



**GREEN  
CLIMATE  
FUND**

**Meeting of the Board**  
16 – 19 March 2021  
Virtual meeting  
Provisional agenda item 14

**GCF/B.28/02/Add.02**

23 February 2021

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# Consideration of funding proposals - Addendum II

## Funding proposal package for FP155

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### **Summary**

This addendum contains the following seven parts:

- a) A funding proposal titled "Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCC)";
- b) No-objection letter issued by the national designated authority(ies) or focal point(s);
- c) Environmental and social report(s) disclosure;
- d) Secretariat's assessment;
- e) Independent Technical Advisory Panel's assessment;
- f) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
- g) Gender documentation.

## Table of Contents

Funding proposal submitted by the accredited entity	3
No-objection letter issued by the national designated authority(ies) or focal point(s)	94
Environmental and social report(s) disclosure	95
Secretariat's assessment	98
Independent Technical Advisory Panel's assessment	112
Response from the accredited entity to the independent Technical Advisory Panel's assessment	124
Gender documentation	126

# Funding Proposal

Project/Programme title:	Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCCJ)
Country:	Hashemite Kingdom of Jordan
Accredited Entity:	United Nations Food and Agricultural Organisation (FAO)
Date of first submission:	<u>2020/04/22</u>
Date of current submission	<u>[2020/04/22]</u>
Version number	<u>[V.1]</u>



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## Acronyms and definitions

AE	Accredited Entity
AFD	French Agency for Development
AMA	Accreditation Master Agreement
ASEZA	Aqaba Special Economic Zone Authority
BH	Budget Holder
BRCCJ	Building Resilience to Cope with Climate Change in Jordan
CADRI	Capacity for Disaster Reduction Initiative (CADRI)
CC	Climate Change
CCA	Climate Change Adaptation
CCCC	Coordination Commission on Climate Change
CFC	Climate Financing Centre
CSO	Civil Society Organizations
CTA	Chief Technical Adviser
CWW	Climate Wise Women
DRR	Disaster Risk Reduction
EE	Executing Entity
ESA	Environmental and Social Analysis
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Safeguards
FAO	Food and Agriculture Organization of the UN
FFS	Farmer Field Schools
FNC	Fourth National Communication
GAM.	Municipality of Greater Amman
GAP	Gender Action Plan
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GGI	Global Green Growth Institute
GHG	Greenhouse Gas Emissions
GIZ	<i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i>
GPS	Global Positioning System
GRMS	Global Resources Management System
HU	Hashemite University
ICARDA	International Centre for Agriculture in the Dry Lands
ICT4CA	Information Communication Technology for Climate Adaptation
IFAD	International Fund for Agricultural Development
INDC	Intended Nationally Determined Contribution



INDC	Intended Nationally Determined Contribution (INDC)
JGBC	Jordan Green Building Council
JMD	Jordan Metrological Department
JUST	Jordan University of Science and Technology
M&E	Monitoring and Evaluation
MOA	Ministry of Agriculture
MoE	Ministry of Environment
MoPIC	Ministry of Planning and International Cooperation (MoPIC)
MoSD.	Ministry of Social Development
MoTA.	Ministry of Tourism and Antiquities
MoU	Memorandum of Understanding
MWI	Ministry of Water and Irrigation
NAMA	National Appropriate Mitigation Actions
NAP	National Adaptation Plan
NAP	National Adaptation Plan
NARC	National Agriculture Research Centre
NCCC	National Climate Change Committee
NDA	National Designated Authority
NGO	Non-governmental Organization
ND-GAIN	Notre Dame Global Adaptation Initiative
NPV	Net Present Values
NRM	Natural Resource Management
OPA	Operational Partners Agreement
PDTRA	Petra Development and Tourism Region Authority
PMF	Performance Management Framework
PMU	Project Management Unit
RCP	Representative Concentration Pathways
RNE	Regional Office for Near East
RSS	Royal Jordanian Scientific Society
SCCF	Special Climate Change Fund
SDG	Sustainable Development Goals
TA	Technical assistance
TNC	Third National Communication
TORs	Terms of Service
TWG-A	Technical Working Group - Adaptation
UN	United Nations
UNCCD	UN Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme



UNFCCC UN Framework Convention on Climate Change  
USD United States dollar  
WAJ Water Authority of Jordan  
WSPL Water Sector Policy Loan

## Contents

Section A	<b>PROJECT / PROGRAMME SUMMARY</b>
Section B	<b>PROJECT / PROGRAMME INFORMATION</b>
Section C	<b>FINANCING INFORMATION</b>
Section D	<b>EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA</b>
Section E	<b>LOGICAL FRAMEWORK</b>
Section F	<b>RISK ASSESSMENT AND MANAGEMENT</b>
Section G	<b>GCF POLICIES AND STANDARDS</b>
Section H	<b>ANNEXES</b>

### ***Note to Accredited Entities on the use of the funding proposal template***

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the [GCF Information Disclosure Policy](#), project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

**Please submit the completed proposal to:**

[fundingproposal@gcfund.org](mailto:fundingproposal@gcfund.org)

**Please use the following name convention for the file name:**

“FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]”

A. PROJECT/PROGRAMME SUMMARY			
<b>A.1. Project or programme</b>	Project	<b>A.2. Public or private sector</b>	Public
<b>A.3. Request for Proposals (RFP)</b>	Not applicable		
<b>A.4. Result area(s)</b>	<p>Check the applicable <a href="#">GCF result area(s)</a> that the overall proposed project/programme targets. For each checked result area(s), indicate the estimated percentage of <a href="#">GCF budget</a> devoted to it. The total of the percentages when summed should be 100%.</p>		
	<p><b>Mitigation:</b> Reduced emissions from:</p> <p><input type="checkbox"/> Energy access and power generation:</p> <p><input type="checkbox"/> Low-emission transport:</p> <p><input type="checkbox"/> Buildings, cities, industries and appliances:</p> <p><input type="checkbox"/> Forestry and land use:</p> <p><b>Adaptation:</b> Increased resilience of:</p> <p><input checked="" type="checkbox"/> Most vulnerable people, communities and regions:</p> <p><input checked="" type="checkbox"/> Health and well-being, and food and water security:</p> <p><input type="checkbox"/> Infrastructure and built environment:</p> <p><input type="checkbox"/> Ecosystem and ecosystem services:</p>	<p><b>GCF contribution:</b></p> <p><u>Enter number</u>%</p> <p><u>Enter number</u>%</p> <p><u>Enter number</u>%</p> <p><u>Enter number</u>%</p> <p>19%</p> <p>81%</p> <p><u>Enter number</u>%</p> <p><u>Enter number</u>%</p>	
<b>A.5. Expected mitigation impact</b>	NA	<b>A.6. Expected adaptation impact</b>	<p>212,416 Direct and Indirect Beneficiaries including 47% women</p> <p>2.1% of country population and 10% of target Governorates population</p>
<b>A.7. Total financing (GCF + co-finance)</b>	33.25 USD million	<b>A.9. Project size</b>	Small (Upto USD 50 million)
<b>A.8. Total GCF funding requested</b>	25 USD million		
<b>A.10. Financial instrument(s) requested for the GCF funding</b>	<p>Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.</p> <p><input checked="" type="checkbox"/> Grant      25 million      <input type="checkbox"/> Equity      <u>Enter number</u></p> <p><input type="checkbox"/> Loan      <u>Enter number</u>      <input type="checkbox"/> Results-based payment      <u>Enter number</u></p> <p><input type="checkbox"/> Guarantee      <u>Enter number</u></p>		
<b>A.11. Implementation period</b>	7 years.	<b>A.12. Total lifespan</b>	30 years
<b>A.13. Expected date of AE internal approval</b>	4/20/2020	<b>A.14. ESS category</b>	B
<b>A.15. Has this FP been submitted as a CN before?</b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>A.16. Has Readiness or PPF support been used to prepare this FP?</b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>A.17. Is this FP included in the entity work programme?</b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>A.18. Is this FP included in the country programme? <sup>1</sup></b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

<p><b>A.19. Complementarity and coherence</b></p>	<p><i>Does the project complement other climate finance funding (e.g. GEF, AF, CIF, etc.)? If yes, please elaborate in section B.1.</i> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
<p><b>A.20. Executing Entity information</b></p>	<p>1. Food and Agriculture Organization (FAO) 2. The Hashemite Kingdom of Jordan acting through the: Ministry of Water and Irrigation (MWI), the Ministry of Agriculture (MoA) and the Ministry of Environment-(MoE) the Nationally Designated Authority (NDA) 3. United Nations Development Programme (UNDP) Details of outputs / activities by each in C.2 and details per activity in E.6)<sup>2</sup></p>
<p><b>A.21. Executive summary (max. 750 words, approximately 1.5 pages)</b></p>	
<p>i. <b>Climate Change Risks:</b> Jordan is facing severe climate change risks and business as usual will no longer suffice in addressing the challenges the country faces to its development and growth. Jordan is one of the most water scarce countries in the world and climate change is further exacerbating aridity due to increasing temperatures and reduced / more erratic rainfall patterns coupled with an unprecedented population increase due to both natural growth and refugee influx. In addition, climate change induced hazards such as droughts, extreme temperatures and flash floods, have almost tripled in Jordan since the 1980s, compared to a doubling worldwide, exposing the population to loss of life, livelihoods and property. Such combination is having one of the most important role in the variation on availability of water resources, water demand for agriculture and domestic purpose and existence of agriculture. Therefore, some sectors such as water and agriculture - where 75% of the cultivated land is rainfed – are the most vulnerable especially in rural areas where adaptation deficit is the highest.</p> <p>ii. <b>Key Challenges:</b> Jordan’s economy and society have faced significant shocks in the past few years due to the regional conflicts in Syria and Iraq, the country’s main trading partners which disrupted Jordan’s trade routes and capital inflows. The Syrian refugee crisis put considerable pressure on the country’s economic, physical and social infrastructure. As a result, the country’s macro-economic indicators weakened, the fiscal deficit rose, and financing many key priorities became very difficult. The latest crisis and lockdown due to the corona pandemic in the country since March, 2020 is likely to be a major setback which will put considerable pressure on the limited resources of the country and impact its revenue sources.</p> <p>iii. <b>Proposed Intervention:</b> Given the exposure, vulnerability and adaptation deficit reported by the country in its Third National Communication to the UN Framework Convention on Climate Change (UNFCCC) and in the National Adaptation Plan, four Governorates in the Dead Sea Basin namely Karak, Madaba, Talifah and Maan have been selected for project interventions as these represent the areas that are considered as the most vulnerable. These Governorates host 840,900 inhabitants who are the most vulnerable in the country to climate change due to the high dependency on rainfed agriculture, poverty rate of rural population, and high climate change adaptation deficit.</p> <p>iv. The goal of the seven-year project titled “Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCCJ)” is increased climate resilient sustainable development in the country. In line with the objectives of the climate change policy (2013-2020) and the National Adaptation Plan (2020) the project is designed to increase the resilience to climate change of water management systems and of the farming community. The project will have three interrelated components which will work synergistically to address key barriers and enhance the impact of project investments. The components are designed to deal with the lack of <u>infrastructure</u>, limited capacity of <u>rural farming households</u> and weak <u>institutional</u> capacity. They include; (i) Component 1: Climate Resilient Water Systems for enhanced water security; (ii) Component 2: Climate Change resilience for Enhanced Livelihoods and Food Security; and (iii) Component 3: Scaling-up climate adaptation into policy and across actors (institutions, private sector, civil society). Coherently with identified lesson learned in Jordan as well as with the GCF Gender</p>	

<sup>1</sup> Draft Version of the GCF Country Programme dated December 2019.

<sup>2</sup> Each of national executing entities have legal personality independent from the Kingdom of Jordan. According to Article 47 of the Jordanian constitution, every minister is responsible for the conduct of all matters pertaining to his or her ministry and that he or she refers to the prime minister any arising matter that does not fall within his or her competence.

guidelines, the project builds on the idea of inclusion of women as change agents for climate adaptation.

- v. The project will be executed jointly by FAO, UNDP, Ministry of Environment (MoE), Ministry of Agriculture (MoA), Ministry of Water and Irrigation (MWI) indicating the strong collaborative and partnership approach which will be adopted during the implementation of the project. The project will capitalise on the strong experience and convening power that both FAO and UNDP have established in the country. UNDP's experience on working on climate change and drought management projects in the country make it a valued partner. The project builds on the established institutional arrangements in the country which serve to high light the climate change agenda such as the National Climate Change Coordination Committee (NCCC) and the Working Group on Climate Adaptation.
- vi. The *Project is the first and only country specific project which the Ministry of Environment (MoE) has included in the GCF country portfolio for submission during the first replenishment period of the GCF (2020-23)*. The investment is expected to reach 212,416 people including 47% women. An analysis of the value for money metrics of the Project shows that the project investment is highly justified based on both financial and economic analysis (Annex 3 and Annex 19). The project investments have an Economic Internal Rate of Return of 24.1.%. The Net Present Value was estimated to be US\$ 80.16 million with a benefit- cost ratio of 2.95. The project is expected to achieve 3% to 3.5% reduction in groundwater overdraft and to contribute up to 4.5% to the water management goals in the National Water Strategy. Cumulative water savings are estimated at around 1.83 million cubic meters (mcm) in a 10-year period and 5.49 mcm for the project's lifespan. Although in absolute terms, this seems low compared to the overall water budget, it is substantial at the individual use level. In addition, 10,600 hectares of agricultural land area will be made more resilient with climate-adaptive measures in the project area as they will be able to rely on additional sources of sustainable water from alternative sources such as the recycled one as well as from new farm management practices that will allow farmers to cope with water related stresses that are related to climate change (i.e. reduced precipitations, erratic rainfall patters and increasing temperatures).
- vii. Total project costs are estimated to be US\$ 33.25 million. This project is based on a request for a grant from the GCF of USD 25 million (75% of total project cost). The Government of Jordan is committed to providing US\$ 6.2 million (19%), and FAO and UNDP will co-finance USD 2.06 million (1 million and 1.06 million respectively, representing 6% of total costs). The beneficiaries are expected to provide USD 4.6 million for investments at the household level.

