ADAPTATION FUND

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

Title of the Project:	Building resilience and adaptation to climate change through innovation and entrepreneurship for green jobs in Jordan
Country:	Jordan
Thematic Focal Area:	Agriculture
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	United Nations Industrial Development Organization (UNIDO)
Executing Entities:	Ministry of Agriculture (MoA), Jordan Valley Authority (JVA), and UNIDO
Amount of Financing Requested:	7,000,000 (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes ☒ No ☐

Amount of Requested financing for PFG: 150,000 (in U.S Dollars Equivalent)

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

NOTE: LOEs 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 concept has been submitted before

☐ This is the first submission ever of the concept proposal

In case of a resubmission, please indicate the last submission date: 3/4/2026

Please note that concept note documents should not exceed 50 pages, including annexes.

Abbreviations and Acronyms

ACC	Agricultural Credit Corporation
AF	Adaptation Fund
AFD	Agence Française de Développement (French Development Agency)
ASEZA	Aqaba Special Economic Zone Authority
CSA	Climate-Smart Agriculture
CSO	Civil Society Organization
DA	Designated Authority
EMV	Economic Modernization Vision
ESP	Environmental and Social Policy
GeoAI	Geospatial Artificial Intelligence
GCF	Green Climate Fund
GRM	Grievance Redress Mechanism
HNAP	Health National Adaptation Plan
IE	Implementing Entity
IPM	Integrated Pest Management
IoT	Internet of Things
JILMI	Jordan Integrated Landscape Management Initiative
JEPA	Jordan Exporters & Producers Association for Fruit & Vegetables
JVA	Jordan Valley Authority
JV	Jordan Valley
KOICA	Korea International Cooperation Agency
LT-LEDS	LTS Long-Term Low Emission Development Strategy
LOE	Letter of Endorsement
MEL	Monitoring, Evaluation, and Learning
MoA	Ministry of Agriculture
MoPIC	Ministry of Planning and International Cooperation
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
O&M	Operations and Maintenance
PFG	Project Formulation Grant
PIE	Project Implementing Entity
PPP	Public-Private Partnership
SDG	Sustainable Development Goal
SMEs	Small and Medium Enterprises
UDHR	Universal Declaration of Human Rights
UNIDO	United Nations Industrial Development Organization

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PART I: PROJECT/PROGRAMME INFORMATION

Project Background and Context

A. Problem Statement

Jordan faces significant socio-economic and environmental challenges due to its dependence on climate-sensitive agriculture, escalating water scarcity, and rising food insecurity. Agriculture accounts for over 50% of freshwater consumption, while annual per capita water availability remains critically low at just 100m³. By 2030, up to 40% of groundwater basins may be severely depleted, intensifying drought effects and jeopardizing agricultural productivity. Without effective adaptation measures, economic stability, labor productivity, and social resilience will deteriorate. The impacts will be particularly severe for vulnerable groups, including 56% of Jordanians and 89% of the refugee population. These challenges also have far-reaching consequences for migration patterns, gender inequality, and regional political stability. While Jordan has existing strategies in place, the Long-Term Low-Carbon and Climate Resilient Strategy (LTS) highlights ongoing gaps in policy, institutional capacity, climate-smart technology adoption, and financial resources. Urgent climate-responsive solutions and sustainable agricultural innovations are needed. Additionally, Jordan's National Adaptation Plan (NAP) emphasizes the necessity of strategic actions to address these vulnerabilities, particularly through improved water efficiency, conservation efforts, and climate-resilient farming practices to enhance agricultural productivity and ensure food security (NAP Jordan 2025). Accordingly, the project will support the Government of Jordan by providing technical assistance to advance innovative agricultural technologies, foster economic diversification, enhance capacity building, and strengthen climate governance. It will also promote effective institutional coordination and cooperation to address climate challenges more efficiently.

B. Geography, Social, Economic, and Environmental Context

Geography: The Hashemite Kingdom of Jordan is located in western Asia, characterized by diverse topography including desert plains, highlands, and the Jordan Rift Valley. The country spans roughly 80 km from the Mediterranean coast and features a unique terrain. The Jordan Valley, part of the world's longest valley, extends about 400 km from north to south, with widths ranging from 10 km in the north to 30 km in the south, and altitudes mostly below sea level (170–400 meters). About 80% of the country's land lies on a semi-desert plateau east of the valley. Water scarcity is a defining geographic feature, as much of the land is arid and receives less than 50 mm of rainfall annually.

Social Context: Jordan has an estimated population of around 11 million people. The population includes local communities and large numbers of refugees, particularly from Syria, which has significantly increased pressure on public infrastructure and social services, especially in governorates like Irbid. Vulnerable populations include economically disadvantaged rural households, refugees, and marginalized communities, who face heightened risks in terms of food security, income stability, and access to essential services. High poverty and unemployment rates in regions such as Ma'an further exacerbate social vulnerability.

Economic Context: Jordan's economy is diversified, with trade and services playing a major role alongside manufacturing, agriculture, mining, and construction. However, economic activity is constrained by limited natural resources, especially water. Rural areas and marginalized communities often rely on agriculture and small-scale livelihoods, which are highly sensitive to climate variability and resource scarcity. Urban centres, including Amman, face growing demands for water and other services, putting further pressure on the country's economic infrastructures.

Environmental and Climate Context: Jordan is highly vulnerable to climate change due to its arid and semi-arid climate, with key environmental challenges including water scarcity, desertification, and land degradation. Critical sectors such as agriculture, water resources, health, tourism, and coastal areas

are particularly at risk. Governorates targeted by development projects, such as Irbid, Amman, Aqaba, Ma'an, and the Jordan Valley, face increasing pressure from population growth, resource scarcity, and climate-related impacts, threatening ecosystem stability and human well-being.

Climate change is intensifying these pressures, with rising temperatures and declining rainfall further stressing water resources. By 2050, average temperatures are projected to increase by 1.5°C to 2.5°C, leading to more frequent droughts, flash floods, and extreme weather events, which will negatively affect agriculture and food security. The Jordan River and groundwater aquifers, the country's primary freshwater sources, are already under immense pressure, with availability expected to decline by at least 40% by 2050. This is particularly critical for water-intensive crops, threatening rural livelihoods and food production.

To address these challenges, the project focuses on climate-resilient water and agricultural management practices, promotion of green job opportunities, and support for rural and urban enterprise development. These interventions aim to provide adaptation benefits for smallholder farmers, marginalized or disadvantaged groups, including women, youth, refugees, and their hosting communities and agro-enterprises, building resilience to climate impacts while fostering sustainable development.

Air temperature projection:

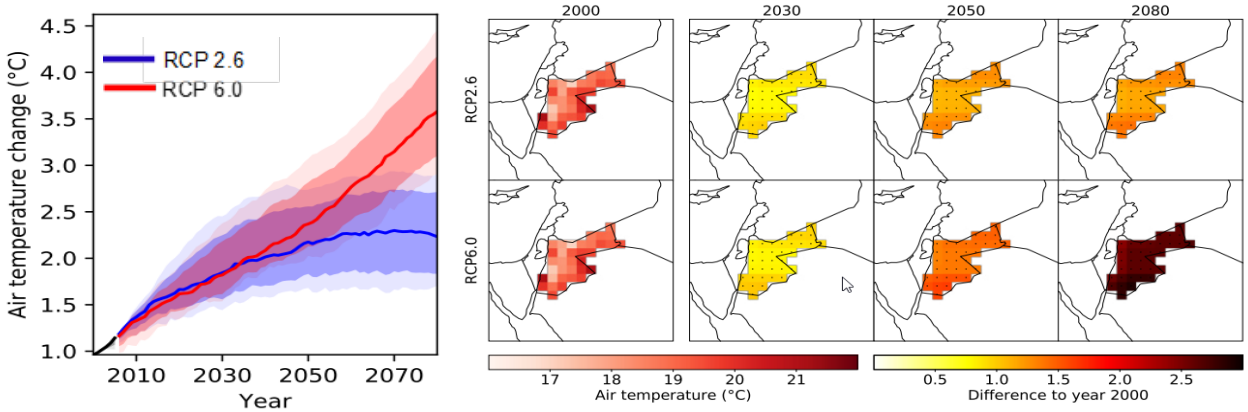

Figure 1: Air temperature projections
The figure shows the projection under different GHG emissions scenarios, where the first projection is relative to the year 1876, while the second projection is relative to the year 2000 (regional variations) (*Source - Potsdam Institute for Climate Impact Research, Adelphi 2022)*.

Precipitation:

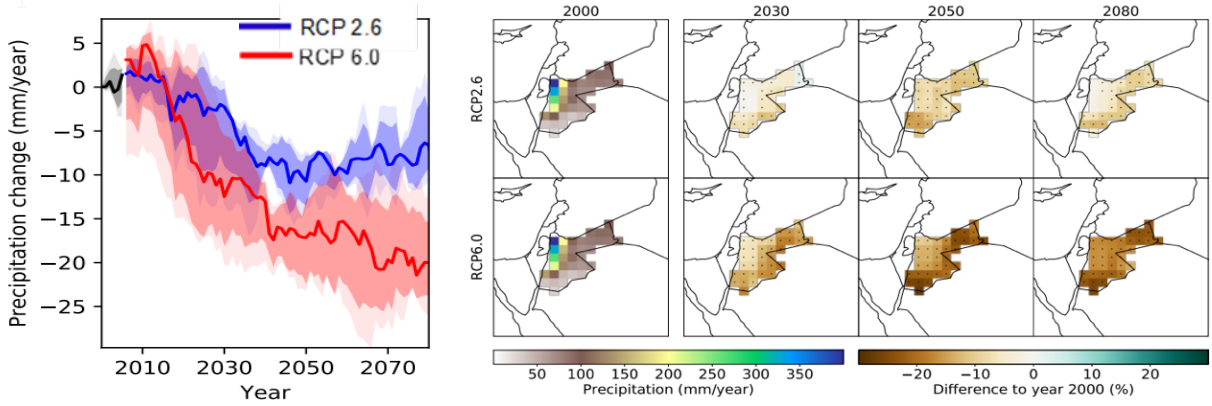

Figure 2: Annual mean precipitation projections
The figure shows the projection under different GHG emissions scenarios, relative to the year 2000 (regional variations).

Characterization of project target areas: (i) As Jordan's capital and economic hub, Amman faces growing food security challenges due to climate change, urban expansion, and resource constraints. Water scarcity, rising temperatures, and extreme weather events threaten agricultural supply chains and food availability. With limited local agricultural production, Amman relies heavily on imports, making it vulnerable to external shocks. Enhancing climate-smart agriculture, efficient water use, and resilient food systems is crucial for ensuring long-term food security and adapting to climate change; (ii) Jordan Valley - a key agricultural and economic region, but it faces rising temperatures, drought, and resource scarcity. As major sources of agricultural supply, the region requires the adoption of climate smart irrigation and water management systems, and climate adaptive technologies and best practices, which will protect its ecosystems and livelihoods; (iii) Irbid Governorate – as a major hub for agriculture, education, and industry, it struggles with water scarcity, declining agricultural productivity, and poverty, which is worsened by climate change and a large refugee population; (iv) Ma'an Governorate – it is Jordan's largest governorate and faces high poverty (26.6%) and unemployment (15.6%), alongside climate-driven water scarcity and decline of agricultural productivity; (v) Aqaba – is Jordan's only coastal city and a key trade hub. As in all other parts of Jordan, Aqaba faces water scarcity, rising temperatures, and extreme weather due to climate change. Limited agricultural land and agricultural practices in the governorate increased reliance on imports, heightening food prices and food security risks. Enhancing climate-smart agriculture, wastewater recycling and desalination, and resilient food systems is crucial for long-term sustainability in the governorate.

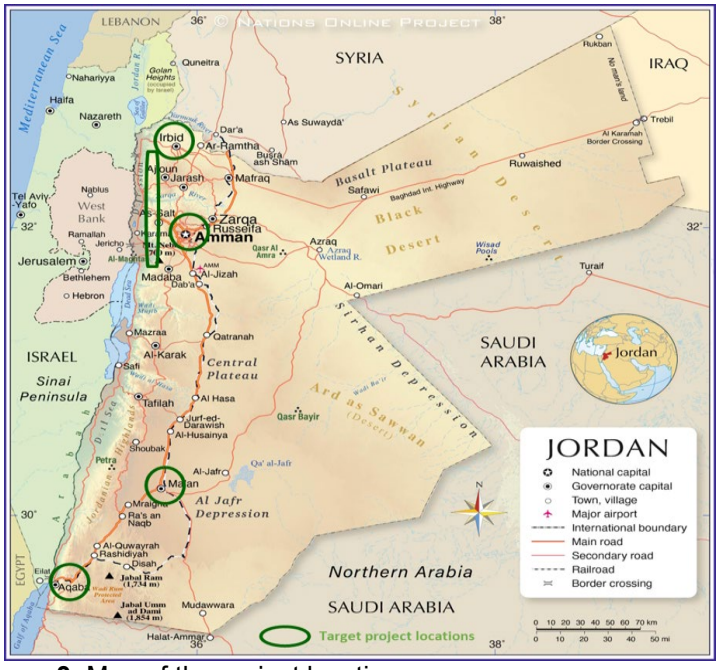

Figure 3: Map of the project location

C. Project Objectives

The project aims to enhance the resilience of the most vulnerable communities by advancing climate-smart agro-innovation and promoting inclusive livelihood opportunities. This objective will be realized through the improvement of water efficiency and governance systems, the adoption of climate-smart technologies, the integration of digital and nature-based solutions, and the strengthening of institutional capacities to support climate-resilient development.

Specific objectives of the project:

- **Enhancing Water Efficiency and Governance**: The project aims to improve water use efficiency in agriculture by promoting water-saving irrigation systems for smallholder farmers and encouraging rainwater harvesting practices. It also introduces innovative systems such as aquaponics and hydroponics to boost urban food production with minimal water use. Furthermore, the project aims to

strengthen local water governance systems to ensure equitable and sustainable water resource management.

- **Advancing Climate-Informed Planning and Decision-Making**: To support informed agricultural and institutional decisions, the project will deploy smart weather stations coupled with GeoAI technologies for real-time monitoring of soil moisture, soil nutrients, crop insect and disease, and crop performance. It will enhance early warning systems and provide tailored advisory services to farmers and planners. Improved access to localized climate data will strengthen both community preparedness and evidence based on national planning.
- **Promoting Climate-Resilient Livelihoods and Youth Engagement**: A climate-smart urban food production living lab (aquaponics/hydroponics) will be established, featuring a youth agripreneurs learning centre and an agro-tourism demonstration site. The project supports the adoption of climate-resilient crop varieties and aims to diversify livelihoods through innovative urban farming systems, digitalization of the production management and supply chain, and eco-tourism, especially in urban areas predominantly dependent on food imports. The project emphasizes strategies to empower women and youth through targeted capacity-building and entrepreneurship support.
- **Strengthening Agricultural Value Chains and Market Access in the Jordan Valley areas**: To improve income and reduce losses, the project will enhance postharvest management and introduce value addition and processing techniques. Strengthening product quality and aligning with international food standards will open new market opportunities. Digital innovation will be integrated to modernize and connect agricultural value chains. Additionally, the project will enhance livelihood diversification for smallholder farmers by promoting regenerative agriculture and agroforestry, enabling year-round production and a focus on high-value crop production.
- **Building Institutional Capacity for Climate Adaptation:** Capacity development for key institutions, including the national implementing entity (MoPIC), will be prioritized to ensure effective climate adaptation action planning, management, and monitoring of climate adaptation initiatives. The project also supports mobilization of climate finance, assists in national agricultural policy reforms through advanced evidence-based best practices, and intersectoral coordination to scale up adaptive solutions and improve support to vulnerable communities.

Aligned with the updated Adaptation Fund Results Framework, the project will reduce exposure to climate-related risks (Outcome 1), strengthen institutional capacity (Outcome 2), and enhance awareness and ownership of adaptation and climate risk reduction processes (Outcome 3). It will also diversify and strengthen livelihoods and income sources for vulnerable populations (Outcome 6), improve policies and regulations that promote and enforce resilience measures (Outcome 7), and accelerate innovation for effective, long-term climate adaptation, enabling solutions to be scaled up across targeted areas (Outcome 8).

D. Project Components and Financing

Table 1: Project/Programme components and financing

Project/ Programme Components	Expected Outcomes	Expected Concrete Outputs	Amount (US$) Output Level	Amount (US$) Component Level
Component 1: Climate Smart (CS), Water-efficient and digitally enabled Urban Farm System for Resilience and Adaptation to Climate Change.	**Outcome 1:** Climate resilience in urban food systems enhanced by mainstreaming CSA technologies that increase food production, urban food security, and green job opportunities.	**Output 1.1:** Climate Smart Urban Agriculture Living Lab established and urban agripreneurs trained.	1,000,000	1,400,000
		Output 1.2: Aquaponic and circular bioeconomy approaches demonstrated for local economic diversification and to address the food and nutrition security under critical water stress conditions.	400,000	

Component 2: Climate-resilient and nature-based rural agriculture and livelihood diversification	**Outcome 2:** Rural agricultural resilience and farmers' income enhanced through the integration of agricultural innovations and economic diversification promoted	**Output 2.1:** Regenerative and ecosystem-based agriculture techniques/practices and drought-resistant crops adopted by smallholder farmers, and household income enhanced.	785,105	3,568,660
		Output 2.2: Efficient and ecosystem-sensitive irrigation systems (supported by weather stations and GeoAI) installed in clustered smallholder farms.	928,000	
		Output 2.3: Postharvest loss of the target crops reduced through ecosystem-conscious storage and processing technologies.	713,732	
		Output 2.4. Strengthened devolved climate finance and insurance mechanisms for Smallholders and SMEs.	570,986	
		Output 2.5: Enhanced livelihood diversification among vulnerable rural communities	570,837	
Component 3: Strengthening institutional and technical capacity to drive national agricultural policy reform and integrate climate adaptation solutions into national development planning.	**Outcome 3:** Key agricultural institutions and stakeholders adopt climate-resilient policies and best practices and scale up the use of climate-smart agriculture approaches in water-scarce areas of the target project locations.	**Output 3.1:** Climate-resilient agricultural policy recommendations and strategic action plans developed and endorsed by relevant institutions**.**	300,000	1,000,000
		Output 3.2: High-level international exchange programs and exposure missions on agricultural innovations and entrepreneurships organized, and awareness on climate-smart agricultural practices enhanced through workshops	700,000	
Project Execution cost (9.5%)				482,953
Total Project Cost				6,451,613
Project Cycle Management Fee charged by the Implementing Entity (if applicable) (8.5%)				548,387
Amount of Financing Requested				7,000,000

E. Projected Calendar

Table 2: Project milestones

Milestones	Expected Dates
Start of Project Implementation	January 2027
Mid-term Review (if planned)	March 2029
Project Closing	December 2031
Terminal Evaluation	March 2032

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project theory of change and components

The project theory of change, which is shown below, illustrates how the project will enhance climate resilience and livelihood diversification through climate-smart agriculture, economic diversification, and farmers' income enhancement, ecosystem restoration, and institutional strengthening. It links key inputs such as climate finance and insurance mechanisms, agricultural technologies, and expertise to outputs like climate-smart farms, regenerative practices, and policy reforms. These will lead to improved livelihoods, adaptive capacity, and stronger institutions, ultimately contributing to resilient, inclusive, and sustainable agricultural systems in the arid and semiarid lands of Jordan.

