops	Training and Workshops	-	10000	-	-	10000	-	per focus group	2,000	-	5	-	-	5
	Local transport costs	Operating Expenses	5 000	-	-	-	5 000	-	Lumpsum	-	-	-	-	-	-
Sub-total Output 1.2			**5 000**	**135 500**	**-**	**-**	**140 500**	-	-	-	-	-	-	-	-
Total Component 1			**613 000**	**160 500**	**-**	**-**	**773 500**	-	-	-	-	-	-	-	-
Component 2. Climate resilient investment in concrete activities in the agriculture sector															
Output 2.1. Aaround 5900 grant packages (of USD 560 each) provided toto farmers, women and youth groups in four (4) districts	Research manager - UNOPS techncical personnel	Technical Assistance	-	18 000	72 000	72 000	162 000	-	person-day	750	-	24	96	96	216
	Logistic & Field coordinator - UNOPS	Technical Assistance	-	5 000	5 000	-	10 000	-	person-day	500	-	10	10	-	20

in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation	technical personnel														
	Community engagement expert	Technical Assistance	-	27 000	36 000	18 000	81 000	-	person-day	600	-	45	60	30	135
	Agriculture Climate change technologies expert	Technical Assistance	-	32 400	48 600	16 200	97 200	-	person-day	600	-	54	81	27	162
	Procurement expert	Technical Assistance	-	-	32 400	32 400	64 800	-	person-day	600	-	-	54	54	108
	Gender and social inclusion expert	Technical Assistance	-	14 400	21 600	7 200	43 200	-	person-day	600	-	24	36	12	-
	Grant packages	Grants	-	1 652 000	1 652 000	-	3 304 000	-	package	560	-	2 950	2 950	-	5 900
	Local transport costs	Operating Expenses	12 600	12 600	12 600	-	37 800	-	Lumpsum	-	-	-	-	-	-
Sub-total Output 2.1			**12 600**	**1 761 400**	**1 880 200**	**145 800**	**3 800 000**	-	-	-	-	-	-	-	-
Output 2.2. Relevant public Institutional staff, farmers and women trained to implement, maintain and sustain climate change resilient agriculture practices and techniquescrops and to support the strengthening or creation of community organizations and community development plans	Logistic & Field coordinator - UNOPS technical personnel	Technical Assistance	-	-	4 500	3 000	7 500	-	person-day	500	-	-	9	6	15
	Community engagement expert	Technical Assistance	-	12 000	18 000	6 000	36 000	-	person-day	600	-	20	30	10	60
	Trainers	Technical Assistance	-	28 800	86 400	57 600	172 800	-	person-day	600	-	48	144	96	288
	Gender and social inclusion expert	Technical Assistance	-	6 000	24 000	13 200	43 200	-	person-day	600	-	10	40	22	72
	Costs for training and capacity building sessions for small holder farmers and herders (venues, etc.)	Training and Workshops	-	30 000	87 000	60 000	177 000	-	per session	1,500	-	20	58	40	118
	Costs for training and capacity building sessions for 60 government officials	Training and Workshops	-	-	4 000	-	4 000	-	per session	2,000	-	-	2	-	-
	Local transport costs	Operating Expenses	9 000	9 000	9 000	-	27 000	-	Lumpsum	-	-	-	-	-	-
Sub-total Output 2.2			**9 000**	**85 800**	**232 900**	**139 800**	**467 500**	-	-	-	-	-	-	-	-

Total Component 2			21 600	1 847 200	2 113 100	285 600	4 267 500	-							
Component 3. Climate resilient investment in concrete activities in the livestock sector															
Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate Climate change resilient natural assets / resources (i.e. rangelands management) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groupssustainable rangeland	Research manager - UNOPS technical personnel	Technical Assistance	30 000	63 750	27 750	-	121 500	-	person-day	750	40	85	37	-	162
	Logistic & Field coordinator - UNOPS technical personnel	Technical Assistance	-	4 500	3 000	-	7 500	-	person-day	500	-	9	6	-	15
	Community engagement expert	Technical Assistance	-	15 000	21 600	12 000	48 600	-	person-day	600	-	25	36	20	81
	Livestock Climate change technologies expert	Technical Assistance	-	27 000	27 000	27 000	81 000	-	person-day	600	-	45	45	45	135
	Procurement expert	Technical Assistance	-	32 400	-	-	32 400	-	person-day	600	-	54	-	-	54
	Gender and social inclusion expert	Technical Assistance	-	15 000	18 000	15 600	48 600	-	person-day	600	-	25	30	26	-
	Grant packages	Grants	-	2 016 000	-	-	2 016 000	-	package	560	-	3 600	-	-	3 600
	Local transport costs	Operating Expenses	10 000	10 000	10 000	-	30 000	-	Lumpsum	-	-	-	-	-	-

management for livestock															
Sub-total Output 3.1			40 000	2 183 650	107 350	54 600	2 385 600	-	-						
Output 3.2. Relevant public Institutional staff, pastoralists and women trained to implement, maintain and sustain climate change resilient natural assets / resources (i.e. rangeland management) production system improvements and to support the strengthening or creation of community organizations and community development plans	Logistic & Field coordinator - UNOPS technical personnel	Technical Assistance	-	-	2 000	4 500	6 500	-	person-day	500	-	-	4	9	13
	Community engagement expert	Technical Assistance	-	-	4 800	9 600	14 400	-	person-day	600	-	-	8	16	24
	Trainers	Technical Assistance	-	-	60 000	48 000	108 000	-	person-day	600	-	-	100	80	180
	Gender and social inclusion expert	Technical Assistance	-	-	7 200	14 400	21 600	-	person-day	600	-	-	12	24	36
	Costs for training and capacity building sessions for small holders' farmers and herders	Training and Workshops	-	-	67 500	82 500	150 000	-	per session	1,500	-	-	45	55	100
	Costs for training and capacity building sessions for government officials	Training and Workshops	-	-	9 000	12 000	21 000	-	per session	1,500	-	-	6	8	-
	Local transport costs	Operating Expenses	-	10 000	10 000	10 000	30 000	-	Lumpsum	-	-	-	-	-	-
Sub-total Output 3.2			-	10 000	160 500	181 000	351 500	-	-						
Total Component 3			40 000	2 193 650	267 850	235 600	2 737 100	-	-						
Component 4. Capturing and disseminating relevant knowledge and learning on climate change resilient practices, products and technologies and to replicate these at national, district and community level															
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, products and technologies and to replicate these at the national level and to one	Research manager - UNOPS technical personnel	Technical Assistance	-	-	2 250	2 250	4 500	-	person-day	750	-	-	3	3	6
	Climate change expert	Technical Assistance	-	-	54 000	54 000	108 000	-	person-day	600	-	-	90	90	180
	Experts to facilitate workshops	Training and Workshops	-	-	45 000	45 000	90 000	-	person-day	600	-	-	75	75	150
	Communication expert	Technical Assistance	-	-	36 000	36 000	72 000	-	person-day	400	-	-	90	90	180
	Editing/ publication of the guidelines	Technical Assistance	-	-	6 000	-	6 000	-	guideline	6,000	-	-	1	-	1

(1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.	TOT (venue renting, transport costs for participants, etc.)	Training and Workshops	-	-	25 000	20 000	45 000	-	per session	5,000	-	-	5	4	9
	Visits demo plots	Training and Workshops	-	-	18000	12000	30000	-	per session	6,000	-	-	3	2	5
	Farmers field schools	Training and Workshops	-	-	60 000	48 000	108 000	-	per session	12,000	-	-	5	4	9
	Sustainability related workshops	Training and Workshops				30000	30000		per session	6000				5	5
	Communication materials (videos, digital contents, leaflets, etc.)	Goods, Services and Inputs	-	-	40 000	-	40 000	-	Lumpsum	-	-	-	-	-	-
	Website	Technical Assistance	-	-	7 042	-	7 042	-	Lumpsum	-	-	-	-	-	-
	Local transport costs	Operating Expenses	-	-	10 000	10 000	20 000	-	Lumpsum	-	-	-	-	-	-
Sub-total Output 4.1			-	-	303 292	257 250	560 542	-	-	-	-	-	-	-	-
Total Component 4			-	-	321 292	239 250	560 542	-	-	-	-	-	-	-	-
Total Project Components			674 600	4 201 350	2 702 242	760 450	8 338 642	-	-	-	-	-	-	-	-
Project Execution Costs															
Project Execution	Office equipment (IT and other)	Goods, Services and Inputs	5 730	-	-	-	5 730	-	Lumpsum	-	-	-	-	-	-
	Project Manager (25% per month)	Salaries and Allowances	36 000	36 000	36 000	18 000	126 000	-	Person Months	3,000	12	12	12	6	42
	Finance Officer (35% per month)	Salaries and Allowances	21 000	21 000	21 000	10 500	73 500	-	Person Months	1,750	12	12	12	6	42
	Driver (30% per month)	Salaries and Allowances	8 652	8 652	8 652	4 326	30 282	-	Person Months	721	12	12	12	6	42
	Office costs (rent, utilities, security, etc.)	Operating Expenses	52 800	52 800	52 800	26 400	184 800	-	per month	4,400	12	12	12	6	42
	Project External Audit (lump sum)	Operating Expenses				18000	18000		per audit	18000				1	1
	Other direct costs for project management, implementation and oversight	Other	36 396	36 396	36 396	18 198	127 386	-	per month	3,033	12	12	12	6	42

	UNOPS indirect costs[49]	Other	88415.22286 -	88415.22286 -	88415.22286 -	44207.61143 -	309,453.28 -	-	Lumpsum	-	-	-	-	-	-
Total Project Execution Costs			**248 993.22286** -	**243 263.22286** -	**243 263.22286** -	**139 631.61143** -	**875151.28**	-	-	-	-	-	-	-	-	-
Total Project Costs			**923 593.22286** -	**4 444 613.22286** -	**2 945 505.22286** -	**909 081.61143** -	**9 213 793.28**	-	-	-	-	-	-	-	-	-
Project cycle management fee costs																
Project cycle management fee costs		Other	223 768 -	223 768 -	223 768 -	111 884 -	783 187	-	Lumpsum	-	-	-	-	-	-	-
Total Project cycle management fee costs			223 768 -	223 768 -	223 768 -	111 884 -	783 187	-	-	-	-	-	-	-	-	-
TOTAL amount of financing requested			**1 147 361.2** -	**4 668 381.2** -	**3 169 273.2** -	**1 011 965.6** -	**9 996 981**	-	-	-	-	-	-	-	-	-

Outputs	Activities	Expenditure category	Year 1 (US$)	Year 2 (US$)	Year 3 (US$)	Year 4 (US$)	Total (US$)		Unit	Unit Cost (US$)	Year 1 (Q-ty)	Year 2 (Q-ty)	Year 3 (Q-ty)	Year 4 (Q-ty)	Total (Q-ty)
Component 1: Participatory prioritization of climate change adaptation options into national, district and community planning for agriculture / livestock development															
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women	Lead expert (per day)	Technical Assistance	$57,600.00	$0.00	$0.00	$0.00	$57,600.00		Person - Day	$720.00	80	0	0	0	80
	Technical agriculture/ livestock expert - North-West (per day)	Technical Assistance	$36,000.00	$0.00	$0.00	$0.00	$36,000.00		Person - Day	$600.00	60	0	0	0	60
	Technical agriculture/ livestock expert - North-East (per day)	Technical Assistance	$36,000.00	$0.00	$0.00	$0.00	$36,000.00		Person - Day	$600.00	60	0	0	0	60

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[49] UNOPS is a self-financing, not-for-profit member of the United Nations family. UNOPS does not receive any core nor voluntary funding from the Member States or other third parties; therefore, and in line with the principle of ensuring financial viability, UNOPS funds its entire operations through costs recovered from project implementation. Indirect costs fund UNOPS core corporate functions, such as strategic leadership, representation, policy setting and United Nations governance. Whereas most other UN entities receive direct contributions from the member states to cover corporate functions, UNOPS does not and needs to recover them through projects indirect costs.

	Technical agriculture/ livestock expert - South (per day)	Technical Assistance	$36,000.00	$0.00	$0.00	$0.00	$36,000.00		Person - Day	$600.00	60	0	0	0	60
	Climate change expert (per day)	Technical Assistance	$36,000.00	$0.00	$0.00	$0.00	$36,000.00		Person - Day	$600.00	60	0	0	0	60
	Gender and social inclusion expert (per day)	Technical Assistance	$24,000.00	$0.00	$0.00	$0.00	$24,000.00		Person - Day	$600.00	40	0	0	0	40
	Community engagement expert(s) (per day)	Technical Assistance	$30,000.00	$0.00	$0.00	$0.00	$30,000.00		Person - Day	$500.00	60	0	0	0	60
	Farmers and herders consultations - (interview per beneficiary)	Training and workshops	$65,000.00	$0.00	$0.00	$0.00	$65,000.00		per focus group	$200.00	325	0	0	0	325
	Focus groups (venue renting, focus groups materials, other logistics, etc.) (per focus group)	Training and workshops	$30,000.00	$0.00	$0.00	$0.00	$30,000.00		per focus group	$2,000.00	15	0	0	0	15
	Local transport costs (lump sum)	Operating expenses	$26,000.00	$0.00	$0.00	$0.00	$26,000.00		Lump sum	$26,000.00	1	0	0	0	1
	Editing/ publication of risks and vulnerability maps (lump sum)	Goods, services and inputs	$8,000.00	$0.00	$0.00	$0.00	$8,000.00		Lump sum	$8,000.00	1	0	0	0	1
Subtotal Output 1.1			**$384,600.00**	**$0.00**	**$0.00**	**$0.00**	**$384,600.00**								
Output 1.2. National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and	Lead expert (per day)	Technical Assistance	$36,000.00	$0.00	$0.00	$0.00	$36,000.00		Person - Day	$720.00	50	0	0	0	50
	Technical agriculture/ livestock expert (per day)	Technical Assistance	$24,000.00	$0.00	$0.00	$0.00	$24,000.00		Person - Day	$600.00	40	0	0	0	40
	Climate change expert (per day)	Technical Assistance	$24,000.00	$0.00	$0.00	$0.00	$24,000.00		Person - Day	$600.00	40	0	0	0	40

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adaptation options are identified, prioritized and promoted at national and district level, with specific attention to the needs of vulnerable groups and women	Gender and social inclusion expert (per day)	Technical Assistance	$12,000.00	$0.00	$0.00	$0.00	$12,000.00		Person - Day	$600.00	20	0	0	0	20
	Focus groups (venue renting, focus groups materials, other logistics, etc.) (per focus group)	Training and workshops	$6,000.00	$0.00	$0.00	$0.00	$6,000.00		per focus group	$2,000.00	3	0	0	0	3
	Local transport costs (lump sum)	Operating expenses	$7,000.00	$0.00	$0.00	$0.00	$7,000.00		Lump sum	$7,000.00	1	0	0	0	1
	Editing/ publication of the strategy (lump sum)	Goods, services and inputs	$8,000.00	$0.00	$0.00	$0.00	$8,000.00		Lump sum	$8,000.00	1	0	0	0	1
Subtotal Output 1.2			**$117,000.00**	**$0.00**	**$0.00**	**$0.00**	**$117,000.00**								
Output 1.3 Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.	Lead expert (per day)	Technical Assistance	$0.00	$23,760.00	$0.00	$0.00	$23,760.00		Person - Day	$720.00	0	33	0	0	33
	Technical agriculture/ livestock expert (per day)	Technical Assistance	$0.00	$12,000.00	$0.00	$0.00	$12,000.00		Person - Day	$600.00	0	20	0	0	20
	Climate change expert (per day)	Technical Assistance	$0.00	$12,000.00	$0.00	$0.00	$12,000.00		Person - Day	$600.00	0	20	0	0	20
	Gender and social inclusion expert (per day)	Technical Assistance	$0.00	$9,600.00	$0.00	$0.00	$9,600.00		Person - Day	$600.00	0	16	0	0	16
	Local transport costs (lump sum)	Operating expenses	$0.00	$42,000.00	$0.00	$0.00	$42,000.00		Lump sum	$42,000.00	0	1	0	0	1
	Training workshops at the district level specific to the respective climate hazard and risk assessment in each district (venue renting, materials, other logistics...) (lump sum per workshop)	Training and workshops	$0.00	$39,000.00	$0.00	$0.00	$39,000.00		Per workshop	$3,000.00	0	13	0	0	13

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	National training workshop in Tripoli on the national climate resilient agriculture/ livestock strategy (venue renting, materials, other logistics…) (lump sum)	Training and workshops	$0.00	$5,000.00	$0.00	$0.00	$5,000.00		Lump sum	$5,000.00	0	1	0	0	1
Subtotal Output 1.3			**$0.00**	**$143,360.00**	**$0.00**	**$0.00**	**$143,360.00**								
Total component 1			**$501,600.00**	**$143,360.00**	**$0.00**	**$0.00**	**$644,960.00**								
Component 2: Climate resilient investment in concrete agriculture activities															
Output 2.1. Around 5900 grant packages (of USD 560 each) provided to farmers, women and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and salwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation.	Lead expert (per day)	Technical Assistance	$0.00	$79,488.00	$19,872.00	$0.00	$99,360.00		Person - Day	$720.00	0	110.4	27.6	0	138
	Community engagement expert(s) (per day)	Technical Assistance	$0.00	$54,000.00	$13,500.00	$0.00	$67,500.00		Person - Day	$500.00	0	108	27	0	135
	Agriculture Climate change technologies expert (per day)	Technical Assistance	$0.00	$77,760.00	$19,440.00	$0.00	$97,200.00		Person - Day	$600.00	0	129.6	32.4	0	162
	Grievance mechanism supporters (per day)	Technical Assistance	$0.00	$28,800.00	$7,200.00	$0.00	$36,000.00		Person - Day	$400.00	0	72	18	0	90
	Gender and social inclusion expert (per day)	Technical Assistance	$0.00	$34,560.00	$8,640.00	$0.00	$43,200.00		Person - Day	$600.00	0	57.6	14.4	0	72
	Grants packages (per package)	Grants	$0.00	$3,304,000.00	$0.00	$0.00	$3,304,000.00		per person	$560.00	0	5900	0	0	5900
	Grievance mechanism operations (e.g. call centre, online platform, etc.) (lump sum)	Goods, services and inputs	$0.00	$4,525.00	$0.00	$0.00	$4,525.00		Lump sum	$4,525.00	0	1	0	0	1

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	Local transport costs (lump sum per district)	Operating expenses	$0.00	$38,400.00	$9,600.00	$0.00	$48,000.00		Lump sum	$12,000.00	0	3.2	0.8	0	4
Subtotal Output 2.1			**$0.00**	**$3,621,533.00**	**$78,252.00**	**$0.00**	**$3,699,785.00**								
Output 2.2. Relevant public Institutional staff, farmers and women trained to implement, maintain and sustain climate change resilient agriculture practices and techniques and to support the strengthening or creation of community organizations and community development plans	Lead expert (per day)	Technical Assistance	$0.00	$20,160.00	$40,320.00	$0.00	$60,480.00		Person - Day	$720.00	0	28	56	0	84
	Community engagement expert(s) (per day)	Technical Assistance	$0.00	$10,000.00	$20,000.00	$0.00	$30,000.00		Person - Day	$500.00	0	20	40	0	60
	Trainers (per day)	Technical Assistance	$0.00	$38,400.00	$76,800.00	$0.00	$115,200.00		Person - Day	$400.00	0	96	192	0	288
	Gender and social inclusion expert (per day)	Technical Assistance	$0.00	$8,000.00	$16,000.00	$0.00	$24,000.00		Person - Day	$600.00	0	13.33333333	26.66666667	0	40
	Grievance mechanism supporters (per day)	Technical Assistance	$0.00	$5,600.00	$11,200.00	$0.00	$16,800.00		Person - Day	$400.00	0	14	28	0	42
	Costs for training and capacity building sessions for small holders farmers beneficiaries on the handling of agriculture climate change resilient crops/ solutions (venues, etc.) (per session)	Training and workshops	$0.00	$59,000.00	$118,000.00	$0.00	$177,000.00		Per session	$1,500.00	0	39.33333333	78.66666667	0	118
	Costs for training and capacity building sessions for public institution staff on how to support set-up and growth of community/ farmers organisations and the creation of community development plans	Training and workshops	$0.00	$6,000.00	$0.00	$0.00	$6,000.00		Per session	$1,500.00	0	4	0	0	4

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	to operate and maintain piloted solutions (per session)														
	Grievance mechanism operations (e.g. call centre, online platform, etc.) (lump sum)	Goods, services and inputs	$0.00	$4,525.00	$0.00	$0.00	$4,525.00		Lump sum	$4,525.00	0	1	0	0	1
	Local transport costs (lump sum per district)	Operating expenses	$0.00	$7,000.00	$14,000.00	$0.00	$21,000.00		Lump sum	$5,250.00	0	1.333333333	2.666666667	0	4
Subtotal Output 2.2			**$0.00**	**$158,685.00**	**$296,320.00**	**$0.00**	**$455,005.00**								
Total component 2			**$0.00**	**$3,780,218.00**	**$374,572.00**	**$0.00**	**$4,154,790.00**								
Component 3: Climate resilient investment in concrete livestock activities															
Output 3.1 Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate Climate change resilient natural assets / resources (i.e. rangelands) production systems. Support	Lead expert (per day)	Technical Assistance	$0.00	$79,488.00	$19,872.00	$0.00	$99,360.00		Person - Day	$720.00	0	110.4	27.6	0	138
	Community engagement expert(s) (per day)	Technical Assistance	$0.00	$32,400.00	$8,100.00	$0.00	$40,500.00		Person - Day	$500.00	0	64.8	16.2	0	81
	Livestock Climate change technologies expert (per day)	Technical Assistance	$0.00	$64,800.00	$16,200.00	$0.00	$81,000.00		Person - Day	$600.00	0	108	27	0	135
	Gender and social inclusion expert (per day)	Technical Assistance	$0.00	$34,560.00	$8,640.00	$0.00	$43,200.00		Person - Day	$600.00	0	57.6	14.4	0	72
	Grievance mechanism supporters (per day)	Technical Assistance	$0.00	$28,800.00	$7,200.00	$0.00	$36,000.00		Person - Day	$400.00	0	72	18	0	90
	Grants packages (per package)	Grants	$0.00	$2,016,000.00	$0.00	$0.00	$2,016,000.00		Per person	$560.00	0	3600	0	0	3600

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will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and sustainable rangeland management for livestock.	Grievance mechanism operations (e.g. call centre, online platform, etc.) (lump sum)	Goods, services and inputs	$0.00	$4,525.00	$0.00	$0.00	$4,525.00		Lump sum	$4,525.00	0	1	0	0	1
	Local transport costs (lump sum per district)	Operating expenses	$0.00	$7,200.00	$1,800.00	$0.00	$9,000.00		Lump sum	$4,500.00	0	1.6	0.4	0	2
Subtotal Output 3.1			**$0.00**	**$2,267,773.00**	**$61,812.00**	**$0.00**	**$2,329,585.00**								
Output 3.2. Relevant public Institutional staff, pastoralists and women trained to implement, maintain and sustain climate change resilient natural assets / resources (i.e. rangeland) production system improvements and to support the strengthening or creation of community organizations and community development plans	Lead expert (per day)	Technical Assistance	$0.00	$20,160.00	$40,320.00	$0.00	$60,480.00		Person - Day	$720.00	0	28	56	0	84
	Community engagement expert(s) (per day)	Technical Assistance	$0.00	$4,000.00	$8,000.00	$0.00	$12,000.00		Person - Day	$500.00	0	8	16	0	24
	Trainers (per day)	Technical Assistance	$0.00	$24,000.00	$48,000.00	$0.00	$72,000.00		Person - Day	$400.00	0	60	120	0	180
	Gender and social inclusion expert (per day)	Technical Assistance	$0.00	$8,000.00	$16,000.00	$0.00	$24,000.00		Person - Day	$600.00	0	13.33333333	26.66666667	0	40
	Grievance mechanism supporters (per day)	Technical Assistance	$0.00	$5,600.00	$11,200.00	$0.00	$16,800.00		Person - Day	$400.00	0	14	28	0	42
	Costs for training and capacity building sessions for herders on the management of climate change resilient assets / resource production system improvements (per session)	Training and workshops	$0.00	$50,000.00	$100,000.00	$0.00	$150,000.00		Per session	$1,500.00	0	33.33333333	66.66666667	0	100

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	Costs for training and capacity building sessions for public institution staff on how to support set-up and growth of community/ farmer / pastoralist organisations and the creation of community development plans (per session)	Training and workshops	$0.00	$6,000.00	$0.00	$0.00	$6,000.00		Per session	$1,500.00	0	4	0	0	4
	Grievance mechanism operations (e.g. call centre, online platform, etc.) (lump sum)	Goods, services and inputs	$0.00	$4,525.00	$0.00	$0.00	$4,525.00		Lump sum	$4,525.00	0	1	0	0	1
	Local transport costs (lump sum per district)	Operating expenses	$0.00	$6,000.00	$12,000.00	$0.00	$18,000.00		Lump sum	$4,500.00	0	1.333333333	2.666666667	0	4
Subtotal Output 3.2			**$0.00**	**$128,285.00**	**$235,520.00**	**$0.00**	**$363,805.00**								
Total component 3			**$0.00**	**$2,396,058.00**	**$297,332.00**	**$0.00**	**$2,693,390.00**								
Component 4 Capturing and disseminating relevant knowledge and learning on climate change resilient practices, products and technologies and to replicate these at national, district and community level															
Output 4.1 Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, products and technologies and to replicate these	Lead expert (per day)	Technical Assistance	$22,320.00	$0.00	$29,760.00	$14,880.00	$66,960.00		Person - Day	$720.00	31	0	41.33333333	20.66666667	93
	Climate change expert (per day)	Technical Assistance	$36,000.00	$0.00	$48,000.00	$24,000.00	$108,000.00		Person - Day	$600.00	60	0	80	40	180
	Experts to facilitate workshops (per day)	Technical Assistance	$30,000.00	$0.00	$40,000.00	$20,000.00	$90,000.00		Person - Day	$600.00	50	0	66.66666667	33.33333333	150
	Community engagement expert(s) (per day)	Technical Assistance	$10,000.00	$0.00	$13,333.33	$6,666.67	$30,000.00		Person - Day	$500.00	20	0	26.66666667	13.33333333	60

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at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots and a website.	Knowledge management expert	Technical Assistance	$24,000.00	$0.00	$32,000.00	$16,000.00	$72,000.00		Person - Day	$400.00	60	0	80	40	180
	Monitoring and evaluation expert (per day)	Technical Assistance	$29,142.86	$29,142.86	$29,142.86	$14,571.43	$102,000.00		Person - Day	$500.00	58.28571429	58.28571429	58.28571429	29.14285714	204
	Organisation of the Inception workshop (venue renting, transport costs for participants, etc.) (lump sum)	Training and workshops	$20,000.00	$0.00	$0.00	$0.00	$20,000.00		Lump sum	$20,000.00	1	0	0	0	1
	M&E baseline survey (lump sum)	Goods, services and inputs	$15,000.00	$0.00	$0.00	$0.00	$15,000.00		Lump sum	$15,000.00	1	0	0	0	1
	M&E completion survey (lump sum)	Goods, services and inputs	$0.00	$0.00	$0.00	$15,000.00	$15,000.00		Lump sum	$15,000.00	0	0	0	1	1
	Editing/ publication of the guidelines on mainstreaming climate resilience into local planning for crops and livestock sub-sector (lump sum)	Goods, services and inputs	$0.00	$0.00	$0.00	$10,000.00	$10,000.00		Lump sum	$10,000.00	0	0	0	1	1
	TOT (venue renting, transport costs for participants, etc.) (per training)	Training and workshops	$0.00	$0.00	$40,000.00	$0.00	$40,000.00		Per training	$5,000.00	0	0	8	0	8
	Visits to demo plots to showcase best agricultural and livestock practices. (per visit)	Training and workshops	$0.00	$0.00	$0.00	$28,000.00	$28,000.00		Per visit	$7,000.00	0	0	0	4	4

	Sustainability-focused workshops with local government, community leaders, representatives of the academia/ research organisations and ministry representatives	Training and workshops	$0.00	$0.00	$0.00	$25,000.00	$25,000.00		Per workshop	$5,000.00	0	0	0	5	5
	Farmers field schools	Training and workshops	$0.00	$0.00	$134,976.00	$0.00	$134,976.00		Per workshop	$3,648.00	0	0	37	0	37
	Local transport costs (lump sum per district)	Operating expenses	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$48,000.00		Per school	$12,000.00	1	1	1	1	4
	Knowledge management and dissemination products (videos, digital contents, leaflets, etc.) (lump sum)	Goods, services and inputs	$8,750.00	$8,750.00	$8,750.00	$8,750.00	$35,000.00		Lump sum	$35,000.00	0.25	0.25	0.25	0.25	1
	Website (lump sum)	Goods, services and inputs	$5,542.00	$0.00	$0.00	$0.00	$5,542.00		Lump sum	$5,542.00	1	0	0	0	1
Subtotal Output 4.1			**$212,754.86**	**$49,892.86**	**$387,962.19**	**$194,868.10**	**$845,478.00**								
Total component 4			**$212,754.86**	**$49,892.86**	**$387,962.19**	**$194,868.10**	**$845,478.00**								
Total Project Components			**$714,354.86**	**$6,369,529.86**	**$1,059,866.19**	**$194,868.10**	**$8,338,618.00**								
Project Execution	Finance Officer (50% per month)	Salaries and allowances	$30,000.00	$30,000.00	$30,000.00	$15,000.00	$105,000.00		Person-months	$2,500.00	12	12	12	6	42
	Procurement Analyst (50% per month)	Salaries and allowances	$0.00	$32,400.00	$0.00	$0.00	$32,400.00		Person-months	$4,050.00	0	8	0	0	8
	Grants Management Officer (50% per month)	Salaries and allowances	$12,150.00	$48,600.00	$4,050.00	$0.00	$64,800.00		Person-months	$4,050.00	3	12	1	0	16