## B.PROJECT/PROGRAMME INFORMATION

### B.1. Climate context (max. 1000 words, approximately 2 pages)

1. The Hashemite Kingdom of Jordan is one of the most water scarce countries in the world. Water scarcity is driven primarily by the arid to semi-arid climatic regime as 92% of the country receives average precipitation of 135 mm/year [WB, 2020; GoJ, 2015]. The average annual air temperature in the country is 18.6°C, ranging from 13°C in the Southern Badia to 28°C in Aqaba. The maximum temperature is distributed almost uniformly in the whole country and corresponds to an average of 25.3°C (Annex 2, pages 19→23). The vulnerability of the country to climate risks has been aggravated, in the last decade, by more erratic rainfall patterns, increased temperatures and an unprecedented population increase due to both natural growth and refugee influx [FAO 2018]. Furthermore, described changes are increasing the rural to urban migration trend (9% vs 91%) as more and more farmers are abandoning their fields due to the impossibility of irrigating their field with precipitations only [Al-Bakri, 2020]. Jordan has a ND-GAIN<sup>3</sup> index ranking of 85 out of 181 countries for climate vulnerability. After some years of slight and constant improvement, especially from 1995 to 2008, when the ranking improved from initially 72 to 64, the ranking decreased again significantly, to the current 85 [NDGAIN, 2019]. Jordan is facing severe climate change risks and the business as usual will no longer suffice in addressing the challenges the country faces to its development and growth. Climate change has exacerbated the water scarcity in the country which impacts both rural and urban households and can negatively impact their safety and health, livelihoods, and sustainable development in the country [FAO, 2018].

2. Reportedly [WB, 2020; GoNL, 2019; USAID, 2017; UNFCCC, 2014; FAO, 2020] climate change has already impacted Jordan: annual maximum and minimum temperature have increased by 0.3-1.8°C and 0.4-2.8°C, respectively, since the 1960s. As reported in the Third National Communication (2014)<sup>4</sup>, both Mann-Kendall rank trend test and linear regression trends indicate that the mean, maximum and minimum air temperature tends to increase significantly by 0.02, 0.01, and 0.03 °C/year, respectively and annual precipitation tends to decrease significantly over time (-3 mm in 2035, -15.4 in 2055 and -12 in 2085 (RCP 4.5))<sup>5</sup>. Rainfall shows decreases at most meteorological stations indicating a drop from 94 mm to 80 mm during the last 10 years and a 2.92 mm/month per century reduction in average annual participation since 1900. Data from local meteorological stations<sup>6</sup> (1990-2019) as well as from remote sensing analysis<sup>7</sup> [FAO, 2020] covering the period 1979-2019 confirm the trends presented in the third national communication for both temperature (MIN and MAX) and rainfall, highlighting also that rainfall is not only reduced but its patterns are now more erratic across the year (Annex 2, page 21). Renewable water recharge capacity have been exacerbated by climate change. According to FAO, around 65% of the renewable water resources of the country come from surface water and run-off stored in ravines or wadis [FAO, 2018]. In 2015, the Ministry of Water and Irrigation (MWI) estimated water availability to be 1,008 million cubic meters (MCM), and water demand 1,222 MCM with a deficit of 214 MCM. As reported in literature [USAID, 2017] and confirmed by the Ministry of Water and Irrigation in the “Water for Life; Jordan Water Strategy 2008-2022”, water availability per capita was 3600 m<sup>3</sup>/year in 1946, but fell to 145 m<sup>3</sup>/year by 2008 with a current of 93 m<sup>3</sup>/year in 2020.

3. The analysis - undertaken as part of the country capacity to adapt - estimates the following impact on the agriculture sector: reduction of chilling time (predicted to be insufficient for fruits already in 2024 [WB, 2013]), reduced water availability during farming operations (about 30 days longer dry season [UNFCCC, 2014]) against a steadily increasing evapotranspiration (increase up to 5.32% evaporation for the period 2013-2030 [Quatarnah, 2018]). Field crops, such as wheat and barley<sup>8</sup>, are highly sensitive to climate change impacts driven by the reduction in time available for assimilation of dry matter and lower water availability [Al-Bakri, 2010]. It is projected that there will be a decrease in yield varying from 7% to 21% for wheat and from 18% to 35% for barley due to shorter duration of crop growth. In terms of olive and olive oil production (one of the most diffuse commodity in Jordan), the potential decrease in yield derived from climate

<sup>3</sup> The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. It aims to help governments, businesses and communities better prioritize investments for a more efficient response to the immediate global challenges ahead

<sup>4</sup> The methodology followed by the Third National Communication to model projections is available in Appendix 4 to Annex 2.

<sup>5</sup> National Adaptation Plan. February 2020. Ministry of Environment. Government of Jordan.

<sup>6</sup> The analysis of meteorological data from available national datasets is available in Appendix 2 of Annex2.

<sup>7</sup> Based on European Centre for Medium-Range Weather Forecasts (ECMWF) ERA5 atmospheric reanalysis of the global climate product.

<sup>8</sup> Wheat and barley are rainfed crops in Jordan and constitute over 90% of farming in most areas of the country but especially in the central and southern governorates.

change impacts varies from 5% to 10% with high evidence on the oil quality reduction [\[UNDP-GEF, 2014\]](#).

4. For many vegetable crops, high temperatures may decrease quality parameters, such as size, soluble solids and tenderness. It is anticipated that a 1°C or 2°C increase in temperature will decrease vegetables yield by 5 and 10%, respectively [\[FAO, 2012, UNFCCC, 2014; GoJ-NAP, 2020<sup>9</sup>\]](#). Similarly, orchards are highly sensitive to climate change with adverse impacts of temperature increase such as less flower bud induction, higher fruit drop, faster volume growth of fruit, earlier maturation, less total soluble solids and fruit reaches insipid and dry states earlier. In terms of rangelands, vegetation change will probably be more closely coupled to changes in soil resources than to immediate physiological responses of plants to CO<sub>2</sub> concentration or temperature. The increase in evapotranspiration (ET) rate and decrease in precipitation in drier systems such as the arid and semiarid rangelands of Jordan would reduce productivity [\[UNFCCC, 2014\]](#).

5. According to all scenarios in the Representative Concentration Pathways (RCP) the described climate change adverse trends will further deteriorate. Reportedly, [\[WB, 2020; GoNL, 2019; USAID, 2017; UNFCCC, 2014; FAO, 2020\]](#), it is extremely likely that Jordan will experience in the 2030-2100 period (relative to the 1980-2010 period) the following: (I) Average temperature increase up to +1.2°C by 2035, 1.8 °C by 2055 and 2.5°C by 2085 (RCP 4.5) or 1.6°C by 2035, 2.6 °C by 2055 and 4.0°C by 2085(RCP8.5); and (II) cumulated precipitation decrease between 15% (- 6% to 25%) (RCP 4.5) and 21% (9% to - 35%) (RCP 8.5). The temperature increase will result in increased evaporation and this, combined with decreased rainfall, will result in less recharge and therefore less replenishment of surface water and groundwater reserves. Standardized precipitation indexes indicate that Jordan will experience more drought events especially in winter and spring [\[UNFCCC, 2014\]](#). The reduced precipitation levels, temperature increase, drought/dry days and projected evaporation and the delivery of rainfall in shorter and more intense periods are likely to be the cause of main future climate hazards in the country [\[UNFCCC, 2014\]](#). Therefore, existing water scarcity in Jordan will worsen due to climate change. National policies [\[GoJ-NAP, 2020; Combaz, 2019; GIZ, 2015; MoE, 2013\]](#) and literature, recognize that water and agriculture sectors as extremely vulnerable to climate change due to high sensitivity, exposure, and low adaptation capacities. In the long-term, this is likely to cause serious soil degradation that could lead to desertification and worsening the situation of the agriculture sector due to the lack of sufficient water. The Third National Communication and the NAP attest that the agricultural sector has a relatively low adaptive capacity, given that most of the current land utilized for production is rain-fed, which is more exposed to climate change and to the fact that most planned and needed adaptation measures require investments that neither the state nor the private sector can currently afford (Annex 3 pages 39→42) and adaptation deficit is high among farmers and rural communities and access to finance is difficult for farmers to secure because of the perceived risk inherent in agriculture incomes and the collateral requirements which most households are unable to meet.

6. The average occurrence of climate change induced hazards has almost tripled in Jordan since the 1980s, compared to a doubling worldwide. Floods and droughts both present major risks. In winter, heavy rains can cause serious flooding and landslides and incidents of flooding are common in Jordan and can be very damaging as most are flash floods. Floods in Jordan claim lives, and destroy agricultural land and infrastructure. Increased productivity and economic development in rural areas with lack of preventing planning and zoning often leads to a higher concentration of people and valuable estates (infrastructures and production sites) in areas at risk along rivers, valleys and in flood plains [\(World Bank, 2018\)](#). Flash flooding has historically caused damages to local tourist infrastructure, archaeological sites and urban infrastructures [\[Alhasanat, 2017\]](#). Incidents of flash flooding in Jordan have claimed the lives of hundreds and affected the lives and livelihoods of thousands. In the past half century, floods have taken of 345 persons and affected 24,321 lives. Additionally, floods usually leave vast agricultural areas covered with water [\[Alhasanat, 2017\]](#). Episodes of drought are increasing with a frequency of 2.43 per 10 years. [\[WB, 2020, GFDRR, 2020; CRI, 2020; WFP, 2019; UNDP, 2019\]](#).

7. In terms of drought, several studies have shown the increase incidence of drought events in Jordan.

<sup>9</sup> The National Adaptation Plan (NAP) will be officially published at the end of 2020.

Literature indicates that the country will face frequent non-uniform drought periods in an irregular repetitive manner [GoJ-NAP, 2020] while the World Bank estimated that Jordan has already developed perennial drought conditions [WB, 2014]. Drought severity, magnitudes and lifespan will increase with time shifting from normal to extreme levels. These droughts will negatively impact the Jordanian agriculture system [A-Quinna, 2010; Saba, 2013-2018]. Based on historical observational data from the Ministry of Water and Irrigation, the occurrences of meteorological droughts months (Figure 1 in the sense of Rajsekhar & Gorelick 2017) are increasing at the country level since 1990 at a pace of 0.13 months per 10 years for Moderate Droughts, 0.21 months per 10 years for Severe Droughts, and 0.30 months per years for Extreme Droughts.

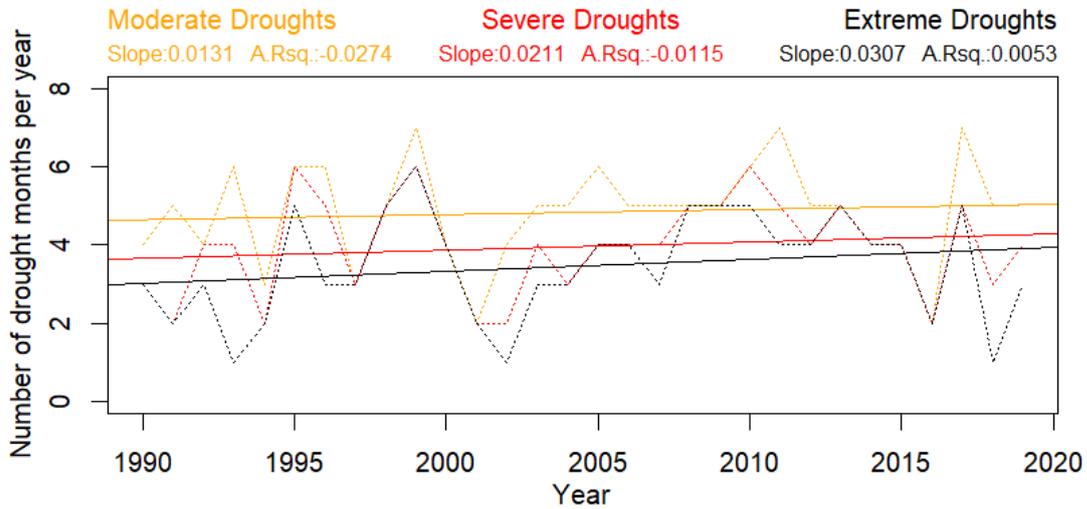


Figure 1: Occurrences of meteorological droughts months at the national scale (in the sense of Rajsekhar, 2017).

8. The analysis of local data, reports that adverse trends for temperature and precipitation are particularly evident in the Dead Sea Basin (target area) where the volume of precipitation has decreased by up to 20% (1990-2019) [FAO, 2020] and become more erratic with rainfall concentrated in a few months (January/February) rather than distributed more evenly along the seasons [FAO, 2020; UNFCCC, 2014].

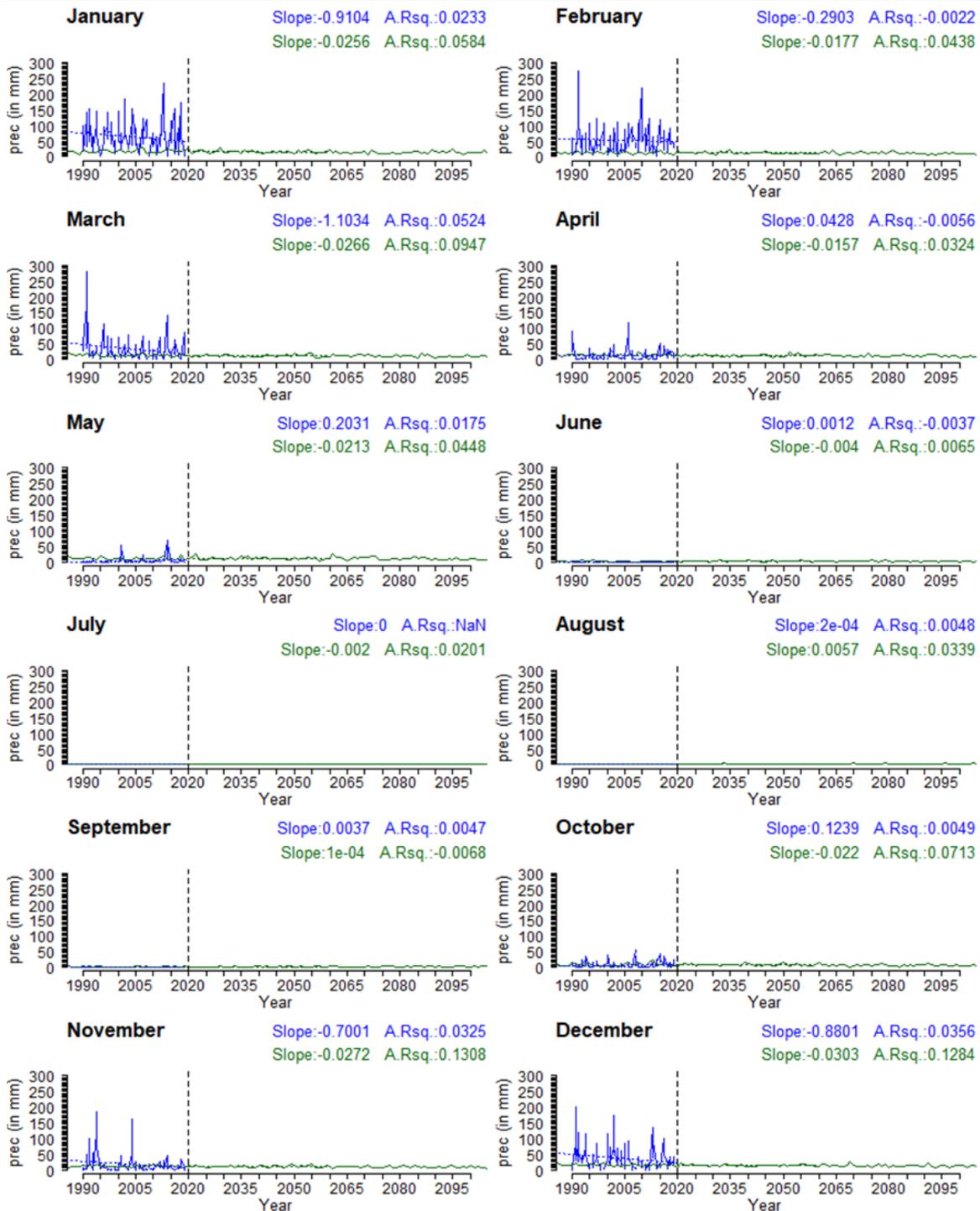


Figure 2: Analysis of local meteorological data from the stations of Madaba, Tafilah, Karak and Ma'an for the period 1990-2019.<sup>10</sup>