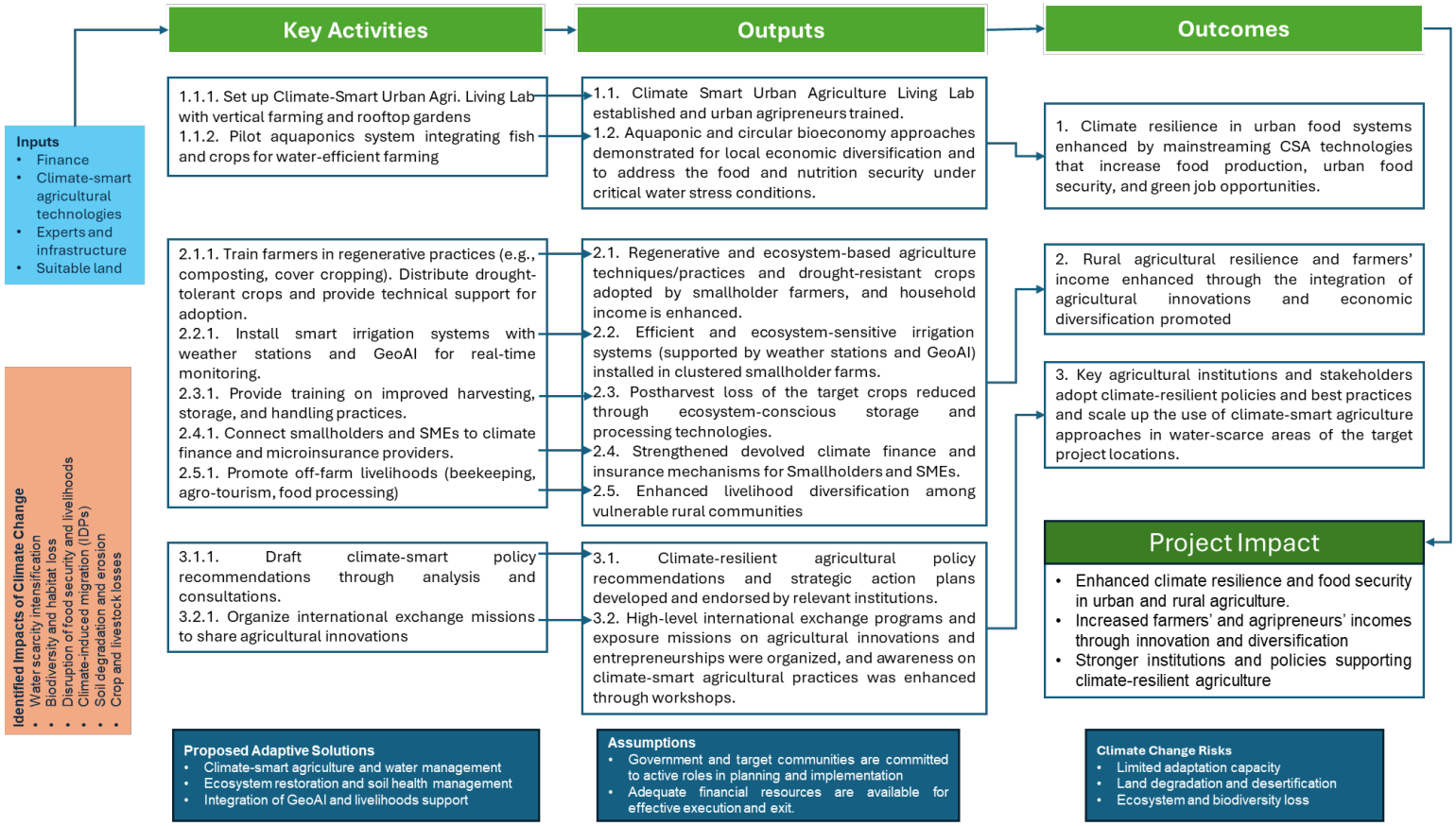

Figure 4: Theory of Change

Underlined Problems: Jordan faces severe climate variability, presenting significant challenges, particularly in agriculture and food security. Climate change has exacerbated water scarcity, droughts, and erratic rainfall patterns in Jordan, disproportionately affecting smallholder farmers, urban vulnerable groups, and SMEs engaged in the food supply chain. This has led to food insecurity, economic hardship, and increased migration.

Smallholder farmers in the project target areas are highly vulnerable to drought, leading to crop failure, soil degradation, and reduced food availability, which in turn contributes to malnutrition and adverse health effects. Additionally, rising unemployment among youth and women, dependence on rain-fed agriculture and traditional, inefficient irrigation methods, and inadequate access to climate finance further exacerbate the issue. Limited institutional capacity to address climate change impacts and provide adaptive solutions, along with insufficient supply chain infrastructure that results in significant food waste, adds to the growing concerns. The country's heavy reliance on imported food, coupled with rapid urban population growth and increasing food demand, continues to strain resources. Climate variability has intensified, with prolonged droughts and erratic rainfall patterns becoming more frequent, further destabilizing agricultural output.

To address these challenges, the project aims to enhance climate resilience by targeting key vulnerabilities faced by women, youth, and poor rural farming and urban communities. It focuses on promoting climate-smart agricultural practices to improve productivity and economic diversification while ensuring access to finance and sustainable markets. The project integrates innovative agricultural technologies and best practices, strengthens institutional capacity to support climate adaptation policies, and adopts gender-responsive approaches to empower women and youth. Additionally, it encourages private sector investments in climate-resilient agricultural solutions and raises awareness about climate adaptation strategies. By implementing these measures, the project seeks to build the resilience and adaptive capacity of smallholder farmers, women, and youth agripreneurs. The ultimate goal is to create a more sustainable and inclusive agricultural sector in Jordan, ensuring long-term food security and economic stability in the face of increasing climate variability.

Component 1: Climate-smart, water-efficient, and digitally enabled urban farm systems for resilience and adaptation to climate change

This component focuses on implementing innovative, water- and nutrient-efficient, and climate-resilient urban farming practices to support vulnerable urban populations, including poor families, youth, women, and SMEs, in adapting to climate change. By fostering green job creation and enhancing access to climate-resilient agricultural solutions, the component addresses the challenges posed by rapid urbanization and increasing population pressures in cities. The initiative integrates smart agritech, water management strategies, circular bioeconomy principles, and sustainable supply chain approaches to enhance agricultural productivity, reduce vulnerability to climate-related shocks, and strengthen urban food systems.

Outcome 1: Climate resilience in urban food systems enhanced by mainstreamed CSA technologies that increase productivity in the face of critical water scarcity.

Under this outcome, climate-smart urban agriculture systems will be operationalized to improve food production in water-scarce environments and enable inclusive economic opportunities. Urban farmers, youth, and women will be trained in sustainable, climate-resilient farming practices, agribusiness management, and value chain development, thereby enhancing productivity, reducing vulnerability to climate shocks, and strengthening local urban food systems.

This outcome will be achieved through two interlinked outputs, which will: i) establish a Climate-Smart Urban Agriculture Living Lab as a hub for innovation, demonstration, and capacity building for urban

agripreneurs; and ii) demonstrate aquaponic, hydroponic, and circular bioeconomy approaches as viable solutions for local economic diversification, resource efficiency, and food and nutrition security under critical water stress conditions.

Output 1.1 will focus on establishing a climate-smart urban agriculture living lab cantered on aquaponics to enhance resilient local food systems in land-scarce and water-stressed urban environments. The living labs will serve as a hub for innovation, demonstration, and capacity building, showcasing integrated technologies and business models that advance climate-resilient food production. Activities and work involved include:

Activity 1.1.1: Establish Climate-Smart Urban Agriculture Living Lab Infrastructure
The initiative will begin by setting up the Climate-Smart Urban Agriculture Living Lab, equipped with vertical farming and rooftop garden units that demonstrate efficient land use and resource-smart production. The Lab will integrate hydroponics and aquaculture systems to create closed-loop, water, and nutrient recycling models that reduce water consumption by up to 90% compared to conventional agriculture. These integrated agri-aquaculture systems align with national priorities on climate change adaptation and sustainable development, offering scalable solutions to address urban food insecurity, resource depletion, and climate vulnerability.

Activity 1.1.2: Pilot Aquaponics System Integrating Fish and Crops for Water-Efficient Farming
To operationalize the Living Labs, the project will pilot aquaponic systems that combine fish and crop production for water-efficient farming, demonstrating how circular resource flows can minimize input costs and environmental impacts. Alongside this, the project will train urban farmers in sustainable, climate-resilient farming and agribusiness management, strengthening their technical and entrepreneurial skills. Training will focus on crop and fish production techniques, water and nutrient management, food quality and safety standards, postharvest handling, and digitized supply chain systems. Special attention will be given to urban youth and women, equipping them to manage profitable climate-smart enterprises.

Activity 1.1.3: Deploy Smart Digital Technologies for Resource Management
To further enhance efficiency and climate resilience, the project will deploy smart digital technologies, such as IoT-enabled sensors[1], intelligent irrigation systems, and data-driven water management platforms. These will optimize resource use, enable real-time monitoring, and improve decision-making processes on water and nutrient applications. This innovation will be complemented by strengthening the urban water governance framework to ensure equitable water resources distribution, reduce water stress, and support urban agricultural SMEs (particularly hydroponic and aquaponic enterprises) to thrive under changing climate conditions.

Activity 1.1.4: Demonstrate Circular Bioeconomy and Nature-Based Approaches
The project will additionally demonstrate circular bioeconomy and nature-based approaches by converting urban organic waste into high-value animal feed and organic fertilizers, such as through Black Soldier Fly technology. This will reduce the carbon and water footprint of urban agriculture while enhancing productivity and creating new income opportunities. Biological pest control and low-input production systems will be promoted to further improve ecological sustainability.

Activity 1.1.5: Capacity Building and Training of Urban Farmers, Youth, and Women
To promote sustainability and replication, the living labs will act as a training-of-trainers (TOT) platform, stimulating the expansion of urban farming infrastructure and partnerships with urban SMEs. This will target unemployed urban youth and women, equipping them with technical and entrepreneurial skills for aquaponics and hydroponics farm management. Tailored curricula will cover areas such as

[1] In the context of smart farming, the Internet of Things (IoT) is a system of interconnected physical devices, sensors, and machinery that collect, exchange, and analyze real-time data from the farm environment to enable data-driven decision-making and automated control of farming operations.

engineering and food production techniques, food quality and food safety standards, postharvest handling, agribusiness development, and digitized sustainable supply chain management. Through these collaborations, the project will strengthen the enabling environment for urban aquaponics and hydroponics enterprises by supporting knowledge exchange and business incubation.

Activity 1.1.6: Strengthen Urban Water Governance and Policy Engagement
Finally, the initiative will engage with local authorities to strengthen urban water governance frameworks, ensuring equitable water allocation for urban agriculture, and supporting the integration of water-efficient systems into municipal plans. Technical oversight and research support will be provided by ICIPE, which will serve as a subcontractor or collaborator to guide implementation, monitor performance, and ensure that the Living Lab operates as a science-based demonstration and learning model.

Output 1.2: This output aims to demonstrate and promote climate-smart agricultural (CSA) innovations as transformative solutions for enhancing food and nutrition security under intensifying climate change variability in urban and peri-urban environments. It emphasizes practical demonstration, stakeholder engagement, and knowledge exchange to showcase how CSA can address food insecurity, unemployment, and ecosystem degradation in cities affected by climate stress. Key activities and work involve:

Activity 1.2.1: Pilot Aquaponics System Integrating Fish and Crops for Water-Efficient Farming
The project will establish a pilot aquaponics demonstration system that integrates aquaculture and hydroponic crop cultivation to maximize water and nutrient use efficiency. This pilot will serve as a hands-on learning site for policymakers, practitioners, and urban farmers, showing how resource-efficient food systems can thrive in water-scarce settings. By reducing water consumption by up to 90% compared to conventional farming, the pilot will demonstrate climate adaptation in practice. Training modules and field visits will be organized for youth and women entrepreneurs, enabling replication and scale-up. The pilot will also serve as a data collection hub for monitoring productivity, resource efficiency, and climate resilience performance.

Activity 1.2.3: Demonstrate Circular Economy Approaches through Conversion of Organic Waste into Value-Added Products
This activity will operationalize circular bioeconomy models by converting organic waste and aquaponic by-products into high-value inputs such as insect-based protein feed (using Black Soldier Fly) and biofertilizers for use in urban and peri-urban agriculture. Youth- and women-led enterprises will be supported to manage these production units, contributing to green job creation and reducing waste generation in urban environments. The recycled products will enhance soil fertility, reduce reliance on chemical inputs, and support sustainable fish feed production, promoting a closed-loop system.

Activity 1.2.4: Stakeholder Engagement, Field Demonstrations, and Knowledge Exchange Programs
To strengthen adoption and replication, the project will host stakeholder workshops, farmer field days, and peer learning events that engage urban farmers, local authorities, and research institutions. These engagements will demonstrate practical CSA techniques, encourage co-learning, and foster partnerships for scaling urban food innovations. Knowledge products such as manuals, policy briefs, and case studies will be produced to inform municipal and national policy dialogues.

Activity 1.2.5: Support Value Chain Development and Market Access for Urban Farmers
The project will facilitate value chain integration for aquaponics and circular bioeconomy products by improving post-harvest handling, cold chain infrastructure, and market linkages with restaurants, retailers, and agrotourism ventures. Targeted technical assistance will help youth and women agripreneurs access blended financing (grants and soft loans) through partnerships with the Ministry of Agriculture and local financial institutions.

Activity 1.2.6: Enhance Capacity Building and Extension Support for Urban Agripreneurs
Tailored capacity development programs will strengthen urban farmers' technical and business skills in CSA technologies, biofertilizer production, and sustainable value chain management. Extension officers and trainers from MoA will be engaged through training-of-trainers programs to ensure knowledge dissemination and institutional sustainability beyond the project period.

The activities under this output involve technical infrastructure (aquaponic units, waste conversion facilities), capacity-building programs, and market linkage initiatives, all of which require significant investment in equipment, training, and operational support. These investments directly contribute to tangible and scalable outcomes aligned with Jordan's climate adaptation and green growth strategies.

Component 2: Climate-resilient and nature-based rural agriculture and livelihood diversification

This component aims to enhance the resilience of smallholder farmers in the Jordan Valley by promoting climate-smart agricultural practices, optimizing post-harvest management, and diversifying rural livelihoods. Smallholder farmers in this region rely heavily on rainfed agriculture and traditional irrigation methods, making them particularly vulnerable to droughts and extreme weather events. To address these challenges, the project integrates sustainable solutions such as climate-smart irrigation systems, agroforestry practices, and climate-resilient crop varieties to mitigate climate risks and ensure stable production. Advanced mini-weather stations linked with GeoAI technologies will be deployed to provide real-time climate risk assessments, monitor crop health and pest infestations, optimize water and nutrient use, and support data-driven decision-making. These interventions will enhance food security, strengthen economic resilience, and empower farmers to take evidence-based, proactive adaptation measures.

Outcome 2: Rural agricultural resilience and farmers' income enhanced through the integration of agricultural innovations

Under this outcome, smallholder farmers will adopt climate-smart practices, improve post-harvest management, and diversify income sources to strengthen resilience against droughts and climate-related shocks. Farmers, SMEs, and rural communities will receive targeted training, technical support, and access to innovative technologies and climate finance instruments, thereby increasing productivity, reducing crop losses, and enhancing household income.

This outcome will be achieved through five interlinked outputs. Output 2.1 focuses on the adoption of regenerative agriculture techniques and drought-resistant crops to enhance smallholder productivity and household income. Output 2.2 will install efficient irrigation systems in clustered smallholder farms, assisted by weather stations and GeoAI tools. Output 2.3 will reduce post-harvest losses for target crops, and Output 2.4 will strengthen smallholders' and SMEs' access to climate finance and insurance. Finally, Output 2.5 will promote enhanced livelihood diversification among vulnerable rural communities. A list of indicative activities under each output is presented below.

Output 2.1: Adoption of regenerative agriculture techniques and drought-tolerant crops
This output aims to strengthen the adaptive capacity of smallholder farmers to climate variability by promoting drought-tolerant crops, soil conservation, and regenerative agriculture practices.

Activity 2.1.1: Hands-on training in regenerative agriculture techniques
Smallholder farmers will receive practical training in techniques such as composting, cover cropping, and mulching to improve soil fertility, moisture retention, and resilience to prolonged drought. Training sessions will combine on-site demonstrations, field visits, and farmer-to-farmer knowledge exchanges to facilitate the adoption of climate-smart practices.

Activity 2.1.2: Provision of drought-tolerant, high-yielding crop varieties
Farmers will be supplied with improved crop varieties suited to their agro-ecological zones. Technical guidance will be provided on crop selection, planting methods, water-efficient irrigation, and ongoing crop management to ensure successful adoption and production under erratic rainfall conditions.