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	Office costs (rent, utilities, security, etc.) (per month)	Operating expenses	$52,200.00	$52,200.00	$52,200.00	$26,100.00	$182,700.00		Per month	$4,350.00	12	12	12	6	42
	Office equipment (IT and other equipment - lump sum)	Operating expenses	$2,600.00	$0.00	$0.00	$0.00	$2,600.00		Lump sum	$2,600.00	1	0	0	0	1
	Project External Audit (lump sum)	Operating expenses	$0.00	$0.00	$0.00	$18,000.00	$18,000.00		Lump sum	$18,000.00	0	0	0	1	1
	UNOPS Regional office experts playing critical roles in project quality assurance and expenses authorisation for procurement management, financial reporting, internal monitoring, human resource management, security management (per month)	Salaries and allowances	$26,760.00	$26,760.00	$26,760.00	$13,380.00	$93,660.00		Person-months	$2,230.00	12	12	12	6	42
	UNOPS Regional office operating costs (per month)	Operating expenses	$7,200.00	$7,200.00	$7,200.00	$3,600.00	$25,200.00		Per month	$600.00	12	12	12	6	42
	UNOPS HQ experts providing oversight for quality assurance and delivery ensuring compliance with UNOPS rules and procedures (per month)	Salaries and allowances	$10,340.04	$10,340.04	$10,340.04	$5,170.02	$36,190.14		Person-months	$861.67	12	12	12	6	42
	Indirect costs (3.5217%)	Other	$30,131.84	$231,623.23	$41,922.89	$9,724.05	$313,402.00		Percentage rate	3.5217%	3.5217%	3.5217%	3.5217%	3.5217%	3.5217%
Total execution costs			$171,38 1.88	$449,12 3.37	$172,47 2.93	$80,974. 07	$873,95 2.24								

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Total costs	$885,736.73	$6,808,652.12	$1,232,339.12	$285,842.17	**$9,212,570.14**								

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Outputs budget notes

Component 1: Participatory prioritization of climate change adaptation options into national, district and community planning for agriculture / livestock development	
Outputs title	
Output 1.1 Climate change vulnerability and hazards risks assessments conducted in the for the agriculture/ livestock sector in Libya, specifically targeting districts main agriculture areas in Libya. which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women	
Budget line	Budget notes
Research manager (per day) - UNOPS technical personnel	Coordinates, supervises and quality assures the field research work and inputs of all experts involved in Component 1. Contributes to drafting and finalization of the 13 climate vulnerability assessments.
Technical agriculture/ livestock expert - North-West (per day)	These experts will conduct field climate vulnerability research/ assessment work. They will perform desk-research and conduct extensive field assessments/ consultations with relevant regional and local authorities, associations/ representatives of farmers and herders, CSOs, women, youth. Each consultant will be assigned a specific region (North-West, North-East, South) to ensure appropriate geographic coverage and depth of the research and consultations. They will also summaries the research findings in the vulnerability assessments, working under the supervision of the Research Manager.
Technical agriculture/ livestock expert - North-East (per day)	
Technical agriculture/ livestock expert - South (per day)	
Climate change expert (per day)	This expert supports the agriculture and livestock experts cross-districts, contributing to the climate vulnerability assessments with suitable climate know-how and experience. This person will also contribute to the drafting of the 13 climate vulnerability assessments.
Gender and social inclusion expert (per day)	This expert supports the agriculture and livestock experts cross-districts, making sure that gender and social inclusion considerations are embedded in the research, consultations, and assessment findings. This person will also contribute to the drafting of the 13 climate vulnerability assessments to include findings that are relevant from a gender and social inclusion perspective.
Community engagement expert(s) (per day)	These two experts support field work across the 5 districts. They support beneficiaries identification, outreach, and organization of focus groups.
Final beneficiaries (farmers and herders)herders' consultations - (interview per beneficiary)	Costs to consult approx. 300 beneficiaries per district. Unit cost based on quotations received from Libyan agencies providing this type of activity.
Focus groups (venue renting, transport costs for participants, etc.) (per focus group)	Logistic and organization costs for 5 focus groups (FG)/ district (1 FG for women, 1FG for youth, 1FG for vulnerable groupsclimate induced, 1FG for local authorities' representatives, 1FG for farmers and herders' representatives).
Geological study - according to ESMP requirements (per study)	Geological surveys to assess groundwater resources and respective pumping rates in project target areas where components 2 and 3 will intervene to mitgate risks related to resource effeciency and pollution prevention.
Local transport costs (lump sum)	Costs to ensure that technical experts can move across target districts to work alongside local stakeholders/ beneficiaries and that stakeholders/ beneficiaries can participate in focus groups (either by covering transport costs for them or by arranging focus groups within their communities, as suitable).
Editing/ publication of risks and vulnerability maps (lump sum)	Costs for editing and publication services of the 13 climate vulnerability assessment reports.
Output 1.2 National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women	
Budget line	Budget notes
Research manager (per day) - UNOPS technical personnel	Coordinates, supervises and quality assures the field research work and inputs of all experts involved in Component 2. Contributes to

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	drafting and finalization of the national strategy.
Technical agriculture/ livestock expert (per day)	In charge of identifying the CC adaptation option, developing and drafting strategy, with inputs from the CC and GESI experts.
Climate change expert (per day)	Complements the agriculture and livestock experts work, providing suitable climate know-how and experience. This person will also contribute to thedrafting of the national strategy.
Gender and social inclusion expert (per day)	Support the other experts with specific GESI knowledge, making sure that gender and social inclusions considerations are embedded in the research, consultations and assessment findings. This person will also contribute to the drafting of the national strategy to include findings that are relevant from a gender and social inclusion perspective.
Focus groups (venue renting, transport costs for participants, etc.) (per focus group)	Logistic and organization costs for 3 focus groups with national and local institutions representatives to consult them and gather inputs for the national strategy.
Local transport costs (lump sum)	Costs to ensure that technical experts can move across target districts to work alongside local stakeholders/ beneficiaries and that stakeholders/ beneficiaries can participate in focus groups and in the national strategy presentation and dissemination workshops (either by covering transport costs for them or by arranging focus groups within their communities, as suitable).
Editing/ publication of the strategy (lump sum)	Costs for editing and publication services of the 13 climate vulnerability assessment reports.
organizationorganizationNational strategy presentation and dissemination workshops	Logistic and organisation costs for: 1 workshop per each of the 4 target districts + 1 workshop for national and local institutions in Tripoli.

Component 2: Climate resilient investment in concrete agriculture activities	
Outputs title	
Output 2.1 women Climate change resilient crops (i.e., drought /heat resilient and salt resistant crop varieties) implemented in four (4) districts in the northwest of Libya, including through around 5900 grant packages to farmers, incl. women	
Budget line	Budget notes
Research manager (per day) - UNOPS technical personnel	Coordinates, supervises and quality assures the agriculture sector field work, ensuring that the findings of component 1 are duly integrated and piloted in component 2 activities.
Logistic & Field coordinator (per day) - UNOPS technical personnel	This person arranges activities on the fields across all target districts, ensuring that: experts move around according to UN security guidelines; agriculture inputs distribution campaigns/ sessions are properly and timely planned, and in ways that are appropriate to the local context and to ensure inclusion.
Community engagement expert (per day)	outreach Support beneficiaries identification, outreach and engagement. This person ensures interaction between the experts and local communities (and/ or their representatives).
Agriculture Climate change technologies expert (per day)	Provides technical guidance and CC expertise to the activities.
overseeProcurement expert (per day)	Provides procurement expertise to the purchase and supply of the items included in the grant packages, ensuring value for money principles.
Gender and social inclusion expert (per day)	Provides expertise on gender and inclusion of vulnerable groups, ensuring that these are included among final beneficiaries and that the project is responsive to their needs.
Grants packages (per package)	Costs to purchase and supply the agriculture inputs included in each grant package: - Seeds of drought and heat resilient crop varieties - Seeds of salinity resistant varieties - Drip irrigation networks (if needed) - Water conservation/ harvesting basins / buns (if needed)
e.g.,centerbeneficiaries'e.g.,centerLocal transport costs (lump sum per district)	Costs to ensure that technical experts can move across target districts to distribute agriculture inputs and assist beneficiary farmers in adopting and implementing climate adaptation solutions.

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Output 2.2 Relevant public Institutional staff, farmers and women trained to implement, maintain, and sustain climate change resilient agriculture practices and techniquescrops and to support the strengthening or creation of community organizations and community development plans	
Budget line	Budget notes
Logistic & Field coordinator (per day) - UNOPS technical personnel	This person arranges activities on the fields across all target districts, ensuring that: experts and trainers move around according to UN security guidelines; trainings and capacity building sessions are properly and timely arranged and beneficiaries can actually participate
Community engagement expert (per day)	beneficiaries'outreach.Support beneficiaries identification, outreach and engagement.
Trainers (per day)	They deliver the trainings for farmers and government officials
Gender and social inclusion expert (per day)	Provides expertise on gender and inclusion of vulnerable groups, ensuring all activities are sensitive and responsive to the needs of women, youth, and other disadvantaged groupsclimate induced.
overseeCosts for training and capacity building sessions for small holders farmers and herders (venues, etc.) (per session)	Logistic and organization costs for training and capacity building sessions for small holders farmers and herders (venues, etc.) (per session). Direct beneficiaries divided in groups of 50 for training sessions. They would need to train, in turn, the other beneficiaries to achieve the target number of final beneficiaries
Costs for training and capacity building sessions for organizations60 government officials (per session)	Logistic and organization costs for training and capacity building sessions for government officials. (venues, training materials, etc.) (p session).
e.g.,centerbeneficiaries'e.g.,centerLocal transport costs (lump sum per district)	Costs to ensure that technical experts and trainers can move across target districts to deliver trainings to farmers and government officials.

Component 1: Participatory prioritization of climate change adaptation options into national, district and community planning for agriculture / livestock development			
Outputs title			
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women			
Activities costs	**Note**	**TOTAL USD**	**Costs description and hp**
Activities costs	Lead expert (per day)	$57,600.00	Coordinates, supervises and quality assures the field research work and inputs of all experts involved in Component 1. Contributes to drafting of the consultation reports, the creation of maps and the drafting of the 13 climate vulnerability assessments.
	Technical agriculture/ livestock expert - North-West (per day)	$36,000.00	These experts will conduct field climate vulnerability research/ assessment work. They will perform desk-research and conduct extensive field assessments/ consultations with relevant regional and local authorities, associations/ representatives of farmers and herders, CSOs, women, youth. Each consultant will be assigned a specific region (North-West, North-East, South) to ensure appropriate
	Technical agriculture/ livestock expert - North-East (per day)	$36,000.00	

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	Technical agriculture/ livestock expert - South (per day)	$36,000.00	geographic coverage and depth of the research and consultations. They will also summarise the research findinings in the vulnerability assessments, working under the supervision of the Lead expert.
	Climate change expert (per day)	$36,000.00	This expert supports the agriculture and livestock experts cross-districts, contributing to the climate vulnerability assessments with suitable climate know-how and experience. This person will also contribute to the drafting of the consultation reports and the 13 climate vulnerability assessments.
	Gender and social inclusion expert (per day)	$24,000.00	This expert supports the agriculture and livestock experts cross-districts, making sure that gender and social inclusions considerations are embedded in the research, consultations and assessment findings. This person will also contribute to the drafting of the 13 climate vulnerability assessments to include findings that are relevant from a gender and social inclusion perspective.
	Community engagement expert(s) (per day)	$30,000.00	These experts support field work across all districts. They support beneficiairies identification, outreach and organisation of focus groups.
	Farmers and herders consultations - (interview per beneficiary)	$65,000.00	Costs to consult approx. 25 farmers/ herders per each of the 13 districts of Libya. Unit cost based on quotations received from Libyan agencies providing this type of activity.
	Focus groups (venue renting, focus groups materials, other logistics, etc.) (per focus group)	$30,000.00	Logistic and organisation costs for focus groups (FG), including at least 1 FG for women, 1 FG for youth, 1 FG for vulnerable groups (including climate-induced IDPs), 1 FG for local authorities representatives, 1 FG for farmers and herders representatives. FGs will be planned to ensure adequate representation and engagement of all project stakeholders.

	Local transport costs (lump sum)	$26,000.00	Costs to ensure that technical experts can move across target districts to work alongside local stakeholders/ beneficiaries and that stakeholders/ beneficiaries can participate in focus groups (either by covering transport costs for them or by arranging focus groups within their communities, as suitable).
	Editing/ publication of risks and vulnerability maps (lump sum)	$8,000.00	Costs for editing and publication services of the 13 climate vulnerability assessment reports.
	Subtotal Output 1.1	**$384,600.00**	

Component 3: Climate resilient investment in concrete livestock activities	
Outputs title	
Output 3.1 women,i.e.,Aaround 5900 grant packages (of USD 560 each) provided toto farmers, women and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation	
Budget line	Budget notes
Research Manager (per day) - UNOPS technical personnel	Coordinates, supervises and quality assures the livestock sector field work, ensuring that the findings of component 1 are duly integrated and piloted in component 3 activities.leads
Logistic & Field Coordinator (per day) - UNOPS technical personnel	This person arranges activities on the fields across all target districts, ensuring that: experts move around according to UN security guidelines; livestock inputs distribution campaigns/ sessions are properly and timely planned, and in ways that are appropriate to the local context and to ensure inclusion.
Community engagement expert (per day)	outreach.Support beneficiaries identification, outreach and engagement. This person ensures interaction between the experts and loc communities (and/ or their representatives).
Livestock Climate change technologies expert (per day)	Provides technical guidance and CC expertise to the activities.
Procurement expert	Provides procurement expertise to the purchase and supply of the items included in the grant packages, ensuring value for money principles.
Gender and social inclusion expert (per day)	Provides expertise on gender and inclusion of vulnerable groups, ensuring that these are included among final beneficiaries and that the project is responsive to their needs.
overseeGrants packages (per package)	Costs to purchase and supply the following equipment included in each grant package: - Equipment and designs for water conservation/ harvesting basins / buns and ridges - Equipment and support with mobile or transhumant grazing practices - Cacti /animal feed; - Food processing package; - Milk production package.
e.g.,centerbeneficiaries'e.g.,centerLocal transport costs (lump sum per district)	Costs to ensure that technical experts can move across target districts to livestock equipment inputs and assist beneficiary herders in adopting and implementing climate adaptation solutions.
Output 3.2 Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland management) production system improvements and to support the strengthening or creation of community organizations and community development plans	
Budget line	Budget notes

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~~Logistic & Field Coordinator (per day) - UNOPS technical personnel~~	~~This person arranges activities on the fields across all target districts, ensuring that: experts and trainers move around according to UN security guidelines; trainings and capacity building sessions are properly and timely arranged and beneficiaries can actually participate~~
~~Community engagement expert (per day)~~	~~outreach.Support beneficiairies identification, outreach and engagement.~~
~~Trainers (per day)~~	~~They deliver the trainings for herders and government officials~~
~~Gender and social inclusion expert (per day)~~	~~Provides expertise on gender and inclusion of vulnerable groups, ensuring all activities are sensitive and responsive to the needs of women, youth, and other disadvantaged groupsclimate induced.~~
~~overseeCosts for training and capacity building sessions for small holders farmers and herders (per session)~~	~~organizationLogistic and organisation costs for training and capacity building sessions for small holders farmers and herders (venues, etc.) (per session). Direct beneficiaries divided in groups of 50 for training sessions. They would need to train, in turn, the other beneficiaries to achieve the target number of final beneficiaries~~
~~organizationsCosts for training and capacity building sessions for government officials (per session)~~	~~Logistic and organization costs for training and capacity building sessions for government officials. (venues, training materials, etc.) (per session).~~
~~e.g.,centerbeneficiaries'e.g.,centerLocal transport costs (lump sum per district)~~	~~Costs to ensure that technical experts and trainers can move across target districts to deliver trainings to farmers and government officials.~~

Output 1.2. National climate resilient agriculture / livestock strategy developed in which climate change hazard risks and adaptation options are identified, prioritized and promoted at national and district level, with specific attention to the needs of vulnerable groups and women

Activities costs	Note	TOTAL USD	Costs description
Activities costs	Lead expert (per day)	$36,000.00	Coordinates, supervises and quality assures the field research work and inputs of all experts involved in Component 1. Leads and contributes to drafting of district and community-level plans focused on climate change adaptation options, contributes to the drafting of the national strategy.
	Technical agriculture/ livestock expert (per day)	$24,000.00	In charge of developing district and community-level plans, identifying the CC adaptation option, developing and drafting the national strategy, with inputs from the CC and GESI experts.
	Climate change expert (per day)	$24,000.00	Complements the agriculture and livestock experts work, providing suitable climate know-how and experience. This person will also contribute to the drafting of the district and community-level plans and of the national strategy.

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	Gender and social inclusion expert (per day)	$12,000.00	Support the other experts with specific GESI knowledge, making sure that gender and social inclusions considerations are embedded in the district and community-level plans as well as in the national strategy. This person will also contribute to the drafting of the national strategy to include findings that are relevant from a gender and social inclusion perspective.
	Focus groups (venue renting, focus groups materials, other logistics, etc.) (per focus group)	$6,000.00	Logistic and organisation costs for 3 focus groups with national and local institutions representatives to consult them and gather inputs for the national strategy.
	Local transport costs (lump sum)	$7,000.00	Costs to ensure that technical experts can move across target districts to work alongside local stakeholders/ beneficiaries and that stakeholders/ beneficiaries can participate in focus groups (either by covering transport costs for them or by arranging focus groups within their communities, as suitable).
	Editing/ publication of the strategy (lump sum)	$8,000.00	Costs for editing and publication services of the district and community-level plans and the national strategy.
Subtotal Output 1.2		**$117,000.00**	

Output 1.3 Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.

Activities costs	Note	TOTAL USD	Costs description
Activities costs	Lead expert (per day)	$23,760.00	Coordinates, supervises and quality assures the preparation and delivery of training workshops. Participates to each workshop.
	Technical agriculture/ livestock expert (per day)	$12,000.00	In charge of preparing training materials and delivering workshops.
	Climate change expert (per day)	$12,000.00	In charge of preparing training materials and delivering workshops.

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	Gender and social inclusion expert (per day)	$9,600.00	Support the other experts with specific GESI knowledge, making sure that gender and social inclusions considerations are embedded in the workshop materials and are addressed during the workshops.
	Local transport costs (lump sum)	$42,000.00	Costs to ensure that technical experts can move across target districts to work alongside local stakeholders/ beneficiaries and that stakeholders/ beneficiaries can participate in the national and district level training workshops
	Training workshops at the district level specific to the respective climate hazard and risk assessment in each district (venue renting, materials, other logistics...) (lump sum per workshop)	$39,000.00	Logistic and organisation costs for district training workshops involving relevant local governmental staff and other relevant stakeholders.
	National training workshop in Tripoli on the national climate resilient agriculture/ livestock strategy (venue renting, materials, other logistics...) (lump sum)	$5,000.00	Logistic and organisation costs for the national training workshop involving Ministry of Environment and Ministry of Agriculture governmental staff and other relevant stakeholders.
	Subtotal Output 1.3	**$143,360.00**	
		$644,960.00	

Component 2: Climate resilient investment in concrete agriculture activities

Outputs title

Output 2.1. Around 5900 grant packages (of USD 560 each) provided to farmers, women and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation.

Activities costs	Note	Quantity	Per Unit	TOTAL USD	Costs description
Activities costs	Lead expert (per day)	138	$720.00	$99,360.00	Coordinates, supervises and quality assures the agriculture sector field work, ensuring that the findings of component 1 are duly integrated and piloted in component 2 activities. Leads the verification of beneficiaries to ensure respect of vulnerability criteria, leasd and contributes to the preparation of district and community-level plans to include operation and maintenance arrangements of piloted adaptation solutions.

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	Community engagement expert(s) (per day)	135	$500.00	$67,500.00	1 expert per each target district to support beneficiairies identification, outreach and engagement. They ensure interaction between the experts and local communities (and/ or their representatives)
	Agriculture Climate change technologies expert (per day)	162	$600.00	$97,200.00	Provides technical guidance and CC expertise to the activities
	Grievance mechanism supporters (per day)	90	$400.00	$36,000.00	These people are in charge of managing the grievance mechanism, collect and report complaints to UNOPS and IFAD, take on follow-up actions
	Gender and social inclusion expert (per day)	72	$600.00	$43,200.00	Provides expertise on gender and inclusion of vulnerable groups, ensuring that these are included among final beneficiaries and that the project activities are responsive to their needs
	Grants packages (per package)	5900	$560.00	$3,304,000.00	Costs to purchase and supply the agriculture inputs included in each grant package: - Seeds of drought and heat resilient crop varieties - Seeds of salinity resistant crop varieties - Water conservation/ harvesting / storing equipment - Soil management and irrigation equipment
	Grievance mechanism operations (e.g. call centre, online platform, etc.) (lump sum)	1	$4,525.00	$4,525.00	Operationg costs related to the set-up and management of the grievance mecanism to collect, report and address beneficiaries complaints (e.g. call centre, online platform, etc.) (lump sum)
	Local transport costs (lump sum per district)	4	$12,000.00	$48,000.00	Costs to ensure that technical experts can move across target districts to distribute agriculture inputs and assist beneficiary farmers in adopting and implementing climate adaptation solutions
Subtotal Output 2.1				**$3,699,785.00**	
Output 2.2. Relevant public Institutional staff, farmers and women trained to implement, maintain and sustain climate change resilient agriculture practices and techniques and to support the strengthening or creation of community organizations and community development plans					

Activities costs	Note	Quantity	Per Unit	TOTAL USD	Costs description
Activities costs	Lead expert (per day)	84	$720.00	$60,480.00	Coordinates, supervises and quality assures the agriculture sector field work, ensuring that the findings of component 1 are duly integrated and piloted in component 2 activities. Leads the organisation of capacity building sessions for beneficiaries and local institution representatives, leads and provides inputs to the drafting of the roadmap for local seed multiplication of drought, heat and salinity resistant varieties in cooperation with ICARDA and the National Centre for Improved Seeds.
	Community engagement expert(s) (per day)	60	$500.00	$30,000.00	1 expert per target district to support beneficiairies identification, outreach and engagement. They ensure interaction between the experts and local communities (and/ or their representatives).
	Trainers (per day)	288	$400.00	$115,200.00	They design the training curriculum and deliver the trainings for farmers and government officials.
	Gender and social inclusion expert (per day)	40	$600.00	$24,000.00	Provides expertise on gender and inclusion of vulnerable groups, ensuring project activities are sensitive and responsive to the needs of women, youth and other disadvantaged groups (including climate-induced IPDs).
	Grievance mechanism supporters (per day)	42	$400.00	$16,800.00	These people are in charge of managing the grievance mechanism, collect and report complaints to UNOPS and IFAD, take on follow-up actions.
	Costs for training and capacity building sessions for small holders farmers beneficiaries on the handling of agriculture climate change resilient crops/ solutions (venues, etc.) (per session)	118	$1,500.00	$177,000.00	Logistic and organisation costs for training and capacity building sessions for small holders farmers beneficiaries - 50 people per session (venues, etc.) (per session).

	Costs for training and capacity building sessions for public institution staff on how to support set-up and growth of community/ farmers organisations and the creation of community development plans to operate and maintain piloted solutions (per session)	4	$1,500.00	$6,000.00	Logistic and organisation costs for training and capacity building sessions for government officials - 1 session per each target district (venues, training materials, etc.) (per session)
	Grievance mechanism operations (e.g. call centre, online platform, etc.) (lump sum)	1	$4,525.00	$4,525.00	Operationg costs related to the set-up and management of the grievance mecanism to collect, report and address beneficiaries complaints (e.g. call centre, online platform, etc.) (lump sum)
	Local transport costs (lump sum per district)	4	$5,250.00	$21,000.00	Costs to ensure that technical experts and trainers can move across target districts to deliver trainings to farmers and government officials
			Subtotal Output 2.2	**$455,005.00**	
			Total Component 2	**$4,154,790.00**	
Component 3: Climate resilient investment in concrete livestock activities					
Outputs title					
Output 3.1 Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate Climate change resilient natural assets / resources (i.e. rangelands) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and sustainable rangeland management for livestock					
Activities costs	**Note**	**Quantity**	**Per Unit**	**TOTAL USD**	**Costs description**
Activities costs	Lead expert (per day)	138	$720.00	$99,360.00	Coordinates, supervises and quality assures the livestock sector field work, ensuring that the findings of component 1 are duly integrated and piloted in component 3 activities. Leads the verification of beneficiaries to ensure respect of vulnerability criteria, leasd and contributes to the preparation of district and community-level plans to include operation and maintenance arrangements of piloted adaptation solutions

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	Community engagement expert(s) (per day)	81	$500.00	$40,500.00	1 expert per target district to support beneficiairies identification, outreach and engagement. They ensure interaction between the experts and local communities (and/ or their representatives).
	Livestock Climate change technologies expert (per day)	135	$600.00	$81,000.00	Provides technical guidance and CC expertise to the activities.
	Gender and social inclusion expert (per day)	72	$600.00	$43,200.00	Provides expertise on gender and inclusion of vulnerable groups, ensuring that these are included among final beneficiaries and that the project activities are responsive to their needs.
	Grievance mechanism supporters (per day)	90	$400.00	$36,000.00	These people are in charge of managing the grievance mechanism, collect and report complaints to UNOPS and IFAD, take on follow-up actions.
	Grants packages (per package)	3600	$560.00	$2,016,000.00	Costs to purchase and supply the following equipment included in each grant package: - Water conservation / harvesting and storage equipment - Soil management and irrigation equipment - Equipment and support with mobile or transhumant grazing practices - Cacti / alternative animal feed - Food processing and milk production packages
	Grievance mechanism operations (e.g. call centre, online platform, etc.) (lump sum)	1	$4,525.00	$4,525.00	Operations costs related to the set-up and management of the grievance mecanism to collect, report and address beneficiaries complaints (e.g. call centre, online platform, etc.) (lump sum).
	Local transport costs (lump sum per district)	2	$4,500.00	$9,000.00	Costs to ensure that technical experts can move across target districts to livestock equipment inputs and assist beneficiary herders in adopting and implementing climate adaptation solutions.
			Subtotal Output 3.1	**$2,329,585.00**	
Output 3.2. Relevant public Institutional staff, pastoralists and women trained to implement, maintain and sustain climate change resilient natural assets / resources (i.e. rangeland) production system improvements and to support the strengthening or creation of community organizations and community development plans					

Activities costs	Note	Quantity	Per Unit	TOTAL USD	Costs description
Activities costs	Lead expert (per day)	84	$720.00	$60,480.00	Coordinates, supervises and quality assures the agriculture sector field work, ensuring that the findings of component 1 are duly integrated and piloted in component 3 activities. Leads the organisation of capacity building sessions for beneficiaries and local institution representatives.
	Community engagement expert(s) (per day)	24	$500.00	$12,000.00	1 expert per each target district to support beneficiairies identification, outreach and engagement.
	Trainers (per day)	180	$400.00	$72,000.00	They design the training curriculum and deliver the trainings for herders and government officials.
	Gender and social inclusion expert (per day)	40	$600.00	$24,000.00	Provides expertise on gender and inclusion of vulnerable groups, ensuring all activities are sensitive and responsive to the needs of women, youth and other disadvantaged groups.
	Grievance mechanism supporters (per day)	42	$400.00	$16,800.00	These people are in charge of managing the grievance mechanism, collect and report complaints to UNOPS and IFAD, take on follow-up actions.
	Costs for training and capacity building sessions for herders on the management of climate change resilient assets / resource production system improvements (per session)	106	$1,500.00	$159,000.00	Logistic and organisation costs for training and capacity building sessions for herders - average 35 people per session (venues, etc.) (per session).
	Costs for training and capacity building sessions for public institution staff on how to support set-up and growth of community/ farmer / pastoralist organisations and the creation of community development plans (per session)	4	$1,500.00	$6,000.00	Logistic and organisation costs for training and capacity building sessions for government officials - 1 session per each target district (venues, training materials, etc.) (per session).
	Grievance mechanism operations (e.g. call centre, online platform, etc.) (lump sum)	1	$4,525.00	$4,525.00	Operationg costs related to the set-up and management of the grievance mecanism to collect, report and address beneficiaries complaints (e.g. call centre, online platform, etc.) (lump sum).

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	Local transport costs (lump sum per district)	2	$4,500.00	$9,000.00	Costs to ensure that technical experts and trainers can move across target districts to deliver trainings to farmers and government officials.
			Subtotal Output 3.2	**$363,805.00**	
			Total Component 3	**$2,693,390.00**	
Component 4: Capturing and disseminating relevant knowledge and learning on climate change resilient practices, products and technologies and to replicate these at national, district and community level					
Outputs title					
Output 4.1 mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, products and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots and a website.					
Activities costs	**Note**	**Quantity**	**Per Unit**	**TOTAL USD**	**Costs description**
Activities costs	Lead expert (per day)	93	$720.00	$66,960.00	Coordinates, supervises and quality assures the knowledge management and dissemination activities, ensuring that the findings of components 1, 2 and 3 are duly integrated in the knowldge products and disseminated across the country. Leads the drafting of guidelines on mainstreaming climate resilience into local planning for crops and livestock sub-sectors and the set-up of partnerships with universities and research centres.
	Climate change expert (per day)	180	$600.00	$108,000.00	In charge of drafting the guidelines on mainstreaming climate resilience,providing technical to the trainings and farmers field schools curriculum and materials. This person provides specific inputs to all knowledge dissemintation materials generated by the project.
	Experts to facilitate workshops (per day)	150	$600.00	$90,000.00	3 experts (1 CC, 1 agriculture, 1 livestock) in charge of preparing and delivering trainings and workshops envisaged under this output.
	Community engagement expert(s) (per day)	60	$500.00	$30,000.00	Support beneficiairies identification, outreach and engagement across all districts targeted by component 4.