9. Already groundwater in the six main basins is declining at an average annual rate of approximately one meter per year [Daniel, 2013] while the most recent assessment of water scarcity and drought risk under climate change, based on a large ensemble of climate model outputs, suggests that the increase in the frequency and duration of meteorological droughts will be larger for the Dead sea basin than for other basins located in the north of the country [Rajsekhar, 2017]. If we focus on data from the governorates of Karak, Tafileh, Ma'an and Madaba, this increase is confirmed with slightly less steep increases : 0.10 month per 10 years for Moderate Droughts, 0.21 months per 10 years for Severe Droughts and 0.28 months per

<sup>10</sup> Additional details from local data analysis are available in Appendix 2 of Annex 2. Reported trends are also confirmed by literature and by the analysis of available remote sensing datasets.

year per Extreme Droughts.

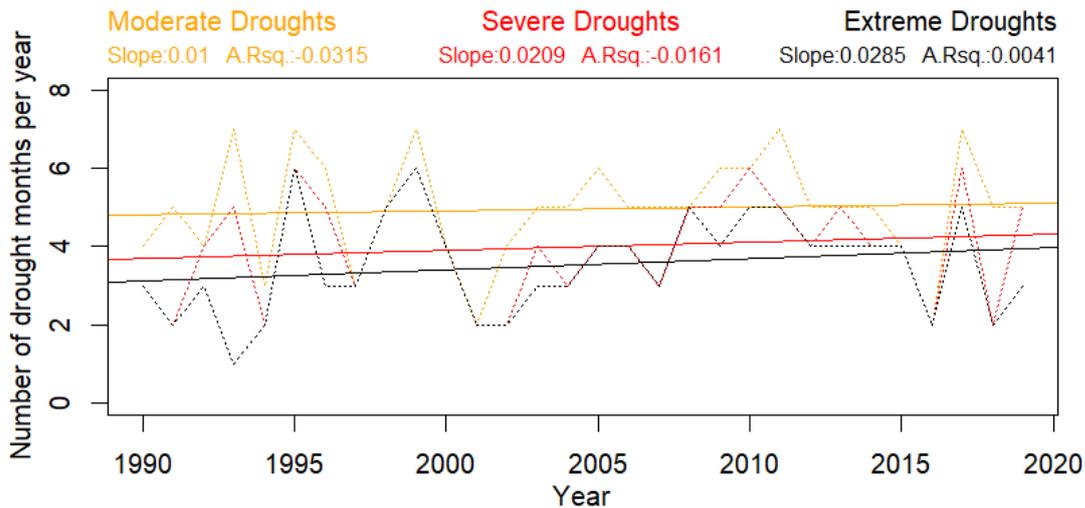


Figure 3: Occurrences of meteorological droughts months in the Dead Sea Basin (in the sense of [Rajsekhar, 2017](#)).

10. The Dead Sea Basin covers four of the 15 sub-basins in the country. This, combined with poverty has contributed to the overall increase in vulnerability in the region. The Dead Sea basin has an average temperature fluctuating between 16C° and 21 C°, with average minimum temperature ranging from <7C° to 18C°. Climate change projections (utilizing the models CSIROmk3, ECHAM5OM, HADGEM1) of the Dead Sea basin indicate a possible increase in air temperature of +1°C by 2030 and of +2°C by 2050, with a significant precipitation decline from -5% to -10% by 2030 and -10% to -20% by 2050 [[Al-Bakri, 2013](#)]. Water deficit in 2015 in the Dead Sea basin was reported to be 33 million m<sup>3</sup> (MCM), given its safe yield of 57 mcm and a total water extraction of 90 mcm, which represented one of the highest relative deficits of all basins (58% of the safe yield) [[FAO, 2018](#)].

11. Given the reported exposure, vulnerability and adaptation deficit of rural communities as well as the distribution of international aid across the country (mostly concentrated in the northern governorates due to higher concentration of refugees from Syria and Iraq), stakeholders consulted during the national engagement process led by the NDA and FAO identified the Dead Sea Basin as one of the most vulnerable areas and selected it for climate adaptation (Annex 2, pages 38→51). Within the basin, the project will be executed in the Governorates of Karak, Madaba, Tafilah and Ma'an<sup>11</sup>. The climate change risks and related adverse impacts in the governorates are related to an increase in average maximum and minimum temperature and a decrease in precipitations with more erratic distribution patterns [[FAO, 2020](#)].

12. The four Governorates host 840,900 inhabitants (about 9% of the total population) that are the most vulnerable in the country to climate change due to the high dependency on rainfed agriculture, poverty rates in rural areas and high climate change adaptation deficit (Annex 15 provides maps of the project area). Additionally, the share of the rural population in the four Governorates is significantly higher than the average national rate of 9.7%, ranging from 22% in Madaba to 46% in Ma'an. Poverty in rural areas is more recurrent than in urban areas and on a national level 19% of the rural population is classified as poor [[WB, 2018](#)]. Further, 10 of the 27 rural poverty pockets<sup>12</sup> of the country are present in the target governorates: 6 in Ma'an, 3 in Karak and 1 in Tafilah [[UNDP, 2013; WB, 2018](#)]. Those employed in the agricultural sector are furthermore poorer than the ones working in other sectors especially those depending on rainfall for their productions. Smallholders that are dependent on rain fed areas are especially vulnerable to irregular rainfall patterns, reduction in precipitation and the increasing frequency of droughts [[FAO, 2018](#)].

13. Jordan has displayed strong ownership and commitment to changing the business as usual scenario. Since 2013 when the first National Climate Change Policy was developed, the policy framework for

<sup>11</sup> Annex 2 pages 41→58 includes a climate brief per each of the identified governorates.

<sup>12</sup> Poverty Pockets are districts with an average poverty level higher than 25%

adaptation in Jordan took a rapid expansion in scope. Jordan has developed several key policies and strategic documents with regards to climate change. These include: (i) the National Climate Change Policy (2013) (ii) the Third National Communication to the UNFCCC including downscaling climate projections for the first time in Jordan (2014); and (iii) its Intended Nationally Determined Contribution (2015) and the National Adaptation Plan (2020). These reaffirm the Government's priorities to bringing about transformative change; the activities in the current project are drawn from its key priorities. The Government has constituted a National Committee on Climate Change (NCCC) with the participation of key stakeholders to oversee the process. Several readiness activities have been approved as part of the GCF country programme in Jordan. Nonetheless, although Jordan plays an active role in the climate change international fora and the country is now accredited with important climate funds such as the Adaptation Fund [[AF, 2020](#)], Jordan's efforts on climate change, including on water and agriculture, have remained, limited in ambition and action due to – among other – to the following: (I) Climate action is severely under-funded, and adaptation requires large and long lasting investments; (II) The issue is not viewed as a priority (compared to e.g. employment), in part due to a lack of understanding of its implications and costs and of the benefits of action; (III) Lack of unified policy framework with fragmented plans and institutions that lack consistency, comprehensiveness, links, common purpose and mainstreaming across institutions and levels (central vs local institutions); (III) Limited application of adopted policies in specific sectors such as water and agriculture; and (IV) Lack of technical skills and resources as additional barriers to implementing projects in the agriculture and water projects<sup>13</sup>.

14. Through the Intended Nationally Determined Contribution [[INDC, 2015](#)] and the National Adaptation Plan (NAP, 2020), the Government has prioritized a number of priority interventions to adapt to climate change. These include improving water use efficiency; promote water harvesting techniques (rainfall and surface including floods); promoting the use of non-conventional water sources (i.e. reclaimed water from waste water treatment plants<sup>14</sup>); rainwater harvesting from rooftops; constructing micro-dams for supplementary irrigation for small farms and decreasing the reliance on groundwater; promoting use of treated wastewater in irrigation; establishing of sea water desalination units and using treated water in agriculture; and raising the awareness on Climate Smart Agriculture, soil conservation; increasing the efficiency of irrigation systems and introducing water saving technologies such as drip irrigation and hydroponic; modifying cropping patterns and crop calendars and using drought tolerant crop varieties; increasing farmers' incomes through crop diversification, etc. There is a strong focus in Government plans on developing a gender sensitive adaptation plan given that climate change is expected to exacerbate current gender inequalities. It is expected that depletion of natural resources and decreasing agricultural productivity may place additional burdens on women's health and reduce time available to participate in decision making processes and income generating activities. Therefore, promoting gender equality and empower women is a necessary program in climate change adaptation plan. The Government however, does not have the resources to undertake the activities and investments required to help it adapt to climate change.

15. There are a few of projects designed to assist the country to deal with issues of climate change being implemented by UN agencies. Some key projects include those being implemented by the UNFCCC-Adaptation Fund which pilots innovative technology transfer and policy support. FAO and UNDP both have on-going projects which are making investments in the area of climate change adaptation through the MADAD project, investments in aquaponic and hydroponics, etc. UNDP is assisting the Government with developing plans for drought management. The United Nation Development Programme (UNDP) launched an "Early Warning System for Flash Floods" in Petra and Wadi Mousa as part of SDC support to the Petra Development and Tourism Region Authority (PDTRA) to mainstream Disaster Risk Reduction (DRR) capacities in local development initiatives. The Adaptation Fund of the UNFCCC (2016-2020) is investing USD 9.2 million in substitution of fresh water with wastewater for specific purposes. It is also assisting in developing and testing innovative solutions to implement participatory water management. WHO has invested in climate change adaptation to protect human health (2010-2014) financed by the GEF SCCF fund.

<sup>13</sup> Additional details are available in Annex 2 pages 34→36.

<sup>14</sup> This part is further developed in the following strategic frameworks: Water Reallocation Policy-2016 and Water Substitution and Reuse Policy -2016. Use and monitoring of reclaimed water from waste water treatment plants in agriculture are regulated by Agriculture Law No. 13 of 2016 and its amendments

16. There are also other donors undertaking investments in the area of adaptation in the country which will complement the project efforts. IFAD collaborated with the National Agriculture Research Center (NARC) with funds from GEF (2014-2018) for investments in irrigation technology to face climate change. IFAD is investing (2021- 2025) USD 15.2 to integrate climate resilient agriculture in selected value chains. AFD and KFW are investing Euro 450 million in a Water Sector Policy Loan which includes diffusion of water harvesting and distribution technology. AFD and KFW are currently carrying out the second phase of the Water Sector Policy Loan (WSPL). GIZ is investing USD 2 million for removing barriers to Climate Change Adaptation in the water and agriculture sector. USAID has invested in policy reforms for the water companies that increased cost recovery and the installation of wastewater treatment plants that supply reclaimed water for the agriculture sector. However, most of the donors efforts are being implemented in the Jordan Valley and in the northern governorates (Annex 2, pages 76→79).

**B.2. Theory of change (max. 1000 words, approximately 2 pages plus diagram)**

17. The key barriers in adapting to climate change in the country stem from constraints at the institutional, household and policy level. Government resources and capacity to invest in the water sector are limited with little strategic thinking on how best to address some of the climate induced adverse impacts such as decline in ground water recharge, stream flow reduction, increase in droughts and floods, and increased temperatures. The NAP also identified general weaknesses in public policy and public finance management and weakly defined institutional roles and remits that affect governance and limit the implementation of identified priorities and ensure compliance of existing regulation. At the national level, there are general weaknesses in public policy and public finance management and lack of clearly defined institutional roles and mandates. The private sector is not fully apprised of the potential opportunities to market climate adaptive inputs and technologies. At the household level the key barriers include the limited capacity to invest in addressing climate induced water scarcity in the water and agriculture sectors as well as the lack of knowledge on climate change issues and dynamics. There is limited knowledge and awareness of the farmers about how to best adapt farming practices to reduced and uncertain precipitation and increase in temperatures and lack of awareness about the range of technologies and practices that can help them become more resilient. The government extension staff have limited outreach and excessive reliance on traditional extension approaches and lack of update knowledge of the range of technologies available for climate adaptation. There is limited use of information communication technology (ICT) to disseminate information that can help in adaptation. Due to social and economic barriers women do not have access to the knowledge, services and resources that can build their resilience to climate risks, women are seldom consulted or involved in key decision although they play an important role in managing key sectors which are impacted by climate risks.

18. An underlying cross-cutting approach of the project, based on the lessons outlined in the NAP, will be to build farmers experience on climate change adaptation. This will allow to break down some of the barriers that exist around understanding the implications of climate change for their lives, ultimately leading to changes in behavior and to a society and economy that is better prepared for climate change and its impacts. Another key constraint identified in consultations held at various levels in the country during the NAP process is the limited interest and engagement of the private sector in supplying the full range of inputs and technologies that exist for adaptation. While the private sector has been providing some water efficient technologies such as drip and sprinkler irrigation systems and equipment for renewable energy, they could be more actively engaged and it appears that there are several barriers that inhibit their role which include lack of demand and a well-developed for the full range of adaptation technologies, market, lack of an enabling environment and market conditions and changing regulations which increase the risk for the private sector (NAP, 2020) or distortive policies such as those in place for water and grains subsidies. The private sector is however gaining increased awareness of the benefits in engaging in climate-related investment opportunities.