Output 2.2: Strengthened land and water management through smart monitoring systems
This output focuses on improving smallholder farmers' capacity to manage land and water resources under climate variability using GeoAI-enabled monitoring systems, weather stations, and an information hub hosted by the JVA.

Activity 2.2.1: Land resource mapping and real-time monitoring
The project will conduct land resource mapping, real-time weather and soil monitoring, and crop status tracking to support data-driven irrigation and farm management decisions. Farmers will be trained to interpret and act upon this data to improve water use efficiency and optimize resource allocation.

Activity 2.2.2: Pilot brackish water and wastewater treatment technologies
Innovative blended water-use approaches will be piloted to reduce pressure on potable water while increasing crop production in water-scarce areas. These technologies will demonstrate sustainable solutions for smallholder farm irrigation under drought conditions.

Output 2.3: Reduction of post-harvest losses
This output aims to reduce climate-induced postharvest losses by piloting common-use cold storage facilities and agro-processing centres that extend the shelf life of perishable agricultural products.

Activity 2.3.1: Training in improved harvesting and storage practices
Farmers will be trained in climate-smart harvesting, handling, and storage techniques to reduce post-harvest losses, extend shelf life, and improve marketability. The training will include practical demonstrations and farmer-to-farmer learning, enhancing food security, income, and resilience to climate-related shocks.

Activity 2.3.2: Introduction of low-cost storage and cold chain technologies
Low-cost solutions such as solar drying ovens and climate-smart cold storage units will be deployed to preserve fruits and vegetables. These interventions will strengthen cold chain logistics and processing infrastructure, ensuring produce reaches consumers with minimal loss, increasing farmer revenue, enhancing food security, and promoting higher-quality products.

Output 2.4: Enhanced financial resilience and access to climate finance
This output seeks to strengthen the financial resilience of smallholder farmers and SMEs by connecting them to climate finance and microinsurance providers.

Activity 2.4.1: Financial literacy and business plan support
Targeted workshops will be provided to build farmers' and SMEs' capacity to make climate-resilient investment decisions. Technical support will assist participants in developing bankable business plans and accessing climate finance and insurance, enabling them to manage climate risks, sustain production, and enhance adaptive capacity.

Activity 2.4.2: Promotion of alternative income-generating opportunities
Youth and women agripreneurs will be supported to access climate finance instruments, soft loans, and insurance schemes. Collaborations with local and international climate-financing institutions will introduce climate risk insurance to help farmers manage climate-related shocks and invest in long-term climate-smart practices.

Output 2.5: Strengthened adaptive capacity through diversified livelihoods
This output focuses on increasing the resilience of vulnerable rural communities by promoting climate-resilient, diversified livelihood options. Activities include:

Activity 2.5.1: Promotion of off-farm income-generating activities
Households will be supported to engage in beekeeping, agro-tourism, and food processing, reducing dependence on rain-fed agriculture and creating new market opportunities. Modern hives, processing equipment, and food processing units will be provided to add value to honey, beeswax, and locally grown crops, extending shelf life and improving profitability.

Activity 2.5.2: Skills development for climate-smart rural enterprises
Tailored training will be delivered on climate-smart production, business development, and financial literacy for youth and women agripreneurs. These activities will enhance household income, promote rural entrepreneurship, and build resilience against climate shocks, ensuring sustainable livelihoods and long-term adaptive capacity.

Component 3: Strengthened institutional and technical capacity to drive national agricultural policy reform and integrate climate adaptation solutions into national development planning

This component aims to build the capacity of key government institutions to revise, align, and enforce policies and legal frameworks that support climate-resilient and sustainable agricultural development. It addresses the critical need to enhance the adaptive capacity of vulnerable communities facing increasing climate variability and extreme weather events. The focus is on strengthening institutional capacities at multiple levels, including designing adaptation strategies, formulating climate action policies, and enabling structural changes required for long-term resilience. Particular emphasis will be placed on empowering local institutions, especially the Ministry of Planning and International Cooperation (MoPIC), the Adaptation Fund's national implementing entity, to effectively plan, coordinate, and implement climate-resilient solutions.

Outcome 3: Enhanced institutional capacity and policy frameworks for climate-resilient agriculture established in target Governorates

Under this outcome, local communities, institutions, and policymakers will improve access to and use of climate information for evidence-based decision-making. Climate adaptation governance will be strengthened through better coordination mechanisms, while monitoring, evaluation, and reporting systems will be enhanced to track progress, capture lessons learned, and ensure accountability. The component will also support mobilization of climate finance to strengthen adaptation actions and reinforce the implementation and enforcement of climate-related policies and strategies. Collectively, these interventions will establish a responsive, accountable, and resilient climate governance framework that promotes sustainable agricultural development. This outcome will be achieved through two interlinked outputs:

- **Output 3.1:** Climate-resilient agricultural policy recommendations and strategic action plans developed and endorsed by relevant institutions.
- **Output 3.2:** High-level international exchange programs and exposure missions on agricultural innovations organized, and local experts' awareness on climate-smart agricultural practices enhanced through workshops and training programs.

Output 3.1: Strengthened enabling policy and institutional environment for climate-resilient agriculture
This output aims to enhance the policy and institutional framework to support sustained climate adaptation in the agricultural sector. By embedding climate resilience into policy, planning, and

regulatory processes, the interventions ensure that adaptation becomes a permanent feature of agricultural development rather than a series of isolated measures. Gender-inclusive approaches will be promoted to leverage the full potential of all community members, ensuring equitable access to resources, technologies, and decision-making.

Activity 3.1.1: Policy support and institutional strengthening
Technical support will be provided to develop actionable recommendations and strategic plans that integrate climate risk management into agricultural transformation strategies at both national and local levels. This includes revising existing policies, designing new guidelines, and aligning institutional mandates with climate-resilient agriculture objectives.

Activity 3.1.2: Mainstreaming climate considerations into agricultural planning
Evidence-based adaptation measures, CSA approaches, and resource-efficient technologies will be embedded into sectoral frameworks, investment plans, and development strategies to ensure systemic integration of climate resilience.

Activity 3.1.3: Promoting gender-sensitive policy frameworks
Policies will be developed and strengthened to recognize the distinct roles, needs, and constraints of women in agriculture. The activity will ensure equitable participation and benefit-sharing across all community members, enhancing social inclusiveness and amplifying adaptive capacity.

Activity 3.1.4: Coordination and institutional linkages
The project will implement this activity to enhance coordination among implementing agencies and link national policy frameworks with community-level interventions. This activity will foster systemic conditions for scaling adaptation, ensuring sustainability and long-term institutional resilience.

Output 3.2: Enhanced capacity of policymakers, agricultural experts, and extension agents
This output focuses on strengthening the technical and strategic capacity of policymakers, agricultural experts, and extension officers to support climate-resilient farming communities. Through knowledge exchange and targeted training, participants will be equipped to provide effective advisory services and implement CSA solutions.

Activity 3.2.1: International knowledge exchange missions
Exchange programs will expose government officials and technical experts to global best practices in CSA technologies, resilient farming systems, and climate-smart policy approaches. Lessons learned will inform national policy reform and local adaptation strategies.

Activity 3.2.2: Workshops on climate-smart agriculture
Workshops will engage policymakers, extension officers, researchers, and practitioners in co-learning, solution design, and adoption of CSA practices tailored to local climate and market conditions. These sessions will promote inclusive participation, ensuring women and youth have equal access.

Activity 3.2.3: Training in climate-informed advisory services
Officials and extension officers will be trained to provide timely, accurate, and locally relevant guidance to farmers. Practical sessions will cover efficient irrigation, soil fertility management, integrated pest control, and precision agriculture to reduce losses, optimize resource use, and improve productivity.

Activity 3.2.4: Digital extension systems upgrade
Extension platforms will be enhanced with digital tools to deliver real-time advice on weather, irrigation, crop management, and climate risk mitigation. Farmers and technical experts will benefit from improved information flow, supporting evidence-based decision-making, and sustainable adoption of CSA practices.

Overall, all project outputs (1.1–3.2) listed under the 3 components have been carefully designed to

ensure that every activity directly contributes to the stated objectives and adaptation goals. Activities such as establishing urban agriculture living labs, piloting aquaponics systems, promoting climate-smart agriculture, implementing GeoAI-based water management, reducing postharvest losses, enhancing financial resilience, and strengthening policy and institutional capacity are fully integrated within their respective outputs. No activity falls outside the scope of these outputs or constitutes an independent resilience of farming communities, reduced vulnerability to climate shocks, and alignment with national adaptation priorities or separate initiatives. Consequently, there are no unintended sub-projects (USPs) under this project, and all planned interventions are fully aligned with the Adaptation Fund's objectives, budget allocations, and monitoring framework.

Project Coordination and Monitoring: In addition to the core components, the project incorporates key coordination and monitoring systems to ensure effective delivery of results and to track progress throughout the project lifecycle. While this element does not directly engage in agricultural adaptation activities, it plays a critical role in enabling and supporting their successful implementation. To ensure all actions are well-aligned, thoroughly monitored, and communicated, the project will establish a dedicated coordination and monitoring framework that promotes integration, accountability, and transparency across all activities.

During the project inception, the project establishes the Project Coordination Unit (PCU). This PCU will be composed of technical and administrative staff. The PCU will oversee day-to-day implementation, ensuring all components work harmoniously towards achieving the project goals. This unit will play a central role in maintaining a unified approach, optimizing resource utilization, and ensuring strategic alignment across various project activities. Furthermore, a Project Steering Committee (PSC), i.e., a multi-stakeholder governance structure, will be established, involving representatives from government, civil society, academia, vulnerable groups, local communities, and AF NDA representatives. This structure will facilitate decision-making and help guide strategic decisions during steering committee meetings. These meetings will ensure that the project remains aligned with national climate adaptation priorities while addressing emerging challenges and ensuring that all stakeholders are effectively engaged.

In addition, the project will develop a monitoring, evaluation, and learning framework to track and assess the effectiveness of adaptation interventions. This framework will include adaptation-specific indicators, such as the number of farmers adopting climate-smart practices, gender sensitive metrics, and the capacity built in institutions. The framework will also incorporate data collection systems at the local level, including digital tools for real-time monitoring. These systems will enable timely feedback, allowing for adaptive management and course corrections as needed. Midterm and final evaluations will assess resilience outcomes and impact, ensuring that the project remains flexible and responsive to emerging needs. Furthermore, the project will develop a communication and outreach strategy to disseminate the results, good practices, and lessons learned to communities, stakeholders, and policymakers. This strategy will leverage various multimedia channels to raise awareness about climate risks and adaptation solutions. Highlighting case studies and success stories, particularly those involving women, youth, and indigenous practices, will also be a key feature of this strategy. Additionally, the project will facilitate the participation of key stakeholders in national and international climate forums, sharing project findings, engaging with global partners, and leveraging additional support for replication and scaling of successful practices. These visibility and outreach efforts will reinforce the potential for scaling up of the project's climate actions beyond the immediate project sites. By effectively communicating results, the project will contribute to knowledge transfer, behaviour change, and broader climate resilience across Jordan. Public awareness campaigns will strengthen the enabling environment for sustainable practices, fostering community ownership and supporting the long-term resilience of vulnerable populations. Through these efforts, the project will ensure that its impacts extend beyond the immediate stakeholders, creating a foundation for systemic change and broad-based climate adaptation across the region.

B. Economic, Social, and Environmental Benefits

The project is expected to directly benefit 15,000–20,000 households across urban and rural areas of Jordan. Based on initial estimations, at least 50% of beneficiaries will be women, including a significant proportion of women-headed households, who are among the most climate-vulnerable groups. Priority will also be given to low-income households, unemployed youth and women, smallholder and landless farmers, marginalized populations, and persons with disabilities, all of whom face limited livelihood opportunities, heightened exposure to climate risks, and restricted access to productive resources. Further gender and vulnerability disaggregation, covering the full range of groups relevant to the project context, will be refined during the full project development phase, when more detailed assessments allow for accurate estimation of beneficiary numbers across all vulnerable categories.

Gender equity will be integral to project design and implementation. The project will apply gender-responsive targeting and participatory approaches to ensure that women, especially those heading households, can access training, climate-resilient technologies, and income-generating opportunities. Capacity-building programs will address gender-specific barriers by providing skills development, entrepreneurship training, and market access support tailored to women and youth. In addition, women-led and youth-led SMEs in urban agriculture, agro-processing, and circular bioeconomy value chains will receive targeted support to foster green job creation and economic empowerment. Through these measures, the project will enhance the adaptive capacity of vulnerable populations, strengthen social and economic resilience, and promote inclusive and sustainable livelihoods in climate-affected communities.

The project is designed to reinforce national efforts toward agricultural and structural transformation by modernizing the agricultural sector through climate-resilient, technology-enabled adaptation measures. In doing so, it enhances the sector's capacity to withstand climate impacts, contributing to long-term food security and sustainable development. The project aligns with the Nationally Determined Contributions (NDC), the National Adaptation Plan (NAP), the national Long-Term Strategy (LTS), the Sustainable Development Goals (SDGs), and the Paris Climate Agreement.

Economic Benefits: The project will enhance the economic resilience of urban and rural communities by promoting climate-smart agriculture (CSA) and inclusive agribusiness models. Urban aquaponics and hydroponics under Component 1 are expected to increase crop and fish yields by 15–25%, reduce water consumption by up to 90%, and create 500–700 temporary and 150–200 permanent green jobs, primarily benefiting youth and women. In rural areas, Component 2 supports smallholder farmers with drought-tolerant crops, regenerative agriculture, and efficient irrigation systems, increasing household incomes by 10–20% while reducing post-harvest losses by 20–30% through improved cold storage, agro-processing, and value chain integration. Circular bioeconomy interventions, such as converting organic waste into fish feed and fertilizers, provide additional revenue streams for both urban and rural beneficiaries. The project also strengthens economic opportunities for women, youth, and marginalized groups by enhancing access to climate finance, microloans, and equitable market linkages, and by supporting small and medium-sized enterprises along the value chain. These interventions not only improve household income and productivity but also create scalable and replicable economic models that reduce vulnerability to climate-related shocks and foster sustainable, long-term economic growth.

Social Benefits: The project emphasizes inclusive capacity-building and empowerment of vulnerable populations, including women, youth, low-income households, landless farmers, and persons with disabilities. Approximately 5,000–7,000 participants will gain skills in climate-smart agriculture, entrepreneurship, leadership, and participatory decision-making. Early warning systems, extension services, and digital climate information hubs will deliver timely alerts on droughts, heatwaves, and pest outbreaks, enabling communities to respond proactively. By fostering cooperative resource management and knowledge sharing, the project strengthens social cohesion and collective resilience.

Component 3 builds institutional capacity in government bodies, ensuring that policies, strategies, and climate-informed agricultural services are inclusive, evidence-based, and aligned with national adaptation priorities. Women and youth will be specifically supported to access skills, leadership roles, and finance, enabling equitable participation and empowering marginalized groups to actively contribute to adaptation planning and implementation, as the initial gender analysis highlighted these as critical areas for enhancing resilience and inclusion (Annex 3).

Environmental Benefits: The project advances environmental sustainability and ecosystem resilience through resource-efficient, climate-smart practices while ensuring gender-responsive participation. Urban aquaponics and hydroponics optimize water and nutrient use, and circular bioeconomy approaches convert organic waste into high-value fish feed and fertilizers, reducing carbon and water footprints. In rural areas, regenerative agriculture and agroforestry interventions are expected to rehabilitate approximately 1,000 hectares of degraded land, improve soil fertility, and enhance biodiversity. The initial gender analysis highlighted that women and youth possess critical knowledge and play central roles in managing natural resources, yet face barriers in access to training, finance, and decision-making (Annex 3). By providing targeted support to women and youth in adopting climate-smart practices, managing water-efficient systems, and overseeing circular bioeconomy initiatives, the project ensures these groups contribute fully to environmental stewardship. Integrated pest and nutrient management, precision irrigation, and GeoAI-enabled digital monitoring to reduce chemical inputs, water stress, and land degradation, while the active participation of women and youth strengthens the sustainability and resilience of these interventions. These combined measures safeguard critical natural resources, strengthen climate-resilient food systems, and support sustainable livelihoods, ensuring that environmental gains are maintained while promoting equitable and inclusive adaptation.

Risk Mitigation and Safeguards: All project interventions are designed to prevent maladaptation and minimize negative environmental or social impacts. Activities will be screened and monitored through a robust environmental and social management framework. No resettlement, significant land-use changes, or degradation of critical ecosystems will occur, and free, prior, and informed consent will be obtained where applicable. Gender-sensitive approaches and equitable targeting ensure that women, youth, and marginalized populations fully benefit. Science-based monitoring, digital climate tools, circular bioeconomy approaches, and climate-smart agricultural practices will collectively ensure that interventions strengthen resilience without increasing vulnerability for beneficiaries or non-beneficiaries.

C. Cost-effectiveness of the proposed project

The proposed project demonstrates a high degree of cost-effectiveness through the integration of smart farming technologies, community engagement, and efficient resource management. Agriculture in the Jordan Valley is highly water-intensive under BAU conditions, with low productivity and postharvest losses often exceeding 25–30%. In one of the world's most water-scarce countries, these losses represent wasted water, land, and labour, and highlight the urgent need for improved irrigation efficiency and cold-chain infrastructure. BAU production and supply systems lack modern monitoring tools, resulting in inefficient irrigation and increased vulnerability to climate shocks. Project pre-assessments show that smart water-use monitoring, soil and crop diagnostics, and efficient irrigation technologies offer the most cost-effective pathway to improve productivity and reduce losses. Without digital water governance tools (GeoAI, IoT sensors), climate-smart irrigation, urban aquaponics, and decentralized cold storage, yields will remain suboptimal, and food security, especially in water-stressed areas like Aqaba, will further deteriorate.