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	Knowledge management expert	180	$400.00	$72,000.00	In charge of supporting the drafting and production of all knwoledge management/ dissemination products, ensuring adequacy to different target audiences (from national institutions to farmers and herders communities)
	Monitoring and evaluation expert (per day)	204	$500.00	$102,000.00	This expert undertakes data collection, monitoring and evaluation tasks related to all components/ outputs as necessary to inform knowledge production and dissemination
	Organisation of the Inception workshop (venue renting, transport costs for participants, etc.) (lump sum)	1	$20,000.00	$20,000.00	Logistic and organisation costs for the project Inception workshop
	M&E baseline survey (lump sum)	1	$15,000.00	$15,000.00	External service to conduct initial survey and data collection to prepare the M&E baseline and draft such baseline
	M&E completion survey (lump sum)	1	$15,000.00	$15,000.00	External service to conduct end of project survey and data collection to measure results and achievements against the baseline
	Editing/ publication of the guidelines on mainstreaming climate resilience into local planning for crops and livestock sub-sector (lump sum)	1	$10,000.00	$10,000.00	Costs for editing and publication services of the guideline
	TOT (venue renting, transport costs for participants, etc.) (per focus group)	8	$5,000.00	$40,000.00	Logistic and organisation costs for training of trainers sessions targeting existing associations/ knowledge hub in target districts (2 ToT sessions * 1 association * 4 target districts)
	Visits to demo plots to showcase best agricultural and livestock practices. (per visit)	4	$7,000.00	$28,000.00	Logistic and organisation costs for the visits to the demo plots (1 demo plot in each of the 4 target districts)
	Sustainability-focused workshops with local government, community leaders, representatives of the academia/ research organisations and ministry representatives	5	$5,000.00	$25,000.00	Logistic and organisation costs for the sustainability workshops aimed at discussing the implementation of the national strategy at the local level, lessons learnt from the project and identify project sustainability actions

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	Farmers field schools (per school session)	37	$3,648.00	$134,976.00	Logistic and organisation costs for the Farmers Field Schools (each FFS session will last approx. 5 days)
	Local transport costs (lump sum per district)	4	$12,000.00	$48,000.00	Logistic and organisation costs needed for the component 4 activities implemented in each target district
	Knowledge management and dissemination products (videos, digital contents, leaflets, etc.) (lump sum)	1	$35,000.00	$35,000.00	Costs for services needed to conceive and produce knowledge management and dissemination products for different target audiencecs and the general public
	Website (lump sum)	1	$5,542.00	$5,542.00	Costs for the set-up and running of the website where findings and knowledge from the project will be disseminated online to national and international public
			Subtotal Output 4.1	$845,478.00	
			Total Component 4	$845,478.00	

~~Component 4: Capturing and disseminating relevant knowledge and learning on climate change resilient practices, products, and technologies and to replicate these at national, district and community level~~	
~~Outputs title~~	
~~**Output 4.1**. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, products and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.~~	
~~Budget line~~	~~Budget notes~~
~~Research manager - UNOPS technical personnel~~	~~Coordinates, supervises and quality assures the knowledge management and dissemination activities, ensuring that the findings of components 1, 2 and 3 are duly integrated in the knowledge products and disseminated across the country centers~~
~~Climate change expert (per day)~~	~~In charge of drafting the guidelines school's and providing technical inputs and facilitating the workshops.~~
~~Experts/ trainers to facilitate ToTs, Farmers field schools, workshops and demoplot visits (per day)~~	~~3 experts (1 CC, 1 agriculture, 1 livestock) in charge of preparing and delivering dissemination workshops.~~
~~Knowledge management expert~~	~~In charge of supporting the drafting and production of all knowledge management/ dissemination products, ensuring adequacy to different target audiences (from national institutions to farmers and herders' communities).~~
~~OrganizationorganizationEditing/ publication of the guidelines (per guideline)~~	~~Costs for editing and publication services of the guideline~~
~~TOT (venue renting, transport costs for participants, etc.) (per focus group)~~	~~Logistic and organization costs for training of trainer's sessions.~~
~~Visits demo plots (per visit)~~	~~Logistic and organization costs for the visits to the demo plots.~~
~~organizationsSustainability-related workshops~~	~~organizationLogistic and organisation costs for workshops with local government, community leaders, representatives of the academia/ research organisations and ministry representatives to discuss the implementation of the national strategy at the local level, lessons learnt from the project and identify project sustainability actions.~~
~~Farmers field schools~~	~~organizationorganizationsLogistic and organisation costs for the farmers field schools.~~

~~Local transport costs (lump sum per district)~~	~~organization~~Costs to ensure that technical experts and trainers can move across target districts to deliver trainings to farmers and government officials.
~~Knowledge management and dissemination products (videos, digital contents, leaflets, etc.) (lump sum)~~	~~Costs for services needed to conceive and produce knowledge management and dissemination products for different target audiences and the public~~
~~Website (lump sum)~~	~~Costs for the set-up and running of the website where findings and knowledge from the project will be disseminated online to national and international public~~

Clarification on UNOPS personnel included in the output's costs vs. UNOPS personnel included in execution costs:

We included in the output costs UNOPS personnel that will work hands-on activities/ outputs delivery; personnel working exclusively on project management and administration are included in the execution costs.

UNOPS personnel included in the output costs is composed of technical experts who will be selected on purpose for the project based on specific Terms of References that will be aligned with relevant competences/ experiences for the activities/ outputs to deliver.
It should be highlighted that, being a projects-based organization, UNOPS does not employ permanent personnel (or staff) - except for corporate leadership positions based at UNOPS HQ in Copenhagen. All UNOPS personnel in field countries are project personnel, hired on purpose for a specific project, working on project implementation only; they are hired based on Individual Contractor Agreements for a fixed term according to the project duration.

When conceiving the project personnel, we considered costs-effectiveness principles and included:

- A Finance Officer, which will be responsible for all project administration and financial matters.
- A Grants Management Officer, which will oversee implementing project activities according to UNOPS grants management policies and procedures.
- A procurement analyst, which will be responsible for carrying out the procurement processes according to UNOPS policies and procedures.
- ~~a Project Manager that will have a 'double hat' of Project Manager and Research Manager. The Project Managerto be recruited will be an agriculture expert and have the necessary experience to coordinate, supervise and quality assure the research work (Component 1), the piloting of climate-adaptive solutions in the agriculture and livestock sectors (components 2 and 3), the knowledge/ results dissemination (component 4). Having one person managing the overall project and quality assuring all technical activities/ contents enables efficient project implementation and eases interactions and relations building with relevant Libyan stakeholders and with IFAD, which is essential for the project success;~~
- ~~a Logistic and field coordinator, which will be selected for having previous experience on field logistics and security in Libya and be responsible for coordinating the logistic aspects of all activities carried out on the ground in target districts. This expertise is necessary given the extent of the geographic coverage, the wide numbers of beneficiaries to outreach and the complexity of distribution campaigns and training activities in a conflict-affected environment.~~

~~For the present project, we estimate international experts will be needed given climate change is a field which is still new in Libya and it is hard to find local experts with suitable know-how and experience required for the proposed initiative.~~

The AF project funding will cover UNOPS project personnel costs according to the effort/ time they will devote to the project. ~~-~~No UNOPS personnel is included in the outputs costs.

Clarification on what is covered under the execution costs and what is covered under the outputs:

Outputs costs only include costs that are necessary to deliver envisaged activities and outputs, with no involvement in project management, administration, and reporting. More specifically:

- A Lead expert will be an agriculture expert and have the necessary experience to coordinate, supervise and quality assure the field work, including the research work (Component 1), the piloting of climate-adaptive solutions in the agriculture and livestock sectors (components

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2 and 3), the knowledge/ results dissemination (component 4). This expert will be the main reference person for UNOPS and IFAD, quality assure all technical activities/ contents to enable efficient project implementation, ease interactions and relations building with relevant Libyan stakeholders.

- A pool of t~~T~~echnical experts that will have profiles tailored to single activities/ outputs contents (e.g., trainers) and target sector (e.g., agriculture, livestock, CC technologies).
- All experts are budgeted based on an estimated number of days that is necessary to work hands-on and deliver on the activity/ output.~~;~~ For the present project, we estimate international experts will be needed given climate change is a field which is still new in Libya, and it is hard to find local experts with suitable know-how and experience required for the proposed initiative.
- Local transport costs are needed to ensure that: technical experts and trainers can move across target districts to work alongside local stakeholders/ beneficiaries; stakeholders and beneficiaries can participate in activities (either by covering transport costs for them or by arranging project activities within their communities, as suitable).
- Knowledge management and dissemination costs (such as publication of guidelines, video-making, etc.) are necessary to disseminate the knowledge and results produced by the project, as envisaged under component 4.
- Project technical and financial reports will be prepared by the ~~Project Manager~~Grants Management Officer and the Financial Officer, with inputs gathered from the Lead expert, and the support of UNOPS Hub experts. Therefore, reporting costs are already included in the execution costs.

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Table 41 Breakdown project cycle management entity fee

Project Cycle Management Implementing Entity Fee	
Financial Management (General financial oversight and quality control; manage, monitor, and track AF funding including allocating and monitoring expenditure based on agreed work plans; financial management compliance with AF requirements; financial reporting compliance with AF standards; procurement support and compliance with national procurement rules).	169,825
Programme Support (Technical support in project implementation including on gender action plan execution; methodologies, identification of experts; troubleshooting and support implementation missions as necessary; portfolio management, reporting; Independent Environmental and Social Audits and policy programming and implementation support services).	315,088
Technical support (Supervision missions and implementation support, risk management, programming; guidance in establishing performance measurement processes; technical support on methodologies, TOR validation, identification of experts, results validation, and quality assurance; troubleshooting, and support evaluation missions as necessary; support on technical issues in programme implementation).	298,274
Total Project Cycle Management Implementing Entity Fee	**783,187**

Table 42 Contribution of IE fees to M & E

Contribution of IE Fees to M&E			
~~Inception workshop report~~	~~UNOPS~~	~~After workshop~~	~~20,000~~
Supervision visits	IFAD, UNOPS, Government	Annual with total of	35~~20~~,000
Final evaluation	IFAD, external consultants	2029	25,000
Total			**60~~5~~,000**

H. Disbursement schedule

Table 43 Disbursement schedule

Schedule	1st disbursement	2nd disbursement – One year after project inception	3rd disbursement – Two years after project inception	4th disbursement – Three years after project inception
Linked Deliverable	Upon agreement signature between IFAD and AF	First Annual Project Performance Report Cleared by AF	Second Annual Project Performance Report Cleared by AF	Third Annual Project Performance Report Cleared by AF

~~Schedule date~~	~~Upon Signing~~	~~One Year after project inception~~	~~Two Years after project inception~~	~~Three Years after project inception~~	~~Total~~
~~A. Project Funds (US$)~~	~~674 600~~	~~4 201 350~~	~~2 702 242~~	~~760 450~~	~~8 338 642~~
~~B. Programme Execution (US$)~~	~~255 186~~	~~248 056~~	~~248 056~~	~~124 028~~	~~875 327~~
~~C. Programme Cycle Mgt (US$)~~	~~223 768~~	~~223 768~~	~~223 768~~	~~111 884~~	~~783 187~~
~~**TOTAL (US$)**~~	~~**1 153 554**~~	~~**4 673 174**~~	~~**3 174 066**~~	~~**996 362**~~	~~**9 997 156**~~

Schedule date	Upon signing	One year after inception workshop	One year after inception workshop	One year after inception workshop	Total
A. Project Funds (US$)	$714,354.86~~$718,104.86~~	$6,369,528.86~~$6,377,478.86~~	$1,059,866.19~~$1,037,440.19~~	$194,868.10~~$205,618.10~~	$8,338,618.00~~$8,338,642.00~~
B. Programme execution	$171,381.88~~$172,881.56~~	$439,123.27~~$438,088.96~~	$172,472.93~~$171,143.50~~	$90,974.07~~$91,125.32~~	$873,952.14~~$873,239.35~~
C. Programme Cycle Mgt (US$)	$223,768.00~~$223,768.00~~	$223,768.00~~$223,768.00~~	$223,768.00~~$223,768.00~~	$111,884.00~~$111,884.00~~	$783,188.00~~$783,188.00~~
	$1,109,504.73~~$1,114,754.42~~	$7,032,420.12~~$7,039,335.82~~	$1,456,107.12~~$1,432,351.69~~	$397,726.17~~$408,627.41~~	$9,995,758.14~~$9,995,069.35~~

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

A. Record of endorsement on behalf of the government[41]

Engr. Ahmed Alarabi Alsoudani~~j~~ Director of Geographical information systems Department Ministry of Environment	Date*: ~~13~~/08~~0~~85/202~~2~~3*

[41] 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.

وزارة البيئة
Ministry of Environment

دولة ليبيا
State of Libya
حكومة الوحدة الوطنية
Government of National Unity

التاريخ: / / 14هـ
الموافق: 08/05/2023م

الرقم الإشاري: بلا
رقم الملف:

ADAPTATION FUND

Letter of Endorsement by Government

[Ministry of Environment, Government of National Unity]

[LIBYA-08/05/2023]

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for the project "REsilience to NEgative impacts of climate-aggravated Water scarcity in the Agriculture sector in Libya (RENEWAL)"

In my capacity as designated authority for the Adaptation Fund in Libya, I confirm that the above national grant 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 Libya.

Accordingly, I am pleased to endorse the above grant proposal with support from the Adaptation Fund. If approved, the project will be implemented by the International Fund for Agriculture Development (IFAD) and executed by the United Nations Office for Project Services (UNOPS).

Sincerely,

[AHMED ALARABI ALSOUDANI]
[National Focal Point for the Adaptation Fund/ Director of Geographical Information Systems Department, Ministry of Environment, Libya]

(021) 487 0266 (021) 487 3761 83618 الفيران - طرابلس

B. Implementing Entity certification

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, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
Implementing Entity coordinator: Mr ~~Tom Mwangi Anyonge~~Juan Carlos Mendoza Casadiegos *Director ~~a.i~~* *Environment, Climate, Gender, and Social Inclusion Division*	
Date: ~~09 January~~19 June 2023_____	e-mail: ecgmailbox@ifad.org
Ms Janie Rioux – AF Coordinator Senior Climate Finance Specialist ECG Division	email: j.rioux@ifad.org
Project contact person: Mr. Walid Nasr, Regional Climate and Environment Specialist ~~(a.i.)~~	
e-mail: w.nasr@ifad.org	
Mr. Philippe Rémy, IFAD Libya Country Director	
e-mail: p.remy@ifad.org	

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ANNEXES

1. ~~E~~ENVIRONMENTAL, SOCIAL AND CLIMATE~~CMP~~ MANAGEMENT PLAN (ESCMP)

~~168.~~175. Content:

1.1. Introduction, purpose, method
1.2. Summary of project environmental and social risks management approach
1.3. Risks screening and categorization
1.4. Environmental and social and climate risks management plan

1.1. Introduction, including summary description of the project/ programme.

~~169.~~176. **Introduction**

Social and environmental policies are essential tools to prevent and / or mitigate undue harm of projects and project activities to people and their environment. In line with the Adaptation Fund's Environmental and Social Policy (ESP) and IFADs SECAP, IFAD is required to categorize the risk of the project as a whole and to manage any potential environmental and social risks and impacts. This Environmental, Social and Climate Risks Management Plan (ESCMP) has been prepared by IFAD.

~~170.~~177. **Purpose**

The purpose of this ESCMP document is to demonstrate how this project complies to the AF ESP. The document shows what potential environmental and social risks and co-benefits and opportunities have been identified per project activity, the potential impacts of the risks and how these will be managed.

~~171.~~178. **Methodology**

To ensure compliance with the AF ESP, all proposed project activities have been screened against the 15 AF principles (i.e., safeguards) to identify potential environmental and social risks and to assess related potential impacts. Where risks have been identified, impacts have been assessed and where needed, measures to avoid or mitigate risks and impact, identified (+ monitoring arrangements). Analyses are based on collected disaggregated data focused on identification of climate change related needs, limitations, constraints, and requirements specific for marginalized and vulnerable groups, especially of women and youth. Activity prioritization has been done in consultations with project beneficiary groups. The executing entity and other contractors will also comply to IFAD's SECAP standards.

~~172.~~179. **Alignment between ESP (Adaptation Fund) and SECAP (IFAD)**

IFAD's Social, Environmental and Climate Assessment Procedures (SECAP) were approved by the Executive Board and became effective in 2015. They were updated in 2017 and 2021. These procedures defined an improved course of action for assessing social, environmental and climate risks to enhance the sustainability of country strategic opportunities programmes (COSOPs), country strategy notes (CSNs), programmes and projects. SECAP along with its 9 Social, Environmental and Climate Standards, sets out the mandatory requirements and other elements that must be integrated throughout the project life cycle. The 2021 updated version (i) draws on lessons learned in SECAP's implementation since 2017; (ii) clarifies the mandatory and non-mandatory requirements applicable to IFAD-supported investments; (iii) further aligns IFAD's environmental and social standards and practices with those of other multilateral financial institutions; (iv) reflects IFAD's complementary policies[42] and climate mainstreaming agenda; (v) enables IFAD's continued access to international environment and climate financing; and (vi) accounts for IFAD's new commitments and upgraded internal processes. All IFAD projects entering the pipeline are subject to an environmental, social and climate risk screening, and are assigned a risk category for environment and social risks (High, Substantial, Moderate or Low), and for climate risks (High, Substantial, Moderate or Low). These findings, along with subsequent analysis and assessments, must be reflected in the project's SECAP review note and project documents. Projects with "**Low environment and social Risk**" and "**Low**" climate risk do not require any further analysis.

~~173.~~180. **Moderate Risk** projects require: (i) the final SECAP review note and ESCMP, indicating how potential risks and impacts can be avoided or mitigated; and (ii) an environmental and social monitoring programme. Projects classified Moderate Risk for climate require a basic climate analysis.

~~174.~~181. For projects with **High and Substantial environmental and social risks and impacts**, the due diligence process entails a critical review of the documentation provided by the borrower/recipient/partner. This should involve site visits and interviews with project representatives and other stakeholders by independent environmental and social specialists. These specialists should gain first-hand knowledge of the project and meet with representatives of affected groups to discuss environmental and social concerns, and information needs. This provides IFAD with a more holistic view of the project's major environmental and social risks and impacts, and the project's mitigation resources. For Substantial Risk projects, a formal SECAP review note or abbreviated ESCMF is required. For High-Risk projects, an Environmental, Social and Climate Management Framework or Environmental and Social Impact Assessment are required. These should also incorporate an ESCMP. In addition, thematic studies or plans can be required for substantial and high-risk projects. These can include a Resettlement Action Framework or Plan (RAF or RAP), Indigenous Peoples Plan (IPP), FPIC implementation Plan, Pesticide Management Plan (PMP), etc.

~~175.~~182. For projects that are screened as "substantial" for climate risks, a Targeted Adaptation Assessment is required. For projects classified as "high", a detailed vulnerability impact and adaptation assessment is required. These assessments aim to quantify risks, identify related adaptation options and ways to integrate them into the project design.

~~176.~~183. IFAD SECAP includes 9 Standards, for which detailed guidance is provided in 9 corresponding Guidance Notes (GN) with: (i) an introduction to each subject, (ii) key steps, roles and responsibilities, objectives, and background, (iii) criteria for environmental screening in IFAD projects; (iv) potential mitigation and adaptation plans and measures for controlling adverse impacts, (v) monitoring project implementation. The SECAP also includes a 10th guidance note that provides an overview of the importance of IFAD's mainstreaming

[42] Including, but not restricted, to policies on targeting (2006), gender equality and women's empowerment (2012), indigenous peoples (2009). Available at: www.ifad.org/operations/policy/policydocs.htm

commitments and highlights entry points for promoting mainstreaming along the project cycle. IFAD's mainstreaming commitments are related to environmental sustainability, climate finance, gender equality, women and youth empowerment and improved nutrition.

~~177.~~184. The following table provides some information about the relation between AF ESP Principles and IFAD SECAP (for further information, visit https://www.ifad.org/topic/gef/secap/overview).

Table 44: relation between AF ESP Principles and IFAD SECAP

AF ESP Guidance Principle	**IFAD SECAP Standards, Guiding Values and Principles**
ESP 1 Compliance with the Law	SECAP requires that activities in the framework of the IFAD financed projects or programmes meet IFAD's safeguard policy guidance, comply with applicable national laws and regulations (labor, health, safety, etc.) and international laws and treaties, and the prohibited investment activities list produced by the International Finance Corporation is adhered to. Project design should review: (i) current national policies, legislation and legislative instruments governing environmental management health, gender and social welfare, climate change (mitigation and adaptation) and governance with their implementation structures, identify challenges, and recommend appropriate changes for effective implementation; (ii) all relevant international treaties and conventions on the environment, climate change, health, gender, labor and human rights to which the country is a signatory.
ESP 2 Access and Equity	Access and Equity is a cross-cutting issue in all the 9 SECAP standards. SECAP requires that projects and programmes ensure the participation of target groups and equitable distribution of benefits. When projects result in physical or economic displacement (affecting access and user rights to land and other resources), the borrower or grant recipient should obtain FPIC from the affected people, document stakeholder engagement and consultation process and prepare resettlement plans or frameworks. The documents must be disclosed in a timely and accessible manner at the QA or relevant implementation stage. **Standard 2 – Resource efficiency and pollution prevention** highlights that Sustainable management requires that people who are dependent on these resources are properly consulted, enabled to participate in development and share equitably in the benefits of that development, and indicates that IFAD promotes an integrated water resources management approach that seeks the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner and without compromising the sustainability of ecosystems. **Standard 3 – Cultural Heritage** includes the following objective: promote the equitable sharing of benefits from the use of Cultural Heritage. **Standard 4 – Indigenous People** includes the following objective: ensure indigenous peoples obtain fair and equitable benefits and opportunities from supported activities in a culturally appropriate and inclusive manner. **IFAD's mainstreaming themes in the project cycle guidance note** highlights that projects should aim at Expanding women's economic empowerment through access to and control of productive assets and benefits.
ESP 3 Marginalized and Vulnerable Groups.	Marginalized and Vulnerable Groups is a cross-cutting issue in all the 9 SECAP standards, as such groups are also the primary target of IFAD interventions. A robust SECAP process requires attention to social dimensions such as land tenure, community health, safety, labor, vulnerable and disadvantaged groups, and historical factors, particularly in relation to natural resource management. It not only looks at compliance (e.g., managing potential negative impacts) but expected positive impacts and ways to maximize opportunities. To assure a good contribution to the quality of SECAP, project design should assess the socio-economic and cultural profile, including key issues relating to disadvantaged or vulnerable groups, conflict, migration, employment, and livelihoods. Consultation with communities and stakeholders must be maintained throughout the project lifecycle, especially in high-risk projects. For investment projects with a projected high sensitivity to climate hazards, IFAD requires a climate vulnerability analysis which can help to improve the targeting of investment actions to include the most vulnerable and least resilient target groups. Other IFAD policies that support and complement this principle are: Improving Access to Land Tenure Security Policy, Gender Equality and Women's Empowerment Policy, Engagement with Indigenous Peoples Policy, Targeting Policy, Youth Policy Brief, Climate Change Strategy, Rural Enterprise Policy, Rural Finance Policy, Private Sector Strategy.
ESP 4 Human Rights	Human Rights is a cross-cutting issue in all the 9 SECAP standards. Among the Guiding Principles and Specific Requirements for IFAD's Social Environmental Climate Assessment Procedures (SECAP), is the principle to "*support the efforts of borrowers/recipients/ partners to respect human rights, avoiding infringement on any human rights and addressing adverse human rights risks and impacts caused by clients' business activities*".
ESP 5 Gender Equality and Women's Empowerment	Gender Equality and Women's Empowerment is a cross-cutting issue in all the 9 SECAP Standards. **IFAD's mainstreaming themes in the project cycle guidance note** provides an overview of the importance of IFAD's mainstreaming commitments (including gender equality, women and youth empowerment); highlights entry points for promoting mainstreaming along the project cycle; proposes the use of assessments which – even if they may be focused on risk assessment and management – are opportunities for mainstreaming; and provides an overview of inventories of key sources of data, tools, methods and approaches that have been found useful.
ESP 6 Core Labor Rights	Core Labor Rights is a cross-cutting issue in all the 9 Standards. A robust SECAP process requires attention to social dimensions such as land tenure, community health, safety, labor, vulnerable and disadvantaged groups, and historical factors, particularly in relation to natural resource management. One of the guiding values and principles for SECAP is to minimize adverse social impacts and incorporate externalities. Avoid and mitigate any potential adverse impacts on health and safety, labor and working conditions and well-being of workers and local communities.

	The requirements set out in **Standard 5 – Labor and working conditions** are designed to achieve the following objectives: Promote direct action to foster decent rural employment. Promote, respect, and realize fundamental principles and rights at work through preventing discrimination and promoting equal opportunity of workers; supporting freedom of association and the effective recognition of the right to collective bargaining; and preventing the use of child labor and forced labor. Protect and promote the safety and health of workers. Ensure projects comply with national employment and labor laws and international commitments; and Leave no one behind by protecting and supporting workers in disadvantaged and vulnerable situations, including a special focus, as appropriate, on women workers, young workers, migrant workers, workers in the informal economy and workers with disabilities
ESP 7 Indigenous People	**Standard 4 – Indigenous People** is a cornerstone to IFAD's goal to design projects not only with the full, effective, and meaningful participation of indigenous peoples but also in a manner that aligns with their distinct vision and development priorities, building sustainable partnerships with indigenous peoples. Standard 4 seeks to ensure that projects are designed and implemented in a way that fosters full respect for indigenous peoples and their human rights, livelihoods, and cultural uniqueness as they define them. The need for the standard is an acknowledgement of a history of discrimination and exclusion of indigenous peoples that has limited or prevented them from directing the course of their own development and well-being. The requirements set out in Standard 4 are designed to achieve the following objectives: Promote indigenous people's ability to determine and develop priorities and strategies for exercising their right to development. Ensure that programming is designed in partnership with indigenous peoples, with their full effective and meaningful consultation and participation, with the objective of seeking their free, prior, and informed consent (FPIC). Ensure indigenous peoples obtain fair and equitable benefits and opportunities from supported activities in a culturally appropriate and inclusive manner; and Recognize and respect the rights of indigenous peoples to their lands, territories, waters and coastal seas and other resources that they have traditionally owned or otherwise occupied and used. Implementation of the requirements of Standard 4 also aims to avoid adverse impacts on indigenous peoples, their rights, lands, territories, and resources and – together with affected indigenous peoples – to mitigate and remedy any adverse impacts that cannot be avoided. According to SECAP, when impacting indigenous peoples, the borrower or the grant recipient must seek FPIC from the concerned communities, document stakeholder engagement and consultation process and prepare an indigenous plan (IP). Whenever FPIC is not possible during project design, the FPIC implementation plan should specify how FPIC will be sought during early implementation. The FPIC plan and related documents must be disclosed in a timely and accessible manner at the Quality Assurance (QA) or relevant stage during implementation. IFAD SECAP promotes the Indigenous Peoples Plan as a tool to ensure that the design and implementation of projects foster full respect for indigenous peoples' identity, dignity, human rights, livelihood systems and cultural uniqueness, as defined by the indigenous peoples themselves. It also ensures that the affected groups receive culturally appropriate social and economic benefits, are not harmed by the projects, and can participate actively in projects that affect them. Other IFAD policies that support and complement these principles: Indigenous People's Policy; Targeting Policy; Gender Policy; Climate Change Strategy.
ESP 8 Involuntary Resettlement	**Standard 7 – Physical and economic resettlement** recognizes that increasing investments in the rural sector may at times involve project-related land acquisition and restrictions on land use – actions that, if improperly managed, may have adverse impacts on communities and persons, including physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood) or both. The term "involuntary resettlement" refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement. Throughout the process of identification, planning, implementation and evaluation of the various elements of resettlement or economic displacement and their impacts, adequate attention will be paid to gender concerns: specific measures addressing the needs of female headed households, gender-inclusive consultation, information disclosure, and grievance mechanisms will be put in place in order to ensure that women and men will receive adequate and appropriate compensation for their losses and to restore and possibly improve their living standards. Other IFAD policies that support and complement this principle are Gender Equality and Women's Empowerment Policy, Engagement with Indigenous Peoples Policy, Targeting Policy, Land Policy, ENRM Policy, Youth Policy Brief, Climate Change Strategy.
ESP 9 Protection of Natural Habitats	**Standard 1 – Biodiversity conservation** requires identification of habitat type and applies increasingly stringent requirements based on an areas' biodiversity values. Where natural habitats are affected, IFAD-funded/supported projects and programmes will proceed only after putting in place appropriate mitigation measures to achieve no net loss, and preferably a net gain of the associated biodiversity values over the long term. This must be accompanied by a robust long-term biodiversity action plan or equivalent that describes conservation outcomes and implementation, monitoring, and evaluation actions. Other IFAD policies that support and complement these principles are Environment and Natural Resources Management (ENRM) Policy; Land Policy; Climate Change Strategy.
ESP 10	The requirements set out in **Standard 1 – Biodiversity conservation** are designed to achieve the following objectives: (i) maintain and conserve biodiversity; (ii) preserve the integrity of ecosystems; (iii) maintain and enhance the benefits of ecosystem services; (iv) adopt the use of a precautionary approach to biodiversity conservation and

Conservation of Biodiversity	ensure opportunities for environmentally sustainable development; (v) ensure the fair and equitable sharing of the benefits from the utilization of genetic resources; and (vi) respect, preserve, and maintain knowledge, innovations and practices of indigenous peoples, and local communities relevant to the conservation and sustainable use of biodiversity and their customary use of biological resources. The main role of this safeguard standard is to avoid or, if avoidance is not possible, minimize and mitigate potential adverse social and environmental impacts on biodiversity and ecosystem services associated with project-related activities. This can be seen through the promotion and requirements on the "use of a precautionary approach" as outlined throughout standard 1. Requirements of Standard 1 address risks to biodiversity and ecosystem types, with increasing stringency depending on risk levels and biodiversity values of project areas. Mitigation activities to eliminate or reduce the negative impacts of a project on biodiversity should follow the following order of preference: (1) Complete avoidance of adverse impact; (2) Reduction of impacts on biodiversity where unavoidable; (3) Restoration of habitats to their original state; (4) Relocation of affected species; (5) Compensation for any unavoidable damage. Other IFAD policies that support and complement these principles are Environment and Natural Resources Management (ENRM) Policy; Land Policy; Climate Change Strategy.
ESP 11 Climate Change	SECAP asks to incorporate climate change risk analysis into projects, which are subject to an environmental, social and climate risk screening, and are assigned a risk category for climate vulnerability (substantial, high, moderate, low). The requirements set out in **Standard 9 – Climate change** are designed to achieve the following objectives: (i) ensure alignment of IFAD-supported projects with targets and priorities of countries' Nationally Determined Contributions and the goals of the Paris Agreement and other international frameworks; (ii) ensure that proposed activities are screened and assessed for climate change and disaster risks and impacts both of and to projects; (iii) apply the SECAP risk mitigation hierarchy principle of applying a hierarchy of risk management measures in project design; (iv) strengthen the climate resilience of communities and their adaptive capacity to address risks of climate change impacts and climate-related disasters; and (v) increase the ability of communities to adapt to the adverse impacts of climate change, and foster climate resilience and low GHG-emitting projects that do not threaten without compromising food production. **IFAD's mainstreaming themes in the project cycle guidance note** provides an overview of the importance of IFAD's mainstreaming commitments (including Climate change); highlights entry points for promoting mainstreaming along the project cycle; proposes the use of assessments which – even if they may be focused on risk assessment and management – are opportunities for mainstreaming; and provides an overview of inventories of key sources of data, tools, methods and approaches that have been found useful.
ESP 12 Pollution Prevention and Resource Efficiency	**Standard 2 – Resource efficiency and pollution prevention** includes requirements that aim at ensuring that IFAD-supported projects and programmes minimize, mitigate and manage any risks and potential adverse impacts that may be related to resource use and pollution, with the following objectives: (i) avoid, minimize and manage the risks and impacts associated with hazardous substances and materials, including pesticides; (ii) avoid or minimize project-related emissions of short-and long-lived climate-change related pollutants; (iii) promote sustainable use of resources, including energy, land and water; and (iv) identify, where feasible, project-related opportunities for resource-use efficiency. Standard 2 outlines a project-level approach to mitigating, minimizing, and managing any risks and potential adverse impacts that may be related to resource use and pollution. IFAD requires that key principles are applied. These include a precautionary approach to addressing significant environmental and social risks and impacts through the mitigation hierarchy; the "polluter pays" principle (whereby the cost of mitigation is borne by the polluter, where relevant); and adaptive management techniques (whereby lessons are learned from past management actions and are proactively utilized to predict and improve management as the project implementation progresses).
ESP 13 Human Health	The requirements of **Standard 6 – Community Health and Safety** aim to ensure that IFAD-supported programs and projects avoid or minimize the risks and impacts to community health, safety, and security. The requirements are designed to achieve the following objectives: (i) to anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and non-routine circumstances; (ii) to ensure that measures are taken to avoid or minimize community exposure to hazardous materials that be used during project activities; (iii) to promote quality and safety, and considerations relating to climate change, in the design and ~~construction of infrastructure~~implementation, ~~including dams;~~ (iv) to avoid or minimize community exposure to project-related traffic and road safety risks; (v) to minimize community exposure to diseases; (vi) to ensure that projects abide by the principles of "do no harm to nutrition"; (vii) to avoid risks of project-related gender-based violence, including risks of sexual harassment, sexual exploitation and abuse, and human trafficking to project-affected people and communities; (viii) to avoid or minimize adverse impacts on ecosystems services that may arise from project activities; (ix) to have in place effective measures to address emergency events; and (x) to ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities
ESP 14 Physical and Cultural Heritage	The requirements set out in **Standard 3 – Cultural heritage** are designed to achieve the following objectives: (i) preserve and safeguard Cultural Heritage; (ii) ensure that effective and active measures are taken to prevent IFAD-supported projects from altering, damaging, or removing any tangible or intangible Cultural Heritage; (iii) promote the equitable sharing of benefits from the use of Cultural Heritage; (iv) promote meaningful consultation on matters relating to Cultural Heritage. Other IFAD policies that support and complement ESP 14 are: Gender Equality and Women's Empowerment Policy, Engagement with Indigenous Peoples Policy, Targeting Policy, ENRM Policy, Climate Change Strategy.
ESP 15	**Standard 2 – Resource efficiency and pollution prevention** includes a specific focus on soil conservation, stating that sustainable soil management is an essential element of sustainable agriculture and is central to sustainable

Lands and Soil Conservation	intensification, climate -change resilience and safeguarding ecosystem services and biodiversity. The updated World Soil Charter lists nine guiding principles that guide all actions to ensure that soils are managed sustainably and that the functions of degraded soils are rehabilitated or restored. IFAD will integrate these principles into its projects, as appropriate, to ensure sustainable soil management and to promote restoration of degraded soils. Other IFAD policies that support and complement these principles: Land Policy; Targeting Policy; ENRM Policy; Climate Change Strategy.