19. Based on these barriers a set of interventions were selected which were accorded the highest priority based on the multi-criteria decision analysis adopted under the NAP process that ranked and weighted them based on relevance, feasibility, sustainability and transfer potential (NAP, 2020). The project interventions were grouped into three components which represent the pathways designed to address key barriers to climate change adaptation. The theory of change of the current project is premised on the evidence that there these pathways can help the country address climate change risks. The project components are designed to reflect these pathways and ensure long-term sustainable change in the country. The theory of change of the project builds on the considerable evidence that FAO and other development partners (e.g. UNDP, IFAD, the World Bank, USAID, GIZ) have established from its investments across several regions and countries that investments in infrastructure, farming households and institutions represent a powerful means to address the specific constraints in the project area as well as scale-up and replicate the innovations introduced by the project to the rest of the country. The project is designed to assist the country work at the

national, community and household level in bringing about a paradigm shift in how scarce water resources are harvested, planned for and sustainably used in agriculture and at the household level. The following sections and the diagram below illustrate the underlying theory of change.

20. **Investments in infrastructure and technical capacity for planning at the level of the hydrological basin for more strategic investments;** The country will have to invest in enabling its institutions and people make a significant shift in their approach and behavior patterns. Government can assist local communities better adapt to the risk of climate change if they are supported by (i) investments in infrastructure such as roof top water harvesting and use of reclaimed water<sup>15</sup> to address the immediate problems of water scarcity and rainfed agriculture in the project area; (ii) these investments can also be used as an entry point for sustainable behavior change if accompanied by awareness about climate risks and water scarcity which will be provided through an NGO recruited to enhance awareness at both the household and in public institutions especially schools and hospitals; and (iii) engagement of the private sector in the process can help them realize the market opportunity to scale-up the sale of more cost-effective and efficient technologies for water harvesting and optimization of water use such as water saving technologies and gadgets for both domestic and on-farm use. The project theory further postulates that building technical capacity of the Ministry of Water and Irrigation (MWI) for planning at the landscape level can assist it make more strategic decisions about water investments and add value to how public resources are utilized for improved management of the hydrological basins with sustained benefits such as ground water recharge, flood protection, soil conservation and drought management which will have an impact not only in the project area but also in areas downstream. The assistance that the project provides in preparing the plans will help to bring about a strategic shift in the manner in which the Government plans and budgets for water infrastructure and makes strategic choices at the basin level.

21. **Investing in building the resilience of farming households** is a promising and sustainable pathway based on the following: (i) enhanced knowledge about climate change risks and its impact on farming will encourage women and men from vulnerable households to change behavior and adopt practices and technologies that can help them introduce adaptive practices such as changing crop calendars, purchase new technologies and inputs for more efficient and productive use of water through Farming Field Schools and field days; (ii) as the demand for these inputs and technologies grows, private sector will be willing to stock and provide the climate adaptation technologies; Special effort will be made to engage the private sector to ensure that there is a sustainable supply of the technologies and inputs so that they can assist farming households in adopting adaptive practices. (iii) Information communication technology can be an important tool for providing climate change information and awareness to farmers and they would be provided actionable intelligence on how to adapt and will adopt practices that are communicated through the e-extension portals given that 89% of the Jordanian population is connected to the internet<sup>16</sup>; (iv) women can be important agents of change as they play a key role in helping households deal with food and water security, they are the main users of domestic water and are engaged in some critical farming tasks such as vegetable gardening, feeding of livestock and are disproportionately impacted by climate change [UN-Women 2016] and would be more willing to adopt and disseminate these practices and technologies if they were given practical guidance [GoJ-NAP, 2020] and opportunities to do so (Annex 8: Gender Assessment); (v) a cadre of community-based women change agents can be key in reaching women from vulnerable households and inculcating transformative behaviour.

22. **An underlying and core aspect of the theory of change of the current project is that as a result of differences in socially constructed gender roles and social status, women and men experience the impacts of climate change differently.** It is now recognized that if climate-smart agriculture interventions are to deliver sustainable benefits and do so in an equitable way, they cannot afford to neglect these differences. **Rural women are crucial to agricultural production and it is important to involve them as this is critical for making the transition to climate-smart agriculture and meeting the food and nutrition security needs of an expanding population in an equitable and sustainable way** (FAO, 2020). There is also a growing body of evidence which shows that costs and benefits associated with

<sup>15</sup> Reclaimed water originates from secondary treatment of wastewater from domestic sources. Agriculture Law No. 13 of 2016 and its amendments regulate its use. State authorities (Ministry of Health, Ministry of Agriculture and Ministry of Environment) test reclaimed water at the source against national and WHO standards for health and safety.

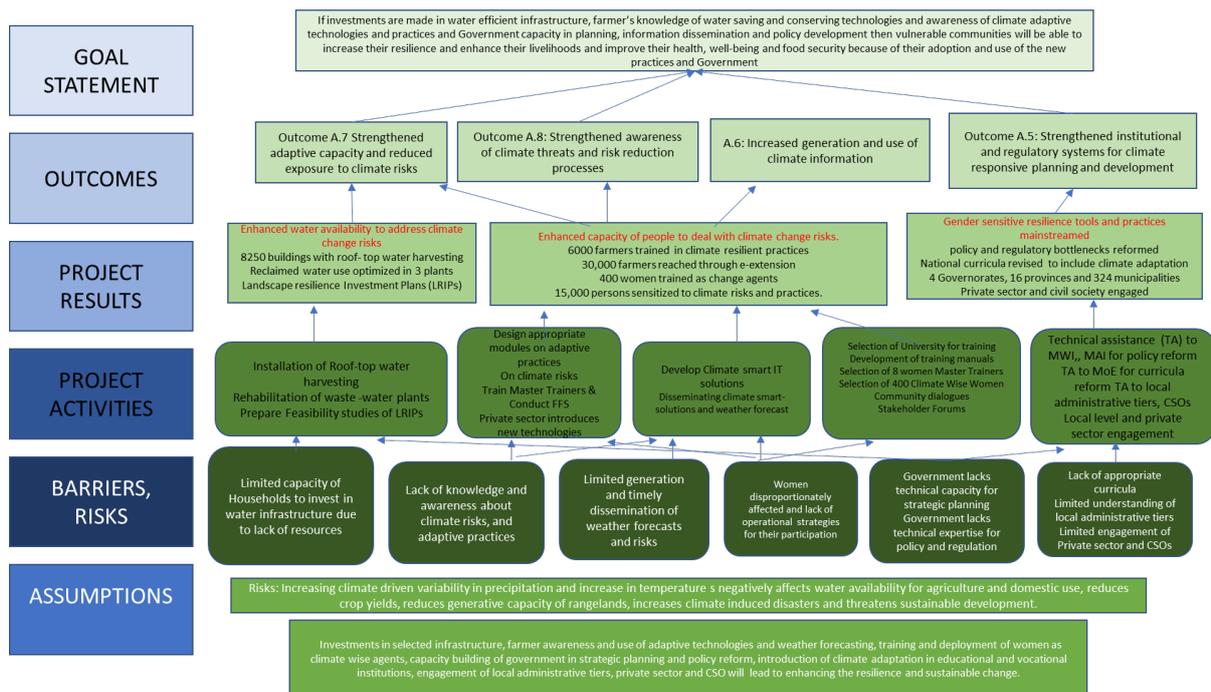
<sup>16</sup> We are Social, 2017.

adopting climate-smart agriculture technologies and practices are not evenly distributed among household members ([FAO, 2020](#)). Therefore, “gender analysis must be an integral part of climate-smart agriculture interventions ([FAO, 2020](#).” Based on this understanding the project will implement a gender-responsive approach to climate-smart agriculture to address the different constraints faced by various vulnerable groups. The project will enhance women’s access to resources, services, information so that they can increase their productivity and contribute to meeting the objectives of climate-smart agriculture and broader development goals.

23. **Long-term change requires policy dialogue, mainstreaming paradigm shifts in the planning and budgeting processes of national and local institutions and engagement with citizens, civil society organizations and the private sector.** This is based on the findings that (i) the current degree of integration of climate change considerations into sectoral planning is still low [GoJ-NAP, 2020] and many of the policies at the national level were formulated without a clear understanding of their impact on climate adaptation such as the policy regarding subsidies on barley used primarily as a fodder crop, or the policy regarding the use of reclaimed water, etc., and a more in-depth audit of policies from a climate change perspective would help decision-makers assess the impact on adaptation and lead to a more effective policy and regulatory framework and encourage use of adaptive measures; (ii) there was low-integration of climate change adaptation in national curriculums [GoJ-NAP, 2020] and mainstreaming of knowledge about climate change through incorporation in university and vocational training curriculum will change the orientation and perspectives of a range of professionals and skilled manpower in how they deal with adaptation and encourage adaptation; (iii) increased awareness of local administration tiers about climate risks would help in improved planning, budgeting and implementation at the local level; (iv) awareness of civil society organizations would help to incorporate climate risk awareness in their modus operandi and enhance their capacity for more effective use of climate financing for sustainable long-term change; (v) citizen engagement and awareness campaigns would generate a long-term behavior change and encourage adoption of adaptation measures; (vi) greater engagement of the private sector will encourage supply and provision of innovative technologies and inputs.

24. **The theory of change for scaling up the scope and impact of the project in a cost-effective and efficient manner** is based on several key and well tested assumptions that have proved the test of time; (i) the focus of the project on capacity building and technology transfer is expected to instil long-term behaviour change in the target communities, institutions and policies and is also one of the main recommendation of the Paris Agreement; (ii) the replicability of the project to other areas is expected to be undertaken as a result of the engagement of the private sector who would explore the growing market, based on increased demand by targeted and other households through the demonstration effect of current users of the array of technologies and inputs that the project will introduce; (iii) the incorporation of climate change in the curricula of the academic and vocational institutions will be used for teaching and training to students and professionals on a regular basis that will be used to train and implement more climate adaptive measures and build resilience. The investment in the capacity building of local tiers of municipal government, civil society and the cadre of climate wise women is expected to pay dividends in terms of the incorporation of climate change adaptation measures in their plans and strategies for implementation at the community level.

Figure 4: The Theory of Change Diagram



An enlarged version of the Theory of Change Diagram in given in Annex 17.

### B.3. Project/programme description (max. 2000 words, approximately 4 pages)

25. The goal of the project is increased climate resilient sustainable development in the country to decrease vulnerability of rural areas to CC-induced water scarcity. The project is designed to help the country adapt to climate risks and is aligned with the country's Green Growth Plan (2017) which stresses the importance of shifting behavior towards more efficient use of water resources, knowledge transfer and introduction of drought tolerant varieties. The project is designed to further the objectives of the Climate Change Policy (2013-2020), the National Adaptation Plan (2020) and to reach the objectives identified in the INDC (2015) by building the adaptive capacity of communities and institutions in Jordan, addressing the needs of vulnerable groups, increasing the resilience of water management systems as well as the agricultural sector to climate change<sup>17</sup>.

26. The project does not promote groundwater use through irrigation or other means. It will solely focus on increasing water supply through storage of treated wastewater and rooftop rainwater harvesting and reducing household water consumption through the use of water saving devices<sup>18</sup>. To assess the project's benefit, we estimate by how much the proposed interventions will contribute to reducing the existing groundwater overdraft in the Dead Sea Basin. Groundwater overdraft occurs when groundwater use exceeds the amount of natural recharge into an aquifer through rainfall, which leads to a decline in groundwater level and an increased vulnerability to drought.

27. According to the Jordanian Ministry of Water and Irrigation (<https://go.nature.com/2L9CL5T>), the existing groundwater overdraft in the basin is 26.9 MCM/year. While this value is subject to uncertainty and potential changes as the basin develops and climate change impacts materializes, it provides the best-available benchmark to quantify the project's contribution to reducing groundwater overdraft<sup>19</sup>. This value

<sup>17</sup> Additional details on the reference policy framework is available in Annex 2, pages 20→36.

<sup>18</sup> Water saving devices will be fully funded by the beneficiaries. Such contributing does not constitute cofinancing.

<sup>19</sup> Whitman, E. (2019) A land without water: the scramble to stop Jordan from running dry. Nature 573, 20–23. doi: 10.1038/d41586-019-02600-w

is compared to the project’s interventions in the table below to demonstrate that by increasing water supply through storage of treated wastewater and rainwater (e) and saving water (effectively reducing consumption in households), the project contributes to reducing groundwater overdraft and the pressure on precious groundwater resources. The water balance is calculated on an annual time-step for the last year (year 7) of the project, when all the planned interventions are expected to have been completed, thus providing their full contribution to the region’s water balance. To account for the uncertainty around real water savings obtained through water saving devices in households, the table presents the water balance for optimistic (top) and base (bottom) scenarios. As shown in Table 1A/1B, the project is expected to contribute to a 3 to 3.5% reduction in groundwater overdraft in the basin.

Table 1A. Water balance, optimistic scenario, where the installation of water saving devices in households and public buildings lead to 30% reduction in consumption. All values are annual, assuming that project interventions reach their full planned capacity by year 7.

<b>Project interventions</b>		
Rooftop rainwater harvesting in private and public buildings	0.31	MCM
Installation of water saving devices in households and public buildings (optimistic – devices lead to 30% reduction)	0.36	MCM
Storage of reclaimed water	0.255	MCM
<b>Water balance</b>		
Water saved by the project in year 7 (optimistic scenario)	0.93	MCM
Existing groundwater overdraft	26.9	MCM
<b>Contribution to reduce annual groundwater overdraft by end of the project in year 7</b>		
Achieved reduction in groundwater overdraft (optimistic scenario, where water saving devices lead to a 30% decrease in water consumption in homes)	3.5%	

Table 1B. Water balance, base scenario, where the installation of water saving devices in households and public buildings lead to 20% reduction in consumption. All values are annual, assuming that project interventions reach their full planned capacity by year 7.

<b>Project interventions</b>		
Rooftop rainwater harvesting in private and public buildings	0.31	MCM
Installation of water saving devices in households and public buildings (base – devices lead to 20% reduction)	0.24	MCM
Storage of reclaimed water	0.255	MCM
<b>Water balance</b>		
Water saved by the project in year 7 (base scenario)	0.81	MCM
Existing groundwater overdraft	26.9	MCM
<b>Contribution to reduce annual groundwater overdraft by end of the project in year 7</b>		
Achieved reduction in groundwater overdraft (scenario where water saving devices lead to a 20% decrease in water consumption in homes)	3%	

28. Finally, according to the goals set in the National Water Strategy (2016-2025), 7 MCM of additional water supplies will be provided through household’s rainwater water harvesting by 2025 ([National Water Strategy](#), table 5). The investments on rainwater harvesting systems supported by the project will contribute to 0.31 MCM or 4.4% to close the gap towards this goal and support the expansion of its impacts at the national level thanks to the extensive training and capacity development of communities, civil society organizations, academia, private sector actors and institutions (central and local).