Alternative adaptation options, such as large-scale desalination, community relocation, food import expansion, or long-term subsidies, were assessed and are either prohibitively costly, energy-intensive, or unsustainable. In contrast, the proposed measures can reduce water use by 40–60%, cut postharvest losses by 20–30%, and support reliable local food production under severe water

constraints. Investments in GeoAI-enabled irrigation, solar-powered cold storage, circular bioeconomy, aquaponics, and value-chain strengthening provide durable, lower-cost solutions that enhance resilience and reduce dependence on imports. Given Jordan's extreme water scarcity, these interventions represent the most economically viable and sustainable strategy to improve food security and livelihoods while addressing climate vulnerability. The cost-effectiveness is evaluated based on resource utilization, productivity gains, water efficiency, adaptation benefits, and socio-economic impacts, as presented in Table 3 below.

Table 3: Comparison of conventional and climate-smart farming techniques

Feature	Conventional / BAU	Rural CSA	Urban Hydroponics	Urban Aquaponics
Investment Cost (US$/ha)	1,500	5,000	18,000	25,000
Yield (t/ha)	3–4	5–8	10	10 + 1 (fish)
Water Use (L/kg)	60	35–40	26	6–10
Adaptation Benefits	Low: minimal resilience	High: drought tolerance, soil health, postharvest loss reduction	Medium-High: water-efficient, urban food supply resilience	High: climate-resilient, urban food security, reduces heat stress
Other Benefits	Minimal	Income diversification, livelihoods	Employment, high productivity	Dual income, green jobs, circular bioeconomy, nutrient recycling
Cost-Effectiveness vs BAU	1×	1.6×	1.8×	2×

Efficient Resource Utilization: Advanced smart farming solutions, including GeoAI-driven recommendations, pest and disease monitoring, nutrient and water tracking, and real-time weather alerts, enable precise management of critical inputs such as water, fertilizers, and renewable energy. By minimizing waste and optimizing production, the project lowers input costs and increases yields, enhancing farmers' return on investment.

Enhanced Productivity and Profitability: Data-driven decision-making supported by the smart farming system empowers farmers to boost crop yields and reduce post-harvest losses, particularly within horticultural and related value chains. This results in higher income, improved resilience to climate variability, and more sustainable livelihoods for smallholder farmers, including women and youth.

Strong Return on Investment (ROI): With a total estimated investment of US$7,000,000 targeting 20,000 to 40,000 farming households, the cost per beneficiary ranges from US$175 to US$350. Considering anticipated gains in productivity, efficiency, and sustainability, the project is expected to generate significant economic and adaptation returns relative to its initial investment.

Sustainability Through Community Participation: The project fosters long-term sustainability by promoting knowledge sharing and resource pooling among local farmers. This community-driven model reduces dependence on external support, encourages self-reliance, and ensures that the benefits of smart farming continue beyond the life of the project.

Long-Term Impact and Scalability: By embedding smart technologies into existing agricultural value chains, the project enhances resilience to climate risks and market fluctuations. Furthermore, the scalable nature of these technologies allows for broader adoption over time, extending the project's impact and reinforcing its cost-effectiveness across a growing number of smallholder farmers.

In general, the investment and technical assistance of the project will generate a high level of gain for the target vulnerable communities. The project ensures cost-effectiveness in line with the Adaptation Fund's principles by promoting efficient resource use, community ownership, and the sustainability of

adaptive solutions. The adoption of water- and energy-efficient aquaponic and hydroponic systems reduces input costs while increasing productivity and climate resilience. Community-based management and capacity-building strengthen local ownership and lower long-term operational expenses. Strategic partnerships with research institutions, private sector actors, and co-financing arrangements further enhance efficiency and leverage additional resources. Continuous cost-benefit monitoring will guide adaptive management to optimize resource allocation, while the scalable design allows replication in other water-stressed areas of Jordan, maximizing adaptation impact per unit of investment.

The use of scalable and replicable practices, including training programs, extension services, and policy tools, will be designed for scalability across regions and can be adopted by other communities, leveraging existing institutional frameworks and avoiding the need for standalone systems. Furthermore, the projects' interventions that invest in proactive adaptation, such as early warning systems and sustainable farming, reduce the high costs associated with emergency response, food insecurity, and land degradation. By prioritizing the needs of women and marginalized populations, the project ensures equitable benefit distribution and reduces the cost of exclusion-related inefficiencies. Thus, the project's design ensures that every dollar spent contributes to multiple benefits, including economic resilience, social inclusion, and environmental sustainability, while minimizing the risk of maladaptation or resource waste.

D. Consistency with national or sub-national development strategies and adaptation programs

The proposed project aligns closely with Jordan's national and sub-national sustainable development strategies and climate adaptation frameworks, demonstrating strong coherence with the country's broader economic, environmental, and social policy goals. Jordan is actively advancing its Economic Modernization Vision (EMV) 2033, a 10-year strategy aimed at sustainable economic growth, job creation, and structural transformation. The project directly supports this vision by promoting climate-resilient agriculture, efficient water use, and green innovation, thereby contributing to inclusive growth and economic resilience.

The proposed interventions are fully consistent with the National Adaptation Plan (NAP) of Jordan, which outlines adaptation priorities across vulnerable sectors. These include the water sector, where improved water use efficiency and conservation are essential to address recurrent drought, rainfall and high evapotranspiration caused by climate change; agriculture, where drought-resistant crops and enhanced irrigation systems are prioritized to counter extreme weather; health, where the NAP calls for stronger health systems and heat-related risk management; and urban development, which highlights the need for climate-resilient infrastructure and sustainable planning in response to urbanization and climate-induced hazards like flooding and heatwaves. The project's focus on climate-smart agricultural interventions, upgrading early warning systems using a combined application of weather stations and GeoAI technologies that enhance production and reduce vulnerability, directly addresses the NAP key priorities.

Furthermore, Jordan's National Climate Change Policy 2022–2050 (NCCP) provides a comprehensive framework that seeks to reduce greenhouse gas emissions, enhance adaptive capacity, and build resilience across key sectors, including water, agriculture, health, and urban development. The project supports the NCCP's objectives by integrating adaptive measures such as smart resource management, infrastructure upgrades, and community-led solutions into development planning. It also reinforces the country's ambition to achieve carbon neutrality by 2050, as outlined in the Long-Term Low Emission Development Strategy (LT-LDS), which is currently under finalization following stakeholder consultations and scenario modelling using the TIMES model.

The Government of Jordan has also demonstrated its climate commitment through its Nationally

Determined Contributions (NDCs), aiming to reduce greenhouse gas emissions by 31% below the Business-As-Usual (BAU) level by 2030. An NDC Action Plan, identifying 35 priority projects across key sectors, is being implemented with support from the NDC Partnership. The proposed project contributes directly to these targets, particularly in the priority areas of water management, agriculture, and energy efficiency. A Cost-Benefit Analysis (CBA) conducted under the Climate Action Enhancement Package (CAEP) framework confirmed that adaptation measures in these sectors offer high economic returns and are essential for building national climate resilience.

Several sectoral strategies and plans provide a strong foundation for advancing climate-resilient agriculture, water management, and sustainable livelihoods, aligning closely with the objectives of this project. The National Agriculture Strategy (2024-2028) emphasizes improving productivity, promoting drought-tolerant crops, enhancing rural livelihoods, and supporting smallholder farmers through modern irrigation and postharvest management techniques. Complementing this, the National Water Strategy and Water Sector Capital Investment Plan (2016–2025) focus on ensuring water security, increasing irrigation efficiency, promoting wastewater reuse, and modernizing water infrastructure, directly supporting both urban and rural climate-smart agricultural practices. The National Biodiversity Strategy and Action Plan (2025-2050) provides guidance on ecosystem-based approaches, soil conservation, and sustainable land management, reinforcing nature-based solutions and circular bioeconomy approaches in agricultural systems. Further to these, Jordan's National Plan for Sustainable Agriculture (2022) prioritizes climate-smart agriculture, crop diversification, and integration of agricultural adaptation measures into sectoral planning, ensuring that both institutional strengthening and on-the-ground interventions contribute to long-term resilience across Jordan's agricultural and water sectors.

The health sector's adaptation is also a significant policy area where alignment is evident. Under the COP26 Presidency Health Programme and COP28 Health Declaration, Jordan committed to developing a climate-resilient, low-carbon health system. The Health National Adaptation Plan (HNAP) is currently being updated with WHO support, involving a decade-long assessment of climate-sensitive health risks, ranging from respiratory and vector-borne diseases to heat stress and mental health. The proposed project aligns with these health adaptation goals by contributing to healthier rural livelihoods and climate-resilient communities.

At the sub-national level, the UNDP Adaptation Pipeline Accelerator (APA) initiative, active in regions like Ma'an, Irbid, and the Jordan Valley, is conducting vulnerability and climate risk assessments, particularly in water and agriculture. The proposed project complements these efforts by supporting local adaptation actions, technical capacity building, and gender-sensitive programming. It also aligns with the Jordan Refugee Response Plan, addressing the climate vulnerability of displaced populations, particularly in northern and eastern regions, by supporting water access and agricultural resilience in host communities.

Overall, the project is well-aligned with Jordan's national strategies and climate commitments, including the EMV 2033, NAP, NDC, NCCP 2050, LT-LEDS 2050, and sector-specific adaptation plans (See table 4). It contributes meaningfully to sustainable development, poverty reduction, and long-term climate resilience, reinforcing both national and international goals, including the Sustainable Development Goals (SDGs) and the Paris Agreement.

Table 4: Jordan's national Strategies, sectoral plans, and MEA-related obligations relevant to the project

Plan / Instrument	Year / Status	Area of Relevance	Linked MEA / Obligation
Economic Modernization Vision (EMV 2033)	2022–2033 (adopted)	Green growth, energy transition, rural job creation, climate-smart value chains	Aligns with UNFCCC mitigation & adaptation pathways; supports SDG
National Adaptation Plan (NAP)	2022 (adopted)	Climate change adaptation, food & water security, urban & rural resilience	UNFCCC / Paris Agreement – adaptation planning & reporting

National Climate Change Policy (NCCP 2050)	2022–2050	Climate change mitigation & adaptation, low-carbon development, resilience building	UNFCCC / Paris Agreement, climate policy alignment
Long-Term Low Emission Development Strategy (LT-LEDS 2050)	Under preparation/draft	Low-carbon & climate-resilient development, sectoral planning	UNFCCC / Paris Agreement, long-term planning
Nationally Determined Contributions (NDCs)	NDC 3.0 submitted in October 2025	Mitigation & adaptation targets, sectoral actions	UNFCCC / Paris Agreement – NDC commitments
National Agriculture Strategy	2024–2028 (updated)	Agricultural development, drought mitigation, rural livelihoods, water use efficiency	Supports UNFCCC adaptation goals; links to SDG 2 & 13
National Water Strategy	2023–2040	Water security, irrigation efficiency, wastewater reuse, and infrastructure modernization	Supports Ramsar obligations, SDG 6; contributes to climate adaptation under UNFCCC
Water Sector Capital Investment Plan	2016–2025	Infrastructure investment in water supply, wastewater services, NRW reduction, and energy efficiency	Supports SDG 6 & water management obligations under regional agreements
National Biodiversity Strategy & Action Plan (NBSAP)	2025–2050	Biodiversity conservation, ecosystem-based adaptation	CBD (conservation & sustainable use of biodiversity)
National Action Programme for UNCCD (Desertification)	2015	Land degradation, desertification, and sustainable land management	UNCCD (land degradation neutrality, sustainable land management)
National Communications to UNFCCC	4th NC, 2023	Reporting on GHG emissions, climate risks & adaptation measures	UNFCCC (reporting & compliance)
Green Growth National Action Plan (GG-NAP)	2021–2025	Mainstreaming green growth and climate resilience across sectors	Supports UNFCCC adaptation & mitigation goals, CBD conservation co-benefits
National Plan for Sustainable Agriculture (NPSA)	2022–2025 (current implementation)	Climate-smart agriculture, crop diversification, irrigation efficiency, and farmer resilience	Supports UNFCCC adaptation; contributes to SDG 2, 6 & 13

E. Relevant national technical standards and compliance with the Environmental and Social Policy of the Adaptation Fund

The project fully complies with national environmental regulations, sectoral technical standards, and the Adaptation Fund's Environmental and Social Policy (ESP). In accordance with the national Environmental Impact Assessment (EIA) framework, the project has been classified as Category B, meaning that potential environmental and social risks are site-specific, reversible, and can be effectively mitigated through standard management measures. As such, the project does not require a full EIA study but will be accompanied by an Environmental and Social Management Plan (ESMP)to ensure that all interventions are implemented safely and responsibly.

This classification is appropriate given that the project's activities centre on climate-resilient agricultural practices, water-use efficiency, rangeland rehabilitation, and institutional capacity strengthening, none of which involve industrial-scale construction, hazardous waste generation, relocation of communities, or conversion of natural or critical habitats. Instead, the project focuses on improving resource efficiency, restoring degraded landscapes, and supporting smallholder farmers, which are expected to generate net positive environmental outcomes, including improved soil health, enhanced vegetative cover, reduced land degradation, and lower reliance on fossil fuels through the use of solar-powered irrigation and storage systems.

In instances where infrastructure development is required, such as the construction or enhancement of agricultural facilities and infrastructure, including irrigation systems and cool storage facilities, the project will adhere strictly to the technical guidelines issued by the Ministry of Environment, the Ministry of Public Works, the Ministry of Agriculture, and the Jordan Institute of Standards and Metrology. These include, among others:

- Jordanian National Building Codes (JNBC): covering structural, plumbing, and drainage requirements for any new facilities.
- Jordanian Standard JS 286: regulating potable water quality for water supply and irrigation.
- Jordanian Standard JS 893: specifying requirements for the use of reclaimed or treated wastewater in irrigation and recirculation systems.
- Environmental Quality Standards (JS 1140/2006, JS 202/2006): ensuring effluent, waste discharge, and air emissions meet national environmental thresholds.
- Technical guidelines for hydroponic and aquaponic water systems: including water reuse, nutrient management, and closed-loop recirculation to minimize environmental impact.

Table 5 below presents a tabulated version of the relevant Jordanian national technical standards, including issuance dates and mapping to project outputs/activities.

Table 5: Applicable Jordanian standards and regulations for project components and outputs

#	Project Component / Output	Applicable Standard / Regulation	Date / Version	Project Output / Activity
1	Component 1, Output 1.1 – Climate Smart Urban Agriculture Living Lab	JS 893 – Reclaimed Domestic Wastewater	1995, updated 2021	Aquaponic nutrient loops, hydroponic irrigation in urban living lab
2	Component 1, Output 1.1	Water Supply for Buildings Code (Code No. 18)	Latest compiled 2020	Plumbing and water supply for aquaponic/hydroponic structures, pump houses, and storage facilities
3	Component 1, Output 1.1	Jordan National Building Codes (JNBC) / JISM technical regulations	Initial 1993, updated 2009, compiled 2020	Construction of aquaponic tanks, hydroponic structures, greenhouses, and living lab buildings
4	Component 1, Output 1.2 – Circular bioeconomy & CSA demonstration	JS 202 – Industrial Effluent Discharge Standards	2007	Discharge from aquaponic/hydroponic waste streams, BSF insect feed production effluent
5	Component 2, Output 2.2 – Efficient irrigation & GeoAI integration	JS 893 – Reclaimed Domestic Wastewater	1995, updated 2021	Irrigation with treated/reused water in smallholder farms
6	Component 2, Outputs 2.3–2.5 – Postharvest, livelihood diversification	Environmental Quality Standards (JS 1140/2006, JS 202/2006)	2006	Cold storage, agro-processing, effluent management, organic fertilizers

By adhering to national standards and environmental regulations, the project ensures that activities are implemented in a manner that avoids, minimizes, or effectively mitigates ecological risks. Wherever possible, it will upgrade and optimize existing infrastructure rather than construct new assets; where new structures are required, designs will be climate-resilient, resource-efficient, and integrated into local landscape conditions to maintain ecological integrity. This approach is consistent with the project's Category B classification, where impacts are site-specific and manageable through standard safeguards. Coupled with Jordan's regulatory framework and the project's ESMP and Gender Action Plan, these measures ensure full alignment with the Adaptation Fund's Environmental and Social Policy,

protect local ecosystems, and promote climate-resilient development that benefits vulnerable communities while avoiding harm.

F. Duplication of project with other funding sources

The proposed project has been strategically and thoughtfully designed to complement, rather than duplicate, existing and planned initiatives supported by other funding sources. It builds on the lessons learned and best practices from previous and ongoing efforts in agriculture, water management, and infrastructure development across the targeted regions of Jordan. An initial thorough review and stakeholder consultation process was conducted to map relevant interventions, assess institutional priorities, and identify critical gaps, unmet needs, and opportunities for synergy (See table 6). This process confirmed that, while numerous climate adaptation and sustainable development initiatives are underway, the proposed project is distinct in scope and focus, aiming to reinforce and scale up successful interventions rather than replicate them. By aligning with the efforts of government agencies, NGOs, community-based organizations, and private sector actors, the project will act as a catalyst for coordination, promoting integrated, multi-sectoral approaches to climate resilience and sustainable development. This collaborative model ensures the efficient use of resources, strengthens institutional knowledge, and enhances the coherence of national and local climate action strategies. Furthermore, the project places particular emphasis on reaching underserved regions and vulnerable populations, expanding access to climate-resilient solutions where they are needed most. Stakeholder engagement will remain ongoing throughout the entire proposal development phase to refine project activities, avoid overlaps, and ensure continued alignment with emerging initiatives. As a result of project mapping and analysis, and the outcome of the stakeholders' consultation, coupled with field assessment, no duplication of efforts or funding has been identified at this stage. Instead, the project is positioned to add unique value by filling existing gaps and amplifying the impact of complementary programs. The table below outlines ongoing and planned projects in the target regions, highlighting key areas of alignment and complementarity with the proposed initiative.