1.1. Summary of project environmental and social risks management approach

The following table provides an overview/summary of the management approach for project risks.

Table 45 Summary of project environmental, social and Climate risks management approach

ESP principle	Initial environmental or social risks present Y/N	Potential risks	Explanation	Impact assessment	Mitigation measures to avoid / reduce any potential risks	Monitoring indicators	Responsible
1.Compliance with the Law	Y	There is a small risk of sub-contractor non-complying with national laws / standards	Relevant national standards and laws have been identified, as well as project compliance with these. No impact assessment is required by national law (see part II.E) for proposed interventions. However, there is still a small risk of sub-contractor non-complying with national	Negative environmental impacts due incompliance to national standards and/or international best practices.	The project complies with all identified relevant national and international standards and laws. For an overview, see part II.E. Include standard clause in all project contracts with reference to laws / standards as described in this proposal (Part II.E) with the condition to comply with these standards / laws	- Review procurement contracts - Review complaints received related to negative environmental impacts on project areas.	UNOPS and IFAD
2.Access and Equity	Y	There is a small risk of inequitable participation in project decision making and access to project benefits. This is mainly due to traditions related to gender roles and the tribal culture that could exclude certain groups.	Inputs and potential concerns of potential project beneficiaries have already been heard. These groups include small-holder farmers, women, youth, and ethnic groups.	Potential tension and/or conflict within community in the target areas.	The project will ensure equal opportunities in participation and decision-making concerning project benefits of women, youth, ethnic groups, and other vulnerable groups by using quotas and by agreeing on representation in decision-making processes through organizations / associations and the use of ToRs, agreements, etc. The targeting	- Review selected beneficiaries against selection criteria. - Review complaints related to bias in selection.	UNOPS and IFAD

					strategy will take into consideration the different needs of the different groups for each activity and will apply strict criteria for selection of beneficiaries. A Grievance and Redress Mechanism (GRM) will be put in place to receive complaints and solve them. If shared water tanks will be installed these should be on neutral / public land		
3.Marginalized and Vulnerable Groups	Y	There is a small risk of vulnerable groups being excluded from project implementation processes and benefits. This is mainly due to traditions related to gender roles and the tribal culture that could exclude certain groups.	Inputs and potential concerns of potential project beneficiaries have already been heard. These groups include small-holder farmers, women, youth, and ethnic groups.	Lost opportunity of capitalizing on women and youth potential. Not meeting results framework targets regarding women and youth.	The project will ensure equal opportunities in participation and decision-making concerning project benefits of women, youth, ethnic groups, and other vulnerable groups by using quotas and by agreeing on representation in decision-making processes through organizations / associations and the use of ToRs, agreements, etc. The targeting strategy will take into consideration the different needs of the different groups for each activity and will apply strict criteria for selection of beneficiaries. A Grievance and Redress Mechanism (GRM) will be put in place	- Review selected beneficiaries against selection criteria and women and youth percentages. - Review complaints related to exclusion of certain groups.	UNOPS and IFAD

					to receive complaints and solve them.		
4.Human Rights	Y	There is a small risk that human rights will not be respected by project partners and sub-contractors	Treaties not ratified in Libya include: - CAT-OP - optional protocol of the convention against torture - CCPR-OP2-DP - second optional protocol to the international covenant on civil and political rights aiming to the abolition of the death penalty. - CED - convention for the protection of all persons from enforced disappearance - CED, art.32 - interstate communication procedure under the international convention for the protection of all persons from enforced disappearance - Ratified or not, there is a potential risk that treaties will both be respected by all project partners and sub-contractors. There is no	Gender Issues and all forms of Gender-Based Violence, including sexual harassment due to the increasing mobilization of women to participate in project activities. Child labor used in project's activities.	Any agreement / contract for the project will include reference to human rights treaties and to respect these. As per principle 8, the project will not allow any involuntary resettlement, even if there is no risk for this. The IE will monitor and report on human rights risks and opportunities and adjust activities if necessary if risks occur. Project partners and sub-contractors will be made aware of the treaties and clauses related to these in their contracts. A Grievance and Redress Mechanism (GRM) will be put in place to receive complaints and solve them.	- Collect gender-disaggregated monitoring and evaluation data to track the extent to which women have been able to participate and benefit from project activities. - Cases of sexual harassment must be dealt with in compliance with IFAD's Policy to Preventing and Responding to SH/SEA and reported directly to IFAD. - Review contracts for human rights and child labor clauses - Review child labor complaints in compliance with GRM	UNOPS, IFAD and community leaders.

			immediate concern for this to happen, but mitigation measures should be in place to avoid this.				
5.Gender Equity and Women's Empowerment	Y	There is a risk of local cultures / traditions blocking women's voices, exclude them from decision making or related to that, a risk of women being negatively affected due to existing sexual harassment or similar. Ww~~w~~omen beneficiaries being negatively treated because of their involvement in the project	Women are not well represented in local government authorities. An initial gender analysis has been included in the annex 2.	Lost opportunity of capitalizing on women's potential to help the sector's adaptation. Not meeting results framework targets regarding women.	The project will Increase local engagement to work with local leaders and female and male-household's members and sensitize on gender equality and against gender biases. The project will also conduct gender-sensitive and participatory consultations while executing the various activities. These must include safe spaces/ women-only focus groups to encourage women's meaningful participation in consultations. As needed, the project will create female only spaces for women to receive trainings and services. The project has specific gender targets and budget allocations. Quotas will be used ensure their participation in planning processes under component 1 and for equal access to grants. Women	- Review selected beneficiaries against women target percentages. - Review complaints related to exclusion based on gender.	UNOPS and IFAD

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					associations will be strengthenedsreng hened to improve their position for negotiations with merchants.		
6.Core Labor Rights	Y	There is a small risk of labor standards not being respected in project-related contracts with sub-contractors. Potential risks may include: ● Non-compliance with safety standards ● Non-compliance for worker rights	ILO conventions and protocols currently not ratified: Relevant standards not ratified in Libya include: Fundamental: **C155** - Occupational Safety and Health Convention, 1981 (No. 155) **C187** - Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187) Governance: **C129** - Labor Inspection (Agriculture) Convention, 1969 (No. 129) Technical: **C184** - Safety and Health in Agriculture Convention, 2001 (No. 184)	Dissatisfaction among workers and employees in the project and potential cases of labor abuse.	The project follows ILO core labor standards. Looking at the conventions and protocols not ratified, the project will be particularly attentive to any health and safety and inspections. Any agreement / contract for project works signed will include reference to compliance with ALL ILO labor standards, also not ratified relevant standards in Libya. Also, inspections will be carried out for work under the grants and for the set-up of the farmer field schools etc.	- Review contracts for clauses related to ILO labor standards. - Review complaints related to labor rights abuse.	UNOPS and IFAD.
7.Indigenous Peoples	Y	There is a small risk of non-integration of ethnic groups' needs, cultural considerations, and possible concerns.	Initial consultations with ethnic groups have already been conducted to identify specific needs and possible concerns. The inhabitants of the project target areas are not indigenous people but rather ethnic groups namely: Arab-Berber and Berber. However,	Potential tension and/or conflict within community between ethnic groups in the target areas.	The project recognizes the rights of all ethnic groups. Free, Prior, Informed Consent (FPIC)will be applied by 1) mapping all ethnic groups and potential impacts of the project on these groups and 2) involving ethnic groups in planning and decision-	- Review FPIC reports to ensure the transparency of the process. - Review complaints related to exclusion on ethnic basis.	UNOPS and IFAD.

			the Amazigh people live in many areas including the town of At-Wilul at Zwara district which the project is not targeting specifically (the district is targeted but not the town).		making processes, including not going ahead with activities if not agreed by ethnic groups (including having written consent. The engagement of ethnic groups will be monitored.		
8.Involuntary Resettlement	N	There is no risk of involuntary resettlements	It is not foreseen that land other than agriculture land will be targeted under this project.	x	Resettlement because of project activities will be always avoided. Owners of private land or people with informal livelihoods that may affected by the project will need to agree with project interventions before they start. People without land title can be selected as project beneficiaries without risk of losing investment / land.	x	x
9.Protection of Natural Habitats	N	There is no risk of Natural Habitats being negatively impacted by project activities.	As per Ramsar there are no vulnerable natural habitats in the five north-western target districts. There are only two in Marj and Derna districts. As per UNESCO there is one biosphere reserve (Ashaafean) in the Nafusa mountains in the target districts of Nalut and Al jabal al Gharbi. No project interventions will	x	Natural habitats in Marj and Derna districts will be considered in the CCVAs.	x	x

			take place in these reserve				
10.Conservation of Biological Diversity	Y	There is a very small risk of biodiversity being negatively impacted by the project activities under component 2.	As per IUCN Red List From the 21 critically endangered and 24 endangered species, 3 are potentially located in the five north-western target districts: the Thorectes puncicollis, the saker Falcon and the Egyptian Vulture.  Drought and heat resilient and salt resistant crop varieties will be varieties of crops already in use	Although it is highly unlikely, the Thorectes puncicollis, the saker Falcon and the Egyptian Vulture may be impacted by project activities.	Although it is highly unlikely, the Thorectes puncicollis, the saker Falcon and the Egyptian Vulture may be impacted by project activities. Before any work on the ground (as part of the grant) can start, it will be checked if any of the above are nesting. If so, works on these locations cannot take place. Otherwise, works should take place during the non-nesting season. This will be part of the geological surveys to be conducted as proposed under principle 12. -	- Review reports on the impact of project activities on these species.	UNOPS and IFAD.
11.Climate Change	Y	There is a small risk of increased energy use due to project activities and thus a negligible increase in GHG emissions.	There could be a negligible increase in GHG emissions due to works on the ground related to the grant packages and livestock practices	Negligible increase in Libya's GHG emissions.	The project will not support any activities that will increase energy use, such as an increase of water pumping, unless energy use is compensated with	- Review training modules related to component 3	UNOPS

					renewable energy use. The grants will be provided with conditions for avoiding GHG emissions. The exact condition will be agreed upon during inception. Trainings on low emissions livestock practices will be included in FFS under component 4 and trainings under component 2 and 3.		
12.Pollution Prevention and Resource Efficiency	Y	There is a small risk of inefficient resource use	There could be a small risk that the grant packages will not be used in the most optimum way and water could be exploited in an unsustainable manner. Also, there is a risk that grant packages will increase the use of agriculture inputs (e.g., pesticides, fertilizers, etc.).	The grant packages will not be used in the most optimum way and water could be exploited in an unsustainable manner. Also, there is a risk that grant packages will increase the use of agriculture inputs (e.g., pesticides, fertilizers, etc.)	The project is designed to efficiently use energy and materials and to avoid any produce of additional waste. Trainings will be provided on avoiding these risks and the use of sustainable agriculture practices, including on resource efficiency and pollution prevention. These will be included in FFS under component 4 and trainings under component 2 and 3. Also, geological surveys will be conducted as part of components 2 and 3. The grants will be provided with conditions for not using	- Review geological survey reports. - Review training modules related to components 2 and 3	UNOPS

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					environmentally harmful and unsustainable practices / techniques. The exact condition will be agreed upon during inception.		
13.Public Health	Y	There is a small risk of health risks, which may include: - Vector borne and communicable diseases Theft and/or stolen items. Covid-19 transmission	The project is expected to have an overall beneficial impact on the public health with improved access to climate-proofed yields and increase quality of produce; Any increase of the use of pesticides as part of project activities will be avoided (see above). However, there is a small risk of beneficiaries attracting diseases during works related to the grants.	Spread of diseases among the community in target areas.	Measures to reduce the potential impact of COVID-19 (and other emerging health risks) situation on project activities will be further assessed as proposed under section III.B (financial and project/programme risk management) These may include flexible approach to having some activities 'online' and mitigation applying health and safety measures to keep people involved in the project safe. Mitigation measures regarding protecting public health from spreading infections will also be incorporated into the project's ESCMP. Any increase of the use of pesticides as part of project activities will be avoided. ILO health and safety standards will be applied	- Review complaints regarding spread of diseases from project beneficiaries.	UNOPS
14.Physical and Cultural Heritage	N	There is no risk of project activities	As per UNESCO there are 5 cultural	x		x	x

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		negatively impacting heritage sites	heritage sites in Libya • Archaeological Sit • Archaeological Sit • Archaeological Sit • Old Town of Ghad • Rock-Art Sites of  Although two are in the five north-western target districts, these are protected structures and there is no risk of project activities negatively impacted these.				
15.Lands and Soil Conservation	N	There is no risk of project activities negatively impacting lands and soils	In the five north-western target districts there are some soils at the margin of a desert area and coastal soils. These are at risk of degradation under the current circumstances in the country	x	The project is designed to avoid any negative effects on any soil or lands and only have positive effects through improvement of soil or reducing degradation.	x	x

1.2. Screening and categorization

~~178.~~185. Based on the screening against the 15 AF principles, the project has been categorized as a "B" category project in terms of the environmental and social risks it poses. See also Part II.L.

~~179.~~186. For an overview of project activities' screening results against the 15 AF principles see below table. For details, see the next section.

Table 46 *Overview of environmental and social impacts and risks for which further assessments and management are required**

Checklist of environmental and social principles	No further assessment required for compliance (during project implementation)	Potential impacts and risks – further assessment and management required for compliance
1. Compliance with the Law		X
2. Access and Equity		X
3. Marginalized and Vulnerable Groups		X
4. Human Rights		X
5. Gender Equality and Women's Empowerment		X
6. Core Labor Rights		X
7. Indigenous Peoples		X
8. Involuntary Resettlement	X	
9. Protection of Natural Habitats	X	
10. Conservation of Biological Diversity		X
11. Climate Change		X
12. Pollution Prevention and Resource Efficiency		X
13. Public Health		X
14. Physical and Cultural Heritage	X	
15. Lands and Soil Conservation	X	

Table 47 Overview of project activities' screening results against the 15 AF risk areas / principles. This table is in line with **table 46** and the risks screening sheets presented later, as these are directly related to project activities and not typical or general risks.

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Detailed outputs / activities	Risk screening result	Explanation why triggered or not
Component 1: Participatory prioritization of climate change adaptation options into national, district and community planning for agriculture/ livestock development		
Output 1.1. Climate change vulnerability and hazards risks assessments conducted in the for the agriculture/ livestock sector in Libya, specifically targeting districts main agriculture areas in Libya, which are those in the north-west (5), north-east (4) and south (4), with the participation of vulnerable groups and women	Potential risks related to AF ESP Principles 3, 5, 7 and 14.	Principles 3, 5 and 7 were triggered based on concerns related to exclusion of women, youth, most vulnerable and ethnic groups. Selection bias could result on discrimination based on gender, age, or ethnicity. However, the project's target strategy, FPIC, targets for women and youth and the grievance and redress mechanism will mitigate those risks. Principle 13 was triggered due to mobilizing people because of trainings, consultations, workshops that could increase the risk of spreading some communicable diseases (e.g., COVID-19). The risk will be mitigated through health and safety standards and online meetings if needed/feasible.
Output 1.2. National climate resilient agriculture-/ livestock strategy developed in which climate change hazard risks and adaptation options are identified, prioritized, and promoted at national and district level, with specific attention to the needs of vulnerable groups and women	Potential risks related to AF ESP Principles 3, 5 and 7.	Principles 3, 5 and 7 were triggered based on concerns related to exclusion of women, youth, most vulnerable and ethnic groups. Selection bias could result on discrimination based on gender, age, or ethnicity. However, the project's target strategy, FPIC, targets for women and youth and the grievance and redress mechanism will mitigate those risks.
Output 1.3. Capacity building for local public officials as well as relevant stakeholders on the operationalization of the climate change vulnerability and hazard risks assessments as well as the national climate resilient agriculture/livestock strategy.	Potential risks related to AF ESP Principles 3, 5 and 7	Principles 3, 5 and 7 were triggered based on concerns related to exclusion of women, youth, most vulnerable and ethnic groups. Selection bias could result on discrimination based on gender, age, or ethnicity. However, the project's target strategy, FPIC, targets for women and youth and the grievance and redress mechanism will mitigate those risks.
Component 2: Climate resilient investment in concrete activities in the agriculture sector		
Output 2.1. Aaround 5900 grant packages (of USD 560 each) provided toto farmers, women, and youth groups in four (4) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and saltwater intrusion. Support will focus on drought resilient crops, salt resistant crops, the use of (traditional) water conservation and harvesting techniques and efficient management of soil and irrigation	Potential risks related to AF ESP Principles 1, 2, 3, 4, 5, 6, 7, 10, 12 and 13.	Principle 1 was triggered based on a potential small risk of subcontractors non-complying with national laws/ standards that could result in environmental harm. However, the risk could be mitigated through contractual clauses to abide to national technical standards and international best practices. Principles 2, 3, 5 and 7 were triggered based on concerns related to exclusion of women, youth, most vulnerable and ethnic groups. Selection bias could result on discrimination based on gender, age, or ethnicity. However, the project's target strategy, FPIC, targets for women and youth and the grievance and redress mechanism will mitigate those risks. Principles 4 and 6 were triggered due to concerns on human and labor rights stemming from non-ratification of some of the human rights conventions. However, this risk will be mitigated by contractual clauses for subcontractors that align with UN and international human rights as well as ILO principles. Principle 10 was triggered due to minimal potential risks related to 3 species namely the Thorectes puncicollis, the saker Falcon and the Egyptian Vulture that could be impacted by project activities. However, interventions in areas where these species are abundant will be avoided as much as possible and any impact will be monitored closely.

		Principle 12 was triggered with risks related to the use of inputs from the grants being used inefficiently and unsustainable use of groundwater resources. However, trainings on resource efficiency and geological surveys to be conducted for groundwater resources should mitigate those risks. Principle 13 was triggered due to the increased use in water resources that could aggravate the risk of spreading water-borne diseases. Awareness raising on the risks of these diseases and how to minimize their spread will be included in training manuals.
Output 2.2. Relevant public Institutional staff, farmers and women trained to implement, maintain, and sustain climate change resilient agriculture practices and techniques~~crops~~ and to support the strengthening or creation of community organizations and community development plans	Potential risks related to AF ESP Principles 3, 5 and 7.	Principles 3, 5 and 7 were triggered based on concerns related to exclusion of women, youth, most vulnerable and ethnic groups. Selection bias could result on discrimination based on gender, age, or ethnicity. However, the project's target strategy, FPIC, targets for women and youth and the grievance and redress mechanism will mitigate those risks.
Component 3: Climate resilient investment in concrete activities in the livestock sector		
Output 3.1. Around 3600 grant packages (of USD 560 each) provided to pastoralists, women and youth groups in two (2) districts in the northwest of Libya, with the purpose to increase climate change resilience to droughts and protect / rehabilitate ~~Climate change resilient~~ natural assets / resources (i.e. rangelands ~~management~~) production systems. Support will focus on the use of (traditional) water conservation and harvesting techniques, efficient management of soil and irrigation and ~~protection / rehabilitation improvements implemented in two (2) districts in the northwest of Libya, including through around 3600 grant packages (of USD 560 each) to pastoralists and women groups~~sustainable rangeland management for livestock	Potential risks related to AF ESP Principles 1, 2, 3, 4, 5, 6, 7, 10, 11, 12 and 13.	Principle 1 was triggered based on a potential small risk of subcontractors non-complying with national laws/ standards that could result in environmental harm. However, the risk could be mitigated through contractual clauses to abide to national technical standards and international best practices. Principles 2, 3, 5 and 7 were triggered based on concerns related to exclusion of women, youth, most vulnerable and ethnic groups. Selection bias could result on discrimination based on gender, age, or ethnicity. However, the project's target strategy, FPIC, targets for women and youth and the grievance and redress mechanism will mitigate those risks. Principles 4 and 6 were triggered due to concerns on human and labor rights stemming from non-ratification of some of the human rights conventions. However, this risk will be mitigated by contractual clauses for subcontractors that align with UN and international human rights as well as ILO principles. Principle 10 was triggered due to minimal potential risks related to 3 species namely the Thorectes puncicollis, the saker Falcon and the Egyptian Vulture that could be impacted by project activities. However, interventions in areas where these species are abundant will be avoided as much as possible and any impact will be monitored closely. Principle 11 was triggered due to a small risk of increased energy use due to project activities as well as increase in livestock and thus a negligible increase in GHG emissions. However, the project will not support any activities that will increase energy use unless energy use is compensated with renewable energy us and. Trainings will include low emissions rangeland management and livestock practices. Principle 12 was triggered with risks related to the use of inputs from the grants being used inefficiently and unsustainable use of groundwater resources. However, trainings on resource efficiency and geological surveys to be conducted for groundwater resources should mitigate those risks. Principle 13 was triggered due to the increased use in water resources that could aggravate the risk of spreading water-borne diseases. Awareness raising on the risks of these diseases and how to minimize their spread will be included in training manuals.
Output 3.2. Relevant public Institutional staff, pastoralists and women trained to implement, maintain, and sustain climate change resilient natural assets / resources (i.e., rangeland ~~management~~) production system improvements and to support the strengthening or creation of	Potential risks related to AF ESP Principles 3, 5 and 7.	Principles 3, 5 and 7 were triggered based on concerns related to exclusion of women, youth, most vulnerable and ethnic groups. Selection bias could result on discrimination based on gender, age, or ethnicity. However, the project's target strategy, FPIC, targets for women and youth and the grievance and redress mechanism will mitigate those risks.

community organizations and community development plans		
Component 4: Capturing and disseminating relevant knowledge and learning on climate change resilient practices, products, and technologies and to replicate these at national, district and community level.		
Output 4.1. Mechanism implemented to capture and disseminate relevant knowledge and learning of climate change resilient practices, products, and technologies and to replicate these at the national level and to one (1) district in the northwest, four (4) districts in the northeast and four (4) districts in south and to vulnerable groups and women, including through workshops, guidelines, farmer field schools, a ToT programme and field visits to demo plots.	Potential risks related to AF ESP Principles 3, 5, 7 and 14.	Principles 3, 5 and 7 were triggered based on concerns related to exclusion of women, youth, most vulnerable and ethnic groups. Selection bias could result on discrimination based on gender, age, or ethnicity. However, the project's target strategy, FPIC, targets for women and youth and the grievance and redress mechanism will mitigate those risks. Principle 13 was triggered due to mobilizing people because of trainings, consultations, workshops that could increase the risk of spreading some communicable diseases (e.g., COVID-19). The risk will be mitigated through health and safety standards and online meetings if needed/feasible.

1.3. Environmental, Social and Climate Management Plan (ESCMP)

~~180.~~187. **Content:**

- ☐ Allocated roles and responsibilities environmental and social risk management / implement of the ESCMP.
- ☐ Opportunities for adaptive management
- ☐ Arrangements to supervise executing entities for implementation of ESCMP.
- ☐ Budget provision to manage environmental and social risks/ implement of the ESCMP.
- ☐ Measures to avoid, minimize, or mitigate potential risks.
- ☐ Risks monitoring system/ indicators.
- ☐ Grievance and Redress Mechanism

~~181.~~188. **Allocated roles and responsibilities for environmental and social risk management / implementation of the ESCMP.**

IFAD will be responsible for environmental and social risks management of the project, including implementation of the Project ESCMP. An AF and IFAD policies and reporting compliance expert will be part of the IFAD project team. This expert will also supervise UNOPS on the implementation of the Project ESCMP. Guidelines showing how to comply to the AF ESP and GP will be shared with UNOPS and UNOPS will be guided on the process, including monitoring. A Safeguarding system compliance expert will also be part of the IFAD project team. Monitoring ~~project staff~~person will require having expertise on environmental and social risk management and be familiar with the AF safeguarding system.

Table 48 Roles and Responsibilities for Direct Contracting

Team	Role	Responsibility
IFAD	Project Management	● Coordination with UNOPS and national authorities ● Appoint project grievance mechanism focal point to implement the Grievance Redress Mechanism
	AF and IFAD policies and reporting compliance expert	● Review ESCMP at inception phase ● ESCMP monitoring ● Reporting (PPR) ● Documentation of site, interviews with beneficiaries
UNOPS / Contractor	~~Project Lead / Manager~~Lead Expert	● Reporting to IFAD Team and ensuring project execution, including but not limited to: o Co-develop ESCMP with Safeguard Consultant Team o Implement ESCMP o Report on ESCMP safeguard activities and key performance indicators to IFAD

~~182.~~189. All project-related ToR's and contracts will include clauses stating contractors will need to comply to the AF ESP, especially principle 1 (law), 4 (human rights), 5 (gender), 6 and 13 (labor and safety), 8 (involuntary resettlement and 11/12 (emissions / pollution) and to the AF GP. This includes:

- ☐ Principle 1: References to laws and standards to which the project activity will need to comply will be included in all legal agreements with all sub-contractors, including steps and responsibilities for compliance.
- ☐ Principle 4: References to relevant Humans rights declarations will be included in all legal agreements with all sub-contractors.
- ☐ Principle 5: Reference to relevant gender policies and approach and baseline
- ☐ Principe 6: Employment and working conditions following ILO standards will be included in legal agreements with all sub-contractors.
- ☐ Principle 8: Statement that no involuntary resettlement will take place due to project activities.
- ☐ Principle 11: Commitment to avoiding GHG emission, where possible
- ☐ Principle 13: Ensure that ICSC international health and safety standards are clearly accessible and understood. e.g., by putting clearly visible signs detailing health and safety standards to be located at project's sites and by supplying protective equipment.