29. The project will have three interrelated components which will work synergistically and enhance the impact of project investments. The components are designed to deal with the key barriers identified above and are grouped into three components addressing climate change vulnerability via: water infrastructure, households adaptation capacity and institutional capacity at various levels;

- Component 1: Climate Resilient Water Systems for enhanced water security;
- Component 2: Climate Change resilience for Enhanced Livelihoods and Food Security;

- Component 3: Scaling-up climate adaptation into policy and across actors (institutions, private sector, civil society).

30. **Component 1: Climate Resilient Water Systems for enhanced water security:** This component has been designed to enhance water security at the farming community level in the Dead Sea Basin which has been jeopardized by climate change. The component will reduce the vulnerability of farming communities that are currently struggling to cope with the described climate changes (e.g. increased temperatures, reduced rainfall and reduced rainfall patterns). Providing farmers with additional water without increasing the overall draft from available resources, will make agriculture possible again as due to lack of water farmers are currently growing marginal crops (e.g. barley for livestock) if not abandoning their lands for the cities. Therefore, the **expected outcome** from the component is **enhanced water availability to mitigate climate change adverse impacts**. Current sources of water supply are quite variable, limited and cause further water imbalance in the project locations and further downstream. In keeping with the Government's plans for a paradigm shift in how water is used and managed (Section D.2), the project will invest in proven water solutions such as rooftops rainwater harvesting, use of water saving domestic devices and use of reclaimed water that will be upscaled in the project area and use that as an entry point for initiating awareness and orientation about water conservation measures (Details available in Annex 2 pages 52→67). While there is potential for investing in water structures that can help to recharge the aquifers, prevent floods and soil erosion, there is inadequate technical capacity across institutions to develop comprehensive landscape level investment plans to enhance the resilience of the hydrological systems. The set of interventions has been selected because of their potential for delivering high-impact within the comparative advantage of the Accredited Entity (AE), it meets all the environment and social safeguards and for its potential to provide immediate and long-term protection against climate risks in the project area (Annex 2 pages 68→75).

31. **Output 1.1.1: 400 public buildings and 7,850 households will be fitted with the roof top water harvesting structures:** Associated Activities include the procurement of integrated water resilient systems, the provision of technical assistance and oversight for water resilient systems, installation of rooftop rainwater harvesting structures (10--20 m<sup>3</sup>) and water saving devices for households and public buildings. Roof top water-harvesting technology is simple, standardized for Jordan by the Uniform Plumbing Code of Jordan approved by the Jordan National Building Council's technical committee in 2015, and ensures that rain falling on rooftops is collected into a dedicated tank instead of being dispersed and lost<sup>20</sup>. The size and type of tank where collected water will be stored will depend on site characteristics at the household level<sup>21</sup>. Water saving devices include spray taps, faucet aerators, pressure reducing valves and low-flow shower heads with shut-off valves to be installed in homes. Coherently, one of the selection criteria of beneficiary households is the technical feasibility where the type of tank will be identified according to the RHS selection criteria specified in Annex 2 page 56. This activity will address the shortage of water at the household level. Households which are connected to the public system for domestic use do not get regular supply and in project areas households are supplied with water once every week or two. Therefore, this activity aims to build climate resilience through improved access to water and efficient water use at the household level for both domestic use<sup>22,23</sup> and for crops planted in the homestead gardens that do not require constant irrigation and that are drought tolerant. To this end, the project considered that households would use about 23%<sup>24</sup> of the stored water for domestic purposes and the rest for crops (e.g. olive oil trees, zaatar and vegetables). From the simulations made by the project, the following pattern for a 20 m<sup>3</sup> system that included irrigation

<sup>20</sup> Groundwater recharge will be considered in the design stage of the system if there is an oversupply of collected rainwater compared to demands. If groundwater recharge will be feasible, the project will put in place all the necessary studies with the Ministry of Water and Irrigation to ensure the feasibility of such action.

<sup>21</sup> Annex 2 pages 55→57 provides additional details on tanks' typology. The technical specification related to the tanks and the system will follow the Uniform Plumbing Code of Jordan approved by the Jordan National Building Council's technical committee in 2015.

<sup>22</sup> The use of water collected via the rainwater harvesting systems will not be used for drinking purposes as dictated by the national law. Drinking water quality in Jordan is governed by Jordanian Standard 286 (JS286) which is adapted based on the World Health Organization (WHO) guidelines for drinking water quality.

<sup>23</sup> The use of water collected via the rainwater harvesting systems will not be used for drinking purposes as dictated by the national law. Drinking water quality in Jordan is governed by Jordanian Standard 286 (JS286) which is adapted based on the World Health Organization (WHO) guidelines for drinking water quality

<sup>24</sup> Source: USAID, 2012 • USAID-IDARA, 2012. Jordan residential water efficiency guide. <https://jordankmportal.com/resources/water-residential-english>

of crops equivalent to about 20 m<sup>2</sup> planted with olive oil trees (2-3) and about 50 m<sup>2</sup> planted with mixed vegetables<sup>25,26</sup>, the system will always be filled with water.

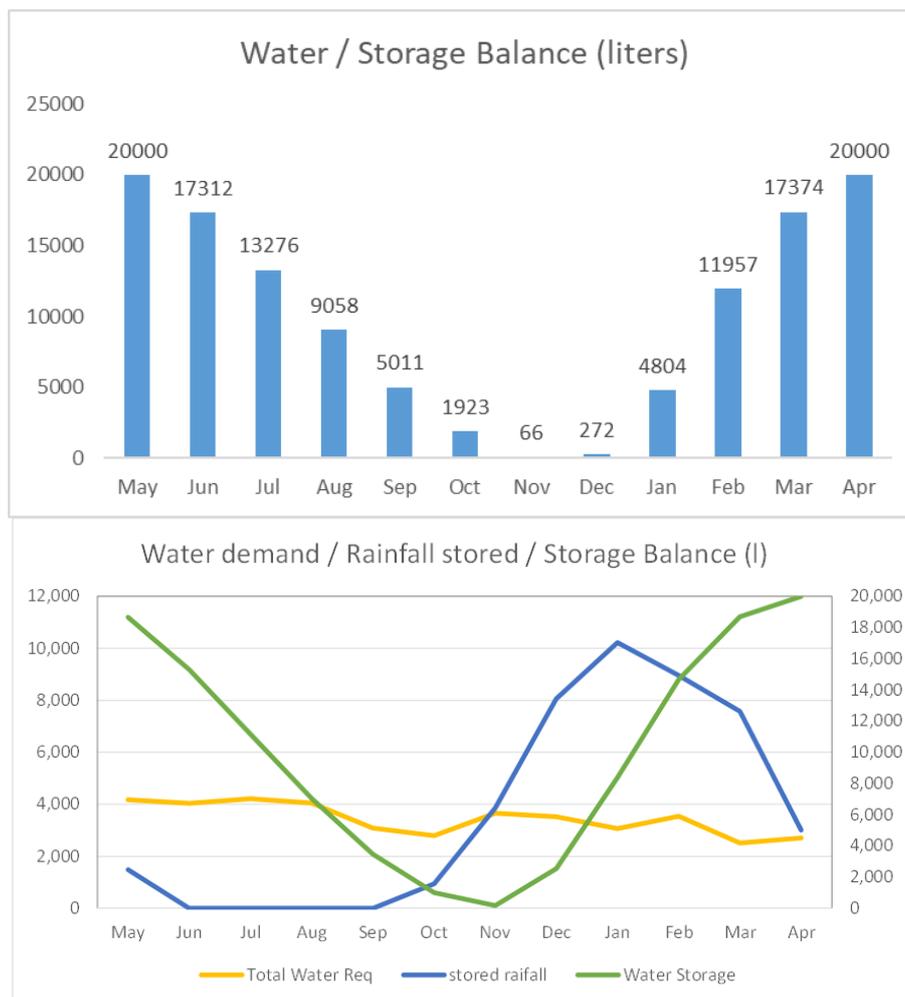


Figure5: Rainwater Storage tanks water balance.

32. Furthermore, households will also have access to the activities designed to increase water productivity, adopt new irrigation technologies and learn new practices that will minimize water requirements both in house and outside (i.e. home garden) [Component 2]. Therefore, the provision of rainwater harvesting systems is not planned to substitute rainfed irrigation in open fields but to optimize the use of potable water from the public system also climate proofing home gardens productions.

33. The project will support the installation of rainwater harvesting systems from rooftops in rural areas (Annex 2, pages 53→58). The system requires a rooftop to collect rainwater that will be transferred by gravity into a tank located underground or above ground depending on soil type, foundations and space availability. Figure 6 illustrate the main elements of the system.

<sup>25</sup> Crop water requirements and crop deficit (water requirements - effective precipitation) as well as the crop calendar were obtained from <http://www.fao.org/aquastat/en/climate-info-tool/>. For the simulation, we estimated to administer at least 80% of the water requirement. The chart presented is already discounted of the water needed for domestic purposes. For tanks smaller than 20 m<sup>3</sup> irrigation of olive oil trees will not be possible but the parcel under vegetables can be increased.

<sup>26</sup> Based on the latest yield data published in literature (e.g Status report: SME Vegetable Farming in Jordan, 2019) proposed actions will allow households to produce around 280 kg of vegetables and, based on the latest [LO report on the Olive Oil Sector in Jordan](#) (2014) about 112 Kg of olives that could produce over 20Kg of olive oil (assuming an efficiency of the milling of about 20%)

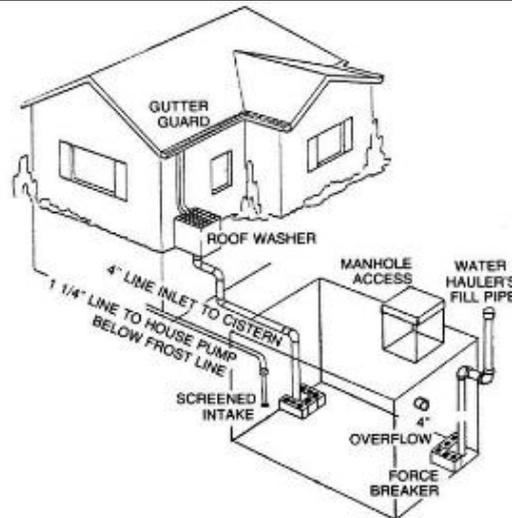


Figure 6: Main elements of the rainwater harvesting system.

34. Rainwater harvesting systems will also be installed in selected public buildings such as schools, mosques, municipalities for wider dissemination and awareness of the technology at the local community level and to also help address water scarcity in public buildings. Details of the criteria to determine the technical feasibility have been detailed in Annex 2, pages 52→67.

35. The type of tank will be determined by the site characteristics/attributes. (e.g. roof area, soil type and type of building). The criteria for selecting the appropriate technology have been specified in Annex 2 page 56 and will serve to guide the bidding package for the service provider. These and the results of the technical feasibility that will be carried out during the preselection phase of beneficiaries by service providers (e.g. NGOs and CBOs) will determine the final design of the RHS's tank. The final design will necessarily be in line with environmental and social safeguards, as per the Annex 6 "Environmental and Social Management Framework" (ESMF). The ESMF considered both environmental and social risks associated with RHS (including, for example, inappropriate site selection, or deployment of inappropriate or ineffective construction methods and materials); it outlines actions (ensure avoidance of/mitigation of) to address potential impacts (Annex 6 →Table 9). The methodology selected for the calculation of the tanks size as well as for the reported specification follows the standards reported by the USAID, 2017 Rainwater Harvesting for Households Guide that are based on the Uniform Plumbing Code of Jordan approved by the Jordan National Building Council's technical committee in 2015 (reference attached). The design of rainwater harvesting systems is available in Appendix 1 of Annex 2. Calculations on tank size have been made based on monthly rainfall (mm), rooftop size (m<sup>2</sup>), number of people per household and runoff coefficient. A detail description of sources and calculation is reported in Appendix 1 to Annex 2, pages 46→64.

36. A service provider will be competitively selected among NGOs and CBOs for the identification of the households and to develop a behavior change strategy for more efficient water use in homes and in the public sphere in schools, mosques and other public places. The Project Management Unit, selected beneficiaries and MWI project staff will monitor the execution of works. Each installed unit will be georeferenced and available in the project Atlas and tracked for performance assessment (Annex 2 page 88). The NGO selected will develop special programmes for school children and teachers to engage them in water conservation activities. One of the criteria for the selection of the service provider will be their proposal and innovation on how they plan to engage school children through art, quiz competition and water savings activities at the school level. The awareness among children is expected to generate additional benefits as young people are being recognized as the champions of climate change who will promote the climate change agenda as adults. A technical criterion for the selection of the geographic area in the Governorates based on technical feasibility and potential for using the water for homestead gardens,

vulnerability, etc., will be used for identification and prioritization of households (Table 1). 69.3% of the output's budget will be allocated to fitting rooftop water harvesting systems (USD 10 million). This component will be jointly executed by UNDP (Output 1.1.1, Activities 1.1.1.4 and 1.1.1.5 and Output 1.1.3, Activities 1.1.3.1, 1.1.3.2 and 1.1.3.3) and FAO.

37. The investment will be accompanied by behavioral change, awareness and orientation activities on water conservation at the household level, for municipal staff of public buildings and children and teachers in schools for sustainable behavior change. The project aims to promote water-use efficiency through uptake and diffusion of water saving devices in households and public buildings. Water saving devices include spray taps, faucet aerators, pressure reducing valves and low-flow shower heads with shut-off valves (Annex 2, Figure 24 page 57). In Jordan, existing evidence suggest that water saving devices has proved to save 30% of water used in buildings (USAID 2005). The government – often with support from international donors- has already embarked on a campaign to promote the uptake of these devices, so this activity is well aligned with existing policies (USAID 2018) (Annex 2 page 56-->57). Therefore, the project will present in schools and other public buildings the advantages of identified devices that will allow families to save water. These devices (e.g. spray taps, faucet aerators, pressure reducing valves and low-flow shower heads with shut-off valves) will not require technical expertise to be installed and they do not require maintenance. Coherently, households will also be introduced to water conserving devices and gadgets with private sector engagement to further enhance the efficiency with which the water is used at the domestic level given that almost half the water is use for domestic purposes in the country. The activity will be introduced in a phased manner based on technical specifications. The phased approach envisages that the project will invest based on beneficiaries' readiness and capacity to receive the rainwater harvesting system. Beneficiaries will be involved in a series of awareness events (Phase I) that will include climate change and water scarcity and that going through specific awareness and training events for identifying feasibility and optimal operation and maintenance on installed systems (phase II) will end by demonstrating the key role that each household has in ensuring water security (phase III). 17,8% of the output's budget will be allocated to raising awareness and education activities. A team of specialists will be in charge of planning, providing technical assistance<sup>27</sup> and oversight and monitoring all the technical aspects during the activity's execution (12.9% of total output's budget). The team of specialists will include experts from the ministry of water and irrigation, experts from FAO as well as technicians (e.g. foreman, architect, and construction engineers) competitively recruited in Jordan. While planning will be fully in charge of specialists of the Executing Entity, oversight and monitoring will be done in collaboration with the Ministry of Water and Irrigation. Technical assistance will be provided by procured parties supervised by experts from executing entities.