Table 6: List of projects related to adaptation and resilience actions in Jordan

Project	Outcome / Output	Fund Resource	Finance Instrument & Amount	Start and Completion Date	Location	Status	Complementary to avoid duplications (The purpose is to filling gaps; different but mutually reinforcing roles)	Synergies to multiply impact (The purpose is to join forces to amplify results)
Increasing the resilience of poor and vulnerable communities to climate change impacts in Jordan	Technology transfer, use of non-conventional water, reuse, rainwater harvesting	AF	Grant USD 9.226 M	Start Date 07/13/2016 *Revised Completion Date:* 01/17/2026	Jordan Valley, Petra	Ongoing	**Geographic Expansion Without Overlap:** The project targets areas not currently covered by similar interventions, ensuring no duplication of efforts. **Building on Existing Achievements**: Leverages the lessons learned, success stories, and innovation platforms from ongoing and completed projects in the target regions. **Policy and Program Alignment**: Complements the ongoing project's national climate adaptation and agricultural development strategies without replacing or duplicating them. **Thematic Differentiation**: Introduces geospatial data and AI to increase water and nutrient use efficiency, integrates improved crops and regenerative agriculture/agroforestry approaches where the current projects focus mainly on wastewater treatment and rainwater harvesting practices.	**Institutional Collaboration:** Strengthens collaboration with national and local executing entities, enhancing their capacity and aligning roles in implementation. **Partnership Integration**: Creates synergies with technical and development partners amplifying shared goals and resources. **Knowledge Sharing Platforms**: Facilitates learning and innovation diffusion through farmer champions, demonstration sites of the current project, and regional peer learning. **Scaling Proven Solutions**: Builds on validated climate-smart technologies and practices to expand impact and accelerate adoption across regions.
Building resilience to cope with climate change in Jordan through improving water efficiency in agriculture	Enhancing adaptive capacity and resilience of water/agriculture systems	GCF	Grant USD 25 M + Co-Financing USD 8.2 M	Start Date 31 May 2022 Completion Date 31 May 2029	Dead Sea Basin (Madaba, Karak, Tafileh, Ma'an)	Ongoing	**Geographic Differentiation:** Targets different regions (Dead Sea Basin vs. Jordan Valley/Irbid). **Thematic Complementarity**: Focused on large-scale water efficiency, while the new project introduces climate-smart irrigation for smallholder farmers, GeoAI, and regenerative practices. **Technology Diversification:** Brings new practices like precision agriculture tools and organic waste valorisation, not covered under the GCF project.	**Data and Knowledge Integration:** Share soil-moisture and weather monitoring platforms to strengthen water governance across regions. S**caling Climate-Smart Practices:** Join efforts in promoting efficient irrigation technologies and drought-resistant crops to maximize water savings impact.
Creating Sustainable Jobs through Green Economy	Green employment and skills development	KOICA	Grant USD 6 M	Start Date June 2023 Completion Date	Amman, Mafraq, Zarqa, Irbid	Ongoing	**Target Group Differentiation:** Focuses on skills training and employment across sectors, while the new project tailors capacity building toward agro-entrepreneurship, youth-led climate-smart farming, and green innovation.	**Joint Youth Empowerment Platforms:** Synergize through agripreneurship centres and urban food hubs, expanding outreach to vulnerable youth and women.

				May 2026			**Complementary Livelihood Strategies**: **Enhances entrepreneurship** modules where the project focuses on business incubation in climate-resilient value chains.	**Amplifying Green Jobs:** Cross-link vocational trainings and green economy pathways aligned with climate-resilient agriculture business models.
Adaptation Programme – Regional	Enhancing resilience of communities and ecosystems	AFD, EU	Grant (EUR 6 M EU, EUR 1.5 M AFD)	Official document is not publicly available.	Jordan, Palestine, Lebanon	Approved /Started	**Geographic and Institutional Complementarity:** Operates regionally (Jordan, Palestine, Lebanon) whereas the project focuses on Jordan's local adaptation models in rural and peri-urban areas. **Thematic Enhancement:** Focuses on multi-sector resilience, while this project deep-dives into agriculture innovation, digitalization, and green value chains.	**Knowledge and Technology Transfer:** Exchange best practices on adaptation technologies like rainwater harvesting, and regenerative agroforestry across countries. **Regional Learning Networks:** Jointly build regional resilience platforms showcasing Jordan's innovations under this project.
Jordan Integrated Landscape Management Initiative (JILMI)	Integrated ecosystem management for resilience	GCF	Grant USD 45 M	Start Date: 18 Jul 2024 Completion Year 2032	Jordan Valley	Approved /Started	**Thematic Complementarity:** JILMI promotes ecosystem-level resilience and water conservation, while this project focuses on farm-level regenerative agriculture, postharvest handling, and climate-smart technologies. **Spatial Differentiation**: Avoids duplication by focusing on smallholder farms and vulnerable households rather than broad landscape restoration.	**Mutual Reinforcement**: Link landscape management approaches with community-level innovations such as urban hydroponics, organic waste-to-feed systems, and mobile digital solutions. **Policy Coherence:** Support joint scaling of integrated water and agriculture management practices aligned with national adaptation priorities.
Increasing the resilience of both displaced persons and host communities to climate change-related water challenges in Jordan and Lebanon (2021–2025; AF; US$13,968,139)	Increase the response to water-related climate change vulnerability in Jordan and Lebanon within the context of the ongoing Syrian crisis.	AF	Grant US$ 14 M	*Start Date:* 10/20/2021 *Revised Completion Date:* 10/26/2026	Mafraq and Irbid	Ongoing	**Target Group Focus Complementarity:** UN-Habitat project concentrates on water infrastructure and planning for displaced populations and host communities; the current project emphasizes agriculture innovation and resilience among rural farmers and youth entrepreneurs. **Thematic Differentiation:** Their project is water security and urban planning-focused; ours is agricultural productivity, digital agriculture, and green value chain development.	**Strengthening Climate Resilience Nexus**: Link municipal water-saving plans with climate-resilient agriculture hubs (urban and peri-urban). **Joint Capacity Building:** Cross-training on smart water solutions and climate-informed farming practices for displaced persons, host communities, and vulnerable farmers.

G. Learning, knowledge management, and dissemination of lessons learned

Effective knowledge management, including the generation, collection, and dissemination of information, is a critical component of climate adaptation action. Access to up-to-date, detailed information on climate trends and adaptation techniques is essential for stakeholders such as government agencies, agricultural extension services, and local communities to implement climate-resilient interventions effectively and sustainably.

The proposed project integrates learning and knowledge management throughout its activities via the Monitoring, Evaluation, and Learning (MEL) framework, rather than through a standalone component. This approach ensures that insights, innovations, and lessons learned on climate-resilient agriculture and adaptation are systematically captured, documented, and disseminated.

Implementation experiences, including successes, challenges, and innovations, will be recorded through participatory monitoring, field trials, and community feedback mechanisms. The project will synthesize these insights into user-friendly knowledge products, such as technical briefs, training manuals, policy recommendations, case studies, and digital learning modules, which will be shared with farmers, local authorities, NGOs, and development partners through workshops, field demonstrations, peer-to-peer exchanges, school programs, media, and online platforms.

Embedding learning within the MEL framework ensures that knowledge informs adaptive management, guides policy and planning, and supports the replication and scaling of effective interventions. The project emphasizes gender-responsive and youth-inclusive learning approaches, ensuring that marginalized voices are reflected in knowledge-generation. Peer-to-peer learning and community exchange visits will enable local farmers, particularly women and youth, to share indigenous knowledge and learn from successful experiences in similar contexts. Moreover, collaboration with national and regional initiatives will create synergies through joint learning activities, resource-sharing, and the promotion of scalable best practices.

Through these mechanisms, the project will contribute to a broader knowledge on climate resilience and sustainable agriculture, support evidence-based policymaking, and strengthen institutional and community capacities to replicate and upscale effective interventions beyond the project's lifespan.

H. Consultative process

The project preparation phase employed an inclusive and participatory consultative process, fully aligned with the Environmental and Social Policy and Gender Policy of the Adaptation Fund. The approach began with a comprehensive stakeholder mapping exercise to ensure broad engagement across public institutions, civil society, the private sector, and vulnerable groups, including women and youth (See annexes).

Initial consultations were conducted with key government stakeholders, including the Ministries of Agriculture, Environment, and Water and Irrigation/Jordan Valley Authority (JVA). These discussions focused on aligning the project with national adaptation priorities, climate policy frameworks, and water governance strategies.

Engagement with Civil Society Organizations (CSOs) and Non-Governmental Organizations (NGOs) provided insights into the specific climate-related challenges faced by vulnerable populations. These discussions highlighted barriers to equitable access to climate-resilient smart agricultural practices and efficient water resources use, particularly for women, youth, and smallholder farmers.

Consultations extended to private sector actors, such as the Jordan Exporters & Producers Association for Fruit & Vegetables (JEPA), who shared perspectives on market access constraints, export potential, and financing challenges related to climate-smart agricultural technologies. Additionally, dialogues with technology and service providers, such as GrowTech and Mate Company, explored the integration of innovative solutions, including AI-driven agricultural tools, remote sensing for soil monitoring, and advanced irrigation technologies.

Engagements with financial institutions, such as the Agricultural Credit Corporation (ACC), were also undertaken to evaluate the existing financial mechanisms and their accessibility for smallholder farmers and women entrepreneurs to invest in climate-resilient practices

Building on Jordan's adaptation priorities and Nationally Determined Contributions (NDCs), vulnerable groups in Irbid, Amman, Madaba, and Aqaba were identified, with a special focus on small-scale farmers in the Jordan Valley and vulnerable urban communities in Amman and Aqaba. Field visits to these regions enabled direct engagement with farmers, cooperatives, and agribusinesses, allowing the project team to assess local vulnerabilities, capacity-building needs, and interest in sustainable practices such as hydroponics, aquaponics, and post-harvest management.

Consultations with the Aqaba Special Economic Zone Authority (ASEZA), and local community representatives were conducted to explore opportunities to pilot modern and climate-smart aquaponic farms in a public-private-partnership (PPP) business model, and hydroponic and aquaculture farmers with agricultural SMEs and youth and women associations. During the consultation meeting with the ASEZA team, land acquisition and in-kind contributions were proposed by the senior management. Accordingly, an innovative climate smart aquaponic farm got proposed for Aqaba as a triple purpose benefits for the locals and Aqaba administration, which includes local (i) food production for local consumption (ensuring sustainable food and nutrition security in cities); (ii) serving as living-lab for youth entrepreneurs and students; (iii) piloting the actualization of future food sovereignty in the region.

The consultative process culminated in a multi-stakeholder workshop held in Amman, which brought together representatives from government ministries, CSOs, financial institutions, academia, the private sector, and research organizations. The workshop provided a platform to validate the project's intervention framework and identify key priorities, including:

- Expansion of climate-smart irrigation systems
- Development of digital marketing platforms
- Capacity building for value-added crop production
- Promotion of financial inclusion for small-scale and marginalized farmers

This inclusive and participatory process will continue throughout the full proposal development phase, ensuring iterative feedback, enhanced coordination, and the refinement of project activities. This approach guarantees that the project remains responsive to the needs of vulnerable communities, while promoting gender equity and adhering to the Adaptation Fund's social and environmental safeguards.

A summary table of key stakeholders consulted, including public institutions, private entities, research centres, and women- and youth-led NGOs, is provided in Table 7 below:

Table 7: Summary of entities/participants who contributed to community and stakeholder consultations conducted across four governorates in Jordan:

Part 1: Community consultation, including smallholder farmers, women's associations, urban and peri-urban youth, and women

Date of consultation	Consulted entity/group	No. of participants (M/F)	Selected core topics discussed	Outcome of the meeting	Where the needs and priorities are

					addressed in the project
8 Dec 2025	Northern Jordan Valley - Group 1: Smallholder Farmers	25 (14M/11F)	Climate impacts	Scaling of climate-smart agriculture, water use, and drought-tolerant crops	Components 1 and 2 (digital farming, smart crops)
8 Dec 2025	Northern Jordan Valley - Group 2: Smallholder Farmers	25 (10M/15F)	Women in agriculture	Support women's cooperatives, home-based agro-processing, targeted training,	Component 2 (Output 2.3 - 2.5)
9 Dec 2025	Southern Jordan Valley - Group 1: Smallholder Farmers	25 (14M/11F)	Structural constraints	Adoption of climate-resilient crops, technical support, including access to finance, water governance, and market access.	Component 2 (Output 2.3 - 2.5); Component 3 (Output 3.1)
9 Dec 2025	Southern Jordan Valley - Group 2: Smallholder Farmers	25 (5M/20F)	Women's labor & needs	Enabling access to formal employment, climate insurance, and supporting local food enterprises.	Component 1 (Output 1.1 &1.2) Component 2 (Output 2.3 - 2.5)
11 Dec 2025	Aqaba - Focus Group: Youth & Women	25 (9M/16F)	Youth & climate-smart agriculture	Support green enterprises, adopt precision agriculture CSA, finance, skills, and green jobs.	Component 1 (Output 1.1 &1.2) Component 2 (Output 2.3 - 2.5)

Part 2: Stakeholders' consultation

Date of consultation	Consulted Entity/Group	No. of Participants (M/F)	Key Topics Discussed	Outcome of the Meeting	Topics addressed in the project
16 Feb 2025	Ministry of Environment (National Designated Authority)	3 (2M/1F)	National priorities for climate change, resilient food systems, green jobs, and sustainable collaboration	Commitment confirmed for endorsement and AF submission	Letter of endorsement granted to the IE (UNIDO)
16 Feb 2025	Jordan Exporters & Producers Association (JEPA)	4 (3M/1F)	Marketing systems and postharvest loss as a bottleneck for climate-resilient agribusiness	Climate-smart logistics, storage, and market linkages prioritized	Component 2 (Output 2.3-2.5)
17 Feb 2025	Ministry of Water and Irrigation / Jordan Valley Authority (JVA)	3 (3M/0F)	Water scarcity and precision agriculture, food systems	Water scarcity is prioritized as a critical problem; smart irrigation and GeoAI solutions are prioritized	Components 1 &2 (All outputs informed by the national priority)
17 Feb 2025	Ministry of Agriculture (MoA)	3 (2M/1F)	Food loss, market linkages, and best practices for water-efficient agriculture	Postharvest loss reduction, low-cost hydroponics/ aquaponics, rainwater harvesting, market access, and capacity building	Components 1 &2 (All outputs informed by the national priority)
17 Feb 2025	GrowTech Company (AI & Innovation Technology)	2 (2M/0F)	Digital farming/ precision agriculture	Identified as a potential GeoAI and remote-sensing-based services provider	Component 1 (Output 1.1) Component 2 (Output 2.2)
17 Feb 2025	Agricultural Credit Corporation (ACC)	3 (3M/0F)	Private sector engagement, scaling	ACC ensures the scaling of the proposed project for nationwide impact through enabling	Component 3 (Output 3.1)

				access to climate finance.	
18 Feb 2025	National Agricultural Research Center (NARC)	2 (2M/0F)	Area of collaboration for sustainable food systems	NARC - service provider; the Ministry of Agriculture, and Jordan Valley Authority - EEs	NARC & MoA – Component 1 JVA – Component 2
18 Feb 2025	Mate Company (Technology Supplier)	2 (2M/0F)	Agricultural modernization for climate resilience	Agri-tech and digital farm services platform	Component 1 (Output 1.1) Component 2 (Output 2.2)
19 Feb 2025	Eco Consult Hub / Private Sector Partners	2 (2M/0F)	CSA	Support access to climate-smart technology and finance; water-efficient agribusiness prioritized	Component 1 (Output 1.1 & 1.2) Component 2(Output 2.2 &2.4) and
22 Feb 2025	Aqaba Special Economic Zone Authority (ASEZA)	2 (1M/1F)	Water management and use efficiency; urban and peri-urban green jobs	Piloting hydroponic/ aquaponic systems, building tourism – aqua- hydroponic business linkage, and youth and women empowerment	Component 1 (Output 1.1 &1.2)

During the community and stakeholders' consultation, 83 women and 70 men actively participated.

Inclusive climate resilience in Jordan (gender and community assessments):

The gender and community assessments reveal that women, youth, and marginalized groups in Jordan are disproportionately affected by climate variability due to persistent barriers in accessing land, water, finance, technology, and decision-making platforms. Women play an essential role in small-scale agriculture and post-harvest processes, but often lack ownership rights, financial independence, and formal recognition of their contributions. Youth and refugees, particularly in rural and peri-urban areas, face high unemployment and limited opportunities to engage in climate-smart agriculture or green enterprise development.

Climate change further widens these disparities, increasing workloads for women, deepening livelihood insecurity, and heightening vulnerability to droughts and water scarcity. Without deliberate inclusion, emerging green and agri-innovation opportunities risk being dominated by men. Nonetheless, the assessments highlight strong potential for gender-responsive and inclusive adaptation. Women's traditional knowledge/ practices in agricultural water management, drought resilient seed selection, and household resilience, along with youth's growing interest in agri-innovation, provide a robust foundation for equitable climate action.

In response, the project places inclusiveness at the center of its design, ensuring that women and youth serve as planners, decision-makers, and beneficiaries. Key measures include:

- Ensuring equal access to capacity-building, digital tools, and climate information and finance
- Strengthening representation in cooperatives, Living Labs, and value-chain governance
- Promoting women- and youth-led enterprises in aquaponics, hydroponics, composting, and post-harvest value addition.

Community consultations led by NARC and UNIDO (2025) reaffirmed the urgency of tackling water scarcity, energy costs, and soil degradation, while showcasing communities' readiness to adopt water-efficient irrigation, renewable energy systems, regenerative soil practices, and green livelihood models. Women and youth expressed strong interest in participating when provided with accessible training, financing, and market linkages.

Overall, the project's inclusive approach ensures that climate adaptation and livelihood resilience are socially equitable, gender-responsive, and locally owned. Empowering women, youth, and vulnerable groups as key actors in climate-smart transformation, it strengthens social cohesion and advances Jordan's transition toward sustainable, climate-resilient food systems.

I. Justification for funding

The requested amount of US$ 7,000,000 is fully justified based on the comprehensive scope of the project and its alignment with the full cost of adaptation principle. The project has been structured to ensure that all planned outcomes and outputs can be fully realized using Adaptation Fund resources alone, thereby guaranteeing effective implementation and measurable impact regardless of the availability of supplementary co-financing. Jordan is among the world's most water-scarce countries and faces increasing vulnerability due to rising temperatures, declining rainfall, and recurrent droughts, all of which severely impact agricultural productivity and rural livelihoods. These climate-induced challenges are compounded by the country's limited adaptive capacity, especially among smallholder farmers, women, and youth groups that are most exposed to climate risks yet have the least means to cope.