~~183.~~190. **Minimum requirements and standard clauses will include:**

~~184.~~191. **Principle 1: Compliance with the laws**

Potential risk / impact	Mitigation
Non-compliance with laws / standards	● Include standard clause in MoU / all contracts with reference to laws / standards as described in this proposal (Part II.E)

~~185.~~192. **Principle 4: Human Rights**

Potential risk / impact	Mitigation
Limited awareness on human rights	● Share information on human rights with project beneficiary groups at the inception phase of the project

~~186.~~193. **Principle 5: Gender Equality and Women's Empowerment.**

Potential risk / impact	Mitigation
Limited awareness of gender approach and baseline	● Share information on gender policies and approach and baseline with project actors

~~187.~~194. **Principle 6 Core labor rights**

Potential risk / impact	Mitigation
Non-involvement Local Employment	● Measures to maximize local employment. ● Work with local community on verification of local workers where feasible
Non-Local Procurement	● Measures to maximize local procurement. ● Work with local community on verification of local suppliers where feasible
Non-compliance Worker Rights	● Include standard clause in MoU / all contracts: ○ HR policy aligned with local law, IFC PS2 and ILO Core Conventions ○ Worker Grievance Mechanism will be established. ○ Enforce minimum age expectations (according to ILO) and GoL minimum age) ○ Measures to ensure Contractor adopts project HR Policy standards (either contractually or through monitoring) ○ Ensure all employees are provided with a written employment contract before start of works. ○ Provide details of the transport arrangements for all workers to and from their accommodation (dedicated or in the local community) ○ Refer to Occupational Health and Safety Procedures
Limited Facilities	● Contractor to provide or facilitate access to necessary worker facilities which include but are not limited to toilets, rest areas, smoking areas, canteen, and potable drinking water to WHO standards. ● All worker facilities and accommodation will be cleaned, maintained, and centrally managed

~~188.~~195. **Principle 11 climate change**

Potential risk / impact	Mitigation
Increased GHG Emissions due to Project Emissions (such as from WWTP and pumping)	● Exact project-related energy use to be determined during project inception phase and where feasible, 'extra' energy use to be compensated through installation of solar PV

~~189.~~196. **Principle 13 Health**

Potential risk / impact	Mitigation
Security incidents	● Ensure health and safety procedure prior to ~~construction~~ implementation that establishes procedures such as UXO clearance and transportation of goods clearance from security agencies
Occupational Health and Safety	Occupational Health and Safety Procedures must be developed, specific to each Project output, for the following: ● Working at Height ● Heavy Lifting ● Working in Confined Spaces ● Excavation Works ● Hot Work ● Working and Scaffolding ● Electrical Safety ● Working with Machinery ● Site Clearance (debris management, unexploded ordinances) ● Collapsing Structures ● Handling of Hazardous Materials ● Weather Conditions ● Lone Working ● Material Transport (unloading and storage)

Potential risk / impact	Mitigation
	● Earthmoving and Concreting ● Permit to Work System ● Lock Out Tag Out (LOTO) System ● Minimum Mandatory PPE (incl. shoes, helmets, gloves, high-visibility vest, safety glasses) ● Proper Safety Signage ● Medical Clinic and First Aid ● Housekeeping
Increase in Social Tension due to Contractor-Community Interactions and Security	A Worker Code of Conduct/Training must be developed and at a minimum must: ● Outline general requirements and expectations on security interaction with community and external stakeholders, respectful, polite, and honest behavior is expected from all employees. ● Outline requirements on conflict avoidance and sensitivity to local cultures, traditions, and lifestyles. ● Ensure that no workers are to engage with the local community except via an appointed representative. ● Ensure zero tolerance of illegal activities by all personnel including: prostitution; illegal sale or purchase of alcohol; the sale, purchase, or consumption of drugs; gambling and fighting. ● Be included as part of induction and signed by all employees
Increase in Vector Borne and Communicable Diseases	A Vector Borne and Communicable Diseases Procedure must be developed and at a minimum must: ● Limit the spread of vector borne disease and communicable diseases
Limited emergency Response Local Capacity and Equipment	● Audit and gap assessment of local capacity ● Coordinate with local emergency response teams (fire, EMS, police, hospital) and implement mitigations to address gaps
Workplace health and safety incidents	An Emergency Preparedness and Response Procedure must be developed and at a minimum must: ● Define individual emergency response actions for all potential scenarios. ● Define a schedule of emergency drills and scenarios. ● Establish an Emergency Response Team with dedicated resources and equipment. ● Ensure emergency communications system is in place and reliable. ● Implement a drill schedule and provide reports. ● Define COVID-19 procedure (see below)

Interaction with security actors	● Develop Security and Human Rights Management Procedure that is in alignment with UNDSS SOP, IFC PS4 and the Voluntary Principles of Human Rights
	● All private security personnel to receive procedural or knowledge training in:
	  ● Guard-post orders and procedures
	  ● Proper conduct and ethics/human rights
	  ● Rules of engagement and use of force
	  ● Community interaction and community grievance mechanism
	● Engage the public security force through the correct hierarchy and channels early in the process to set up good working relationship and improve opportunities for influence on the adoption of International Standards.

Stolen Items	● In the case of public spaces, the municipality will assign a guard
Covid-19	● A Health and Safety Risk Assessment of each project activity, including supply chains and associated facilities, against International Standards needs to be carried out including specific alignment with IFC PS2 (Labor and Working Conditions) as well as IFC PS4 (Community Health and Safety and Security). The assessment involves a four-step process: 1. Conduct a Health and Safety Risk Assessment to identify the potential risk and impact of COVID-19 on project activities, including supply chains and associated facilities. 2. Develop and implement mitigation measures to manage health risks for each project activity (to be provided in the ESCMPs during the project inception phase). 3. If despite the implementation of mitigation measures a positive COVID-19 case is identified, then alternative “lower risk” activities will be proposed. 4. If “lower risk” activities are not an option, then activities will be delayed/postponed. Contractors should start to implement COVID-19 mitigation measures now, even if the virus has not arrived in the communities they are operating within. The following is a list of mitigation measures to prevent the spread of COVID-19 in the workplace that must be implemented at each work site: • Ensure workplaces are clean and hygienic. Surfaces (e.g., desks and tables) and objects (e.g., telephones, keyboards) need to be wiped with disinfectant regularly. • Promote regular and thorough hand washing. • Put sanitizing hand rub dispensers in prominent places around the workplace and ensure these dispensers are regularly refilled. • Display posters promoting hand washing and ensure that workers have access to places where they can wash their hands with soap and water. • Brief workers that if COVID 19 starts spreading in your community anyone with even a mild cough or low-grade fever needs to stay at home. • Where N95 masks are not available, ordinary surgical face masks will be provided.

Potential risk / impact	Mitigation
	The World Health Organization (WHO) has additional information and best practice approaches to occupational health and safety during the COVID-19 outbreak. The International Finance Corporation (IFC), also provides specific guidance regarding preventing and managing health risks of COVID-19 in the workplace and support for workers.

~~190.~~197. **Adaptive management**

When changes in project activities or additional activities are required, these will need to go through a new risks screening and impact assessment process in compliance with AF, IFAD and national policies and standards. When this is required, this will be led by IFAD and the PAC would need to approve the changes.

~~191.~~198. Due to the dynamic nature of the context in Libya, the ESMP takes an adaptive management approach. This means that, when changes in project activities or additional activities are required, these will need to go through a new risks screening and impact assessment process in compliance with AF, IFAD and national policies and standards. When this is required, this will be led by IFAD and the PAC would need to approve the changes.

~~192.~~199. Also, the ESCMP allows for abiding by any new laws, amendment to current laws, regulations or technical standards that may emerge in Libya. Any new concerns around access and equity that may come up especially from vulnerable communities (including women, youth, disabled people, and ethnic groups) during implementation will be accounted for and further consultations will be conducted to discuss solutions to address them. The ESCMP allows for adapting training activities into online/less crowded sessions in case any health concerns (e.g., COVID-19 like) emerge. Also, while the project avoids areas of important biodiversity abundance, the ESCMP allows for monitoring the before mentioned endangered species in case needed. In addition, already planned mitigation measures will also be evaluated to assess their effectiveness and then enhanced/changed accordingly. Mitigation measures and any updates with regards to environmental and social risks will be reported to the AF through the annual PPR.

~~193.~~200. **Arrangements to supervise executing entities for implementation of ESCMP.**

Table 49 Capacity of potential executing entities to carry-out gender responsive activities.

Potential executing entity	Skills and expertise to provide gender mainstreaming inputs	Specific requirements execution entities for compliance	Capacity building needs
UNOPS	Yes (UN core value)	- Appoint an ESP compliance and gender focal point (among technical experts) - Capacity to comply to the AF ESP and implementation of the ESCMP guided by IFAD. - Capacity to comply to the AF GP	- Awareness on requirements - Share guidelines for execution entities to comply and to ensure 'opportunities' are identified and exploited

~~194.~~201. **Budget provision to manage environmental and social risks (incl. gender) / implement the ESCMP.**

Dedicated safeguard/ gender compliance staff time is allocated under the project. ~~execution fees~~. ~~This person will be supported by IFAD safeguard/ gender specialists.~~

~~195.~~202. **Table 50:** ESMP Budget Sources

ESMP related activity	Source of funding to cover costs
Capacity building of project team	Built-in the Project Execution Costs
Implementation of Mitigation Measures	Built-in the Project Costs[43] + Project Execution Costs[44]
Monitoring and reporting of ESMP	Built-in the Project Execution Costs
Reporting on ESMP in PPR	Built-in the Project Execution Costs + IE Fees
Ensuring ESMP compliance	Built-in the IE Fees

Notes:

[43] Measures including trainings on low emissions livestock, training on resource efficiency and geological surveys.
[44] Measures including specific contract clauses (E.g., related to Labour rights), ensuring targeting strategy is implemented, health precautions and reviewing complaints through GRM.

Principle 1: No cost. Part of the procurement.
Principle 2: No cost. Part of the GRM and targeting strategy.
Principle 3: No cost. Part of the GRM and targeting strategy.
Principle 4: Consultations are built in project-cost.
Principle 5: No cost. Part of the GRM and targeting strategy.
Principle 6: No cost. Part of the procurement.
Principle 7: Consultations are built in project-cost.
Principle 8: Check of nesting as part of geological surveys proposed under principle 12.
Principle 10: No cost. Part of the targeting strategy.
Principle 11: Trainings on low emissions livestock practices included in FFS under component 4 and trainings under component 2 and 3.
Principle 12: Trainings on resource efficiency and pollution prevention included in FFS under component 4 and trainings under component 2 and 3. Geological surveys to be conducted as part of components 2 and 3.
Principle 13: No cost. Health precautions.

~~196.~~203. **Measures to avoid, minimize, or mitigate potential risks.**

Table ~~51~~49 sets out the general Environmental and Social (E&S) commitments/policies to avoid, minimize or mitigate potential risks, that are to be fulfilled by the Contractor, supported by IFAD, UNOPS and the Safeguard expert~~Consultant Team,~~ during the Project activities as they relate to the E&S impacts attributable to the ~~construction~~ implementation~~of works~~. This is additional / more detailed to the mitigation measures mentioned in **Table 4~~5~~6.**

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Table 51 Detailed program-level mitigation policies

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
A. General Requirements				
A1. Responsibilities and Liabilities	Ensure that all workers, suppliers, and possible sub-contractors are familiar and comply with the requirements and specifications of each ESCMP. Review Contracts to ensure that Environmental and Social Safeguards (ESS) requirements are included	Contracts	UNOPS / IFAD	Review of Contracts to ensure that ESS requirements are included
A2. Resources allocated to ESS Management	Assign ESS responsible staff and define the requirements and responsibilities. Typically, responsible for contact with stakeholders (Community Liaison Officer (CLO))	Final Project-specific ESCMP	UNOPS	Review at project inception phase
A3. ESS Training	Provided as required during implementation for IFAD and team	Training performed and recorded	Safeguard Consultant Team	Review of training records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
B. Protection of the Environment				
B1. Emissions and dust	Exact project-related energy use to be determined during project inception phase and where feasible, 'extra' energy use to be compensated through installation of solar PV	Recording of energy use	UNOPS	Regular monitoring and review of energy use
B2. Wastewater management	Ensure access to toilet facilities or portable toilet facilities that will be serviced on a weekly basis	Visual inspection of condition of facilities	UNOPS	Random site inspection
	Control surface water and where appropriate incorporate storm water management into project designs	Visual inspection, design review	UNOPS	Regular site inspection Final project design
B3. Pollution prevention	Ensure all works carried out minimize pollution risk (e.g., liquid effluents, air emissions, noise and vibration management, vehicle and equipment maintenance and selection, fuel, oil and chemical storage and handling) including the whole duration of the Project.	Ensure that potential pollutants are not stored and handled within 50 m of sensitive receptors (particularly watercourses).	UNOPS	Regular site inspection Review of grievance records
~~B4. Effluents~~	~~Ensure appropriate containment and storage of construction wastewater, including sanitary water. No untreated effluent is discharged.~~	~~No untreated wastewater discharge~~	~~UNOPS~~	~~Regular site inspection~~ ~~Review of grievance records~~
B5. Waste Management	Identify waste management facilities and ensure disposal through treatment/removal/recycling of each of the waste types.	Waste management procedure Waste transfer notes	UNOPS	Inspect waste management facilities. Review of waste transfer records
	Ensure that all wastes produced are properly collected, segregated, stored, transported, and treated	Waste collection areas existent, waste inventories Waste transfer notes	UNOPS	Random site inspection, Review of waste inventories Review of waste transfer records
	Minimize the waste production to the extent possible.	Records of waste production are kept. Waste Management Plan Training performed and recorded	UNOPS	Monitor (e.g., monthly) the amount of waste produced. Review of training records
	Document all waste related operations (type of wastes, quantities produced etc.).	Storage, transport, and treatment of waste is documented. Waste transfer notes Waste inventories	UNOPS	Review of waste transfer records Review of waste inventories
	Appropriate and safe storage of fuels, ~~construction~~ materials, wastes and any materials that can cause spills (e.g., batteries from energy generators).	Safe storage of materials Spill prevention and response procedure Spill response and remediation equipment in place.	UNOPS	Random site inspection

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
C. Worker Health and Safety				
C1. Occupational Health and Safety Plan	Develop an Occupational Health and Safety Plan	Occupational H&S Plan in place	UNOPS/ Safeguard Consultant Team (for review)	Review of Occupational H&S Plan
C2. Incident reporting	Ensure all H&S related incidents (e.g., observations, accidents) on site are recorded and followed up properly.	Reporting protocol for Major Incidents	Contractor/ ~~EE~~UNOPS	Check incident/accident records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
C. Worker Health and Safety				
C3. COVID-19	Ensure workplaces are clean and hygienic including being wiped with disinfectant regularly; the availability of hand sanitizing opportunities (dispensers and/or individual bottles); social distancing where possible; signage on COVID-19 protocols; self-isolation of a worker with symptoms accompanied by immediate testing of workforce. Where N95 masks are not available, ordinary surgical face masks will be provided.	Visual inspection on a regular basis	UNOPS	Regular monitoring
C4. Personal protective equipment	Ensure the provision of Personal Protective Equipment (PPE) for workers (hardhats, masks, safety glasses, safety boots etc. depending on project type).	PPE used by everyone on-site.	UNOPS/Site Manager	Random site inspection
C5. UXO/ Damaged structure clearance	Ensure UXO clearance/damaged structure clearance obtained prior to start of works.	Documentation of clearance (Commencement of Works Letter)	UNOPS	Review documentation
C6. First-aid	Provide one trained first aiders per 50 employees and adequate amount of first aid kits on site.	Suitable first aid kits on site Ensure the presence of first aid helpers in all shifts. First aid certificates	UNOPS	Regular monitoring of first aid kits Review of first aider certificates Review of number of first aiders required by local legislation
C7. Access to health care	Ensure the workforce has access to primary healthcare on site, providing prescriptions and vaccinations where necessary/applicable	Healthcare available on site	UNOPS	Random site inspection Review of grievance records Review of medical records (in case not confidential)
	In case more than 35 workers are present on site, ensure that a hospital, medical clinic, or a health center can be reached within a period of 45 minutes.	Medical centers in the proximity of the site.	UNOPS	Medical centers in the proximity of the site identified once prior the commencement of works

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
D. Community Health and Safety				
D1. Contractor-Community Interactions and Security	Engage/ communicate/ inform communities. Ensure consultations with the local authorities and communities regarding the ~~construction.~~ implementation	Minutes of Meetings Grievance Mechanism	UNOPS	Review of grievance register Minutes of consultation meetings
	Initiate an efficient Grievance Mechanism to allow potentially affected individuals to raise their concerns.	Grievance Mechanism in place, grievances recorded	UNOPS	Review of grievance register
	Establish a Code of Conduct taking into consideration legislation, safety rules, driving safety rules, substance abuse, environmental sensitivity, communicable diseases, gender issues (sexual harassment), respect for local beliefs and customs, community interactions etc.	Code of Conduct in place and rules shared with personnel	UNOPS	Review of Code of Conduct induction records Review of reported punishable or misconduct behavior. Review of grievance records
D2. Vector Borne and Communicable Diseases	Ensure the provision of adequate space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, fire and disease-carrying animals and insects, adequate sanitary and washing facilities, adequate lighting, and basic medical services, in accordance with all applicable health and safety regulations and norms.	Vector Borne and Communicable Diseases Procedure Appropriate conditions for workers on site Irrigation plans and procedures	UNOPS	Regular inspection Review of grievance records

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
D. Community Health and Safety				
D4. Security and Human Rights	Ensure security and human rights in alignment with UNDSS SOP, IFC PS4 and the Voluntary Principles of Human Rights	Security and Human Rights Management Procedure	UNOPS / IFAD	Regular inspection Review of grievance records
D5. Damage to people and property	Ensure that site areas are provided with appropriate security, fencing, signage, and lighting. Use hazard notices/signs/barriers to protect children and other vulnerable people from harm and prevent access to non-workers.	H&S planning of ~~construction~~ implementation~~site done~~, items installed	UNOPS	Inspection prior to the activities. Random site inspection Review of grievance register
D6. Involuntary resettlement	Ensure no physical displacement. Include standard clause in MoU / all contracts: Stating no physical displacement will take place due to project activities (unless project beneficiaries request this)	Contracts Resettlement Action Plan (if necessary)	UNOPS / IFAD	Review of Contracts
	Ensure no economic displacement. Include standard clause in MoU / all contracts: Stating no economic displacement (even informal) will be take place due to project activities (unless project beneficiaries request this)	Contracts Livelihood Restoration Plan (if necessary)	UNOPS / IFAD	Review of Contracts
D7. Vulnerable Groups	Ensure all vulnerable groups are consulted during inception phase and continually throughout project cycle to verify and further identify all specific needs, limitations, and constraints.	Meeting Minutes Grievance Mechanism in place, grievances recorded	UNOPS	Review of grievance register Minutes of consultation meetings and consultation reports

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
E. Labor				
E1. Worker Rights	Ensure minimum legal labor standards as per ILO regulations (child/forced labor, sexual assault, no discrimination, equal opportunities, working hours, minimum wages) are met.	Grievance Mechanism Records	UNOPS	Review of Inspection reports (also from labor authorities), Review of grievance records
	Ensure that all direct and indirect workers have access to and are aware about the Workers Grievance Mechanism where they can raise workplace relevant complaints anonymously.	Workers Grievance Mechanism in place and grievances recorded.	UNOPS	Review of workers grievance register
	Ensure all workers have the same rights and are treated equally.	Non-discrimination policy in place	UNOPS	Random site inspection Review of grievance register
E2. Local employment and procurement	Ensure local communities are preferred for the supply of goods and services to the Project and Project personnel, where appropriate.	Local Employment and Procurement Records	UNOPS	Review procurement and employment records Review of grievance register
E3. Facilities	Ensure provision of OR facilitate access to necessary worker facilities which include but are not limited to toilets, rest areas, potable drinking water to WHO standards	Appropriate H&S and sanitary facilities provided at site	UNOPS	Regular inspection Review of grievance records
E4. Fossils/ Archaeological Chance Finds	Establish specific procedures to manage the protection of archaeological and historical sites, chance finds and fossils. Ensure all finds of cultural heritage (e.g., graves, old ceramic, old building fragments) are reported immediately to the relevant authority and avoid excavation in the ultimate neighborhood of a chance find, fence the chance find and await instructions from the competent authority.	Notification records to relevant authority Training records, Records about chance finds	UNOPS	Site inspection

Item	Mitigation, Management and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
F. Supply Chain – Suppliers and Disposal				
F1. Supply Chain Verification	Verify that operations of these facilities meet Libyan national standards and are permitted.	Visual inspection of facility operations and review of permits	UNOPS/ Safeguard ~~Consultant Team~~Expert	Verification at Project commencement
	Verify if facilities require expansion for Project works.	Visual inspection on a quarterly basis	UNOPS/ Safeguard Expert~~Consultant Team~~	Regular quarterly monitoring
F2. Supply Chain Monitoring	Monitor the operations of these facilities for risks related to: 1. Controversial linkages with sanctioned entities. 2. Exclusion list (including child labor and trafficking of arms along supply routes); and 3. Security (number of checkpoints along supply routes)	1. Verification of receipts of material sources 2. Visual inspection of facility operations and supply routes 3. Visual inspection of supply routes	UNOPS/ Safeguard Expert~~Consultant Team~~	Regular quarterly monitoring

~~197.~~204. **Risks monitoring system / indicators.**

The environmental, social and climate risks management approach include monitoring of potential risks and implementation of risks mitigation measures. This monitoring program commensurate with project activities and will report on the monitoring results to the Fund in the mid-term, annual, and terminal performance reports. Monitoring will be done to ensure that actions are taken in a timely manner and to determine if actions are appropriately mitigating the risk / impact or if they need to be modified to achieve the intended outcome. Annual reporting will include information about the status of implementation of this ESCMP, including those measures required to avoid, minimize, or mitigate environmental and social risks. The reports shall also include, if necessary, a description of any corrective actions that are deemed necessary.

~~198.~~205. IFAD will be responsible~~responsibility~~ for environmental and social risks management, including monitoring of the implementation of the Project ESCMP. An AF and IFAD policies and reporting compliance expert will be part of the team. A Safeguarding system compliance expert will also be part of the team. Monitoring staff part of the Supervision Unit will require having expertise in social risk management and be familiar with the AF safeguarding system. Under component 1, ESIA a specialist company will be hired verify the developed ESMF/Ps at inception phase. These will include detailed guidelines for executing entities, any other contractors, and the government partners to comply to the AF ESP and GP, including roles, responsibilities, and monitoring. Gender specific indicators and targets have been developed as shown in the results framework. Specific budgets for risks monitoring are covered by M&E staff time and safeguarding/ gender ~~under the execution fees~~expert.

Table 52 monitoring arrangements for general risks management

Action	Indicator and method	Responsibility and frequency
Monitoring of capacity execution entities to comply	- Guidelines and action plans shared. - Monitoring reports comply to requirements	IFAD within half a year from inception when reports are required
Implementation of grievance mechanism	- Grievance mechanism information is at target locations (buildings, etc.) - Grievance mechanism information is shown on IFAD project website	IFAD in coordination with execution entities Within half a year from inception
Monitoring of measures to avoid or mitigate risks / impacts per output	- See table above	IFAD in coordination with execution entities When reports are required

Grievance Redress mechanism

~~199.~~206. IFAD-supported projects and programmes are designed in a participatory process thus considering the concerns of all stakeholders. IFAD works to ensure that all IFAD investments are implemented in accordance with the Fund's policies, standards, and safeguards. IFAD considers it equally important that parties adversely or potentially adversely affected by IFAD-supported projects and programmes should be able to bring issues to the Fund's attention.

~~200.~~207. IFAD's Grievance Redress Mechanism (GRM) can be accessed when necessary to manage project-related grievances that cannot be resolved by the project's Executing Entity. The purpose of the GRM is to provide a complaints procedure for alleged non-compliance with AF's social and environmental policies and mandatory aspects of IFAD's Social, Environmental and Climate Assessment Procedures (SECAP). IFAD's Complaints Procedure aims to serve as an accountability mechanism with a clear entry point and transparent process for people and communities to raise concerns with IFAD-supported projects and to provide effective sustainable solutions. Its mandate is to: i) facilitate the resolution of complaints from people who may be affected by projects or subprojects in a manner that is fair, objective, and constructive; ii) enhance the environmental and social outcomes of projects; and iii) foster public accountability and learning to enhance the environmental and social performance of IFAD and reduce the risk of harm to people and the environment. The Procedure is organized in two complementary functions:

- Problem solving function: to help resolve issues raised about the environmental and/or social impacts of project through a neutral, collaborative, problem-solving approach and contribute to improved social and environmental outcomes of the project.
- Impartial review function: to carry out reviews of IFAD's compliance with its SECAP and other related policies, assess harm done, and recommend remedial actions where appropriate.

Project-level GRM

~~201.~~208. The project team will establish communication channels at field level to file complaints. Contact information (including contact postal code, phone number and/or email) and information on the process to file a complaint will be disclosed in all meetings, workshops, and other related events throughout the life of the project. The project will include in the engagement activities information on the GRM and will continuously build on consultations to determine the most suitable way for beneficiaries and stakeholders to communicate their concerns and ideas.

~~202.~~209. The project-level GRM and guidelines will be developed for the project considering UNOPS GRM guidelines and IFAD's corporate Complaints Procedure to receive and facilitate resolution of concerns and complaints with respect to alleged non-compliance of its environmental and social policies and the mandatory aspects of its SECAP. The project team will also be responsible for documenting and reporting to IFAD and AF as part of the safeguards performance monitoring on any grievances received and how they were addressed.

~~203.~~210. Complaints can be raised directly to the UNOPS field representative at the district level at the concerned project area and the field team should help the complainant fill the complaint ensure the following information is included:

- Name and contact details of the person(s) (and/or their representative) or community affected by the project.
- Clear statement of the project's adverse impact(s). This includes direct and material harm which can be actual present harm, or harm that is expected in the future.

- Whether the complainants wish to keep their identity confidential.

Level 1

~~204.~~211. Submitted complaints will be sent to the ~~Project Coordinator at UNOPS~~ UNOPS office ~~and M&E officer~~ to assess whether the complaint is eligible. ~~Project Coordinator will inform and~~UNOPS will involve the relevant ~~Safeguards personnel~~technical specialist(s) from the project as required. Eligible complaints will be addressed by the implementing ~~entity~~ partner(s)/contractor(s) at the field level (see eligibility criteria below). The ~~Project Coordinator~~UNOPS office M&E expert ~~and the relevant Safeguards personnel, with support from the M&E Officer~~ will be responsible for recording the grievance and how it has been addressed if a resolution was agreed.

Level 2

~~205.~~212. If the grievance is not resolved at the field level, it should be escalated back to ~~the~~ UNOPS. Received complaints will be registered, investigated, and solved by ~~the~~ UNOPS. The Project Advisory ~~Steering~~ Committee should be made aware of the complaint and the measures being taken to address it.

Table 53 Communication Channels for the GRM

Communication Channel	Description
Engagement Activities	• Grievances can be communicated during engagement activities verbally and/or written and submitted into a comment box
Verbal	• Grievances can be communicated directly to project focal points (GRM supporters)
Phone	• Phone Number to be provided in relevant ESCMP • Phone Number to be provided on billboard at project site location • Calls will be received from: 9AM - 5PM
WhatsApp	• Phone Number to be provided in relevant ESCMP • Phone Number to be provided on billboard at project site location • Grievances can be communicated through WhatsApp instant messaging system with audio and video support if required
Email	• Email to be provided in relevant ESCMP • Written grievances can be communicated through email
Comment Box	• A comment box will be available at all engagement activities and at Management Team office for written grievances
Informal channels	• Grievances can be also received by verified community leaders if needed

The UNOPS team will be trained on the GRM, and these communication channels will be disseminated during the inception workshop. During capacity building and community activities, beneficiaries and stakeholders will be made aware of these channels to be able to file their complaints as needed.

Level 3

~~206.~~213. If the complaint has not been solved ~~in~~ at level 2, the complaint must be submitted to IFAD by downloading the complaint form (https://www.ifad.org/documents/38711624/40169860/IFAD+Complaints+Submission+Form+Final+Draft+%28Downloadable%29.docx/52c75cad-439f-4e4a-8a70-45056ebde826) and sending an email to SECAPcomplaints@ifad.org or a mail to:

IFAD
SECAP Complaints (PMD)
Via Paolo di Dono 44
00142 Rome, Italy

~~207.~~214. The full complaint procedure at IFAD is stipulated in the sections below.

~~208.~~215. Complaints can be submitted in any language by letter, e-mail and/or web form (available on IFAD's website). Any communication thereafter will be in English with a translation into Arabic. Processing of complaints not submitted in English may require additional time due to the need for translation. IFAD will timely notify the complainant of any delays caused by translation.

~~209.~~216. When a complaint is received, IFAD will first assess its admissibility. For complaints to be considered, the following eligibility criteria must be met:

- The complainant alleges that IFAD has failed to implement its social and environmental policies and/or the mandatory provisions set out in SECAP.

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- The complainant alleges that they have been or will be adversely affected or harmed (direct or material) because of such non-compliance.
- The complainant must be submitted by a group of at least two people (an organization, association, society, or other group of individuals) who are both nationals of the country concerned and/or residing in the project's target area.

~~210.~~217. The following complaints will not be considered eligible:

- Matters not related to IFAD's actions or omissions in designing or implementing the project.
- Matters already considered by IFAD's Complaints Procedure unless complainants have new evidence previously not available to them and unless the subsequent complaint can be readily consolidated with the earlier complaint.
- Submissions from foreign entities or anonymous.
- Matters related to procurement of goods, services, and consulting services.
- Accusations of fraudulent or corrupt activities in relation to project implementation – these are dealt with.
- Allegations of fraud and corruption in IFAD-supported projects – these are dealt with by IFAD's Office of Audit and Oversight.
- Matters that are frivolous, malicious, trivial, or generated to gain competitive advantage.

~~211.~~218. Allegations of sexual harassment, exploitation and abuse are dealt with through IFAD's existing policy to preventing and responding to sexual harassment, sexual exploitation, and abuse, and are forwarded to IFAD's Ethics Office.

Retaliation

~~212.~~219. The key principle underlying IFAD's Complaint Mechanism is that every individual or group has the right to voice their criticism or file a complaint with relation to an IFAD-supported project without threats to their safety of fear of retaliation. IFAD expects its partners not to prevent or harm stakeholders who may (or have) criticize(d) an IFAD-supported project or file(d) a complaint.

~~213.~~220. According to IFAD's Whistle Blower Protection Procedures, any retaliatory behavior by IFAD personnel against an external party engaged in any dealings with IFAD because such person has reported unsatisfactory conduct and/or misconduct will be considered unsatisfactory conduct or misconduct.

~~214.~~221. During the project design and implementation process IFAD will inform stakeholders of its SECAP as well as of the Complaints Procedures in force. To this end, IFAD will ensure that stakeholders are aware that they can contact IFAD directly and file a complaint if they believe that they are, or will be, adversely affected by the project and that UNOPS are not responsive to their concerns.

~~215.~~222. Hence, complainants can go directly to level 3 and send his/her complaint to IFAD if they fear retaliation from the executing entities.

Receipt and Registration of Complaint

~~216.~~223. After receipt of a complaint, the SECAP Redress Service (SRS in IFAD will ensure that an acknowledgement of receipt is sent to the complainant(s) within five business days. Complaints submitted in another language than English, may require additional time for translation. The acknowledgement informs the complainant(s) the date by which IFAD will determine the eligibility of the complaint, and whether additional information is required.

~~217.~~224. Upon receipt, the SRS will verify whether the complaint is known and/or already being processed by the project-level grievance redress mechanism. If not, the SRS decides within 21 business days after the acknowledgement of receipt on the eligibility of the complaint, based on the criteria defined above. During this phase, further information may be requested from the complainant and/or the regional division to clarify the complaint. In case of partial or total ineligibility, the SRS will, if possible, advise the complainant on which alternative measures could be taken and/or to which institution the concerns may be addressed. In the case of full eligibility, the complainant will receive a notice with information on the next steps, and the complaint will be registered.

~~218.~~225. The SRS will also notify the following internal stakeholders regarding receipt of the complaint: the Country Director and other relevant staff including the Regional Director, Director Environmental, Climate, Gender and Social Inclusion Division (ECG), Director Sustainable Production, Markets and Institutions Division

(PMI), Director Operational Policy and Results Division (OPR), Office of the General Council (LEG), Communications Division (COM), Office of Enterprise risk Management (RMO) and others as appropriate.