38. The households that benefit from the rainwater harvesting system will be expected to contribute part of the costs based on criteria that favours women-headed households, refugee and poor households, those reliant solely on agriculture, HHs with a person with disability or more than six dependents and HHs using the water for homestead gardens for increased food security. While men and women will both be consulted on designing water outlets, special care will be taken to involve women as the primary users of domestic water, kitchen gardens and feeding livestock in the homestead. The criteria for the selection of public buildings will be based on water use in the buildings such as schools, mosques, hospitals and the willingness to finance part of the cost and install water savings devices and gadgets from their own resources and participating in orientation sessions on more efficient water use. These will be directly paid by the HH to the seller of these gadgets. The amount will not enter project books but the record of who has installed these (after verification during the feasibility assessment, and the cost will be entered in the M&E system.

<sup>27</sup> A team of technical specialists comprising a water engineer and an M&E specialist will provide guidance to MWI and oversight of service providers on all technical aspects of component 1

Table 2 Description of Eligibility criteria and financial Incentive proportions per target group

Financial Incentive Proportion / Per cent of total costs covered by the project per target group	Expected distribution of funds per target group (preliminary)	Eligibility criteria <sup>28</sup>
100%	20%	Women-headed household, those identified as poor households with potential to use water for homestead kitchen gardens.
100%	20%	HH dependent entirely on agriculture owning/renting up to 10 dunums of land with possibility of planting around the homestead.
70%	20%	HH with a person with disability or more than 6 dependents ( <a href="#">UK4D, 2018</a> ).
35%	40%	Any other HH which applies and is willing to invest in water saving gadgets and devices within the HH.

Figure 3: sample of the requested water saving gadgets and devices



39. The activity is in line with environmental and social safeguards, as per the Annex 6 “Environmental and Social Management Framework” (ESMF). The ESMF considered both environmental and social risks associated with the activity (including, for example, adherence to water quality indicators and respect for national laws and provide technical assistance to promote demand and safe reuse of reclaimed water, including building local capacity of farmers and Water User Associations); it outlines actions (ensure avoidance of/mitigation of) to address potential impacts (Annex 6 pages 68→69: Table 9). This investment will assist in enhancing climate resilience at the farm level for the targeted households by providing additional water in accordance with Jordan’s Water Substitution and Reuse Policy (2016). MWI has certified its commitment to undertake the operation and maintenance of the storage and distribution infrastructure that will be built to maximize the use of the reclaimed water (Annex 13, see MWI letter). The project will assist the MWI and the MoA in building capacity of Water User Association (WUAs) among farmers that are or will be connected to reclaimed water sources. WUAs will be supported in affixing the responsibility for water allocations, operation and maintenance at the field level and costing among users. The project will also

<sup>28</sup> Both owners and tenants will be eligible. In the specific case of tenants, agreement from the proprietor will be necessary.

support WUAs in ensuring transparency and rational water sharing rights among farmers and in establishing rules and applications forms to allow possible enlargements of the network for use by additional subscribers.

40. **Output 1.1.2: Reuse of reclaimed water from 3 Waste Water Plants is optimized.** Infrastructure at the wastewater treatment site in project areas is inadequate and does not have the capacity to store reclaimed water<sup>29</sup> for use in the dry season and/or for supplementary irrigation to at least 968<sup>30</sup> climate vulnerable farmers that are growing rainfed fodder crops and that are currently going out of production due to lack of sufficient rainfall and low marketability of produced good. The proposed activity aims to address this problem by providing additional water storage infrastructure to the wastewater treatment plants where reclaimed water will be stored during the winter months and distributed to farmers during the dry season when water demand is at its highest. Water distribution during the dry season will be managed by farmers and facility managers depending on needs and storage capacity<sup>31</sup> of farmers. This will allow storing water when available and distribute it when needed by farmers mitigating the adverse impacts of climate change (i.e. reduced and erratic precipitation patterns). Although law n.13, 2016 will only allow farmers to use reclaimed water for fodder irrigation<sup>32</sup> this will not penalize beneficiaries nor limit the food security potential of the country. As reported in Annex 3, the economic and financial analysis demonstrate the viability of the shift in current practices, where current crop patterns (as rainfed barley) are currently replaced by Alfalfa irrigated with reclaimed water. Forage crops meet less than 25% of livestock feed requirements and the rest is imported. Considering that Jordanian laws do not allow the use of groundwater for fodder irrigation and that the high cost of freshwater for vegetables joined with volatile market prices increases the investment risks for farmers, fodder production will contribute to beneficiaries' resilience and to the national food security (Annex 19). The project will not impose nor push for any particular crop. The alfalfa is reported in the documents and analyzed in Annex 19 as it appears to be the favorite crop for farmers that can access irrigation from reclaimed water. The activities will include enhancing the storage capacity for distribution of water to maximize use of reclaimed water from the existing wastewater treatment plants in Madaba, Karak, and Tafilah. No new households will be connected to the wastewater treatment plants, as these activities concentrate on existing plants and the wastewater volumes they already treat. The activity will support at least 968 farmers in reducing their vulnerability (CC adaptation) by helping them optimize the use of available water resources without increasing the total volume of water harvested/extracted in project areas. In a business as usual scenario, furthermore without adequate storage capacity and recycling, wastewater would be dumped into the nearby streams and farmers would be reliant only on rainfall for their crops.

41. The activity is in line with environmental and social safeguards, as per the Annex 6 "Environmental and Social Management Framework" (ESMF). The ESMF considered both environmental and social risks associated with the activity including adherence to water quality indicators and respect for national laws and provide technical assistance to promote demand and safe reuse of reclaimed water, including building local capacity of farmers and Water User Associations. Furthermore, it outlines actions (ensure avoidance of/mitigation of) to address potential impacts (Annex 6 pages 68→69: Table 9). Additionally, the project will ensure that the design of identified tanks and their construction will follow the Jordanian and WHO standards to reduce the risks related to biological contamination. To this end, the project will work with the wastewater treatment plants and the Ministry of Water and Irrigation that water is managed to further decrease risks related to contamination. The design of tanks and safe management procedure will be secured at start up. This investment will assist in enhancing climate resilience at the farm level for the targeted households by providing additional water in accordance with Jordan's Water Substitution and Reuse Policy (2016). MWI has certified its commitment to undertake the operation and maintenance of the storage and distribution

<sup>29</sup> Reclaimed water originates from secondary treatment of wastewater from domestic sources. Agriculture Law No. 13 of 2016 and its amendments regulate its use. State authorities (Ministry of Health, Ministry of Agriculture and Ministry of Environment) test reclaimed water at the source against national and WHO standards for health and safety.

<sup>30</sup> The total number of farmers was identified based on water availability and proximity to reservoirs.

<sup>31</sup> The project will provide to farmers, where necessary, the needed technical assistance to store water and to plan for irrigation according to the cropping patterns of the crops.

<sup>32</sup> This is due to the fact that none of the wastewater treatment plant is ready to ensure tertiary treatment and therefore the quality of water does not comply with national and international (WHO) standards to irrigate food crops for direct human consumption.

infrastructure that will be built to maximize the use of the reclaimed water (Annex 13, see MWI letter). The project will assist the MWI and the MoA in building capacity of Water User Association (WUAs) among farmers that are or will be connected to reclaimed water sources. WUAs will be supported in affixing the responsibility for water allocations, operation and maintenance at the field level and costing among users. The project will also support WUAs in ensuring transparency and rational water sharing rights among farmers and in establishing rules and applications forms to allow possible enlargements of the network for use by additional subscribers.

42. **Output 1.1.3: Landscape Resilience Investment Plan for part of the Dead Sea Basin** in the four target governorates and enhanced capacity of MWI to prepare similar plans in the future. The activities under this component will include plans for infrastructure investments for recharge of the aquifers in the Dead Sea Basin, flood protection works, weirs and delay action dams, storage ponds, water diversion structures, etc. Strong technical capacity will be procured through the project for development of a portfolio of investments that are technically, economically and socially assessed. The preparation of the plans will be used as an entry point for building the technical capacity of the MWI and introducing a more strategic and comprehensive approach for investments at the landscape level. These plans will be used by the Government to make the investments from its own resources in the future or secure additional financing from other development agencies and partners.

Table 3 Description of eligibility criteria.

<b>Component 1: Climate Resilient Water Systems for enhanced water security;</b>			
<b>Key Activity</b>	<b>Eligibility Criteria</b>	<b>Stage Timing</b>	<b>Responsibility</b>
Installation of rooftop rainwater harvesting structures and water saving devices for households	<ul style="list-style-type: none"> <li>• Single house legally owned by the beneficiary in target areas or if rented with formal approval of the proprietor to install the proposed system.</li> <li>• Technical feasibility based on roof size (at least 100 m2) and land availability (up to 2 dunums) and lay-out.<sup>33</sup></li> <li>• Finance part of the cost through an agreed plan of cost-sharing.</li> <li>• Installation of water savings devices and gadgets from own resources.</li> <li>• Potential for use of the water for kitchen gardens use around the homestead.</li> <li>• Proof of involvement of women in positioning of outlets and consideration of people with disabilities where relevant.</li> <li>• Proof of participation in orientation sessions on optimal water use.</li> <li>• In case of partial incentives only (i.e , &lt; 100%): Proof of having completed all the preparatory works and acquired the identified pipes and valves.</li> <li>• Incentive will be provided based on the vulnerability criteria identified.</li> </ul>	During implementation of the project	<p>Service provider will identify based on criteria and propose to PMU.</p> <p>PMU will assess based on criteria and make final selection.</p>
Installation of rooftop rainwater harvesting structures and water saving devices for public buildings	<ul style="list-style-type: none"> <li>• Building owned by public or civil society institutions in target areas with a clear public function (schools, training centers, community centers, etc.).</li> <li>• One hundred out of 200 schools to be girl's schools</li> <li>• Technical feasibility based on roof size.</li> <li>• Proof of installation of water savings devices and gadgets from own resources</li> <li>• Formal agreement with the institution to use and allow the use to agreed third parties of the infrastructure to do trainings, orientation and awareness sessions on optimal water use.</li> </ul>	During implementation of the project	<p>Service provider will propose to PMU.</p> <p>PMU will assess based on criteria and make final selection.</p>
Selection of waste water treatment plants	<ul style="list-style-type: none"> <li>• Proximity to agricultural lands with the potential to use reclaimed water<sup>34</sup>.</li> <li>• Systems in place to monitor water quality at the outlets.</li> </ul>	Madaba, Karak, and Tafilah have been	MWI and FAO have selected sites during design stage.

<sup>33</sup> The feasibility study will also identify for each household the best RHS tank's characteristics based on the criteria reported in Annex 2 page 56.

<sup>34</sup> Only farmers with no access to any source of water (e.g. wells) will be included.

for investments in hydraulic structures to maximize use of reclaimed water	<ul style="list-style-type: none"> <li>Adherence to water quality indicators and respect of national laws</li> <li>Availability and volume of surplus reclaimed water of at least 500 m<sup>3</sup>/day available for at least 3 months of the year</li> <li>Existence of agreements between MWI and farmers to regulate reuse of reclaimed water</li> <li>Formal agreement of the MWI and of the WAJ to assume the operation and maintenance costs during and after the project with participation of local farmers (Annex 13, MWI letter).</li> </ul>	preselected with the MWI based on the criteria.	
Landscape Resilience Investment Plans	<ul style="list-style-type: none"> <li>Priority to be accorded to plans in (i) areas which are identified as most impacted by climate risks in project area; (ii) potential to offer protection from flash floods (iii) potential for ground water recharge; (iv) potential to impact a minimum number of households (iv) potential for inclusion in Capital Investment Plan of MWI.</li> </ul>	During implementation of the project	MWI/UNDP Technical Assistance/ Local communities to be involved in selection and design.

43. **Component 2: Climate change resilience for enhanced livelihoods and food security:** This component has three outputs; (i) Enhanced capacity of households to deal with climate change; (ii) strengthening of a system of e-extension for wider dissemination through use of Information Communication Technology for Climate Adaptation (ICT4CA) and (iii) establishing a cadre of climate wise women for climate adaptation. The **expected outcome** from this component is **enhanced capacity of households to deal with climate change**.

44. **Output 2.1.1: By year seven, 6,000 women and men farmers will be trained in climate resilient production practices through Farmer Field Schools (4,050) and field days (6,000) of which at least 2,200 will be women farmers.** The first sub-component is intended to strengthen the capacity of farming households to better adapt to climate change and build their resilience. The project will help people understand how they need to adjust their crop calendar and change their planting and harvesting dates in response to changing climate. The project will focus on crops relevant for the area such as barley, olives, figs, stone fruits, apples, vegetables and herbs, etc. The technologies have been selected based on the priority crops grown in the project area and those considered most relevant for the target areas (Annex 2, Section 5). In the selection the project has been particularly sensitive to technologies appropriate for women for production of herbs, vegetables such as wicking beds for herbs, grow bags for vegetables and low cost green-houses. Through the FFS the project will introduce techniques, seed varieties and crops which are much more drought tolerant and water efficient such as the cultivars of a range of horticulture crops (grapes, olives), introduction of tested varieties of barley, vegetables and horticulture crops. The project will also organize FFS around water efficient irrigation technologies like sprinkler systems, drip irrigation, subsurface irrigation systems, etc. Multiple approaches will be used for increasing water productivity. These could include combining biological water-saving measures with engineering solutions (water saving irrigation method, deficit irrigation, proper deficit sequencing, modernization of irrigation systems, etc.), and agronomic and soil manipulation (seed priming, seedling age manipulation, proper crop choice, integrating agriculture and aquaculture, increasing soil fertility, addition of organic matter, tillage and soil mulching, etc.).