The proposed project addresses these vulnerabilities by introducing integrated, climate-resilient solutions that go beyond incremental improvements and instead build long-term resilience in a transformative manner. A key component of the project is the adoption of smart farming technologies, including data-driven recommendations for irrigation scheduling, precision fertilization, pest and disease control, and weather alerts, which enable farmers to make timely, informed decisions and respond more effectively to climate variability. These innovations are essential adaptation measures, not business-as-usual development practices, as they specifically target climate-related stressors that are undermining food security and economic stability in rural areas.

In addition to smart farming, the project promotes climate-resilient agriculture practices such as agroforestry, drought-resistant crops, and improved water-use efficiency, and enhancing circularity demonstrated by the intended pilot urban aquaponic farm, while also supporting alternative livelihood options. These interventions are designed to reduce dependence on climate-sensitive crops, diversify income streams, and enhance household resilience. Without this adaptation support, many small-scale farmers risk further marginalization as conventional agricultural methods become less viable under worsening climate conditions.

The full cost of adaptation is also reflected in the project's focus on capacity building, knowledge transfer, and institutional strengthening. The funding will support training programs, farmer field schools, demonstration plots, and local market development, ensuring that adaptation measures are accessible, locally owned, and scalable. By leveraging existing infrastructure where possible and incorporating resource-efficient technologies, the project maximizes cost-effectiveness while minimizing environmental impact. These measures are not merely developmental, but they are essential investments to safeguard livelihoods against climate risks that are already materializing and expected to intensify.

Furthermore, the project is strategically aligned with Jordan's NAP and contributes directly to national climate priorities, including sustainable water management, food security, and inclusive economic development. It also supports the implementation of the Sustainable Development Goals (SDGs), particularly SDG2 (Zero Hunger), SDG3 (Good Health and Wellbeing, SDG 5 (Gender Equality), SDG 6 (Clean Water and Sanitation), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), and SDG 15 (Life on Land). By addressing systemic climate vulnerabilities and strengthening community-level resilience, the proposed investment represents a high-impact, scalable adaptation solution with long-term benefits for both people and ecosystems.

Overall, the requested funding represents the full cost of enabling vulnerable communities in Jordan to adapt to the adverse effects of climate change. It fills critical adaptation gaps that cannot be addressed

through market mechanisms or domestic resources alone, thereby ensuring that adaptation actions are not only implemented but are effective, equitable, and sustainable.

J. Project Sustainability

The project has been designed to ensure long-term sustainability across environmental, social, economic, financial, and institutional dimensions, with explicit arrangements for post-project O&M, institutional anchoring, and continuous service delivery.

Environmental sustainability is embedded across all components. Under Component 1, climate-smart urban agriculture systems (aquaponics, hydroponics, vertical farming) reduce water demand by up to 90% through closed-loop nutrient recycling, enabling sustained production in water-scarce cities. Under Component 2, regenerative agriculture, drought-tolerant crops, improved soil management, and solar-powered irrigation enhance soil health, increase water-use efficiency, and reduce pressure on fragile ecosystems. Component 3 reinforces this sustainability by institutionalizing these practices through climate-resilient policies, standards, and extension guidelines, ensuring they remain part of regular agricultural planning and service delivery.

Social sustainability is strengthened by community empowerment and inclusive decision-making. The Climate-Smart Urban Agriculture Living Labs (Component 1) and rural regenerative agriculture demonstration centres (Component 2) will continue to serve as community learning centres, enabling farmers, cooperatives, youth, and women to maintain and expand climate-resilient practices. The project ensures that Water User Associations, cooperatives, and producer groups include at least 40% women, supporting equitable representation and long-term leadership. These inclusive structures create social ownership and continuity of services beyond the project lifetime.

Economic and financial sustainability result from increased productivity, reduced post-harvest losses, new income streams (e.g., aquaponics, circular bioeconomy), and strong market linkages. Urban aquaponics and circular bioeconomy models (e.g., in Aqaba and neighbouring tourist attractive areas), and rural climate-smart production systems in the Jordan Valley, create new income streams for vulnerable households while reducing financial losses linked to climate shocks. Improved post-harvest practices and market linkages help stabilize incomes and reduce vulnerability to price and climate variability. These improvements ensure recurring revenue for both households and collective management groups. In addition, the project's sustainability is ensured through cost-recovery mechanisms and revenue-generating models (e.g., fee-for-service rural irrigation and cold storage facilities operated by the farmers' cooperatives and water user associations, and produce sales from Living Labs), and training programs to support long-term O&M. In addition, training on climate finance, insurance, and business planning equips farmers and SMEs to continue investing in adaptation measures without relying on project subsidies.

Institutional sustainability is secured through strong government ownership and integration of project approaches into national and local systems. Component 3 builds the capacity of the Ministry of Agriculture, JVA, Water User Associations, municipalities, and extension services to deliver climate-smart agriculture as part of their routine mandates. Policies, strategies, and operational guidelines developed under the project ensure long-term adoption, operable and inclusive EWSs, O&M, and budgeting for climate-resilient agricultural services.

Infrastructure and O&M arrangements have been clearly defined to ensure continuity after project completion. This includes: Climate-Smart Urban Agriculture Living Labs (Component 1) will be co-managed by the Ministry of Agriculture and local municipalities, with trained youth and women agripreneurs groups responsible for daily operations under public–community enterprise models; Aquaponics, hydroponics, and irrigation systems installed under Components 1 and 2 will include warranties, supplier-backed maintenance contracts, and user training to ensure reliable long-term operation; Decentralized cold storage and post-harvest infrastructure (Component 2) will be operated by cooperatives and Water User Associations under transparent fee-for-service structures that generate funds for maintenance and repairs;

Digital advisory systems, GeoAI platforms, and early-warning tools (Component 3) will be integrated into the Ministry of Agriculture's ICT and extension budgets, with government technicians trained in system monitoring and troubleshooting. These O&M mechanisms ensure that all physical and digital infrastructure remains functional beyond the life of the grant without requiring new external financing.

Scalability and replication are embedded in the project design. The urban Living Labs (Component 1) and rural demonstration centres (Component 2) will serve as national reference points for future replication by government, private sector, and civil society. Tools, guidelines, business models, and training curricula developed under Component 3 will be institutionalized within national extension and vocational training systems. The use of training-of-trainers (ToT) approaches ensures continuous scaling as government extension staff and cooperatives replicate and expand these climate-resilient models across additional municipalities and rural regions. Integration into sector policies further guarantees that scaling and replication become part of long-term national climate adaptation planning.

K. Environmental and social impacts and risks

Based on preliminary environmental and social screening conducted by UNIDO in alignment with AF's Environmental and Social Policy, the project is classified as Category B. This classification indicates that potential environmental and social risks are site-specific, limited in scale, and reversible, and can be effectively managed using standard mitigation measures. The project does not involve activities associated with significant or irreversible impacts such as involuntary resettlement, conversion of critical habitats, land acquisition without consent, or any action that could result in human rights violations. To ensure systematic risk management, a project-wide Environmental and Social Management Plan (ESMP) will be developed and applied throughout implementation. The ESMP will include screening checklists, site-specific mitigation plans (where needed), monitoring indicators, roles and responsibilities, and reporting procedures, and will ensure full compliance with the Adaptation Fund's 15 Environmental and Social Principles, as well as relevant national regulations. The Environmental and Social Risk Assessment Table below provides a principle-by-principle review of potential risks in accordance with the Adaptation Fund ESP. It identifies the nature and likelihood of each risk, along with clearly defined mitigation and management measures, monitoring requirements, and accountability arrangements. This structured approach ensures that the project consistently avoids harm, safeguards vulnerable groups, promotes equitable access to benefits, and strengthens climate resilience, while maintaining transparency and alignment with national and international environmental and social safeguard standards.

Table 8: Tabulated summary of environmental and social risks

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law		**Risk - Low:** The Implementing Entity (IE) will ensure full compliance with all relevant laws and international obligations. A legal review will identify activities requiring permits or approvals, and the IE will coordinate with authorities to secure them. Compliance will be continuously monitored, and a legal checklist will be integrated into project reporting to ensure transparency.
Access and Equity		**Risk – Low:** The PIE will ensure equitable access to project benefits by promoting inclusion, non-discrimination, and equal participation of all community members, including marginalized and vulnerable groups. **Key measures include:** ▪ **Stakeholder Mapping:** Identify all stakeholders, including vulnerable and displaced groups, to ensure inclusive participation. ▪ **Risk Analysis:** Assess barriers to access and inequality risks to guide mitigation measures.

		These measures will be applied throughout the project, supported by stakeholder engagement and grievance mechanisms to ensure equity, inclusion, and accountability.
Marginalized and Vulnerable Groups		**Risk - Low:** The project, in collaboration with the national institutions, has conducted initial stakeholder mapping, engaging vulnerable groups and private sector actors to capture their key concerns and needs. However, a more detailed participatory analysis will follow during full proposal development. This detailed analysis will include: ▪ **Identification and quantification**: map and quantify marginalized, minority, and vulnerable groups in target areas. ▪ **Characterization:** assess socio-economic conditions, vulnerabilities, and specific needs of each group. ▪ **Impact assessment**: identify potential social, economic, or environmental risks and ensure mitigation measures are included in project design. **Establish monitoring mechanisms:** establish monitoring and grievance mechanisms with feedback loops to track impacts, prevent exclusion, and safeguard rights.
Human Rights		**Risk - Low:** The risk of human rights violations is low, but potential impacts could be significant. The project incorporates safeguards, aligns with national laws and the Universal Declaration of Human Rights (UDHR), and prioritizes vulnerable groups such as women, youth, indigenous peoples, and refugees. Inclusive consultations, human rights screening, and a grievance redress mechanism will ensure community participation and the timely resolution of concerns. Compliance will be monitored through periodic assessments, reinforcing the project's commitment to equitable, inclusive, and rights-based climate resilience.
Gender Equality and Women's Empowerment		**Risk - Moderate:** The project aims to benefit all community members, but existing gender disparities, such as limited land ownership, access to inputs, finance, or decision-making, may restrict participation for women, youth, and marginalized groups (See annex 2 and annex 3). To address this, gender equality will be mainstreamed across all components, supported by a comprehensive assessment of gender roles, resource access, and the legal and institutional context during full proposal development. The PIE will address exclusion risks and promote women's empowerment to ensure equitable project benefits. Key actions include: ▪ Designing inclusive capacity-building activities for both women and men. ▪ Ensuring equal participation in decision-making bodies, such as water user associations and farmer cooperatives. ▪ Supporting women-led enterprises and diversified livelihoods, including aquaponics. ▪ Integrating gender-sensitive indicators into monitoring and evaluation. ▪ Collaborating with local women's organizations and stakeholders to guide gender-responsive implementation. These measures and gender-sensitive monitoring will promote equity, empower vulnerable groups, and support inclusive, sustainable development.
Core Labour Rights		**Risk - Low:** Although the risk is low, any impact on workers' rights or project credibility could be significant. The project will mitigate this by adhering to ILO core labour standards and national labour laws, integrating them into design, procurement, and implementation. **Key measures include:** ▪ Embedding labour rights in all project contracts. ▪ Training stakeholders on core labour standards and safe work conditions. ▪ Setting up monitoring and confidential grievance systems. ▪ Building capacity on labour rights in rural and marginalized areas. These measures will ensure decent work conditions and uphold labour rights in line with the Adaptation Fund's Environmental and Social Policy.

Indigenous Peoples		**Risk - Low**: In line with the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) and national frameworks, a preliminary screening confirmed that no Indigenous Peoples reside in or hold customary rights to the project areas; therefore, no direct risks are anticipated. However, the project will maintain a precautionary and inclusive approach. A detailed assessment during the full proposal stage will reconfirm findings through consultations and field verification to ensure no groups are excluded. If any Indigenous Peoples are later identified, the project will apply appropriate safeguards, including Free, Prior, and Informed Consent (FPIC), consistent with UNDRIP and national laws.
Involuntary Resettlement		**Risk - Low:** The project will not involve land acquisition or displacement. However, small infrastructure works (e.g., aquaponic or hydroponic farms, storage, small-scale irrigation infrastructure, and processing facilities) may pose a low risk of land access issues. A social and environmental assessment with site screening will prevent involuntary resettlement. Where land is needed, publicly owned or voluntarily provided land, with full consent and documentation, will be used. The project will follow the Adaptation Fund's safeguards and maintain a grievance mechanism for fair issue resolution.
Protection of Natural Habitats		**Risk - Low:** Project activities will take place on existing agricultural land, with no expected encroachment or degradation of natural habitats. At the full proposal stage, an Environmental and Social Risk Assessment will confirm that activities do not impact sensitive ecosystems. Site selection will exclude ecologically important areas and comply with national land use and environmental regulations. Regular environmental monitoring and stakeholder engagement will ensure early detection of any unforeseen impacts. Environmentally sound practices, such as buffer zones and low-impact construction, will be applied to safeguard ecosystems and promote sustainable land use.
Conservation of Biological Diversity		**Risk - Medium:** the project may affect biodiversity through activities near sensitive ecosystems or agricultural intensification. To mitigate risks, environmental screenings will identify and exclude critical habitats. Any restoration will use native species, and sustainable farming practices will be promoted. Buffer zones will be established as needed, and biodiversity conservation will be integrated into training and awareness activities. Continuous monitoring and adaptive management will ensure alignment with national environmental standards and long-term ecosystem protection.
Climate Change		**Risk - Low**: Occurrence of unforeseen climate hazards, such as prolonged droughts, extreme heatwaves, or changes in seasonal rainfall, which may affect agricultural productivity and water availability. While severe climate hazards are unlikely, their potential impact on agriculture and livelihoods is high. The project embeds climate adaptation, promoting resilient practices, efficient irrigation, drought-tolerant crops, and early warning systems. A climate risk assessment will evaluate exposure and environmental impacts, guiding the Environmental and Social Management Framework. These measures reduce climate risks, enhance community resilience, and support national climate adaptation and mitigation goals.
Pollution Prevention and Resource Efficiency		**Risk – Low:** New agricultural practices, infrastructure (aquaculture, hydroponics, pilot facilities, small-scale irrigation), and agricultural inputs may cause pollution and inefficient resource use. The project will comply with environmental standards, promote efficient use of water, energy, and materials, and apply sustainable inputs such as organic fertilizers, IPM, and locally adapted crops. Waste will be treated, reused, or recycled, and staff and beneficiaries will receive environmental training. Continuous monitoring and corrective actions will ensure protection of the environment, improved resource efficiency, and long-term ecosystem sustainability.

Public Health		**Risk- Low:** Although the likelihood of adverse health impacts is low, the project recognizes the potential consequences and will mitigate risks through integrated health screenings and assessments following WHO guidelines and national standards. Interventions involving water management, irrigation infrastructure, aquaculture, hydroponics, and agricultural inputs will be designed to protect community health. Special attention will be given to waterborne diseases, waste management, and agrochemical exposure, with preventive measures such as awareness campaigns, safe handling training, and environmentally friendly practices. The project will coordinate with the Ministry of Health and local authorities to ensure alignment with national policies and effective monitoring. This approach safeguards public health while supporting climate resilience and livelihood objectives.
Physical and Cultural Heritage		**Risk – Low**: Project activities (small-scale farms, aquaponics, hydroponics, water infrastructure) may inadvertently affect archaeological, historic, or sacred sites. The project will conduct a preliminary heritage screening to identify sensitive sites and engage local authorities and communities to ensure their protection. If heritage materials are discovered during implementation, work will halt, authorities will be notified, and mitigation measures applied. Staff and contractors will receive training on cultural sensitivity, and ongoing monitoring will ensure heritage sites are safeguarded throughout the project.
Lands and Soil Conservation		**Risk – Low:** Degradation or conversion of productive land providing essential ecosystem services Although the likelihood of land degradation is low, its potential impact on ecosystem services and productive land is moderate to high. The project will integrate soil and land conservation measures, including identifying fragile soils, mapping erosion-prone areas, and assessing risks using GeoAI technology. Interventions will include sustainable land management, erosion control, contour farming, organic soil amendments, and buffer zones in ecologically sensitive areas. Farmers and communities will receive training on best practices, and monitoring protocols will track land use and soil health throughout the project. These measures will protect ecosystem services, maintain productivity, and ensure environmental and social sustainability.

- **Partially Unidentified Sub-Projects (USPs)**

The project clearly acknowledges that the use of partially unidentified sub-projects (USPs) is appropriate and necessary under Components 1 and 2. The proposed interventions, such as climate-smart urban agriculture systems, aquaponics pilots, digital water-management technologies, circular bioeconomy solutions, and rural post-harvest and livelihood initiatives, are highly site-specific and dependent on further diagnostic work. At the concept stage, precise locations, technical configurations, and beneficiary groups cannot yet be defined because they require feasibility and environmental assessments, hydrological and soil testing, value-chain analysis, digital readiness evaluations, and gender-responsive community targeting. In line with the Adaptation Fund's Updated Guidance on USPs (Decision B.39/52), these activities are therefore classified as partially unidentified.

The USP approach is justified because it provides the flexibility needed to tailor each intervention to its local environmental, socio-economic, and governance context. This ensures technical soundness, climate resilience, and long-term sustainability, while reducing the risk of maladaptation. Implementation of USP-type activities will involve coordinated roles across UNIDO, the Ministry of Agriculture, the Water Authority of Jordan, the Jordan Valley Authority, municipalities, climate and ICT agencies, private agritech partners, cooperatives, and youth and women's groups.
During the full proposal stage, the project will develop a structured safeguards framework to ensure that all USP-type activities comply fully with the Adaptation Fund's 15 Environmental and Social Principles. This framework will include: USP selection criteria and decision-support tools to guide the identification of eligible sites and beneficiaries; environmental and social screening procedures for each USP to evaluate risks and define mitigation measures; an exclusion list to prevent consideration of any high-risk or non-compliant

activities; gender-responsive and inclusive consultation protocols tailored to USP design and implementation; and integration of all USP safeguards processes into the project's ESMP at the full proposal stage. These measures will ensure that USP activities are designed and implemented in a safe, transparent, equitable, and fully compliant manner, while preserving the operational flexibility required for innovation in climate-smart agriculture, digital water management, and diversified rural and urban livelihoods.