Assessment of Complaint

~~219.~~226. Once a complaint is deemed eligible and registered as such, the SRS will initiate the assessment process. During this phase, the SRS will set up a review group consisting of the Country Director, ECG representative, PMI representative and a LEG representative to carry out an assessment of the complaint to:

- Develop a thorough understanding of the issues and concerns raised.
- Engage with the Project Delivery Team (PDT).
- Engage with the complainant, the Borrower, and the project team in Libya.
- Identify local communities and additional stakeholders as relevant.
- Explain the different functions of the Procedure, their scope and possible outcomes to the parties involved; and
- Determine whether the parties seek to initiate a problem-solving process or impartial review.

~~220.~~227. The assessment process is used to give the complainant(s), the Borrower, and the PDT an opportunity to ask questions and consult with the SRS to facilitate informed decision making and understanding of the Procedure. Typical activities during this phase include:

- Review of project related documents.
- Meetings with the complainant(s), Borrower, UNOPS staff, and if relevant local government officials, representatives of civil society and other stakeholders.
- Visit to the project site(s); and
- Public meetings in the project area as necessary.

~~221.~~228. When planning a visit, the SRS will inform all parties upfront of its planning. At the end of this phase, the Complainant(s) and the Borrower/Recipient/Partner decide whether they would like to proceed with the problem-solving process or an Impartial compliance review. If both parties agree to the problem-solving process, this will be started by the SRS. If there is no agreement, the complaint will be forwarded to the Impartial Review Function.

~~222.~~229. The assessment should be finalized within 120 business days after the registration of the complaint with an assessment report prepared by the SRS. The report should include:

- Summary of the information gathered, and parties' perspectives of the issues raised.
- Decision of the parties to pursue a problem-solving process or compliance review.
- Action plan with timeframe for implementation, including appointment of mediator as relevant.
- Copy of the complaint, anonymized as necessary, as well as any Borrower's response that may be provided.

~~223.~~230. The report will be shared with all parties. Any comments should be received within 30 business days before the report is finalized and published (as necessary).

Problem Solving

~~224.~~231. If the parties agreed to a problem-solving procedure, the SRS would facilitate the process to help resolve issues raised about the environmental and/or social impacts of the project through a neutral, collaborative, problem-solving approach. During the assessment phase, it should have been clarified what problem-solving approach will be followed:

- **Facilitation and information sharing**: in case the complainant(s) raise(s) questions regarding existing of foreseen impacts of a project, the SRS may facilitate the involved parties to obtain the information and clarifications resulting in a resolution.
- **Mediation**: a neutral third party who acts as a mediator may be appointed to assist the parties involved in voluntarily negotiate a mutually satisfying resolution.
- **Fact-finding mission**: the SRS may contract (an) external consultant(s) to conduct a fact-finding mission to examine the issues agreed upon by the parties to reach a common understanding and possible solution.

~~225.~~232. Engagement in the problem-solving process is in any case a voluntary decision and requires agreement between the complainant and the Borrower. Each party reserves the right to exit at any point in the process.

~~226.~~233. Any agreement reached following the problem-solving process should be specific in terms of objective, nature, and requirements, and documented in written form (to be prepared by the SRS or involved

mediator or consultant). The timeline for the process is to be defined in the assessment report, but in any case, the process should not take longer than 2 years. In pursuit of a solution, IFAD will not knowingly support agreements that would coerce one or more parties, be contrary to IFAD policies, or violate the domestic or international laws applicable.

~~227.~~234. Where an agreement is reached, the SRS will monitor the implementation of the agreement and share interim updates with the parties, IFAD management and on the website (as applicable).

~~228.~~235. Where there is no, or only partial agreement reached, the SRS will verify whether the complainant(s) would like to transfer the case to the Impartial Review Function.

Impartial Review Function

~~229.~~236. In the case no or partial agreement is reached during the problem-solving process, or if decided during the assessment phase, the SRS will forward the case upon agreement of the Complainant(s) to the Impartial Review Function, based in the Office of the President and Vice-President (OPV).

~~230.~~237. Out of a roster of independent experts, a minimum of two will be contracted to review the complaint and lead the impartial review. The role of these independent experts is to carry out reviews of compliance with IFAD's SECAP and other relevant policies, assess related harm and recommend remedial actions where appropriate. The impartial review will consider issues raised in the complaint or identified during the assessment process, but not those already resolved during the problem-solving process.

~~231.~~238. The Impartial Review should be finalized within a reasonable timeframe, no later than 2 years. The number of days to finish the review will depend on the complexity of the case (i.e., need for field visit, number of stakeholders involved), as well as the findings and conclusions of the review.

~~232.~~239. After completion, the independent experts will prepare a final report of their findings and in the case of non-compliance, specific actions to undertake. The report may also contain recommendations for IFAD on how to improve existing policies and/or procedures. After receiving internal comments, the (revised) draft report will be sent to the complainant(s) and the Borrower for fact checking. Comments should be received within 15 business days. The final report will then be prepared for disclosure to IFAD management and the Executive Board within 10 business days. IFAD management will provide a management response to the final report within 10 business days. The final report including the management response will be send to the complainant(s) and a summary will be published at IFAD's website.

~~233.~~240. In cases where non-compliances are identified, the SECAP Redress Service will monitor the situation until actions are taken to assure non-compliance(s) are addressed.

Reporting and Information Disclosure

~~234.~~241. All information relevant to the case, including updates on the status and progress of the complaint process, to the extent possible and consistent with IFAD's disclosure policy, is shared with the complainant(s). In addition, IFAD will publish a case registry on its website. The registry will contain the following information in relation to eligible complaints:

- A summary of the issues raised.
- Date of receipt
- Date of registration
- Project details (name, number, E&S category & climate classification, implementing partner, country, status)
- Information on the status
- Link to available report(s)
- The case registry will also contain information in relation to ineligible complaints, namely:
    - Key issues raised.
    - Date of receipt
    - Project details as above
    - Basis for ineligibility

~~235.~~242. Once a case is closed, IFAD will prepare a summary of the complaint, including follow-up actions and recommendations, considering privacy and confidentiality regulations and IFAD's disclosure policy, to be published on its public website. The summary will also be included in IFAD's Annual Report which is published on its website.

Resolution

~~236.~~243. Upon acceptance of a solution by the complainer, a document with the agreement should be signed.

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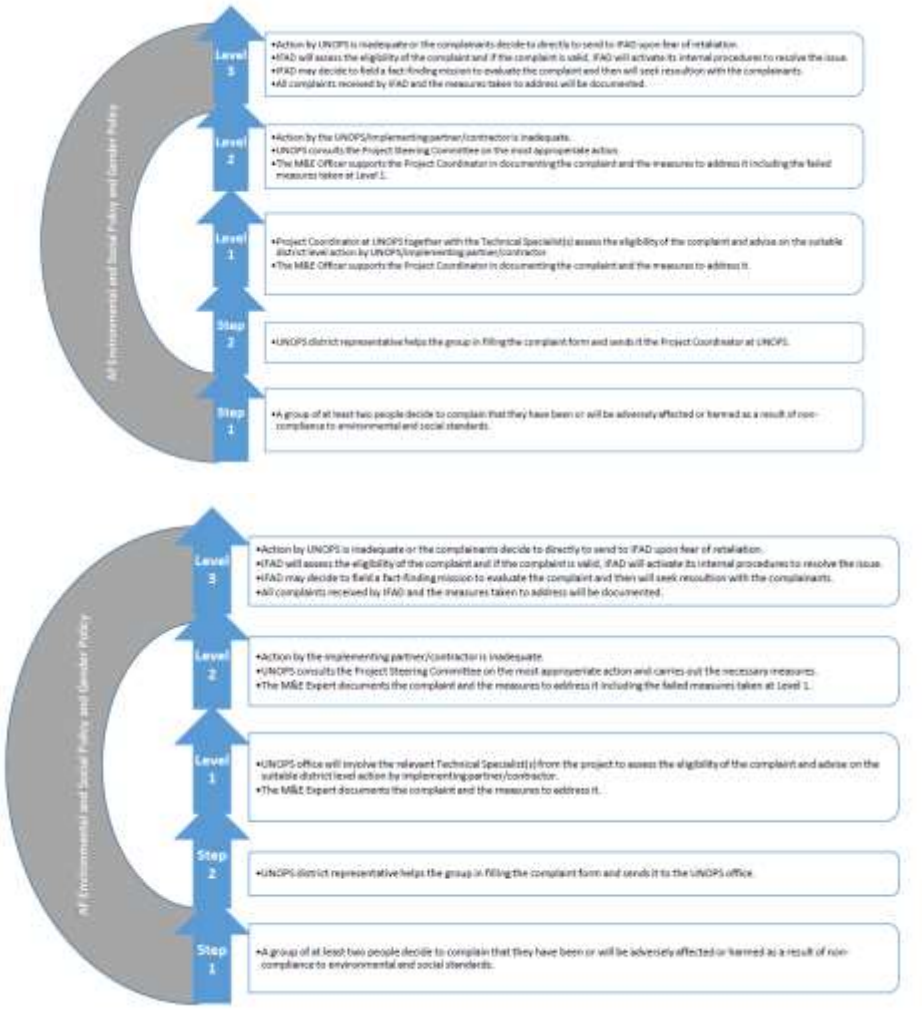

Figure 20 The Project's Grievance and Redress Mechanism (GRM)

Table 54 Ggrievance form

Grievance Form
Reference No:
Please enter your contact information and grievance. This information will be dealt with confidential. ***Please note: If you wish to remain anonymous, please enter your comment/grievance in the box below without indicating any contact***

information – your comments will still be considered.	
Full Name	_____
Anonymous submission	• **I want to remain anonymous**
Please mark how you wish to be contacted (mail, telephone, e-mail).	• **By Mail (Please provide mailing address):** _____ _____ • **By Telephone (Please provide Telephone number):** _____ **By E-mail (please provide E-Mail address):** _____
Preferred Language for communication	• **Arabic** • **English** • **Other, please specify:** _____
Description of Incident or Grievance:	What happened? Where did it happen? Who did it happen to? What is the result of the problem?
Date of Incident / Grievance: _____	• **One-time incident/grievance (date _____)** • **Happened more than once (how many times? _____)** • **On-going (currently experiencing problem)**
What would you like to see happen to resolve the problem?	

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2. GENDER AND YOUTH APPROACH AND BASELINE

237.244. **Purpose**

The purpose of this specific 'gender annex' is to demonstrate (in an overview) how this project will comply to the AF GP. A gender approach and data baseline has been established, which is necessary at the project start against which implementation progress and results can be measured. In line with IFADs SECAP, the approach includes the identification and of promotion of economic, social, and environmental benefits and opportunities for women and youth for each project activity (which can be seen as an additional safeguard area). During project preparation a 'gender assessment' has been conducted to identify potential project gender equality and women's and youth empowerment issues, but also opportunities. The outcomes are summarized below, as well as arrangements that will be taken during project implementation to comply to the AF GP, including to show how the project contributes to improving gender equality, the empowerment of women and youth and the project interventions' suitability to meet the adaptation needs of targeted women and men and youth.

238.245. **Methodology**

During the project preparation phase, potential gender equality and women's and youth empowerment challenges and opportunities have been identified through initial data analysis / desk research, surveys and focus group discussions with women, youth, and other groups. Through these methods, specific women and youth needs and perceptions were identified, as well as potential gender-related risks and impacts, including possible concerns regarding proposed project activities.

239.246. **Specific considerations and phases**

1. Determinants for gender-responsive stakeholder consultations

Table 55 Stakeholders consulted to develop gender approach.

Type of stakeholder	Specific stakeholder
UN agencies and NGO's	- UN Women

Community level	- Community consultations and focus group discussions with women and youth

*See also part II.I

2. Initial Gender Assessment

240.247. Negative gender stereotypes and social norms impact all aspects of women's lives in Libya, inhibiting their freedom of movement, economic participation, community-level engagement, and access to formal justice systems[45]. In 2019 the Gender Development Index (GDI) for Libya was 0.98. The index score in the country increased annually from 2015 onwards, indicating worsening gender equality in the fields of education, health, and wealth. The GDI measures the levels of gender parity within societies. It ranges from zero (perfect gender equality) to around one (no gender parity).[46] Libya also has a Gender Inequality Index (GII) value of 0.252 ranking it 56 out of 162 countries in the 2019 index[47].

241.248. Libya acceded to the international Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1989 with two reservations related to Islamic Shariah law. However, most Libyan laws do not comply with CEDAW's provisions, and Libya lacks a national action plan for CEDAW implementation. Labor laws limit women's working hours and the jobs women may preform, purportedly due to women's "nature". Some laws are discriminatory and do not serve women's interests, while other laws lack effective mechanisms to enforce the gender equality, they supposedly intend to protect[48].

242.249. Although the Libyan constitutional draft was abandoned, the final draft constitution eliminated gender stereotypical language, and Article 7 guaranteed equality before the law and non-discrimination. Article 49, titled Supporting Women's Rights, ensured protection and promotion of women's status and opportunities and prohibited discrimination against women. Article 184 provided for a quota of 25% of the total seats for women in any national or local election and clearly stated that women also may run for general seats. The efforts of women's rights organizations and advocates played a vital role in amendments to the final draft constitution to grant more rights to Libyan women. However, two main concerns were not addressed in the final draft. First, the right of Libyan women to confer citizenship to their children was not protected. Second, the final draft constitution ignored demands to establish a Women's National Council under the authority of the legislature instead of or in addition to Women's Empowerment Units in Ministries and other executive departments[49].

243.250. On the policy level, few women are in government leadership positions, and they are mainly in traditional sectors related to social affairs or women's affairs. Very few women have any real influence in policy-making processes, including the weak Women's Support and Empowerment Unit established by the Presidency Council in 2018. Women's empowerment units in ministries are also marginalized and ineffective. These units have an essential role but need capacity building and other support to have any impact[50].

244.251. Only 16% of parliamentary seats are held by women and female participation in the labor market is 33.9% compared to 65.3% for men[51]. Yet, since the crisis there has been an increase of female employment in the country and 51% indicate that the need for additional resources is the main reason for employment. Most women are employed by the public sector with only 2.5% of women being employed by the private sector. In addition, Women's freedom of movement is significantly lower than men's and perceptions of women's civic engagement continues to be shaped by social norms and gender stereotypes[52]. On the other hand, 70.5% of adult women have reached at least a secondary level of education compared to 45.1% of their male counterparts. In general, females have higher mean years of schooling than men[53].

245.252. However, the conflict situation has left women and girls vulnerable to sexual exploitation, sexual harassment, abuse, and rape especially among migrants and refugees. Currently, around 153,000 people are at risk of Gender-Based Violence (GBV) including 47,000 displaced, 49,000 returnees, 15,000 non-displaced

[45] UN Women (2020). The Economic and Social Impact of Conflict on Libyan Women.
[46] Statista
[47] UNDP (2020). Briefing Note for Countries on the 2020 Human Development Report: Libya. *Human Development Report.*
[48] USAID (2020). Libya Gender Analysis: Identification of Constraints, Opportunities and Best Practices in UASID/Libya.
[49] USAID (2020). Libya Gender Analysis: Identification of Constraints, Opportunities and Best Practices in UASID/Libya.
[50] Ibid.
[51] UNDP (2020). Briefing Note for Countries on the 2020 Human Development Report: Libya. *Human Development Report.*
[52] UN Women (2020). The Economic and Social Impact of Conflict on Libyan Women.
[53] UNDP (2020). Briefing Note for Countries on the 2020 Human Development Report: Libya. *Human Development Report.*

Libyans, 27,000 migrants and 14,000 refugees. Of the total people at risk of GBV, 51% are women and 48% are girls. Most people facing GBV risks and in need of assistance are in Tripoli, representing 21 per cent of all those in need[54]. The conflict also has increased fear in families about the safety of their female family members, and the perceived need for male protection of young women has increased. This change has promoted practices like early marriage, which reportedly has become more common in rural areas and among ~~internally displaced~~migrant communities to protect young women from rape or kidnapping by armed groups[55].

~~246.~~253. At the household level, women are expected to do all domestic work, and men's contributions in the home are not considered their duty, but as help they give to the women. Law No. 10 of 1984 Article 18 regulates inequality in the household by enumerating a wife's obligations to her husband, which include taking care of his comfort, managing the marital house, and raising children. COVID-19 has exacerbated or re-entrenched women's traditional roles in the household. Women also bear the burden of maintaining household sanitation and hygiene and caring for sick family members during the pandemic. During the COVID-19 lockdown, women's responsibilities of caring for and teaching children have been amplified because children cannot attend school[56].

~~247.~~254. In the south, household financial hardship has increased women's economic participation and elevated their important role within their households, and making women, to some extent, accepted in the public sphere. The same has been noticed in the workplace with more acceptance of women to work in the health sector as nurses and doctors despite having them work night shifts. However, it is important to mention that women work mostly in branches of medicine were dealing with men will be limited, like pediatrics and gynecology[57].

~~248.~~255. The centralized system in Libya that distributes resources and economic activities more to the major cities creates difficulty to get proper job opportunities for Libyans in rural areas, especially for women who are constrained in their movements by the challenging security situation and conservative cultural norms. Women who started to work in traditional home-based businesses that can generate income to the household, were unable to expand. They face several constraints to either starting or expanding their businesses. Women entrepreneurs have limited access to available financial resources, such as local venture capital or loans from banks, government schemes, or donor-funded development programs. Access to bank loans, for example, is typically conditioned by ownership of land or property and a guarantor. Most women in Libya, however, do not own or have control over land or property against which they can obtain bank loans. While women and men have the same rights in land and property ownership, men typically retain control over such assets within a family[58].

~~249.~~256. In addition, access to information is an issue for most Libyans, but women suffer more from lack of information about laws, resources, and services relevant to their lives because their lower levels of status and power inhibit them from communicating with governmental institutions. These limitations are especially true for women of limited income and women in rural areas, who have less access to online resources and services. In recent years, Libyan women have started to use existing social media platforms to advocate for their rights, and for women-owned businesses to promote their products and services, such as food catering, interior design, software programming, fashion design, building instruction, and art. Most women in Libya own mobile phones but they have limited access to computers. In some families, women do not have the freedom to surf the internet and they are monitored and censored. Women, in general, have limited digital/online literacy. They primarily use Facebook if they are online at all. However, during the conflict and COVID-19 crisis, women are increasingly using online space, primarily social media platforms and mainly in the northern region where internet connectivity is better, to mitigate some of the social constraints they face[59].

~~250.~~257. In agricultural areas, women work in their immediate family or relatives' family farms, but never in those outside the family. In an assessment by the World Food Program, women were found to benefit more from agricultural projects if safe access and proper training programs were provided to them[60].

[54] OCHA (2020). Humanitarian Needs Overview 2021: Libya.
[55] USAID (2020). Libya Gender Analysis: Identification of Constraints, Opportunities and Best Practices in UASID/Libya.
[56] Ibid.
[57] Ibid.
[58] USAID (2020). Libya Gender Analysis: Identification of Constraints, Opportunities and Best Practices in UASID/Libya.
[59] Ibid.
[60] Ibid.

~~251.~~258. As most women in Libya work in the informal sector in home-based businesses and, therefore, do not pay taxes or make social security contributions, they are excluded from receiving social security benefits when they reach retirement age, further disadvantaging them from men, who work in much greater numbers in the formal sector[61].

3. Data baseline – overview of disaggregated data (beneficiaries) in target areas.

Table 56 Data baseline – women and youth

Project components	Direct		Indirect	
	Women	Youth	Women	Youth
1. Participatory prioritization of climate change adaptation options into national, district and community planning for agriculture / livestock development	171	171	2,040,000	2,040,000
2. Climate resilient investment in concrete activities in the agriculture sector	10,620 1416 female-headed Household	10,620	402,005	402,005
3. Climate resilient investment in concrete activities in the livestock sector	6,480 864 female-headed households	6,480		
4. Capturing and disseminating relevant knowledge and learning on climate change resilient practices, products, and technologies and to replicate these at national, district and community level	81	81	TBD	TBD

a. Context:

Table 57 analysis of gender-specific legal and cultural / religious context

Analysis of legal status of women	Libya has ratified the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW).

4. Differentiated climate change impacts on men and women and their differentiated capacities do adopt to these, gender division of labor and gender-based power structures.

~~252.~~259. Climate change has a strong impact on agricultural production systems. Rural communities are in the front lines in the battle to improve food security. At the same time, these communities must also cope with changing climate conditions. Gender is one critical dimension of this diversity. It shapes men's and women's roles and opportunities, and consequently determines their access to the resources and processes needed for dealing with climate change. Accurate climate information and the ability to interpret it allows farmers to plan and make better decisions on how to adapt to climate change. Women usually have lower access to production inputs, resources, and information. This what makes women more vulnerable in time of crisis and climate change.

Table 58 Differentiated climate change impacts on men and women

Sector / Livelihood relevant to the project	Climate change impact	Gender and youth equality and empowerment issues, incl. specific Vulnerabilities / barriers to adapt	Capacity to adapt and opportunities for promoting a 'women' and 'youth' as agents of change
Agriculture	- Reduction in crop yields - Seawater intrusion - Decline in water availability	- High unemployment rates among youth especially for women. - Women working mostly in the informal sector. - Women dropping out of school and traditionally carry the burden of household work in addition to	- Participatory approach focusing on women and youth to develop climate vulnerability assessments and climate resilience strategy for the sector, including specific impacts and needs identified. - Capacity building to focus on women and youth to provide them with access to the knowledge

[61] Ibid.

Livestock	- Decline in water availability for livestock	farm work limited access to nutritious food. - Women have much less access to inputs, knowledge, and assets especially land ownership. - Exclusion of women and youth voices in planning and decision making leading to their needs in the agriculture sector being overlooked. - Youth in rural areas being more vulnerable to joining extremist and violent groups	needed for them to contribute to agriculture, livestock, and water sectors. - Providing inputs in the form of grants for young and female farmers and pastoralists to increase their incomes and help them adapt to climate change. - Addressing policy issues that systematically exclude women and youth through institutional capacity building. - Organize women through women associations
Water	- Decrease in precipitation. - Seawater intrusion on groundwater		

5. Capacity gaps affecting GP compliance.

Table 59 Capacity of potential executing entities to carry-out gender responsive activities.

Potential executing entity	Skills and expertise to provide gender mainstreaming inputs	Specific requirements execution entities for compliance	Capacity building needs
UNOPS	Yes (UN core value)	- Appoint ESP a compliance and gender focal point (present in country office) - Capacity to comply to the AF ESP and implementation of the ESCMP guided IFAD. - Capacity to comply to the AF GP	- Awareness on requirements - Share guidelines for execution entities to comply and to ensure 'opportunities' are identified and exploited

6. Opportunities for promoting a 'women' and 'youth' as agents of change.

~~253.~~260. The project aims to target women (and youth) in community level skill building and trainings and to especially target women-headed households. Opportunities include:

~~254.~~261. **Gender**

- ☐ Engage women in the early stages of planning and in project implementation, also through women associations.
- ☐ Community-level awareness-raising programmes targeting both men and women should be developed and implemented to address restrictive social norms and negative gender stereotypes, including the association of a woman's worth as a person with her honor. Existing community engagement models that challenge patriarchal stereotypes of women should be used as a foundation for engaging women and girls as well as men and boys.
- ☐ Providing inputs in the form of grants for young and female farmers and pastoralists to increase their incomes and help them adapt to climate change.

~~255.~~262. **Youth**

- ☐ Help build youth assets by supporting them to set up income-generating activities.
- ☐ Support the development of locally appropriate platforms for youth that enable them to identify and prioritize their needs, how those needs might be addressed through engagement, and how they can lead initiatives to address needs throughout the process.
- ☐ Develop a dedicated youth civic engagement activity, as well as working to integrate youth into existing activities.
- ☐ Providing inputs in the form of grants for young and female farmers and pastoralists to increase their incomes and help them adapt to climate change.

7. Project implementation

~~256.~~263. IFAD aims to have a gender responsive and adaptable management approach in place which, when needed, allows adjustment based on learning from earlier decisions and interventions and received feedback. This is done through having gender expertise and focal points in place, who should identify challenges, barriers or restrictions that arise during project/programme implementation, which might hinder the equal participation of men and women in activities. Execution entities will be supported to ensure gender is mainstreamed and to identify any challenges that may arise during project/programme implementation, which might hinder the equal participation of men and women in activities. This requires appointing a gender focal

point and having quota targets for women and youth participation in project activities. Gender focal points from the government will be part of the steering committees. The project Grievance mechanism established will be capable to accept grievances and complaints specifically related to gender equality and women's empowerment.

8. Performance Monitoring and Evaluation

~~257.~~264. The gender responsive management approach includes gender responsive monitoring and evaluation, which is participatory and where 'gender disaggregated data' will be collected and analyzed. Where possible, women and youth will be encouraged to participate in monitoring activities.

9. Knowledge Management, Information Sharing and Reporting

~~258.~~265. IFAD aims to have a gender responsive knowledge management approach in place, where specific gender considerations are highlighted through reporting on the project / programme's commitment to gender equality and women's empowerment in all outreaches, communication and information sharing efforts.

3. UNOPS ALIGNMENT WITH THE AF ESP AND GP

Table 60: AF ESP principles and UNOPS guiding values and principles.

AF ESP Guidance Principles	UNOPS Guiding Values and Principles
Principle 1: Compliance with the Law.	UNOPS operates in accordance with a strict legislative framework comprised of: ● Internal Directives and Instructions. Directives are organization-wide policies that govern actions within UNOPS and its external relations. ● UN system Instruments: All UNOPS's Legislative Instruments are compliant with the United Nations Instruments promulgated by organs of the United Nations. ● National law of countries of operations: UNOPS Executive Office Instructions[62] on Health & Safety and Social & Environmental Management states that "[l]legal and compliance requirements in the social and environmental field in each country shall be identified, recorded and regularly updated".[63] To ensure compliance with the law, UNOPS regularly reviews and adapts to (i) current national policies, legislation and legislative instruments governing environmental management, health, gender and social welfare, climate change (mitigation and adaptation) and governance with their implementation structures, identified challenges, and recommended appropriate changes for effective implementation; (ii) all relevant international treaties and conventions on the environment, climate change, health, gender, labor and human rights to which the country is a signatory.
Principle 2: Access and Equity.	UNOPS projects provide fair and equitable access to benefits in a manner that is inclusive and does not impede access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, and land rights. In applying the "do no harm" doctrine, the projects do not exacerbate existing inequities, particularly with respect to marginalized or vulnerable groups. Moreover, UNOPS's guidance[64] requires projects to ensure the participation of target groups. The Gender Equality and Social Inclusion (GESI)[65] Mainstreaming in Projects Strategy promotes equal rights and opportunities for people to live full lives, supported by sustainable, resilient, and inclusive infrastructure, and by the efficient and transparent use of public resources in procurement and project management. UNOPS makes sure that stakeholder engagement activities include a representative group of end users. Ensuring inclusive stakeholder engagement provides the legitimacy of a project, is rooted in human rights and is critical to the following activities: - To accurately identify and understand the needs of end users. - To ensure that stakeholders are effectively informed. - To involve stakeholders in the development and decision-making process. - To receive feedback and evaluate project performance and outputs; and - To ensure that projects are contributing to outcomes.
Principle 3: Marginalized and Vulnerable Groups.	UNOPS avoids imposing any disproportionate adverse impacts on marginalized and vulnerable groups when implementing a project. This is reflected in the releasing of the Gender Equality and Social Inclusion (GESI) Mainstreaming Strategy in Projects 2022-2025, to support GESI mainstreaming activities across UNOPS projects. This strategy is anchored in the Universal Declaration of Human Rights[66], the Beijing Declaration and Platform for Action[67], and other international agreements, standards and norms that are shaping the 2030 Agenda for Sustainable Development[68].

[62] EOI REF. EOI.SSC.2021.01 on Health & Safety and Social & Environmental Management.
[63] Ibid. para. 4.1.4.
[64] UNOPS GENDER EQUALITY AND SOCIAL INCLUSION MAINSTREAMING IN PROJECTS: Strategy 2022 – 2025
[65] Ibid.
[66] United Nations, Universal Declaration of Human Rights, United Nations, Paris, 10 December 1948.
[67] The Fourth World Conference on Women, Beijing Declaration and Platform for Action, Beijing, 15 September 1995; UN Women, Beijing Declaration and Platform for Action: Beijing+5 Political Declaration and Outcome, UN Women, New York, 2014.
[68] Resolution adopted by the United Nations General Assembly, 'Transforming our world: the 2030 Agenda for Sustainable Development, A/RES/70/1, 21 October 2015. The 17 Goals include 169 targets and 232 indicators of which 80 indicators have been identified as gender relevant.