Table 4: Key Topics in FFS

FFS Main Topic	Priority Target	Main Objective	Main Climate Change Adaptation Benefit (CCAB) and coherence with national priority adaptation measures (CAM)
Shift to drought tolerant barley varieties <sup>35</sup>	Rainfed barley producers.	Reduce water needs of plants and ensure higher resilience of crops to temperature and prolonged water deficit.	<b>CCAB:</b> Farmers will be able to cope with the increased evapotranspiration caused by increasing temperatures and water deficit. This will potentially allow for increased productivity per unit of water and more stable income for households.
Water harvesting infrastructures (on farm contour bunds/gully plugs)	Rainfed crop producers (e.g.	Increase water availability at the farm level and increase soil moisture at the roots level.	

<sup>35</sup> Such varieties – old and under used varieties of barley - are available at the National Center for Agriculture Research (NARC). These are not OGM.

	pulses and grains).		<p><b>CAM:</b> (I) Improving soil water storage to maximize plant water availability by maximizing infiltration of rainfall; (II) minimizing unproductive water losses (evaporation, deep percolation and surface run-off); (III) increasing soil water holding capacity; and maximizing root depth; (IV) Application of conservation agriculture; (V) Use of supplemental irrigation from harvested rainwater in the critical stages of crop growth; (VI) Modification of planting and harvesting dates</p>
Water harvesting infrastructures (on farm bunds)	Rainfed fruits producers (e.g. plums and cherries).	Increase water availability at the farm level and increase soil moisture.	
Conservation Agriculture (no/minimum tillage, crop rotation and restorative fallow practices)	Rainfed crop producers.	Increase soil moisture, reduce land erosion due to rain washing and enhance the soils physical properties.	
Adapting the crop calendar to changing temperature and rainfall patters: modification of planting and harvesting dates.	Rainfed crop producers (e.g. pulses and grains).	Reduce risks of water shortage and increase chances of water availability in the critical phases of growth of the plants.	<p><b>CCAB:</b> Farmers will be able to cope with the increased evapotranspiration caused by increasing temperatures and water deficit. Farmers will be able to produce for more cycles, reduce the amount of inputs and water needed. This will allow for increased productivity per unit of water and more stable income for households.</p>
Protected and semi-protected cultivation' practices for home gardens and irrigated lands	All farmers with irrigation and households with home gardens.	Increase productivity per water unit and allow for higher production in limited space.	
Fertigation of crops	All farmers with irrigation and households with home gardens	Increase productivity per water unit and allow for higher production in limited space, reduced risk of soil contamination (chemical and biological).	
Wicking beds		Increase productivity per water unit and allow for higher production in limited space, reduced risk of soil contamination (chemical and biological), reduce the level of pesticides needed and reduce the risk of soil borne diseases.	
Container and soilless cultivation (aquaponics and hydroponic)		Increase productivity per water unit and allow for higher production in limited space, reduced risk of soil contamination (chemical and biological), reduce the level of pesticides needed and reduce the risk of soil borne diseases.	
Agronomic and soil manipulation (seed priming, seedling age manipulation, increasing soil fertility, addition of organic matter, tillage and soil mulching, etc.).	All farmers with irrigation and households with home gardens	Increase productivity per water unit and allow for higher production in limited space, reduced risk of soil contamination (chemical and biological), reduce the level of pesticides needed and reduce the risk of soil borne diseases.	
Irrigation and cultivation with reclaimed water	All fodder producers	Shift from rainfed barley to better-irrigated crops such as AlfaAlfa <sup>36</sup> . Increase productivity per water unit and increase of fodder available for livestock.	

45. The project will use the Farmer Field School (FFS) approach which is conducted on the farmer's field over the entire crop season. The MoA staff (69 already available employees) will be trained as FFS Facilitators and trained for the purpose. The approach to FFS will focus on climate adaptive aspects of both crop and livestock production. FAO has been a pioneer of the FFS which leads to much higher adoption rates and sustained behaviour change. Experience of projects like the IFAD financed Rural Economic Growth and Employment Project shows over 80% adoption rates.<sup>37</sup> In addition, the project will also sponsor field days and workshops to scale up tested techniques and practices. The project will design and organize separate FFS for women (at least 70) by identifying topics of interest to them and also encourage women to participate in the main FFS where appropriate. The project will especially encourage Lead farmers to demonstrate the practice and technology to others in the area. The Lead farmers will be given additional incentives and inputs to demonstrate the technology to others and expects that these Lead Farmers will help to expand the outreach of the adaptation technologies and practices over time. 22% of total education budget per farmer in Activity 2.1.1.6 (FFS implementation) is expected to provide the necessary supplies and inputs. The private

<sup>36</sup> The project will not impose nor push for any particular crop. The alfalfa is reported in the documents and analysed in Annex 19 as it appears to be the favourite crop for farmers that can access irrigation from reclaimed water.

<sup>37</sup> Mid-Term Review Report: Rural Economic Growth and Employment Project. IFAD. November. 2018.

sector input suppliers<sup>38</sup> will also be engaged throughout the process and will be invited to demonstrate their inputs and technologies as they will be the ones expected to provide the improved technologies and inputs to farmers on a sustained basis based on the market potential. There are a range of activities that will be undertaken under this sub-component, which have been elaborated below;

46. ***The set of activities identified to achieve this output include design of appropriate modules for Climate Smart FFS:*** Six modules will be developed by specialists in the first year and fourth year in collaboration with local farmers for implementation. International and local experts will be paired to develop these training modules. Technical assistance will be procured for the purpose among Jordanian NGOs, and private firms that will take responsibility for the FFS and will help develop work plans, training modules in coordination with MoA and NARC and organize the venue, inputs and other arrangements for the FFS and field days. The component will be implemented by the Extension Agents<sup>39</sup> of the Ministry of Agriculture. The Extension Agents will organize the Farmer Filed Schools (FFS), field days and demonstrations of new technologies. The activities will be undertaken in coordination with the National Agriculture Research Centre (NARC) as a key implementing partner, which has four research centres in the selected Governorates and staff in Amman who have considerable experience in conducting FFS and field days in several previous projects<sup>40</sup>. Technical Assistance (TA) will be recruited in the first year and support the project throughout its seven years. The TA will be competitively procured and can be assigned to an individual or a firm, an NGO or university to take full responsibility for developing work plans, training modules and coordinating with MoA and NARC for execution by their staff and identifying and organizing the venue, inputs and other arrangements for the FFS and field days for technology transfer. Special effort will be made to ensure that the FFS are organized and implemented in a manner which is relevant for women and encourages their participation. The tested techniques and practices available for adaptation locally by NARC will be incorporated in the modules (Annex 2: section 5). NARC has developed drought resistance barley and other crop varieties as well as innovative techniques that conserve water such as the grow-bag technique, wicking beds for vegetables, beans, sage and thyme as well as a range of irrigation management practices to help economize on the use of water. NARC staff will collaborate with the PMU in the development of the content for the FFS and in implementing and monitoring them special care will be taken to ensure that these are gender-sensitive.

47. ***Conducting the FFS would involve a series of preparatory activities which will be undertaken by the project including Training a team of Master Trainers/Facilitators:*** A team of 40 Master Trainers or Facilitators (50 percent women) will be trained from the selected Governorates, a few adjoining Governorates in the Dead Sea Basin and NARC. They will be provided 30 days training in the technology to be disseminated as well as some basics of how the FFS is to be planned, implemented and monitored. Periodic refresher trainings will be held as required. The Extension Agents of the MoA will have the main responsibility for identifying the participants for each FFS. The Extension Agents will select the participants based on the following criteria; (i) Participants who have been impacted by climate change; (ii) relevance of the training for them; (iii) commitment to attend the designated sessions; (iv) commitment to maintain records on input use and report on adoption rates; (v) agree to visits by supervision and monitoring teams and (vii) willingness to disseminate the learnings to other farmers. At least 70 FFS will be organized exclusively for women and the topics decided in close collaboration with women farmers for crop and livestock activities selected by them. Women will also be encouraged to participate in the main FFS where appropriate. The project will refine the existing application used to track climate resilience adoption disaggregated by sex. The Master Trainers will be provided with a smart device and trained in the use of the FAO monitoring application that tracks adoption rates over time and reports the impact of the technologies and practices disseminated. The records will store baseline information and changes in adoption rates, water use, climate resilience indicators such as productivity per unit of water and land as well as impact of precipitation and temperature

<sup>38</sup> This includes suppliers of water efficient technologies such as drip and sprinkler irrigation, suppliers of water saving gadgets, low cost green-house technology and grow bags and wicking beds, etc.

<sup>39</sup> The extension agents of the MoA are staff of the ministry under national contract. All the identified profiles are already available at the ministry and deployed in target areas.

<sup>40</sup> NARC involvement as a procured party will be regulated by a Letter of Agreement where each party's contribution and responsibilities will be established.

changes on yields. The project will provide this technology for use in the selected Governorates in year 1 and scale it up to all extension staff in year 4 by providing 120 smart devices and training in its use.

48. The project will finance 270 FFS with a total of 4,050 participants. The FFS will be conducted by the Agriculture Extension Officers of the MoA. It is expected that on average there will be 15 farmers per group. The project will organize 70 FFS exclusively for women with a minimum participation of 1200 women. Apart from the FFS exclusively for women, they will also be encouraged to join the other FFS as well. The FFS will be conducted by Extension Agents and NARC staff. The staff time of the Government staff will be the contribution from the Government of Jordan and only out of pocket costs such as expenditure on travel and food in the field will be paid by the project. The project will provide inputs for the FFS (seed, wicking beds, grow bags, saplings, low cost material for green-houses, etc.) as well as the technologies that are being demonstrated (drip, sprinkler, etc.). The FFS will be implemented on Farmers Fields and where required, the four NARC research centres will be used.

49. NARC has tested a host of climate adaptive technologies which it will demonstrate and disseminate. The modus operandi used by it are field days, workshops and exchange visits. It is expected that NARC will hold 500 sessions and field days over the 7-year project in the four Governorates and in Amman to disseminate these technologies. It is expected that 6,000 people will benefit from these field days. The private sector agencies which are selling the climate resilient inputs and technologies will be invited to these demonstrations. Given the COVID-19 pandemic and its disruption of the supply lines, it will be an extremely timely and appropriate intervention for the households to become more self-reliant in food through establishing home-stead vegetable gardens using water efficient technologies. NARC will contribute its staff time and the use of its facilities for the purpose. The project will only finance the out of pocket costs for travel and other logistical aspects. Private sector input suppliers who stock these technologies will be invited to introduce their products, location, contact numbers and prices for ensuring sustainable supply lines and promote a market based approach.

50. An independent impact assessment will be undertaken by a third party to assess the quality of the demonstrations, beneficiary feedback, adoption rates and the extent to which participation in the FFS and field days has helped in introducing to the farming households adaptive technologies and practices and its impact on building their resilience. A high-quality report will be produced to record the experience and draw lessons from it for the future.

51. **Output 2.1.2: At least 30% of the farming households in the country or 30,000 farming households are reached through the e-extension system or Information Communication Technology for Climate Change (ICT4CA):** These will be the direct beneficiaries of the project. The project will further strengthen and consolidate the efforts of the MoA (DG-Extension and NARC) and MoE in disseminating information on climate change adaptation and weather forecasts through the model of e-extension or ICT4CA which they have put in place (Annex 2, para 174). NARC is also investing in developing a system for propagating tested research through the use of smart applications. Tailored gender-responsive extension messages on climate adaptation measures and weather forecasts which provide actionable information will be broadcast through this mechanism. This is all the more important given the limited outreach of the traditional extension approach. Given the current COVID-19 pandemic with restrictions on travel, this approach can also prove valuable in case of any future travel restrictions. The project will undertake the following specific activities under this sub-component.

52. **Developing climate-smart IT solutions for smart devices:** The project will assist in developing and strengthening, smart applications which can be used by MoA, NARC and MoE for disseminating information on climate change adaptation. It is projected that 85% of the people in Jordan own a mobile phone ([Pew, 2019](#)) and this can be used to download both audio and video content. The project will hire a

technical expert who will review the IT systems which have been developed by the MoA and MoE and assess their capacity, upgrade them and build an interface that enables its use by multiple agencies. This investment will be made in the first year.

53. **Disseminating climate smart-solutions and weather forecast through smart devices:** The MoA and the MoE have already initiated the development of platforms for disseminating information through smart applications using ICT4CA. NARC is in the process of establishing a social media platform and a system for transferring its tested technologies. Each of these agencies have committed to develop messages, extension materials, video and audio content and weather forecasts that will assist women and men from farming households to adapt to climate change through transfer of technology and weather information. This activity will be financed entirely by these Government entities as each of them have dedicated staff to develop and transmit the messages.

Table 5: Eligibility Criteria of beneficiaries of component 2

Component 2: Climate Change resilience for Enhanced Livelihoods and Food Security;			
Key Activity	Eligibility Criteria	Stage Timing	Responsibility
<i>Selection of modules for Climate Smart FFS</i>	<ul style="list-style-type: none"> <li>Modules will be selected based on a participatory approach with both men and women farmers.</li> <li>Priority will be given to topics based on farmer ranking of adaptation measures.</li> <li>Women groups to identify their own set of priorities for building their resilience.</li> </ul>	During first year of project implementation.	Technical Specialist in discussion with MoA and Farmers.
<i>Master Trainers/Facilitators (40)</i>	<ul style="list-style-type: none"> <li>Extension Agents already employed with MoA or NARC in the project area or close proximity to project Governorates of which at least 50% are women.</li> <li>Preference will be given to EAs with previous experience of FFS.</li> <li>Formal agreement with the EA and the MoA to participate in project activities and devote at least 40% of their time to FFS.</li> </ul>	During first year of project implementation.	DG Extension with a sub-committee from PMU.
<i>Identify target groups including beneficiaries of FFS</i>	<ul style="list-style-type: none"> <li>Source of water is from legally permitted sources.</li> <li>Own or lease less than 50 dunum of rain-fed land and 5 irrigated dunum.</li> <li>There will be no requirement for land ownership or leasing for women farmers.</li> <li>Women will have a choice to attend women only FFS sessions or the mixed gender FFS sessions.</li> <li>commitment to attend at least 80% of the designated sessions before he or she is entitled to receive any inputs<sup>41</sup>;</li> <li>Commitment to present regular records on input use to the FFS supervisor and report on adoption rates before he or she is entitled to receive any inputs<sup>42</sup></li> <li>Formal acceptance to be visited by supervision and monitoring teams;</li> <li>Formal acceptance to share the learnings with at least 3 other farmers.</li> </ul>	On-going.	Directorates of Agriculture in the selected Governorates.