Table 9: Tabulated summary of USP types and justification (5 Major USP Categories)

No.	USP Type / Activity Area	Reason for Non-Identification at Concept Stage	Justification for USP Approach	Responsible Stakeholders
USP-1	Climate-Smart Urban Agriculture Systems (Living Labs, aquaponics, hydroponics, Water treatment for food production).	Sites, design specifications, and beneficiary groups depend on urban land availability, feasibility studies, water-quality testing, and youth/women SME targeting.	Urban CSA systems must be tailored to local constraints (water stress, space limitations, market demand). USP flexibility ensures appropriate siting and avoids maladaptation.	UNIDO, MoA, Municipalities, ASEZA, Youth & Women SMEs
USP-2	Digital Water Governance & Smart Irrigation Technologies (IoT sensors, smart irrigation, GeoAI, automatic-weather stations)	Technical architecture and hosting arrangements require digital readiness assessments, infrastructure mapping, and climate-risk diagnostics.	Ensures digital solutions are adapted to local hydrology, data connectivity, and institutional capacity. USP approach minimizes technical and operational risks.	MoA, WAJ, JVA, ICT Providers, Municipalities
USP-3	Circular Bioeconomy & Waste-to-Value Systems (organic waste conversion, BSF units, biofertilizer, and feed production)	Locations depend on waste-stream analysis, market demand, SME readiness, and environmental screening.	Waste-to-value systems must match organic waste quality and availability, and operator capacity. USP flexibility ensures economically and environmentally viable placement.	UNIDO, Municipalities, MoA, NARC, Private Agribusinesses, Green enterprises, Youth/ Women Groups
USP-4	Post-Harvest, Cold Chain & Market Infrastructure (storage, processing units, aggregation centres)	Facility siting requires value-chain assessments, product flow mapping, cooperation with farmers/SMEs and exporters, logistics systems, and environmental review.	Ensures infrastructure is sized and located according to real demand, infrastructure, and operable supply chain systems, reducing spoilage and maximizing climate-resilience benefits.	MoA, Municipalities, SMEs, JPEA, NARC, Farmers' Cooperatives, Private Cold-Chain Firms, Supermarket chains
USP-5	Climate-Resilient Rural Agriculture & Diversified Livelihoods (regenerative agriculture, drought-tolerant crops, beekeeping, agro-tourism, food processing)	Final sites and beneficiaries require vulnerability assessments, agro-ecological profiling, and gender-responsive community consultations.	Rural resilience measures must match local climate risks and livelihood capacities. USP approach ensures relevance, inclusion, and sustainability.	MoA, JVA, NARC, Rural Cooperatives, NGOs, Women & Youth Groups

PART III: IMPLEMENTATION ARRANGEMNETS

A. Implementation Arrangement and Roles of Partners

The project will be implemented through a coordinated partnership framework that ensures strong national ownership, efficient execution, and sustainability of outcomes. UNIDO will serve as the Project Implementing Entity, responsible for overall fiduciary oversight, supervision of the Executing Entities, reporting to the AF, and ensuring compliance with AF ESP/GP and fiduciary standards. In addition, UNIDO may undertake specific execution functions for selected outputs where it has a clear comparative advantage in delivering key adaptation solutions, upon request from the Government of Jordan. However, all implementation and execution functions carried out by UNIDO will operate independently, with a clear firewall in place to prevent any conflict of interest. Thus, UNIDO, as the IE, establishes organizational, operational, and financial separation between its IE functions (oversight, supervision, fiduciary management, reporting), and its EE functions (on-the-ground implementation or execution of activities). Thus, a firewall ensures independent decision-making channels, separation of financial management systems, separate project oversight and execution teams, clear documentation of roles and responsibilities, and no overlap in staff who supervise and staff who execute. These independent operating arrangements will be further detailed as a guiding framework and presented to the AF during the PFG phase, and

subsequently at project inception, to ensure full transparency and address any potential concerns. UNIDO may execute activities, including the establishment and operation of the Climate-Smart Urban Agriculture Living Labs under Component 1, and will co-execute several outputs under Component 2 and activities under Component 3 related to capacity building and institutional strengthening, e.g., strengthening national climate governance frameworks, supporting revision and alignment of agricultural policy and strategy documents, and coordinating national and sub-national institutions to mainstream climate adaptation measures. The Ministry of Agriculture (MoA) will act as the national technical lead for Output 1.2 and will oversee the demonstration and scale-up of climate-smart agricultural technologies in urban and peri-urban areas. MoA will coordinate engagement with youth, farmers, SMEs, and urban agripreneurs, lead extension services and training-of-trainers programs, and support integration of project lessons into national agricultural advisory systems.

The Jordan Valley Authority (JVA), as a national executing entity, will lead the execution of Component 2, which focuses on strengthening rural resilience and adaptive capacity among smallholder farmers in the Jordan Valley. JVA will be responsible for planning and executing land and water management interventions, hosting the GeoAI-enabled climate and farm monitoring hub, and coordinating clustered irrigation and smallholder demonstration sites. UNIDO will be responsible to execute Component 3, focusing on strengthening national climate governance frameworks, supporting revision and alignment of agricultural policy and strategy documents, and coordinating national and sub-national institutions to mainstream climate adaptation measures.

To ensure technical rigor, the project will engage specialized international research and technology partners. ICARDA will be subcontracted to provide research-based climate-resilient agricultural solutions across both urban and rural components, including support in digitized irrigation and nutrient management, drought-tolerant crop selection, aquaponics and hydroponic system design, fish production management, and training for extension officers and local experts. ICIPE will provide specialized technical assistance related to circular bioeconomy and nature-based approaches, including the conversion of organic waste into insect-based sustainable fish feed and organic fertilizers, as well as integrated biological pest management to reduce chemical input dependency. The Agricultural Credit Corporation (ACC) will contribute to strengthening financial resilience by facilitating access to climate finance instruments, microinsurance schemes, and concessional financing opportunities for smallholder farmers, youth, and women-led agribusinesses. Specialized climate-smart agricultural technology providers such as Metos and Grow-Tech will support the digitalization of farm management through installation of IoT-enabled monitoring tools, automated irrigation systems, climate and soil monitoring instruments, and related training on data interpretation and use for climate-responsive decision-making.

A Project Steering Committee (PSC) composed of UNIDO, MoA, JVA, and other key government counterparts (to be identified during the PFG phase)will provide strategic guidance, ensure alignment with national adaptation priorities, review implementation progress, and facilitate inter-institutional coordination. Day-to-day operations will be managed by a Project Management Unit (PMU) hosted by UNIDO, which will coordinate planning, procurement, financial management, monitoring, evaluation, reporting, and stakeholder engagement. This integrated implementation arrangement ensures that each partner contributes its comparative advantage, strengthens institutional capacity at multiple levels, and promotes sustainability and replication of climate-resilient agricultural solutions beyond the project duration.

B. Project Alignment with the Results Framework of the Adaptation Fund

Table 9: Project Alignment with AF results framework

Project Objective(s)[2]	Project Objective Indicator(s)	Adaptation Fund Outcome	Adaptation Fund Outcome Indicator	Grant Amount (USD)
Objective 1. Enhance water efficiency and climate-informed decision-making: *Improve sustainable water use through efficient technologies and strengthen real-time climate monitoring and advisory systems to* guide agricultural and planning decisions.	▪ % of households with enhanced awareness of climate change risks, and effectively applied climate adaptive solutions.	Outcome 1**:** Reduced exposure to climate-related hazards and threats.	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis.	1,400,000
Objective 2. Promote climate-resilient, diversified livelihoods with youth and women empowerment: *Support resilient farming practices and new income opportunities—especially urban agriculture—while building the skills and entrepreneurship capacities of youth and women.*	▪ % of target beneficiaries adopted best climate resilient practices. ▪ Number of farmers enabled to make an informed decision and take climate action ▪ % of beneficiaries (by gender and age; and at least 50% women) with increased income or diversified climate-resilient livelihoods.	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level.	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses.	1,713,105
		Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in target areas.	6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods.	1,855,555
Objective 3. Strengthen value chains and institutional capacity for climate adaptation: *Upgrade postharvest systems, value addition, and market access, while enhancing institutional capabilities for climate-adaptive planning, coordination, and climate finance mobilization.*	# of institutions improved their capacity in providing climate-responsive adaptive solutions and enabling smallholder farmers access to reliable climate information for informed action.	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased.	600,000
	# of improved policies specific to water use and water use governance, land use strategies, and legal frameworks used as a guideline for strengthened CSA practices.	Outcome 7: Improved policies and regulations that promote and enforce resilience measures.	7. Climate change priorities are integrated into national development strategy.	150,000

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

	# of agricultural innovations and best practices toolkits developed and adopted into the farming systems led by local institutions for effective actions.	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies.	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	250,000
Total outcome level grant amount				**5,968,660**
Project Outcome(s)	**Project Outcome Indicator(s)**	**Adaptation Fund Output**	**Adaptation Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1: Climate resilience in urban food systems enhanced by mainstreamed CSA technologies that increase productivity	# of new climate adaptation strategies formulated and policy recommendations drafted	Output 1.1**:** Risk and vulnerability assessments conducted and updated	1.1. No. of projects/ programmes that conduct and update risk and vulnerability assessments (by sector and scale)	400,000
	▪ # of new climate-resilient technologies adopted ▪ # of green jobs generated for youth and women ▪ # of farmers and young agripreneurs (disaggregated by gender) engaged in diversified income-generating activities.	Output 1.2: Targeted population groups covered by adequate risk reduction systems	1.2.1. Percentage of target population covered by adequate risk-reduction systems	1,000,000
Outcome 2: Rural agricultural resilience and farmers' income enhanced through the integration of agricultural innovations.	# of smallholder farmers adopted appropriate climate adaptation technologies and practices # of smallholder farmers reported an increase in crop productivity (% women) # of new climate resilient technologies adopted # of improved drought and salinity tolerant seeds/seedlings distributed % of postharvest loss reduced after the project intervention # of enterprises benefited from postharvest technologies adopted	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	1,650,000
	% of household income increased after the project interventions	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of	1,118,660

			individual or community livelihood strategies	
	# of households improved their food and nutrition security	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability.	6.2.1. Type of income sources for households generated under climate change scenario	800,000
Outcome 3: Enhanced institutional capacity and policy frameworks for climate-resilient agriculture established in target Governorates.	# of experts trained to effectively plan and proactively respond to extreme weather events.	Output 2.1: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	250,000
	# of bankable business plans developed to enable institutions to access climate finance	**Output 2.2:** Increased readiness and capacity of national and sub-national entities to directly access and program adaptation finance	2.2.1 No. of people benefitting from the direct access and enhanced direct access modality	200,000
	# of climate-smart technological approaches, bioeconomy, and nature-based solutions mainstreamed into national development plans	**Output 7:** Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector).	250,000
			7.2. No. of targeted development strategies with incorporated climate change priorities enforced.	100,000
	# of climate innovations co-generated by the local institutions	Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	200,000
Total output level grant amount				**5,968,660**

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

A. **Record of endorsement on behalf of the government**[3]**:** Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments as possible if a regional project/programme:

H.E. Dr. Aiman Abdalla Soleiman Minister of Environment Ministry of Environment	Date*: (Month, day, year)* December 9, 2025

B. **Implementing Entity certification:** *Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address*

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Economic Modernization Vision - 2033(EMV), National Adaptation Plan - 2021(NAP), National Climate Change Policy 2022–2050 (NCCP), Long-Term Strategy - 2050(LTS), the Updated Nationally Determined Contributions - 2021(NDCs), Health National Adaptation Plan (HNAP) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender 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	
Name & Signature/ Implementing Entity Coordinator: Ganna Onysko Ms. Ganna Onysko Senior GEF, GCF, AF Coordinator Division of Funding Partner Relations Directorate of Global Partnerships and External Relations United Nations Industrial Development Organization - UNIDO Implementing Entity Coordinator	
Date: *(Month, Day, Year): 4 March*, 2026	Telephone: +43 1 26026 3708
Project Contact Person: Ms. Yvonne Lokko	
Email: Y.LOKKO@unido.org	

[3] 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.

Annexes

Annex 1: Government Endorsement Letter – Ministry of Environment

Ministry of Environment

Ref.No 7-2-3965
Date 13-7-2025

Adaptation Fund Board Secretariat
c/o Global Environment Facility
Email: Secretariat@Adaptation-Fund.org
Mail stop: N 7-700
1818 H Street NW
Washington DC 20433
USA
Fax +1 202 522 3240

Subject: Endorsement for "*Building resilience and adaptation to climate change through innovation and entrepreneurship for green jobs in Jordan*" by UNIDO

Dear Sir,

In my capacity as designated authority for the Adaptation Fund in Jordan, I confirm that the above national project/programme 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 Jordan.

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project/programme will be implemented by the United Nations Industrial Development Organization (UNIDO) in collaboration with the Ministry of Agriculture, the Jordan Valley Authority and partly executed by UNIDO.

Please accept my high esteem and consideration,

Sincerely,

Minister of Environment

Dr. Munaver Khalid Radaideh

THE HASHEMITE KINGDOM OF JORDAN
TEL : +962 6 5560113 FAX : +962 6 5516377 P.O.BOX : 1408 AMMAN 11941 JORDAN www.moenv.gov.jo

Ministry of Environment

Ref.No 7-2-653
Date 27-1-2026

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

Subject: Letter of Support for UNIDO's execution role in Components 1, 2, and 3 in Jordan for "Building resilience and adaptation to climate change through innovation and entrepreneurship for green jobs in Jordan"

With reference to the earlier Letter of Endorsement, and as the primary contact within the Designated Authority in Jordan for the Adaptation Fund, this is to convey the Government's agreement for the United Nations Industrial Development Organization (UNIDO) to serve as the Executing Entity for specialized activities in Component 1, 2, and 3 under the proposed project titled "Building resilience and adaptation to climate change through innovation and entrepreneurship for green jobs in Jordan"

UNIDO is requested to execute the above-mentioned components and related deliverables due to its proven track record and well-established technical expertise in sustainable value-/ supply-chains, climate-smart technologies and best practices, the promotion of climate-resilient agrifood systems, and institutional capacity-building through South-South Cooperation for the effective deployment, monitoring, and scaling up of adaptation solutions. In addition, UNIDO brings emerging climate solutions that support water user associations, small urban/ peri urban agro- and aqua-preneurs, and agri-service providers in adopting improved, climate-informed production practices and evidence-based decision-making systems.

It is important to emphasize that UNIDO's engagement is limited in scope and complementary in nature, while the project remains fully country-driven and firmly aligned with Jordan's national development and adaptation priorities.

Sincerely,

Minister of Environment

Dr. Aiman A. Soleiman

Revised PFG Submission Form[1]

Project Formulation Grant (PFG)

Submission Date: 28 November 2025

Adaptation Fund Project ID:

Country/ies: Jordan

Title of Project/ Programme: Building resilience and adaptation to climate change through innovation and entrepreneurship for green jobs in Jordan

Type of IE (NIE/RIE/MIE): MIE
Implementing Entity: United Nations Industrial Development Organization (UNIDO),
Executing Entity/ies: UNIDO

A. Project Preparation Timeframe

Start date of PFG	June 2026
Completion date of PFG	December 2026

B. Proposed Project Preparation Activities ($)

List of Proposed Project Preparation Activities	Output of the PFG Activities	US$ Amount	Budget note[2] (Based on Lead Organization)
Baseline assessment, initial stakeholder Engagement & Participatory Planning	Comprehensive stakeholder consultation reports, inputs integrated into proposal design	17,249	Baseline assessment – UNIDO USD10,000 Community and stakeholders' organization and Stakeholders Consultation Workshop – MoA/JVA – USD 7,249
Gender and Vulnerability Analysis	Gender-sensitive vulnerability and needs assessment report	10,000	Conduct desk review and stakeholder mapping - MoA/JVA – USD3,000

[1] As presented in AFB/PPRC.33/40 Annex 1.
[2] The proposal should include a detailed budget with budget notes indicating the break- down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

			Identification of vulnerabilities and inequities, collect and analyze disaggregated data, develop recommendations and integrate findings, and validation and stakeholder engagement – UNIDO – USD7,000
Environmental & Social Risk Assessment (ESS)	ESS screening, risk mitigation framework, and compliance checklist	20,000	Site assessments, screen and categorize potential risks, develop mitigation measures and an Environmental & Social Management Plan (ESMP) – UNIDO USD12,000 Desk review and national E&S policy alignment and conduct stakeholder consultations – MoE – USD8,000
Climate Risk & Impact Modelling	Evidence-based climate risk profile for target areas and sectors	15,000	Climate data collection and analysis based on GeoAI methods, climate risk profiling, modeling/ projection of climate impacts and ranking of vulnerability in different governorate in Jordan – UNIDO - USD10,000 Provides scientific justification for adaptation actions based on projected climate scenarios – MoE – 5,000
Institutional & Policy Alignment Review	Alignment report with NDC, NAP, EMV 2033, and sectoral plans	5,000	Aligning project interventions with national climate and agriculture related policies, and adaptation priorities and designing strategies for effective implementation – MoPIC – USD5,000
Mapping and Data Analytics for Project Areas and analysis of appropriate climate change adaptation solutions.	Set of detailed GIS-based maps identifying farms in target areas; Database of farmer profiles and agricultural statistics; defining location specific intervention recommendations for climate change adaptation; Monitoring framework and algorithm development for improved farm-level	33,000	Create spatial maps and visualize farms within the project area, assist in designing decision-support systems, collect farm-level data, and apply data science techniques to enhance feasibility analysis and improve algorithm performance; identifying climate resilient solutions through science-based approaches and mapping of best global practices; develop intervention-based mapping – UNIDO – 23,000

	analysis and impact tracking		Organizing field mission providing logistics services, and providing technical assistance during intervention-based land use and land resources mapping – MoA – USD10,000
Environmental sustainability & Financial Feasibility Analysis	Cost-effectiveness study, long-term sustainability and co-financing strategy	10,000	Undertake basic data collection, undertake environmental and economic analysis, demonstrates viability, scalability, and sustainability of proposed adaptation actions – UNIDO – USD10,000
Monitoring, evaluation & learning (MEL) Plan; Exit strategy, synergies, and sustainability planning	Adaptation-relevant indicators and MEL framework	10,000	Establishing MEL planning and evaluation frameworks and reporting mechanism, develop strategies to enhance local counterpart and stakeholders' ownership – UNIDO USD10,000
National stakeholder consultation and validation workshops (2)	Workshop reports, inputs for proposal refinement, Final validated project design by stakeholders, Secures national ownership and endorsement of the proposal.	18,000	Compilation of findings and finalizing the AF project proposal – UNIDO – USD 10,000 Organize high-level project proposal validation workshop (including travel cost of UNIDO's staff and Consultant from HQ)– UNIDO - USD8,000
Total Project Formulation Grant		138,249	
Implementing Entity management fee (Agency fee 8.5%)	• IE admin and technical support for project development, monitoring and supervision. • Compliance assurance.	11,751	
Total Project Formulation Grant		150,000	