	A comprehensive approach to GESI mainstreaming takes into consideration an intersectional lens (including gender, age, ethnicity, and disability, which often lead to multiple forms of discrimination and often remain invisible and unaddressed) throughout the project lifespan. Intersectionality involves acknowledging that people are often discriminated against and marginalized by multiple factors of oppression. Based on this, and to increase meaningful participation of marginalized and vulnerable groups, UNOPS makes sure that stakeholder engagement activities include a representative group of end users, with a specific focus on the representation of women, marginalized and underrepresented groups. Ensuring inclusive stakeholder engagement provides the legitimacy of a project, is rooted in human rights and is critical to the following activities: - To accurately identify and understand the needs of end users. - To ensure that stakeholders are effectively informed. - To involve stakeholders in the development and decision-making process. - To receive feedback and evaluate project performance and outputs; and - To ensure that projects are contributing to outcomes. These consultations and engagement are vital to identify and address any barriers to participation and to support their role in decision-making. At the same time, UNOPS recognizes its existing limitations in working with all marginalized and underrepresented groups and will thus adopt a proportional approach to strengthen efforts for their inclusion in all projects. Therefore, UNOPS will (initially) focus on accelerating work with: - Women and girls by contributing directly to women's economic empowerment through decent work, employment, access to resources, participation in decision-making, capacity, and skills-building. - People with disabilities by focusing on four areas of the United Nations Disability Inclusion Strategy framework: 1) leadership, strategic planning, and management; 2) inclusiveness to be able to fully encapsulate the principles of 'Nothing About Us without Us'; 3) programming; and 4) organizational culture as defined in the UNOPS Disability Inclusion Action Plan. - Youth by the participation, promotion, and inclusion of youth in its projects as per the UNOPS Youth Action Plan; and - Context-sensitive (based on sexual orientation and gender identity) and context-specific (based on race, ethnicity, religion, and indigenous status) groups
Principle 4: Human Rights.	As a UN entity, UNOPS upholds good international practices by supporting the realization of United Nations principles and directives. As such, the inclusion of international human rights is a cross-cutting consideration that extends throughout all aspects of UNOPS operations. In fact, UNOPS operates in accordance with a strict legislative framework of Directives and Instructions which govern actions within UNOPS and its external relations. All UNOPS's Legislative Instruments are compliant with the United Nations Instruments promulgated by organs of the United Nations, including the Universal Declaration of Human Rights, the Beijing Declaration and Platform for Action, and other international agreements, standards and norms that are shaping the 2030 Agenda for Sustainable Development and seek to realize the human rights of all people. In managing its activities and facilities, UNOPS adopts a people-centered approach, upholding rights, promoting active participation, including disadvantaged groups and individuals, and leaving no one behind.[69]
Principle 5: Gender Equality and Women's Empowerment.	UNOPS projects are designed and implemented in such a way that both women and men 1) have equal opportunities to participate; 2) receive comparable social and economic benefits; and 3) do not suffer disproportionate adverse effects during the development process. UNOPS continuously strengthens its ability to ensure diversity and inclusion throughout the project lifespan, including its procurement practices. This is reflected in the UNOPS Gender Equality and Social Inclusion (GESI), which has been released to support GESI mainstreaming activities across UNOPS projects. This strategy is anchored in the Universal Declaration of Human Rights, the Beijing Declaration and Platform for Action, and other international agreements, standards and norms that are shaping the 2030 Agenda for Sustainable Development and seek to realize the human rights of all people and to achieve gender equality and the empowerment of women and girls. It is aligned with the United Nations Core values of respect for diversity, integrity, and professionalism, which underpin and guide the actions and behaviors of all United Nations personnel. The Gender Equality and Social Inclusion Mainstreaming Strategy in Projects reaffirms UNOPS commitment to gender equality, diversity, and inclusion. It mobilizes its efforts to promote equal rights and opportunities for people to live full lives, supported by sustainable, resilient, and inclusive infrastructure, and by the efficient and transparent use of public resources in procurement and project management. This includes identifying the root causes of inequalities and systemic barriers, with particular focus on determining the positive and negative implications throughout the project lifespan. The GESI is complemented by a project specific Gender Action Plan (GAP). A GAP details activity to address gender-based constraints and opportunities, as well as specific targets, responsible actors, and indicators to measure progress and outcomes. The GAP informs and is integrated into project plans and the project budget for effective gender mainstreaming throughout the project lifespan. The GAP also captures information about the gender mainstreaming

[69] Executive Office Directive (EOD) REF. EOD.ED.2021.01 on Occupational Health & Safety and Social and Environmental Management, para. 2.2.

	activities associated with each project output and identifies the related budget, timeframe, target, personnel responsible and the success indicator. It is vital to project success to ensure that the planned activities to implement the GAP are embedded into the day-to-day operations, including any design specifications or quotas in place (e.g., equal representation of women in community engagement workshops, a certain percentage of women suppliers or workers, etc.) to ensure minimum requirements are met. This extends even to UNOPS procurement activities, where the Gender Responsive Procurement (GRP) will ensure that the procurement process and the selection of goods, services and works have a positive, holistic impact on gender equality and inclusion. Lastly, UNOPS Executive Office Instruction (EOI) on HSSE Management states that "[a]all offices and facilities shall aim to adopt a continuous improvement process in relation to (...) significant social considerations including but not limited to diversity, accessibility, gender equality"[70].
Principle 6: Core Labor Rights.	UNOPS implements projects in a manner that meet the core labor standards as identified by the International Labor Organization (ILO). While UNOPS EOI on HSSE Management states that "[l]legal and compliance requirements in the social (...) field in each country shall be identified, recorded and regularly updated"[71], the labor laws are applied to the projects regardless of whether countries where UNOPS is implementing a project have ratified the relevant conventions. Instead, "[t]he health and safety of all people at UNOPS workplaces and in communities that interact with UNOPS activities shall be considered at all times and throughout the life cycle of UNOPS projects"[72]. This applies to "(...) activities and projects that are controlled by UNOPS, including activities that UNOPS assigns to contractors"[73]. Moreover, for everyone's safety, it is mandatory for people at UNOPS workplaces to comply with the UNOPS Golden Rules for addressing fatal or significant hazards,[74] and wherever necessary and applicable, the UNOPS can incorporate the ILO core labor standards in the design and implementation of the project and create awareness with all involved on how these standards apply.
Principle 7: Indigenous Peoples.	UNOPS does not implement projects that are inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples. The Amazigh form the Indigenous population of Libya. They are estimated to number some one million people, or more than 16% of the country's total population. Libya voted in favor of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP).[75] UNOPS works in compliance with national and international laws (see above in Principle 1, 3 and 4) and adopts a people-centered approach, upholding rights, promoting active participation, including disadvantaged groups and individuals, and leaving no one behind[76]. UNOPS adopts a proportional approach to strengthen efforts of inclusion in all projects and focuses on accelerating work with context-sensitive (based on sexual orientation and gender identity) and context-specific (based on race, ethnicity, religion, and indigenous status) groups, among others.
Principle 8: Involuntary Resettlement.	n/a
Principle 9: Protection of Natural Habitats.	The protection of natural habitats is enshrined in UNOPS's HSSE guidelines, where it states that "[t]he health and safety of all people at UNOPS workplaces and in communities that interact with UNOPS activities shall be always considered and throughout the life cycle of UNOPS projects. Similarly, ways to avoid harm to the environment (...) shall also be always considered and throughout the life cycle of UNOPS projects"[77]. Prior to commencing any project activities, UNOPS will identify: 1) the presence in or near the project/programme area of natural habitats, and 2) the potential of the project/programme to impact directly, indirectly, or cumulatively upon natural habitats. This is done through a Social and Environmental Screenings (SES)[78], in which key project stakeholders and technical experts are consulted to ensure that the Screening is informed by the best available knowledge. The SES considers direct, indirect, and cumulative impacts throughout the life cycle of the project. The SES results indicate in which thematic areas risks and opportunities (if any) for the project have been identified. These risks and opportunities shall inform the consequent steps of the management system. Based on the SES, UNOPS develops a Social and Environmental Management Plan[79], to address the project SE risks

[70] EOI REF. EOI.SSC.2021.01 on Health & Safety and Social & Environmental Management, para. 4.2.2.
[71] Ibid. para. 4.1.4.
[72] Ibid. para. 2.1.
[73] Ibid. para. 1.2.
[74] Ibid. para. 3.1.
[75] IWGIA, Indigenous peoples in Libya, https://www.iwgia.org/en/libya.html .
[76] EOD REF. EOD.ED.2021.01 on Occupational Health & Safety and Social and Environmental Management, para 2.2.
[77] EOI REF. EOI.SSC.2021.01 on Health & Safety and Social & Environmental Management, para. 2.1.
[78] Ibid. para. 4.3.2.
[79] Ibid. para. 4.3.3.

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	and opportunities and other requirements set in the UNOPS HSSE policy[80].The applicable SE plans shall: - make use of adaptive management. - apply the mitigation hierarchy for risks and impacts. - follow internationally recognized good practice principles such as the precautionary principle and good international industry practice (GIIP).
Principle 10: Conservation of Biological Diversity.	UNOPS implements projects in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species. UNOPS carries out Social and Environmental Screenings (SES)[81], in which key project stakeholders and technical experts are consulted to ensure that the Screening is informed by the best available knowledge. The SES considers direct, indirect, and cumulative impacts throughout the life cycle of the project. The SES results indicate in which thematic areas risks and opportunities (if any) for the project have been identified. These risks and opportunities shall inform the consequent steps of the management system. Based on the SES, UNOPS develops a Social and Environmental Management Plan[82], to address the project SE risks and opportunities and other requirements set in the UNOPS HSSE policy[83]. The applicable SE plans shall - make use of adaptive management. - apply the mitigation hierarchy for risks and impacts. - follow internationally recognized good practice principles such as the precautionary principle and good international industry practice (GIIP).
Principle 11: Climate Change.	UNOPS projects do not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change. This is also applied to any agriculture projects UNOPS implements. UNOPS EOI on HSSE states in section 4 that " UNOPS social and environmental performance shall be based on a management system approach aligned to best international practices and standards"[84], and "UNOPS business units and personnel shall operate with the ambition of aligning with the UN Sustainability Strategy 2020-2030 (UNSS), and in particular ensuring that GHG emissions are maintained at a level compatible with limiting the increase in global temperature to 1.5°C as recommended by the Intergovernmental Panel on Climate Change"[85]. UNOPS has mandatory minimum HSSE Management regulations in place that it applies to all activities and projects that are controlled by UNOPS, including activities that UNOPS assigns to contractors. In fact, the applicable SE requirements shall be communicated to suppliers and contractors as part of the solicitation process. Contractors can be authorized to implement their own SE plans and processes if these are formally reviewed by the UNOPS personnel responsible for SE implementation in the project and found at least substantially equivalent to the UNOPS ones. These external processes are monitored and evaluated according to UNOPS standards.[86] If necessary, UNOPS can carry out a Social and Environmental Screening (SES)[87], in which key project stakeholders and technical experts are consulted to ensure that the Screening is informed by the best available knowledge. The SES considers direct, indirect, and cumulative impacts throughout the life cycle of the project. The SES results indicate in which thematic areas risks and opportunities (if any) for the project have been identified. These risks and opportunities shall inform the consequent steps of the management system. Based on the SES, UNOPS develops a Social and Environmental Management Plan[88], to address the project SE risks and opportunities and other requirements set in the UNOPS HSSE policy[89]. The applicable SE plans shall - make use of adaptive management. - apply the mitigation hierarchy for risks and impacts. - follow internationally recognized good practice principles such as the precautionary principle and good international industry practice (GIIP) The mandatory and recommended SE requirements are applicable to all business units and will be periodically updated[90]. Moreover, induction, awareness and training on SE shall be provided to all UNOPS personnel on a regular basis, with due consideration of their job descriptions, roles, and competences[91].
Principle 12: Pollution Prevention and	UNOPS projects are designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants. This is reflected in UNOPS EOI HSSE[92], in which section 4 states that " UNOPS social and environmental performance

[80] EOD Ref. EOD.ED.2021.01. on Occupational Health & Safety and Social and Environmental Management.
[81] EOI REF. EOI.SSC.2021.01 on Health & Safety and Social & Environmental Management, para. 4.3.2.
[82] Ibid. para. 4.3.3.
[83] EOD Ref. EOD.ED.2021.01. on Occupational Health & Safety and Social and Environmental Management.
[84] EOI REF. EOI.SSC.2021.01 on Health & Safety and Social & Environmental Management, para. 4.1.1.
[85] Ibid. para. 4.1.2.
[86] Ibid. para. 4.1.9.
[87] Ibid. para. 4.3.2.
[88] Ibid. para. 4.3.3.
[89] EOD Ref. EOD.ED.2021.01. on Occupational Health & Safety and Social and Environmental Management.
[90] EOI REF. EOI.SSC.2021.01 on Health & Safety and Social & Environmental Management, para. 4.1.4.
[91] Ibid. para. 4.1.7.
[92] Ibid.

Resource Efficiency	shall be based on a management system approach aligned to best international practices and standards"[93], and "UNOPS business units and personnel shall operate with the ambition of aligning with the UN Sustainability Strategy 2020-2030 (UNSS), and in particular ensuring that GHG emissions are maintained at a level compatible with limiting the increase in global temperature to 1.5°C as recommended by the Intergovernmental Panel on Climate Change"[94]. In general, UNOPS has mandatory HSSE Management regulations in place that it applies to all activities and projects that are controlled by UNOPS, including activities that UNOPS assigns to contractors. In fact, the applicable SE requirements shall be communicated to suppliers and contractors as part of the solicitation process. Contractors can be authorized to implement their own SE plans and processes if these are formally reviewed by the UNOPS personnel responsible for SE implementation in the project and found at least substantially equivalent to the UNOPS ones. These external processes are monitored and evaluated according to UNOPS standards.[95]
Principle 13: Public Health.	When community health could be affected by the intervention, UNOPS can carry out a preliminary Social and Environmental Screening (SES)[96], in which key project stakeholders and technical experts are consulted to ensure that the Screening is informed by the best available knowledge. The SES considers direct, indirect, and cumulative impacts throughout the life cycle of the project. The SES results indicate in which thematic areas risks and opportunities (if any) for the project have been identified. These risks and opportunities shall inform the consequent steps of the management system. Based on the SES, UNOPS develops a Social and Environmental Management Plan[97], to address the project SE risks and opportunities and other requirements set in the UNOPS HSSE policy[98]. The applicable SE plans shall - make use of adaptive management. - apply the mitigation hierarchy for risks and impacts. - follow internationally recognized good practice principles such as the precautionary principle and good international industry practice (GIIP)
Principle 14: Physical and Cultural Heritage.	UNOPS projects are designed and implemented in a way that avoids the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. To mitigate this risk UNOPS can carry out a Social and Environmental Screening (SES)[99], in which key project stakeholders and technical experts are consulted to ensure that the Screening is informed by the best available knowledge. The SES considers direct, indirect, and cumulative impacts throughout the life cycle of the project. The SES results indicate in which thematic areas risks and opportunities (if any) for the project have been identified. These risks and opportunities shall inform the consequent steps of the management system. Based on the SES, UNOPS develops a Social and Environmental Management Plan[100], to address the project SE risks and opportunities and other requirements set in the UNOPS HSSE policy[101]. The applicable SE plans shall then: - make use of adaptive management. - apply the mitigation hierarchy for risks and impacts. - follow internationally recognized good practice principles such as the precautionary principle and good international industry practice (GII).
Principle 15: Lands and Soil Conservation.	Projects shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services. To address this, UNOPS has mandatory HSSE Management regulations in place that it applies to all activities and projects that are controlled by UNOPS, including activities that UNOPS assigns to contractors. Considering this, UNOPS can carry out a Social and Environmental Screening (SES)[102], in which key project stakeholders and technical experts are consulted to ensure that the Screening is informed by the best available knowledge. The SES considers direct, indirect, and cumulative impacts throughout the life cycle of the project. The SES results indicate in which thematic areas risks and opportunities (if any) for the project have been identified. These risks and opportunities shall inform the consequent steps of the management system. Based on the SES, UNOPS develops a Social and Environmental Management Plan[103], to address the project SE risks and opportunities and other requirements set in the UNOPS HSSE policy[104]. The applicable SE plans shall then: - make use of adaptive management. - apply the mitigation hierarchy for risks and impacts. - follow internationally recognized good practice principles such as the precautionary principle and good

[93] Ibid. para. 4.1.1.
[94] Ibid para. 4.1.2.
[95] Ibid. para. 4.1.9.
[96] Ibid. para. 4.3.2.
[97] Ibid. para. 4.3.3.
[98] EOD Ref. EOD.ED.2021.01. on Occupational Health & Safety and Social and Environmental Management.
[99] EOI REF. EOI.SSC.2021.01, para. 4.3.2.
[100] Ibid. para. 4.3.3.
[101] EOD Ref. EOD.ED.2021.01. on Occupational Health & Safety and Social and Environmental Management.
[102] EOI REF. EOI.SSC.2021.01, para. 4.3.2.
[103] Ibid. para. 4.3.3.
[104] EOD Ref. EOD.ED.2021.01. on Occupational Health & Safety and Social and Environmental Management.

	international industry practice (GII).

4. ESTIMATED NUMBERS OF CULTIVATED / PRODUCED TREES AND CROPS IN THE PROJECT TARGET AREA

Table 61. Number of horticultural trees affected by the saltwater intrusion and drought in the districts of Nalut, Al-Jabal Al-Gharbi, Zwara, Al-Jafara, Al-Zaweya

Name of the district	Olive trees	Date Palm trees	Almond trees	Citrus trees	Grapevine trees	Fig trees
Nalut	103039	59962	12081	486	6045	29982
Al-Jabal Al-Gharbi	699172	31109	235389	2816	72979	120110
Zwara	800993	175109	123275	18304	142729	73395
Al-Jafara	1356388	551561	31446	1798417	293340	53414
Total	2959592	817741	402191	1820023	515093	276901

Source: - Bureau of Statistics and Census, 2007.

Table 62 Production quantities (quintals) of crops of wheat, barley, alfalfa, dry legumes, peanuts, and oats in the districts affected by the saltwater intrusion and drought in the districts of Nalut, Al-Jabal Al-Gharbi, Zwara, Al-Jafara, Al-Zaweya

Name of the district	Wheat	Barley	Alfalfa	Dry legumes	Peanuts	Oats
Nalut	3762	21360	23091	82	0	2488
Al-Jabal Al-Gharbi	3855	34650	4290	18	25	17028
Zwara	474	28567	44662	12	5070	45630
Al-Jafara	4991	167037	392898	367	9324	187850
Total	13082	251614	464941	479	14419	252996

Source: - Bureau of Statistics and Census, 2007.

Table 63 Production quantities (quintals) of crops of potatoes, spring onions, onion, garlic, pumpkin, carrot, and fresh beans in the districts affected by the saltwater intrusion and drought in the districts of Nalut, Al-Jabal Al-Gharbi, Zwara, Al-Jafara, Al-Zawey

Name of the district	Potatoes	Spring Onions	Onion	Garlic	Pumpkin	Carrots	Fresh Beans
Nalut	3	576	352	540	11	270	5
Al-Jabal Al-Gharbi	4	61	16380	23	0	0	21
Zwara	445	974	3306	372	312	2398	497
Al-Jafara	102442	29903	126965	55653	14463	11204	3530
Total	102894	31514	147003	56588	14786	13872	4053

Source: - Bureau of Statistics and Census, 2007.

Table 64: Production quantities (quintals) of crops of peas, beans, tomatoes, watermelon, melon, cucumber, and pepper in the districts affected by the saltwater intrusion and drought in the districts of Nalut, Al-Jabal Al-Gharbi, Zwara, Al-Jafara, Al-Zaweya

Name of the district	Peas	Beans	Tomatoes	Watermelon	Melon	Cucumber	Pepper
Nalut	0	10	21	42	25	11	122
Al-Jabal Al-Gharbi	2473	21	9	957	9250	0	5
Zwara	184	3	3181	252	43	114	5800
Al-Jafara	2730	1892	84528	52073	4191	15200	70293
Total	5387	1926	87739	53324	13509	15325	76220

Source: - Bureau of Statistics and Census, 2007.

Table 65: Production quantities (quintals) of crops of eggplant, lettuce, cabbage, parsley, and spinach in the districts affected by the saltwater intrusion and drought in the districts of Nalut, Al-Jabal Al-Gharbi, Zwara, Al-Jafara, Al-Zaweya

Name of the district	Eggplant	Lettuce	Cabbage	Parsley	Spinach
Nalut	12	0	0	540	607
Al-Jabal Al-Gharbi	0	0	0	23	0
Zwara	50	151	7	372	252
Al-Jafara	5422	2796	3878	55653	11728
Total	5484	2947	3885	56588	12587

Source: - Bureau of Statistics and Census, 2007.

5. DERTAILEDS SOLUTIONS FOR DROUGHT AND SALINITY PROBLEMS

266. **Natural pastures in the arid regions of Libya**

The lack of rainfall and irregularity often leads to the non-cultivation of lands with seasonal field crops; the land is left for the growth of natural pasture plants. However, there are conditions leading to these pastures being poor and uneconomic. The most important of these conditions is overgrazing and the lack of good management. Also, the process of plowing the land damages pastoral plants and leaves the surface of the land without vegetation cover. Then, if the rain did not fall in sufficient quantity for the growth of the cultivated crop, and the seeds did not germinate, the land would be exposed to wind drought and erosion. Then, the rehabilitation of this land to become pastures again is very difficult under drought conditions. The most important characteristic of these natural pastures in these areas is that they change greatly in terms of their density and quality due to the extreme fluctuation in rainfall as well as the irregular distribution of plants in the region and their presence in the form of irregular spots. Most of the animal species in these areas have adapted to these environmental conditions, such as sheep, goats, and camels. The most important characteristic of these areas is the tribal system of grazing, where the herders move constantly between different locations according to the seasons in which the plants flourish in each location. Ownership of livestock herds (sheep, goats, and camels) is private property of pastoral families, while pastures and drinking points (often wells) are public property.

267. **Possible solutions to preserve natural pastures.**

268. **Management of natural pastures by cooperative societies**

Where the right to use, the pasture is granted to cooperative societies for long periods without charge or for a symbolic fee, and the contract is renewed if the association maintains the pasture and organizes grazing in it according to the correct grazing principles. In this system, it is forbidden to cut shrubs and use them as fuel, as well as it is forbidden to convert pastures to seasonal crop cultivation. Also, the cooperative association re-seeding the damaged pasture, protecting it, and organizing grazing in it.

269. **Limited or rotational grazing system.**

It means moving between regions. It is a kind of postponement of grazing or the pastoral rotation, in which the plants regain their ability to reproduce. This system has been used long times ago in Libya, but without fixed management, as the herds of livestock are moved between the natural pastures in the areas of Al-Jabal Al-Gharbi and the Jefara Plain during the different months of the year.

270. **Drylands and farming - techniques**

These lands are cultivated once during the year (winter season) if the only source of water is the rain, the land remains empty (poor) until the year after next, to be given an opportunity to reconfigure the land and decompose the organic matter.

The most important problems facing farmers in these lands is the extreme fluctuation in rainfall from one year to the next, as well as the irregular rainfall during one agricultural season, to meet the needs of the cultivated crops. There are several examples of this fluctuation that can be summarized as follows:

1. The rain falls early in the fall (end of September and through October), so crops are planted, and the rain continues to fall repeatedly during the critical stages of plant growth (germination, branching, flowering, and grain filling) until the end of March and the beginning of April, so the result is a bountiful crop, and this matter only happens once every four or five years.

2. Rain falls early in the fall (end of September and through October), so crops are planted, but after that rain is irregular and does not occur during critical times for crop growth, so the result is below average production.

3. The rain falls early in the fall (end of September and through October), so crops are planted, and the seed germination process takes place, but after that the rain stops for months, which leads to the death of young seedlings and the loss of the crop.

4. The rains do not fall during the fall, and it falls late (during December and January), which makes most farmers refrain from planting.

5. The rain does not fall in sufficient quantities during the entire agricultural season, and this is repeated at a rate of three to four consecutive years in most cases.

271. Most of the previous examples (2-5) make the farmer unsure and do not encourage him / her to make any additional effort such as buying improved and certified seeds or adding the necessary fertilizers because of their high prices, and this is reflected in the lack of production even in good seasons.

272. Example No. (1) is the only case suitable for growing winter field crops such as (wheat, barley, oats, chickpeas, beans, lentils, etc.). As for Example No. (2), only the barley crop is suitable, and no production can be obtained in Examples (3, 4, and 5).

273. **Techniques that increase the utilization of rainwater in the rainfed farming system**

- Limiting the agricultural areas to the fields, which receive additional amounts of water from the neighboring highlands, in addition to increasing their fertility due to the high percentage of nutrients received with the water torrents.

Figure 21: A field in which rainwater has collected from the neighboring heights.

- Contour plowing, where the plow goes in an arc, perpendicular to the slope of the land, which helps the water to penetrate vertically into the soil.
- Most of the agricultural lands suffer from the presence of a solid layer under the surface of the soil due to the repeated use of (disc) plowing machines at the same depth for many years, which impedes the penetration of water into the soil sector, and thus the work on breaking this layer reduces surface run-off and increases the efficiency of the soil in preserving water.
- The plowing process before the start of the winter agricultural season and before the rainfalls is one of the most important field operations that increase the ability of the soil to save rainwater.

- The use of chisel plows, not discs, which reduces the loss of the upper layer rich in organic matter and reduces soil exposure to wind erosion.
- The use of organic fertilizers, especially in the soil in which the sand component predominates, to increase its efficiency in preserving water.
- The use of phosphate fertilizers such as di-ammonium phosphate, which helps to ensures good root system growth.
- Cultivation of drought-resistant varieties, which are characterized by their possession of a set of characteristics such as:
  - Seeds of large size produce strong seedlings even when planted at deeper depths than usual, to benefit from the moisture present in great depths.
  - Possessing a large root system with high water use efficiency.
  - Has little tillers (1-3) tillers and is semi-dwarf and resistant to the phenomenon of lodging.
  - Characterized by large spikes (strong sink) and high spike photosynthesis.
  - Contains a waxy layer on the surfaces of leaves and stems with high stem reserves.
  - Completes its life cycle quickly, that is, it reaches full maturity at the end of April, before the temperature rises.
  - High resistance to various diseases.
- The importance of good management of various pests, the most important of which is the weed pest, which is considered one of the biggest problems that farmers in dry areas suffer from.

274. **The main problems facing agriculture in Zuwara region and the Jefara plain.**

275. **Lack of water resources**

The most important problem in this region is the deterioration of the underground water reserve due to excessive use, which coincided with the decrease in annual rainfall rates. The three elements of climate (precipitation, temperature and relative humidity) are in stark contrast, whereas, the season of precipitation with the greatest amount of rain during the winter months coincides with low temperature and high relative humidity, and the winter crops planted at the end of autumn are not in great need of water, but in the stages in which the crop is in great need of water, which are the stages of flowering and grain filling, so they occur at different times in which the rate of precipitation is little accompanied by high temperature and low relative humidity, and this leads to an increase in the severity of the problem.

276. **The soil problem**

The soil of the region is characterized as light in texture, highly permeable, and poor in organic matter, which does not exceed 1%. It also has high levels of salinity, which is exacerbated by improper agricultural practices.

277. **Low productivity per unit area**

This is due to the lack of use of improved and certified seeds, the spread of agricultural pests and weeds, as well as the farmer's lack of knowledge of modern methods of agricultural transactions, and the lack of tractors, harvesters, and threshing machines, or the lack of spare parts.

278. **The fragmentation of agricultural land ownership**

Large farms are divided among the heirs, and these work on digging new wells in their own farms, and thus the number of wells doubles and the rates of withdrawal from underground water increase, which led to a disruption of the water balance.

279. **The most important solutions to face the water shortage in the Jafara Plain and Zuwara**

1 - Focusing on winter crops only.
2- Stopping the drilling of wells without prior authorization from the competent authorities.
3 - Focusing on rain-fed agriculture that is irrigated by supplementary irrigation.
4 - Determine the method, time, and duration of irrigation according to scientific studies and impose them on farmers.
5- Strict control and follow-up of the implementation of decisions taken by the legislative authorities.
6- Follow the drip irrigation method: Although this method has some disadvantages such as its high cost compared to surface or sprinkler irrigation, as well as damage to plastic pipes due to blockage or because of exposure to rodents or others, it is considered one of the best methods in areas that suffer from a lack of irrigation water in crop farms. and trees such as olives, palm trees, figs, pomegranates, and grapes. It also reduces the need for manpower and reduces the growth of weeds, and thus reduces the cost of the chemical pesticides, in addition to reducing the

exposure of plants to diseases that spread in moist environments in other irrigation systems such as sprinkler irrigation.
7 - The use of some other sources of water, such as saline water or water harvesting

280. **The most important salt-tolerant crops.**
The most important salt-tolerant crops that can be grown in areas affected by seawater intrusion and high salinity in irrigation water or soil composition are barley, wheat, soybeans, beans, and sweet sorghum.
The following tables show the degree of electrical conductivity in Siemens per centimeter at a temperature of 25 degrees Celsius for soil extract and irrigation water, at which the production decreases by only 10%.

Table 66 The most important salt-tolerant field crops:

Crop	The soil extract	The irrigation water
Barley	10.0*	6.7
Wheat	7.4	4.9
Soybeans	5.5	3.7
beans	2.6	1.8
Sweet Sorghum	5.1	3.4

*Siemens per Centimeter at 25°C

Table 67 The most important salt-tolerant vegetable crops:

Crop	The soil extract	The irrigation water
Tomatoes	3.5	2.3
Spinach	3.3	2.2
Cabbage	2.8	1.9
Cantaloupe	3.6	2.4
Broccoli	3.9	2.6

* Siemens per Centimeter at 25°C

Table 68 The most important salt-tolerant fruit crops:

Crop	The soil extract	The irrigation water
Date Palm	6.8	4.5
Olive	3.8	2.6
Figs	3.8	2.6
Pomegranate	3.8	2.6
Grapes	2.5	1.7

* Siemens per Centimeter at 25°C

281. **The most important drought-tolerant crops.**
The five most important crops are winter crops that are sown at the end of autumn, grow vegetatively during the winter months, flowering in early spring, and ripen at the end of spring before the temperature rises. They do not need any supplemental irrigation if the rainfall is regular and exceeds 250 milliliters during the growing season. As for vegetable crops, they cannot be grown without supplementary irrigation due to insufficient rainfall in Al-Jabal Al-Gharbi region or in Al-Jefara Plain.
As for the five fruit crops, these are usually grown during the winter months when temperatures are low and rainfall is available, such as figs, pomegranates, and grapes, or at the end of winter and the beginning of spring such as olives and palms.

Table 69 The most important drought-tolerant crops:

Field crops	Fruit Crops
Barley	Olive
Wheat	Date Palm
Oat	Fig
Chickpea	Pomegranate
Lentils	Grapes

Table 70 The most important crop varieties adapted to drought and salinity in the targeted areas.

Common name	Scientific name	Varieties	Target area	Source
Barley	*Hordeum vulgare* L.	1 – Rihane	All target areas	Tunisia
		2 – ACSAD-176	All target areas	Tunisia
Bread Wheat	*Triticum aestivum* L.	1 – Salambo	All target areas	Tunisia
		2 – Utique	All target areas	Tunisia
Durum Wheat	*Triticum durum*	1 – Karim	All target areas	Tunisia
		2 – Saragolla	All target areas	Italy

Oat	*Avena sativa* L.	1 – Local varieties	All target areas	Local market
Sweet Sorghum	*Sorghum vulgare* L. (Var. sacchratum)	1 – Local varieties	Zuwara and Al-Jefara	Local market
Chickpea	*Cicer arietinum* L.	1 – Local varieties	Nalut and Al-Jabal Al-Gharbi	Local market
Lentils	*Lentilla lens* L.	1 – Local varieties	Nalut and Al-Jabal Al-Gharbi	Local market
Tomatoes	*Solanum lycopersicum*	1 – Barnum (Bakkar Brothers)	Zuwara and Al-Jefara	The Netherlands
Cantaloupe	*Cucumis melo* var. cantalupensis	1 – Shahd (Trust Seeds)	Zuwara and Al-Jefara	Jordan
Cabbage	*Brassica oleracea* var. capitatacapitate	1 – From Sakata seed	Zuwara and Al-Jefara	Japan
Spinach	*Spinacia oleracea*	1 – From Sakata seed	Zuwara and Al-Jefara	Japan
Broccoli	*Brassica oleracea* var. italica	1 – From Sakata seed	Zuwara and Al-Jefara	Japan
Date Palm	*Phoenix dactylifera* L.	1 – Hellawi	Zuwara and Al-Jefara	Local market
		2 – Bekrari	Zuwara and Al-Jefara	Local market
Olive	*Olea europaea* L.	1 – Shemlali	All target areas	Tunisia
		2 – Gergashi	All target areas	Local market
Fig	*Ficus carica* L	1 – Local varieties	All target areas	Local market
Grapes	*Vitis vinifera* L.	1 – Local varieties	All target areas	Local market
Pomegranate	*Punica granatum* L.	1 – Gabsi	All target areas	Tunisia
		2 – Tajuri	All target areas	Local market

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282. **The most important and preferred water harvesting techniques.**
Rainwater-harvesting techniques are used in mountainous areas, especially in areas dependent on rainfall, as well as in pasturelands, to conserve water in the soil or mitigate water erosion, and to provide quantities of water that can be used in supplementary irrigation and sometimes provide the residents with drinking water. Thus, rainwater-harvesting techniques is considered as an ideal solution to increase water resources in these areas.