Please describe below each of the PFG activities and provide justifications for their need and for funding required:

For LLA Projects only:

If requesting additional funding for LLA projects to enable devolving decision making to the local level, please specify the activities that would directly serve to enable devolving decision making to the lowest appropriate level and enable local actors to make informed decisions on how adaptation actions are defined, prioritized, designed, and implemented:

Please provide justifications for their need and for additional funding required:

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Ms. Ganna Onysko Senior GEF, GCF, AF Coordinator Division of Funding Partner Relations Directorate of Global Partnerships and External Relations United Nations Industrial Development Organization - UNIDO Implementing Entity Coordinator Implementing Entity Coordinator		
Signature		Date (Month, day, year)	28 November 2025
Project Contact Person	Ms. Yvonne LOKKO Head IET/AGR/AIB Email: y.lokko@unido.org Work Phone: +43 1 26026 3737		
Telephone	Work Phone: +43 1 26026 3708		
Email Address	g.onysko@unido.org CC: gef@unido.org / glo@unido.org / f.haidara@unido.org		

Annex 2: Summary of community consultations in the project area

Table 10: Summary of community consultation taken place in various locations

Date	Consulted Entity/Group	No. of Participants (M/F)	Key Topics Discussed	Outcome of the Meeting	Locations, Methodology, participants
8.12.2025	Northern Jordan Valley - Focus Group 1: Small Farmers	25 (14M/11F)	Climate change impacts on water availability, crop productivity, input costs, market access, and livelihoods	Participants underscored the need to scale up climate-smart agriculture practices, strengthen water management, and improve market linkages, with strong interest expressed in drought-tolerant crop varieties.	**Location:** North Jordan Valley (Al-Shouneh Al-Shamaliyah); **Methodology:** Participatory focus group discussion. **Participants**: Small-scale farmers dependent on irrigation from the King Abdullah Canal
8.12.2025	Northern Jordan Valley - Focus Group 2: Gender & Women	25 (10M/15F)	Women's roles in agriculture, access to resources and finance, income generation, and cooperatives	Women highlighted priority needs for cooperative development, targeted training, and support for home-based food-processing enterprises, alongside gaps in social protection and labour rights.	**Location:** North Jordan Valley (Al-Shouneh Al-Shamaliyah); **Methodology:** Women-focused participatory discussion; **Participants**: Women engaged in agricultural labor, livestock care, and food processing
9.12.2025	Southern Jordan Valley - Focus Group 1: Small Farmers	25 (14M/11F)	Water scarcity, high production costs, land constraints, market barriers, and climate-resilient crops	Farmers expressed interest in adopting climate-resilient crops, including date palms, blueberries, and diversified vegetables, subject to water availability, technical assistance, and access to organized marketing channels.	**Location:** Southern Jordan Valley (Ghour Al-Safi); **Methodology:** Participatory focus group discussion; **Participants**: Smallholder farmers reliant on irrigation
9.12.2025	Southern Jordan Valley - Focus Group 2: Gender & Women	25 (5M/20F)	Women's agricultural labour, informal employment, social protection gaps, and dairy value addition	Women emphasized the importance of formalized employment, social protection mechanisms, and support for dairy and food-processing cooperatives, with growing interest in value-added activities.	**Location:** Southern Jordan Valley (Ghour Al-Safi); **Methodology:** Women-focused participatory discussion; **Participants:** Women engaged in farming, livestock care, and informal food processing
11.12.2025	Aqaba - Focus Group: Youth & Women	25 (9M/16F)	Youth entrepreneurship in climate-smart agriculture, technology adoption, and access to land and finance	Youth and women demonstrated strong awareness of climate change impacts and clear interest in green and environmental enterprises, while identifying key barriers related to land access, finance, technical skills, and business development support.	**Location:** Aqaba Governorate (Al-Quwayrah District); **Methodology:** Mixed youth and women participatory discussion; **Participants:** Youth and women interested in climate-resilient livelihoods and green entrepreneurship




Figure 5: Local community consultations in the Jordan Valley and Aqaba

Annex 3: Summary of stakeholder and community consultations conducted for initial gender analysis

Table 11: Summary of initial gender analysis

Consulted Entity / Group	Date	No. of Participants (M/F)	Topics Discussed	Key Outcomes / Issues Raised	How is it considered in project design
Urban youth groups (Amman, Irbid, Aqaba)	16 – 17 Feb 2025	7 M / 4 F	Climate impacts on food systems, urban gardening, and employment opportunities	Youth highlighted unemployment; women emphasized food affordability, rooftop gardening, and urban agriculture potential	Informed Component 1 on Urban Agripreneurship Living Labs; 50% quota for women and youth; tailored training in aquaponics, hydroponics, circular bioeconomy, and food safety; support for youth- and women-led green enterprises
Smallholder farmers (Jordan Valley, Ma'an, Karak)	18 Feb. 2025	4 M/ 3 F	Climate impacts on agriculture, irrigation, postharvest handling, and access to extension services	Women face barriers in land ownership, credit, technology, and extension services; men highlighted climate-related production risks	Informed Component 2: equitable access for women smallholders to irrigation, regenerative agriculture, digital advisory services; strengthening women's cooperatives in postharvest handling and agro-processing; expanded access to climate finance and insurance
Women's groups (cooperatives, NGOs)	7 April 2025	5 M/ 9 F	Gender equality, climate resilience, leadership, and access to finance	Cultural/mobility constraints limit participation; need for capacity-building and leadership in policy dialogues; importance of inclusive governance	Informed Component 3: integrating gender-sensitive frameworks into policy, building institutional capacity for sex-disaggregated data collection, fostering women's leadership in policy dialogues; Project Steering Committee ≥40% women; gender-sensitive MEL framework
Government institutions (MoA, JVA, MoE)	16-18 Feb.2025	7 M/ 10 F	National policies, climate adaptation strategies, and legal frameworks	Identified gender gaps in policy implementation and resource access	Guided gender-responsive CN Preparation and contributed to ensuring alignment with Adaptation Fund ESS.
Private sector and NGOs	17 Feb. 2025	14 M/ 11 F	Entrepreneurship, green jobs, digital agriculture	Highlighted opportunities for women- and youth-led enterprises and innovation in climate-smart agriculture	Supported the development of Component 1 and Component 2 interventions for inclusive green enterprise development

***Figure 6**: Community consultation on gender inclusion and youth participation in* climate-smart *farming* The consultation was conducted in the Central Jordan Valley (i.e., the first and second picture) and in Northern and Southern Jordan, where Irbid, Madaba, and Aqaba are part of (i.e., the first and second picture).

Annex 4: Summary of Field Visits and Stakeholder Engagement Meetings

Table 12: Summary of key stakeholders and private sector consultation

Date	Consulted Entity/Group	No. of Participants (M/F)	Key Topics Discussed	Outcome of the Meeting	Locations and roles of participants
16.02.25	Ministry of Environment (NDA)	3 (2M/1F)	National Policy Alignment: Adaptation priorities, fund procedures, and national strategy alignment	Confirmed commitment to support endorsement and AF submission.	**Location:** Amman; **Participants:** NDA and the project team
16.02.25	Jordan Exporters & Producers Association (JEPA)	4 (3M/1F)	Horticulture & Livelihoods: Climate impacts, post-harvest losses, market access, youth and women jobs	Climate-smart logistics, shared storage, and market linkages are identified as key to reducing post-harvest losses and improving inclusive horticultural livelihoods.	**Location:** Amman; **Participants:** The Chairman and JEPA experts.
17.02.25	Jordan Valley Authority (JVA)	3 (3M/0F)	Water & Climate Risks: Water scarcity, climate-smart irrigation, drought-tolerant crops	Water scarcity was confirmed as the key climate risk in the Jordan Valley, with climate-smart irrigation and GeoAI- and sensor-based soil and water management identified as priority adaptation solutions.	**Location:** Amman; **Participants:** JVA Secretary General, Irrigation Engineers
17.02.25	Ministry of Agriculture (MoA)	3 (2M/1F)	Smallholder Support: Waste reduction, market access, low-cost hydroponics, training	Priority actions were identified on waste reduction, sustainable production (including low-cost hydroponics and aquaponics), rainwater harvesting, market access, and capacity building, with emphasis on women's empowerment and strengthening CSOs and farmer alliances.	**Location:** Amman; **Participants:** Principal Advisor of the Minister; the Director of International Cooperation.
17.02.25	GrowTech (AI & Tech firm)	2 (2M/0F)	Precision agriculture, small-scale and reliable early warning systems, digital & sensor technologies (soil water detection sensors, IoT, and AI)	Identified as a tech-supplier for Geo-AI and remote sensing to promote precision agriculture, and enhance farmers' and digital farm advisors' (DFA's) decision support systems.	**Location:** Amman; **Participants:** CEO and GeoAI expert.
17.02.25	Agricultural Credit Corporation (ACC)	3 (3M/0F)	Climate Finance: Climate risk financing, supply chains, inclusive lending	ACC is identified as a potential strategic partner for climate risk financing and inclusive lending, with a JOD 65 million portfolio including JOD 25 million in interest-free loans supporting resilient supply chains.	**Location:** Amman; **Participants:** ACC Director General, Bankers, and the agribusiness loan services department team.
18.02.25	National Agricultural Research Centre (NARC)	2 (2M/0F)	Adaptation Integration: National planning, AI tools, value chains, fisheries, bioeconomy (Black-Soldier-Fly for biomass waste recycling)	NARC is identified as a key partner in supporting smallholders and food security through coordinated implementation with MoA and JVA, aligned with national adaptation planning, AI-enabled value chains, fisheries, and bioeconomy solutions.	**Location:** Balqa; **Participants:** Principal Advisor of the DG, and International Cooperation and Research Director of NARC.
18.02.25	Mate Company (Technology Supplier)	2 (2M/0F)	Agri-Tech & Platforms: Agricultural technologies, supply-chain, and digital platforms	Identified as a potential agri-technology and digital platform supplier to support project implementation and supply-chain solutions.	**Location:** Amman; **Participants:** Founder and CEO
19.02.25	Eco Consult Hub / Private Sector Partners	2 (2M/0F)	Adaptation Barriers: Technology adoption, financing gaps, ongoing initiatives	The gap to climate-smart technology and climate financing schemes is identified as a critical limitation to building resilience. Hydroponics was identified as water efficient and attractive agribusiness stream.	**Location:** Madaba **Participants:** CEO of Eco-Consult, and hydroponic experts
22.02.25	Aqaba Special Economic Zone Authority (ASEZA)	2 (1M/1F)	Collaboration to scale hydroponic and aquaponic farming for youth and women, addressing land and water access, saline water treatment, tourism market linkages in Aqaba, and agripreneurs training.	Agreed to support pilot production of hydroponic and aquaponic systems, strengthen tourism-linked market access in Aqaba, and build the capacities of youth, women, and local farmers.	**Location:** Aqaba; **Participants:** Environment Commissioner - ASEZA), and assistant to the commissioner

Brief discussion of how consultations informed project design:

- Consultations with government entities ensured alignment with national adaptation priorities and integration of climate-smart agricultural policies.
- Engagement with private sector and technology providers informed inclusion of digital tools, AI, and hydroponics/aquaponics systems.
- Consultations with community-based organizations and local farmers highlighted specific barriers faced by vulnerable groups, particularly women, youth, and low-income households. This guided inclusion of gender-responsive measures, equitable access to skills training, leadership opportunities, and financing.
- Feedback on market access, value chains, and postharvest management shaped interventions to reduce food loss, enhance income, and create jobs.

Summary of Proposed Interventions:

The consultations informed a coherent set of interventions aimed at strengthening climate resilience, improving productivity, and enhancing livelihoods across rural and urban agricultural systems.

- **Expand Climate-Smart Irrigation and Water Management:** Promote small-scale, efficient irrigation systems and reduce groundwater pumping costs to enhance drought resilience and water-use efficiency.
- **Leverage Digital and GeoAI Technologies:** Deploy GeoAI, remote sensing, and digital tools for real-time monitoring of soil, water, crop health, and pest dynamics to support data-driven, climate-resilient agricultural decisions.
- **Improve Access to Climate-Resilient Inputs:** Enhance the availability of improved, drought-tolerant seeds and planting materials adapted to climate variability.
- **Promote Regenerative and Circular Agriculture:** Support sustainable agriculture and agroforestry practices and introduce organic waste-to-resource technologies (e.g., composting, biofertilizer, animal feed) to improve soil health and resource efficiency.
- **Enhance Postharvest and Value Addition Systems:** Strengthen food processing, cold storage, and postharvest handling to reduce food loss and improve market access for smallholders.
- **Strengthen Institutional and Market Linkages:** Build institutional capacity and deploy digital platforms (e.g., traceability, mobile banking, agri-market information systems) to improve farmer access to finance, markets, and scaling of climate-smart solutions.
- **Foster Gender and Youth Empowerment:** Provide targeted training, entrepreneurship support, and job creation opportunities for women and youth in climate-smart agriculture and agribusiness.
- **Promote Private Sector Engagement:** Leverage partnerships with agribusinesses and technology providers to scale innovations, attract investment, and improve sustainability.
- **Build Policy and Institutional Capacity:** Strengthen national and local institutions to integrate climate adaptation and resilience into agricultural planning and implementation.

These interventions collectively aim to improve agricultural productivity, reduce vulnerability to climate risks, and promote inclusive, sustainable, and market-oriented rural and urban livelihoods.

Conclusion:

The field mission underscored the urgent need to address climate impacts like drought and heatwaves in agriculture that drive water scarcity for agriculture, industries, businesses, and homestead consumption, while also revealing strong opportunities for collaboration to reduce postharvest losses, build resilience, and support inclusive economic growth for small-scale farmers, women, and youth.

Annex 5: List of participants at the stakeholders' consultation workshop with supporting photos (12 Mar.2025, Sheraton Nabil Amman Hotel)

Table 13: Stakeholders' consultation and validation workshop participants

	Name	Organization/ Association	Address	Contact	Presented (Yes/No)
1	Yousef Abu Eadeh	BALADNA WUA	Al Karameh	0785113470	Y
2	Waleed Al Faqeer	Pump station 55 WUA	Middle of JV	0795609408	Y
3	Raef Obedawi	Development area (5) WUA	North of JV	0787645864	N
4	Fandi	Development area (5) WUA	North of JV		Y
5	Talal Farhan	Al Ramah WUA	South Shouneh	0796083590	Y
6	Eng. Anwar Al Adwan	WUAs directorate at JVA	JV field office	0798207143/ +962 777575015	Y
8	Lamia Salah Abu Sahyoun	Jordanian Women's Network Association	Irbid	0775438210	Y
10	Nawal Salem Balawneh	Balawneh Charity Association	Dier Ala	0776468564	Y
11	Jamila Murdi AlJazi	AlJawhara Charity Association	Ma'an	0791585998	Y
12	Fatimah Abedullah	Ambassadors of Humanity Association	Irbid	0797677241	Y
13	Dr. Maram Alabbady	NARC	Balqa	0776502828	Y
14	Rand Al Khushman		Ma'an - Showbak	randalkhushman@gmail.com	Y
15	Eng. Belal Shaqareen	Ministry of Environment. Director of Climate Change	Amman	belal.shqarin@moenv.gov.jo +962 7 95957454	Y
16	Ms. Amal Da'ajah	JEPA	Amman	962 7 95009480 amal@jepa.org.jo	Y
17	Raed dawod, Eng.Maram Zaid	Eco Consult	Amman	Maram.zaid@ecoconsult.jo Raed.daoud@ecoconsult.jo	Y
18	Abrar ALUtaibi Hilana Najjar	GrowTech Company	Amman	info@grow-tech.org 0777999931 hilana@grow-tech.org	Y
19	Eng. Salha AlMajali	Agricultural Credit Corporation (ACC)	Amman	079866553	Y
20	Dr. Waleed Almasri	Arabicjo Company Nurseries Company	Zarqa	078551 3229 info@arabicjo.com	Y
25	Dr. Mohammad Shahein	UNIDO Consultant/ Food Systems			Y
26	Eng. Mahmoud Qattous	UNIDO Consultant/ Food Systems			Y
27	Sulafa Mdanat	UNIDO Country Representative	Amman		Y
28	Hazem Al Nawaiseh		Amman		Y
29	Nana Zabaneh	UNIDO, Jordan Field Office	Amman		Y
30	Rana Fakhoury	UNIDO, Industrial Development Officer, HQ	Amman		Y
31	Awwad Harahsheh	UNIDO AF Consultant	Amman		Y
32	Yvonne Lokko	UNIDO – Head of AGR/AIB	Vienna		Virtual
33	Yoseph Delelegn	UNIDO – Project Coordinator	Vienna		Virtual

Figure 7: Stakeholder consultation workshop in Amman, Jordan

Figure 8: Focus group discussions with potential partners and stakeholders.
(Pictures from left to right: Aqaba SEZA, Ministry of Agriculture, Jordan Exporters, Producers Association, Ministry of Environment, National Agricultural Research Centre, Jordan Valley Authority, JEPA CEO and UNIDO Jordan Country Representative, JEPA management team, JVA, YAMOO Agricultural Knowledge and Innovation Centre.)

Figure 9: Field visits at the agriculture knowledge and innovation centre and private and large-scale hydroponic farm in Madaba, fish ponds, and irrigation supplemented horticulture in Disah, Aqaba