Many traditional methods have been used by the residents, such as digging ground tanks in which rainwater is collected. The capacity of these ground tanks ranges between 20-100 cubic meters.

283. **The most important systems for rainwater harvesting to increase agricultural and pastoral production are:**
1 - Contour ridges
2 - Semicircular bunds
3- Contour bench terraces

Contour ridges

Semicircular bunds

Contour bench terraces

Table 71 Estimated prices of the proposed techniques in the target areas

Technique	Cost US Dollars		Unit per person
	Per hectare	Per Unit	
Soil service operations			
Contour ridges	50	-	One hectare
Semicircular bunds	-	10 – 50 per unit	5 big olive trees
Contour bench terraces	200	-	quarter hectare
Contour plowing	30	-	One hectare
Plowing process before the start of the winter agricultural season	20	-	One hectare
Subsoiling operations	200	-	Quarter hectare
Equipment to make contour lines / barriers.	-	From 40,000 to 45,000	
Fertilizers			
Organic fertilizers	-	10 per ton	One ton
Di-ammonium phosphate (DAP) fertilizer	-	100 per quintal	One quintal

Certified Seeds			
1 – Barley, wheat, and oat	-	100 per quintal	Half quintal
2 – Sweet sorghum	-	20 per kg	One kg
3 – Chickpea and Lentils	-	10 per kg	Five kg
4 – Tomatoes	-	100 per 10,000 seeds	5,000 seeds
5 – Cantaloupe	-	50 per 1000 seeds	5,000 seeds
6 – Cabbage, spinach, and broccoli	-	30 per 1000 seedlings	5,000 seeds
7 - Date Palm	-	20	5 per farmer
8 – Olive, fig, grapes, and pomegranate	-	3	20 per farmer
Water related equipment			
1 - Water tank underground	-	1000 for a tank with a capacity of 20,000 liters	One tank per each municipality
2 - Cost of water pumping or buying water (per certain amounts of water)	-	From 10 to 20 per 12,000 Liters	24,000 liters per farmer
3 - Water tank mobile	-	1000 for a water tank mobile with a capacity of 3000 liters	One water tank mobile per each municipality
4 - Desalination devices	-	550 for 1 inch unit	One per farmer
5 - Drip-irrigation	1000	-	Quarter hectare
6 – Portable soil and water analyzer	-	250 per unit	One per each municipality
7 – Rubber water tank		700 per unit	One tank
Animal feed			
1 – Barley	-	30 per quintal	5 quintals
1 – Concentrated feed	-	40 per quintal	5 quintals
2 – Hay bales (barley)	-	3 per a bale of hay	20 bales
3 – Hay bales (Alfalfa)	-	5 per a bale of hay	20 bales

284. **Arrangements required to introduce and sustain these techniques.**

The best way to adopt and introduce these technologies to the targeted areas is through the municipalities that contain these areas. The local administration has proven its efficiency compared to the central administration, especially in all kinds of development programmes. The best available option for preserving these technologies is to place them under the direct supervision of the relevant authorities. It is preferable that this task be undertaken by private entities such as civil society organizations and cooperative societies. The reason for this is that most of the beneficiary stakeholders belong to these organizations and are in constant contact with them. Previous experiences in which government organizations were directly supervising proved their failure in the long run, and there are many examples in this field, such as productive agricultural projects that were established during the seventies and eighties of the last century.

Figure 22 Project target area map with issues identified. See online version with explanation of what you see here

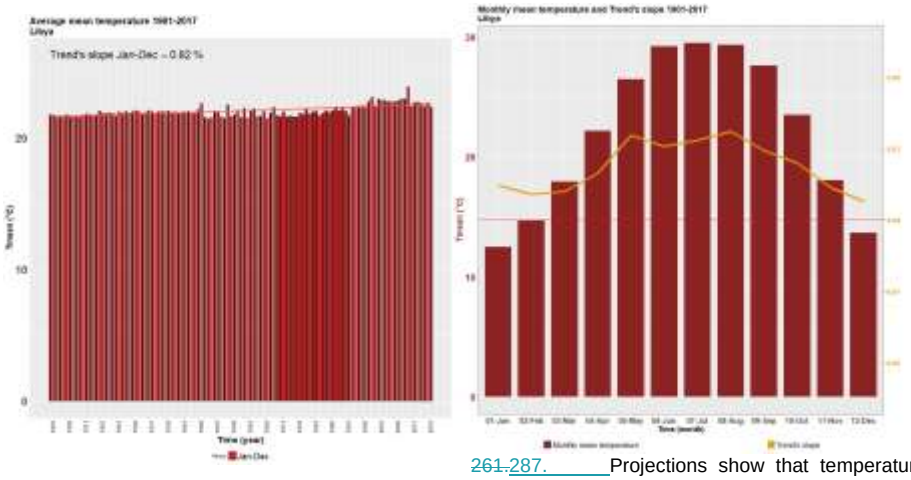
6. DETAILED CLIMATE RISK ANALYSIS

259.285. Main Climate Change Hazards

260.286. **Temperature:** Since the beginning of last century, average temperature has been increasing in Libya. The average mean temperature has increased by an average rate of 0.0082°C/year between the years 1901 and 2017. The increase in average maximum temperature was the highest at about 0.01°C/year between

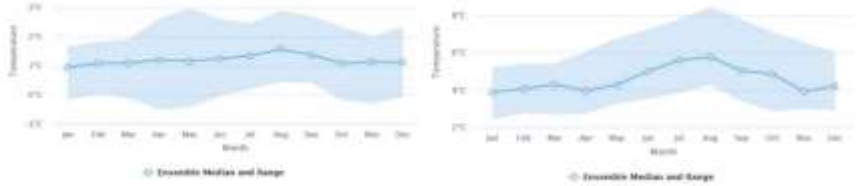
Figure 23 Average Mean Temperature (Left) and Monthly Mean Temperature (Right) in Libya between 1901 and 2017

the years 1901 and 2017 while the increase in minimum temperature was at about 0.0068°C/year for the same period as shown in **Figure 23**[105].



261.287. Projections show that temperature will continue to increase for each month under all scenarios until the end of the century with a mean annual temperature increase of 2°C by 2050 compared to the 1986-2005 period under the worst scenario. For the period between 2040 and 2059, the least expected increase will be 0.95°C in February under scenario RCP 2.6 while the highest can reach up to 2.96°C in August under scenario RCP 8.5. Whereas for the period between 2080 and 2099, the least expected increase will also be 0.95°C but in January under scenario RCP 2.6 while the highest can reach up to 5.75°C in August under scenario RCP 8.5 as shown in **Figure 24**[106].

Figure 24 Projected Change in Monthly Temperature under RCP 2.6 (Left) and RCP 8.5 (Right) in Libya between 2080 and 2099



262.288. For the project target districts, the trend has been similar. Temperatures are rising and will continue to rise with comparable rates in the four~~five~~ districts as we approach the end of the century. The rate of the increase depends on the scenario. The more pessimistic the scenario (e.g., SSP5-8.5), the higher the increase.

[105] This analysis is based on the CoMon tool that uses CHIRPS/Climate Hazards Group-USGS data.
[106] World Bank (2021). Climate Change Knowledge Portal. Last Accessed [03/01/2021: https://climateknowledgeportal.worldbank.org/country/libya]

Figure ~~23~~ 25 below shows the rates of increase for each district under four ~~five~~ different scenarios until 2100 compared to 1995-2014 reference period[107].

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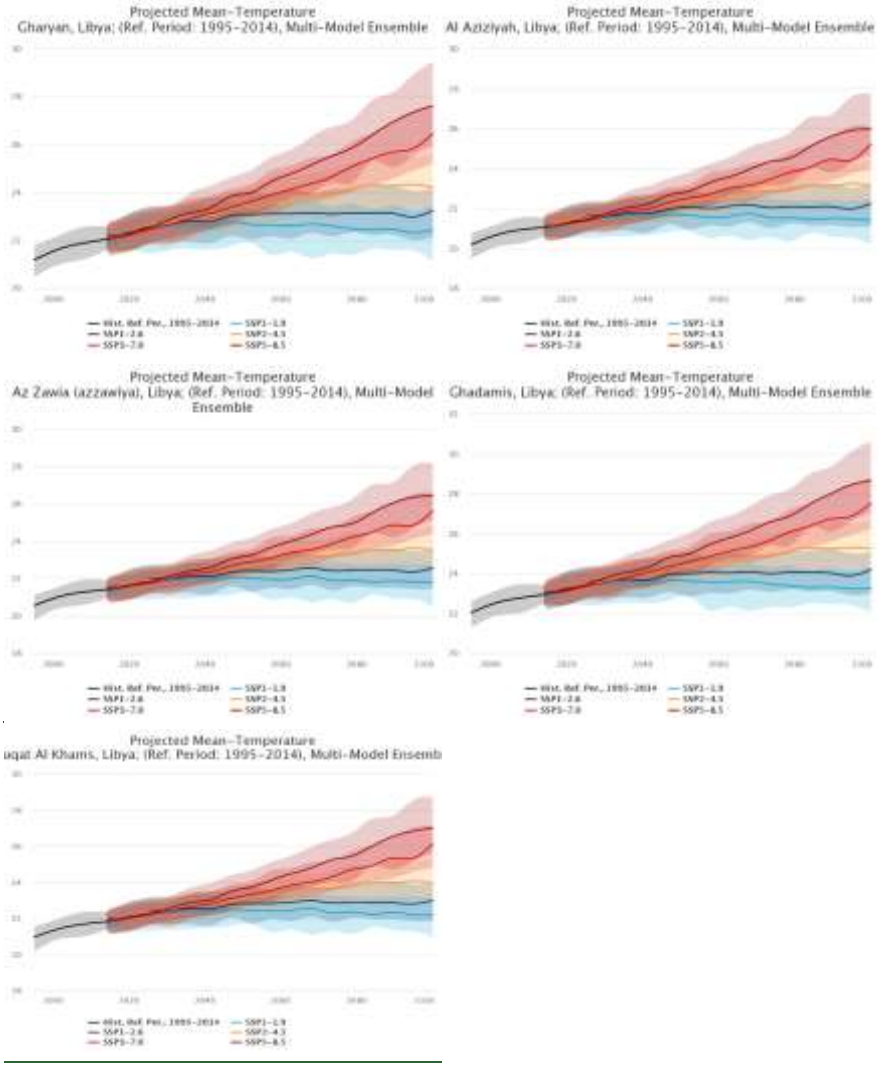
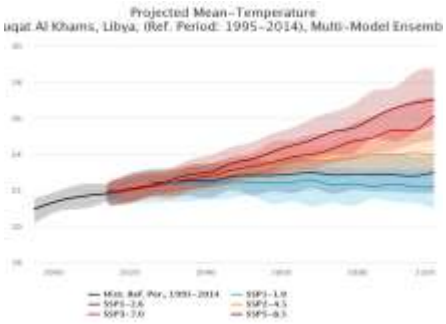
[107] World Bank (2022). Climate Change Knowledge Portal. Last Accessed [11/12/2022: https://climateknowledgeportal.worldbank.org/country/libya/climate-data-projections]

Figure 25 Projected Mean Temperature until 2100 compared to 1995-2014 for Al Jabal Al Gharbi (top left), Aljafrah (top right), ~~Azzawya (middle left),~~ Nalut (~~middle~~ bottom ~~right~~left) and Zuwara (bottom ~~middle~~right)





263.289. **Precipitation:** There has been overall slight decline in trend of precipitation by 0.076% which represents an average decline of 0.76 mm per decade in Libya between 1981 and 2018. Monthly rainfall had no change in summer with increase in average precipitation occurring in February, October and December and a decline in January, March, April, and November as shown in **Figure 26** below[108].

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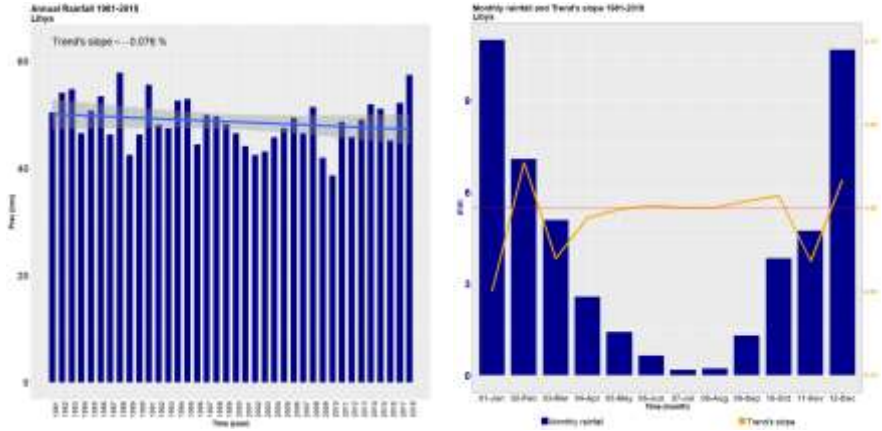
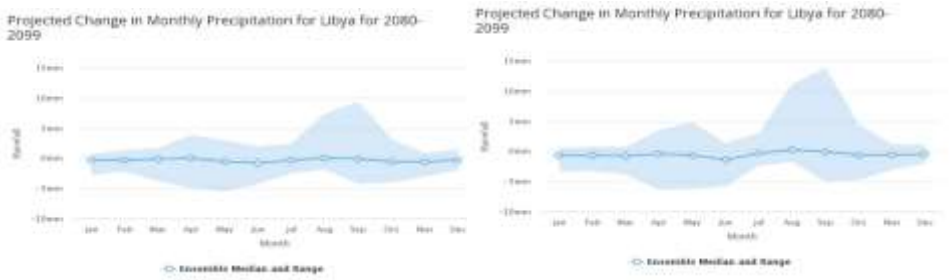
Figure 26 Projected Change in Monthly Precipitation under RCP 2.6 (Left) and RCP 8.5 (Right) in Libya between 2080 and 2099



264.290. While different models have large discrepancies on precipitation data, it is likely that there will be a decline of around 7% in mean annual precipitation. Monthly data shows slight median changes. For the period between 2040 and 2059, the biggest decline is expected to be around 1.04 mm in June under scenario RCP 4.5 while the highest increase will be around 0.53 mm in April under the same scenario. For the period between 2080 and 2099, the biggest decline is expected to be around 1.39 mm also in June under scenario RCP 8.5 while the highest increase will be around 0.46 mm in May under scenario RCP 2.6 ~~as shown in **Figure 26**~~[109].

[108] This analysis is based on the CoMon tool that uses CHIRPS/Climate Hazards Group-USGS data.
[109] World Bank (2021). Climate Change Knowledge Portal. Last Accessed [03/01/2021: https://climateknowledgeportal.worldbank.org/country/libya]



291. For the project target districts, the projected trend is that precipitation will be declining under all scenarios. However, the correlation between the scenario and the percentage of decline is inconsistent across the century although the SSP5 – 8.5 scenario will cause the biggest decline in the five districts by 2100. **Figure 27** below shows the percentage of decline for each district under five different scenarios until 2100 compared to 1995-2014 reference period[110].

Figure 27 Projected Precipitation Percent Change until 2100 compared to 1995-2014 for Al Jabal Al Gharbi (top left), Aljafrah (top right), Nalut (bottom left) and Zuwara (bottom right) (World Bank, 2022)

~~265.~~

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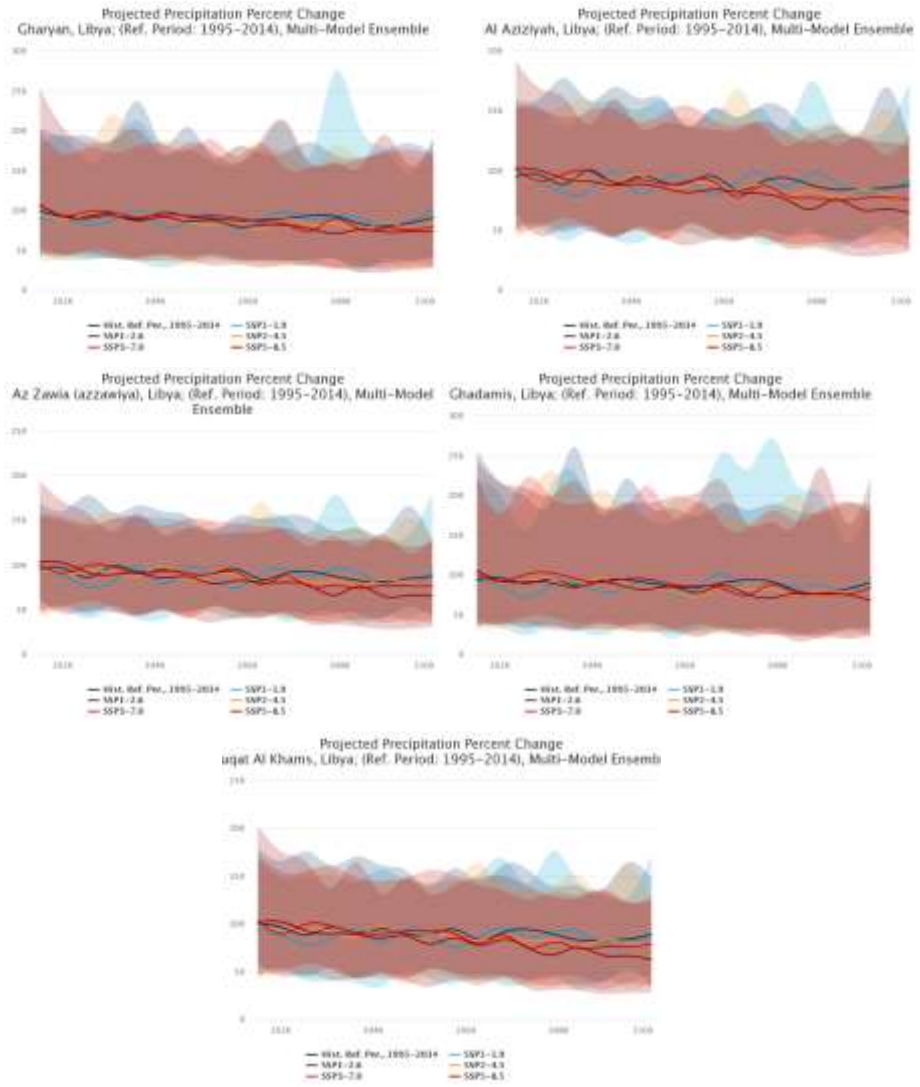
[110] World Bank (2022). Climate Change Knowledge Portal. Last Accessed [11/12/2022: https://climateknowledgeportal.worldbank.org/country/libya/climate-data-projections]



~~**Figure 27** Projected Precipitation Percent Change until 2100 compared to 1995-2014 for Al Jabal Al Gharbi (top left), Aljafrah (top right), Azzawya (middle left), Nalut (middle right) and Zuwara (bottom middle) (World Bank, 2022)~~

~~266.~~292. **Extreme Events:** Flooding is not very common in Libya although flash flooding can be disastrous. In terms of spatial distribution, Libya is considered a flood-prone country with potentially large economic losses[111]. Drought is become more frequent in Libya over the past two decades. **Figure ~~27~~ 28** shows the change

[111] Suwihli, S. (2020). Geospatial Analyses of Seismic Hazards and Risk Perception in Libya. *Theses and Dissertations: University of Arkansas.*

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in events of drought in Libya between 1983 and 2019 as indicated by the decrease in Standardized Precipitation Evapotranspiration Index[112] (SPEI). Severe drought is likely once the SPEI drops below -2. There is a major trend decline in average 18 months SPEI indicating higher chance of drought events between 1981 and 2018. The frequency of negative SPEI for consecutive years has increased greatly since the year 2000[113].

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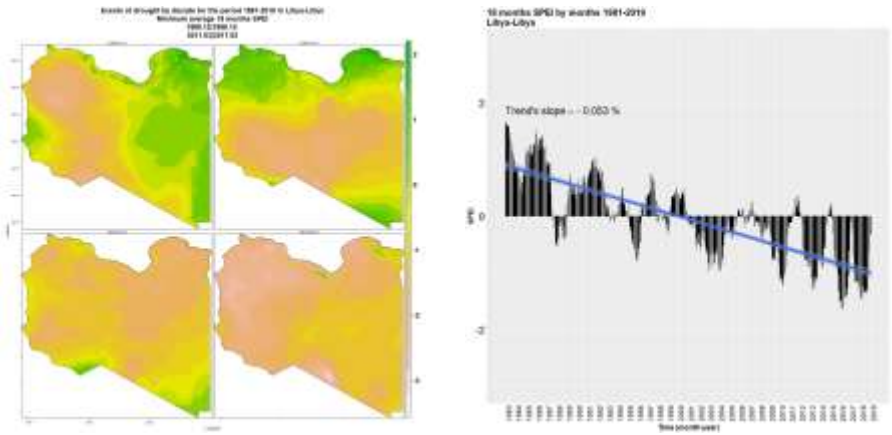
[112] The Standardized Precipitation Evapotranspiration Index (SPEI) measures the changes in water balance using both precipitation input as well as evapotranspiration losses. Positive values indicate positive water balance (or wet) conditions and negative values indicate negative water balance (or dry) conditions. Severe drought is likely once the SPEI drops below -2. The 12-month integrated SPEI was used to compute the annual likelihood of a severe drought. Particularly in the sub-tropics there is a clear trend towards increasing likelihood of drought conditions, but the overall trend is positive in most places due to increasing temperatures and little precipitation variability.

[113] This analysis is based on the CoMon tool that uses CHIRPS/Climate Hazards Group-USGS data.

Figure 28 Events of Drought in Libya between 1988 and 2017 by the Decrease in SPEI (Left) and Four Months SPEI between 1983 and 2019 in Libya (Right)



~~267.~~1. ~~Projections show that there will be an increase in the incidents of heat waves as we move towards the end of the century. The more pessimistic the scenario gets, the higher the annual probability of heat waves. The likelihood of severe drought follows the same trend as it increases as we move towards the end of the century with only slight differences between scenarios RCP 4.5, RCP 6.0, and RCP 8.5. It is predicted the number of annual drought days will increase from 101 to 224 in the Libyan coast over the next 40 years[114]. Libya will also be subject to an increase in the frequency of flooding in coastal areas as well as an increase in sandstorms and dust storms[115].~~

Figure SEQ Figure * ARABIC 27 ~~Events of Drought in Libya between 1988 and 2017 by the Decrease in SPEI (Left) and Four Months SPEI between 1983 and 2019 in Libya (Right)~~

293. Projections show that there will be an increase in the incidents of heat waves as we move towards the end of the century. The more pessimistic the scenario gets, the higher the annual probability of heat waves. The

~~[114] USAID (2017a). Climate Change Risk Profile: Libya. *Fact Sheet*.~~
~~[115] World Bank (2021). Climate Change Knowledge Portal. Last Accessed [03/01/2021: https://climateknowledgeportal.worldbank.org/country/libya]~~

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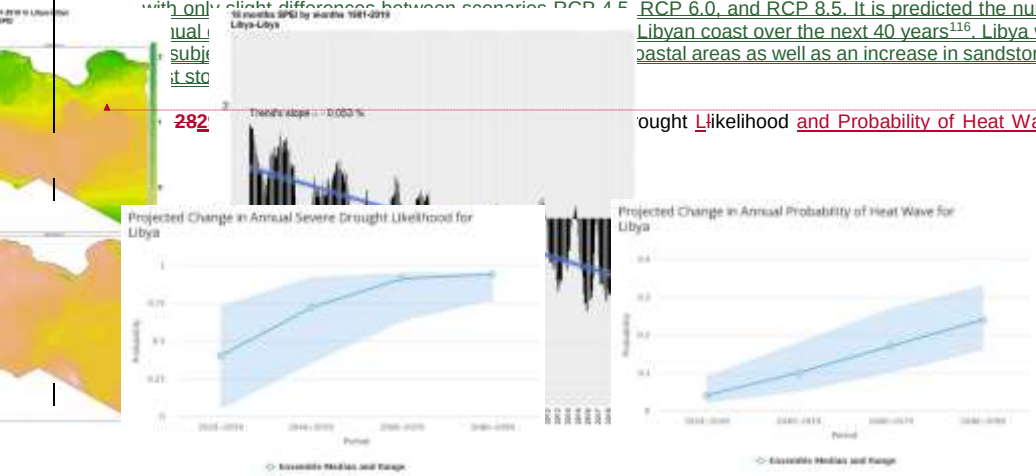
likelihood of severe drought follows the same trend as it increases as we move towards the end of the century with only slight differences between scenarios RCP 4.5, RCP 6.0, and RCP 8.5. It is predicted the number of [illegible] Libyan coast over the next 40 years[116]. Libya will also subj[illegible] coastal areas as well as an increase in sandstorms and [illegible]t sto[illegible]



282 ought Likelihood and Probability of Heat Waves for

268.294. **Sea Level Rise:** Data shows fluctuations in sea level anomaly for Libya with an overall increase between 1993 and 2015. While in 1993 there was a decline of 6.91 mm, 1994-2015 showed a trend of increase where the lowest was 4.49 mm in 1995 and the peak was in 2010 with an increase of 102.6 mm[118]. This trend is expected to continue with the global mean sea level rise expected to be in the range of 0.29 m and 1.1 m by the end of the century[119]. **Figure 29 30** below shows the most vulnerable areas along the Libyan coast under a 1 m sea level rise scenario.

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[116] USAID (2017a). Climate Change Risk Profile: Libya. *Fact Sheet*.
[117] World Bank (2021). Climate Change Knowledge Portal. Last Accessed [03/01/2021: https://climateknowledgeportal.worldbank.org/country/libya]
[118] World Bank (2021). Climate Change Knowledge Portal. Last Accessed [03/01/2021: https://climateknowledgeportal.worldbank.org/country/libya]
[119] IPCC (2019). Special Report on the Ocean and Cryosphere in a Changing Climate. *Chapter 4*.

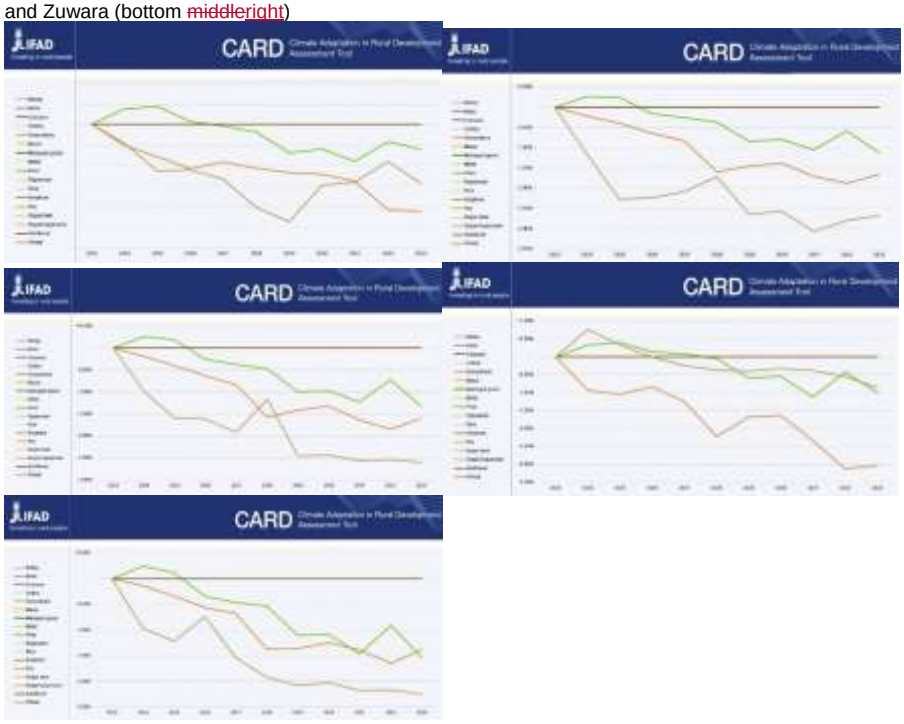
Figure ~~29~~ 30 Vulnerable Areas to Sea Level Rise in Libya based on a 1-meter scenario (El Raey, 2010)

~~269.~~295. Crop Analysis

This analysis uses the CARD[120] methodology to identify potential impact of different climate change scenarios on some of the crops in the target districts. The crops available for the analysis in the tool were groundnuts, peas, and wheat. The Median scenario shows a general decline in the yield for the three corps in all five districts by the end of the ten years period despite some fluctuations during this period as shown in **Figure 3~~0~~1**.

[120] The Climate Adaptation in Rural Development (CARD) assessment tool enables easy access to peer-reviewed modelling results for crop yields under climate change.

Figure 3~~0~~1 Changes in Crop Yield for Groundnuts, Peas, and Wheat between 2023 and 2033 under a Median Scenario in Al Jabal Al Gharbi (top left), Aljafrah (top right), ~~Azzawya (middle left),~~ Nalut (~~middle~~ bottom~~right~~ left) and Zuwara (bottom ~~middle~~right)



~~270.~~296. The percent changes in yields by 2033 can be summarized in the Table below:

Table 72 Percent Changes in Yields for Groundnuts, Peas, and Wheat by 2033 in the ~~Five~~ Four Districts

District/Crop	Groundnuts	Peas	Wheat
Al Jabal Al Gharbi	-2.12%	-0.61%	-1.43%
Aljafrah	-1.66%	-1.13%	-2.68%
~~Azzawya~~	~~-1.60%~~	~~-1.32%~~	~~-2.60%~~
Nalut	-3.04%	-1.00%	-0.85%
Zuwara	-1.38%	-1.53%	-2.25%