54. **Output 2.1.3: Establishing a cadre of 400 climate wise women change agents for climate adaptation:** The third sub-component will train a cadre of women as change agents. Women in rural areas are disproportionately affected by climate change with unequal access to resources and assets, barriers to decision-making and limited mobility. At the same time, women have the potential to become agents of change – leaders, practitioners, educators and influencers in climate change adaptation and mitigation. Empowering rural women as agents of change for climate adaptation has been identified in the literature as critical to addressing climate change challenges. Building on the success of the award-winning GiZ Water Wise Women initiative in Jordan, the project will create a cadre of 400 young women as agents of change for climate adaptive practices from the rural areas in the four target Governorates. These young women will

<sup>41</sup> Attendance will be monitored by the FFS supervisor and regularly reported to the M&E unit of the project as well as to the Ministry of Agriculture.

<sup>42</sup> Data and reports will be collected by the FFS supervisor and transmitted to both the M&E unit and the Ministry of Agriculture.

be advocates and repositories of knowledge and technical guidance and support on climate change adaptation, anchored in rural communities. The women will be trained and certified through a customized sixteen-week course delivered over the course of a year in state-of-the-art techniques for climate adaptive agriculture, agri-business planning and development and use of social media for climate change adaptation advocacy. The presence of these young women in the rural communities will bring practical knowledge and sustained support for climate adaptive agriculture to the doorstep and optimize, especially for women and youth, the benefits of project interventions. At the national level, it will highlight women's role as change agents in climate change in Jordan and provide the government with informed, community-based interlocutors for mainstreaming gender in climate change.

**55. The project will undertake a set of activities to establish the cadre of women agents that will include** procuring technical assistance for the purpose to design a proper course and training manual for the purpose. The course content will include modules on irrigation technology, rainwater harvesting and soil management, domestic use of water, organization and management of the dissemination of key technologies, budgeting and business plan development.. The course will be developed in English and Arabic. A Memorandum of Understanding will be signed with a Jordanian university to provide the training like the Jordan University of Science and Technology (JUST).<sup>43</sup> A 7-week course on Climate Change Adaptation, will be delivered over 6 months to 8 young women agronomists to train them as Master Trainers for training Climate Wise Women from the four target Governorates. This training will be advertised through multiple channels such as Universities, Colleges, newspapers, social media and Civil Society Organization networks. The scholarship will cover transportation, accommodation, board and lodging. There will be an agreement signed between the young women agronomists and the MoE specifying the obligation to complete the course and deliver the climate adaptation training to a specified number of young women in the community. The selection criteria will include but are not limited to the following:

- Professionals with a degree in the field of Agriculture / Professionals in the field of Agriculture with Master degrees.
- Resident in Tafilah, Maan, Madaba and Karak (2 from each Governorate)
- Excellent interpersonal and communication skills
- Willingness to work in the field

**56. Competitive selection and training of candidates for climate wise-women:** Service provider will be hired in each Governorate to manage an information dissemination campaign (educational institutions, newspapers, CBOS and Civil Society Organization networks, community dialogues) for the recruitment of the 400 young women, with 100 women from each Governorate and at least one woman from each village. The candidates will be competitively selected in each Governorate through a board comprising representatives from the PMU, Government Extension Departments, Master Trainers and the NGO<sup>44</sup>. The criteria for selection will include the following:

- Graduate
- Excellent Interpersonal skills
- Geographical Location (minimum of one women from each village in each Governorate)

**57.** There will be an agreement signed between the young women selected to be Climate Wise Women and the MoE specifying the obligation to complete the course and deliver the climate adaptation training to a specified number of young women and men in the community.

**58.** Two service providers will be hired to organize and deliver the training for 400 young women from rural areas in the four Governorate. Each service provider will be responsible for organizing, delivering and monitoring the training for 200 women from 2 Governorates. These young women will be trained by the

<sup>43</sup> Preliminary discussions with JUST indicated a strong interest and commitment to participate in the project.

<sup>44</sup> The service providers will only identify potential trainees based on predefined criteria (below in table 6) but the final decision will remain with the EE and the AE based on an agreed approval process.

young women Master Trainers prepared by the project. The training will be organized at a central venue with appropriate arrangements in place for activities. The service provider will be responsible for providing safe transport and making all the logistic arrangements for the training.

59. **Output 2.1.4 By year 7, 15.000 Persons sensitized for climate adaptive measures.** The trained women agents will be required to hold community dialogues, undertake household visits highlight the importance of including women and the role that women can play in helping rural households adapt to climate change through the key role they play in the domestic and agriculture sectors and in their role as mothers and educators and an important member of the household and the community. The specific activities that would be undertaken to highlight this role would include the following activities given below. The Climate Wise Women will hold dialogues with groups of women, men and youth in the communities to provide them with information about the phenomena of climate change, reflect on the impact of climate change on their lives and undertake household visits to advise on adaptation measures at the domestic and farm level. These will include but not be limited to water-saving devices and practices at the domestic level, setting up of simple greenhouses, drip irrigation systems, production and use of growbags etc., at the homestead and farm level. It is assumed that each young woman will organize 10 dialogues and undertake 25 house visits for which she will receive an activity-based stipend. The Climate Wise Women will also use social media to lead dialogues on climate change especially with young people and introduce them to modern climate adaptive agriculture.

60. **Organizing multi-stakeholder climate-wise women forums:** The Climate Wise Women Forums will be organized in Year 4,5 and 6 of the project. These events will serve to highlight the role of women as change agents; identify achievements and challenges for climate adaptation at the community level for women, men and youth; provide feedback to the Jordanian government on actions required at multiple levels to address climate change. These events will be highly interactive with modern techniques like World Café used to engage the maximum number of participants in simultaneous dialogues and Gender Action Learning System Tools used to develop a gender-sensitive vision for Climate Change. The participants<sup>45</sup> will be the climate wise women from the four different Governorates, young men and women from target communities, Government representatives from MOA and MOE at the national level and the Agriculture and Environment departments at the governorate level and relevant Civil Society Organizations.

Table 6: Eligibility criteria for the selection of the climate wise program beneficiaries

Key Activities	Eligibility Criteria	Stage Timing	Responsibility
Women Master Trainers (8)	A degree in the field of Agriculture or water engineering or equivalent.  Resident in Tafilah, Maan, Madaba and Karak (2 from each Governorate) Excellent interpersonal and communication skills  A formal agreement specifying their roles and responsibilities.	During first year of project implementation.	PMU through a committee with representatives from NDA and DG Extension.
Climate wise women change (400)	100 women from each Governorate and at least one woman from each village.  The women will be selected through a two-stage process;  Written applications invited by placing an advertisement in local papers, social media and word of mouth.	During second year of project implementation	A board comprising representatives from the PMU, Government Extension Departments, Master Trainers and the NGO selected to deploy them.

<sup>45</sup> The representatives in the forums will be selected by the Extension Department of MoA, local Government representatives and from the participants of the project. The overall responsibility will be with the PMU to coordinate.

	<p>Screening based on educational qualifications, graduation grades, age, experience and domicile.</p> <p>Personal interview conducted by a panel to assess personality, interpersonal skills.</p>		
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61. **Component 3: Scaling-up climate adaptation into policy and across actors (institutions, private sector, civil society):** This component will be instrumental to scale up impacts, ensure long term sustainability of identified climate change adaptation practices and technologies and guarantee national ownership of the identified transformative path. As detailed in Annex 2 (pages 35→37 and 68) the main factors hampering climate change adaptation of the water and agriculture sector in Jordan are: (I) the institutional lack of coherence between the national strategies and their effective application/mainstreaming into existing and/or new legal tools and standards; and (II) the lack of technical skills and resources. This is particularly evident in the way water and agriculture subsidies are still planned and distributed in a business as usual model without any specific consideration/premium for adaptation practices. Furthermore, notwithstanding the fact that the majority of the rural population remain dependent on water and agriculture for their livelihood, very limited action is taken to ensure the adequate technology and knowledge transfer to farming communities due to limited and weak extension services. The combination of these factors have led to maintain inefficient irrigation technologies, a problematic pricing structure for water and wastewater, and water subsidies that do not play in favor of optimization and shift to improved technologies across the country. Similarly, the current setting for rainfed grains (e.g. barley for fodder Annex 2 pages 18→19) does not play in favor of the adaptation objectives of the country.

62. Therefore, the main **outcome of this component will be to mainstream gender sensitive adaptive tools and practices to adapt to water scarcity in the national policy and educational framework as well as in the administrative, economic and social frameworks of target areas.** This will be secure by addressing identified policy bottlenecks with stakeholders and upgrading the capacities of those actors (local institutions, civil society organizations and private sector) that constitute the front line of adaptation in rural areas. There are 3 outputs that will help in securing the ground for effective execution of climate change adaptation strategies.

63. **Output 3.1.1: 6, specific policy and regulatory bottlenecks are identified and reforms initiated:** The project will work with partners and stakeholders<sup>46</sup> to ensure that the factors inhibiting adaptation of the agriculture and water sectors to climate change in Jordan are addressed. Therefore, based on lessons learned, the project will support partnering institutions and the national climate change committee (NCCC) with the creation of mechanisms for the establishment of incentives for climate change to support and scale-up adoption. Specifically, the project intends to encourage the following; (i) Adoption of drought tolerant grains and fruits and changes in the grain related subsidies to progressively shift from production based subsidies/incentives to climate adaptive incentives/subsidies based on adoption of climate smart field and water management (e.g. those introduced in C1 and C2); (ii) Adoption of water efficient technologies to obtain premium water and agriculture subsidies to progressively shift from production based subsidies/incentives to climate adaptive incentives/subsidies based on adoption of climate smart field and water management (e.g. practices and technologies introduced in C2). This will contribute to the various policy framework objectives of promoting the efficient use of water in irrigation and high-yield agricultural products; (iii) Adoption of building rules that will incentivize: (a) the use of rainwater harvesting systems for rooftops in rural areas; and (b) the integration of water saving devices. A timed incentive based (e.g. tax benefits, subsidies, priority in the approval process for construction’s permits) strategy will be developed and agreed with stakeholders (including the private sector). At the end of the strategy identified devices and

<sup>46</sup> Including the Program Management Unit (PMU) of the MWI (A chart reporting the setup of the MWI and the responsibility of the different agencies including the PMU that is not a project related structure is available in Annex 2 page 33). The PMU was established in the late 1996 and it is responsible for a vast array of functions related to the regulation of water supply and wastewater utilities, the promotion of private sector participation in the water sector and MWI planning and execution.

technologies will become mandatory. The strategy will also include the upgrade of public building standards to include and enhance the minimum requirements for water saving and water harvesting technologies and construction practices. The adoption of adaptive incentives will also contribute in: (I) increasing the participation of the private sector in national adaptation strategies and will contribute to the national objective of engaging the private sector in the implementation of strategic projects and management of the water sector; and (II) setting national standards for plumbing; (iv) Upgrade of standards for the use of reclaimed water in agriculture. As reported in the main strategic frameworks of Jordan, one of the higher priorities of the country is to increase the supply of water to the agriculture sector by replacing fresh water from surface and groundwater sources with treated wastewater from wastewater treatment plants. As farmers can only produce fodder due to the quality of effluent from WWTP, the project will support stakeholders in enhancing standards to allow a more efficient and effective monitoring process of farms irrigated with reclaimed waters.

64. **Technical assistance<sup>47</sup> to the Ministry of Environment, the Ministry of Agriculture and the Ministry of Water and Irrigation to address and solve identified policy bottlenecks:** This will begin with the recruitment of a team of international and national experts to advise and support stakeholders in identifying and initiating the necessary policy reform processes to address identified bottlenecks. The team will work with the NCCC and hold Gender-inclusive consultation with a range of stakeholders and formulate their recommendations for presentation to the TWG-A and to the NCCC. Proposed changes will also be discussed at local level via dedicated workshops and events. The project will ensure the monitoring and follow up of the approval process with relevant institutions. It is expected that at least 6 policy mechanism that include action plans and financial needs will be identified with the reform process initiated.

65. **Technical Assistance to support the MWI in strengthening the enabling environment for promotion of reuse of reclaimed water:** A team of national and international experts will support stakeholders (e.g. MoE, MoH, MoA, MWI, WUA) in ensuring the upgrade of water quality standards, develop the incentives to enhance the use of reclaimed water and ensure that downstream uses of reclaimed water are included in planning and designing of new plants or expansion of the existing ones.

66. **Output 3.1.2: 6 national curricula of vocational schools (masonry, plumbing and agriculture) and of specialized universities (agriculture, architecture, water engineering) are updated to include climate smart agriculture, water efficiency and precision agriculture.** The activities to accomplish this will include the following;

67. **Technical Assistance to the Ministry of Education and main Universities to update the national curricula:** A team of national and international experts will be procured to support the Ministry of Education and universities to introduce gender-sensitive climate change adaptation practices and technologies in the national curricula of vocational schools (e.g. agriculture, light industry and construction) and university degrees (e.g. agriculture, architecture and civil engineering). Gender-inclusive Consultation with public and private actors active in the vocational and superior education sector will be secured to prepare the new curricula for vocational schools and universities in the CC/Agriculture/Water sectors. It is expected that at least 6 institutions will introduce and update their national curricula to introduce climate adaptation as a key integrated approach. The project will support the update of at least the following curricula: (I) Agriculture / Water management (Vocational schools and universities). The project will introduce in the national curricula of agriculture studies key concepts of climate change adaptation, climate smart agriculture, climate adaptive water management and climate adaptive technologies; and (II) Masonry / hydraulics / electricity (Vocational schools). The project will introduce in the national curricula of vocational schools: (I) principles and elements of rainwater harvesting from building; (II) irrigation technologies; (III) water saving devices and water saving techniques in construction.

<sup>47</sup> Technical experts will work with their counterparts in the relevant ministries to ensure that national strategies and international commitments such as the NDCs are supported by the appropriate laws and regulations.

68. **Training for teachers and professors to enable the teaching and practice of the new curricula:** The project will work with the Ministry of Education and Universities to develop an update/upgrade climate change adaptation course for national teachers/trainers/professors. The course will be the base to mainstream gender-sensitive climate change adaptation practices and technologies among teachers, instructors and university professors. *This will involve organization of logistic at the national level, training of trainers; preparation and distribution of learning materials, execution of the training modules, monitoring and evaluation of the trainings.*

69. **Output 3.1.3: Capacity building of least 6440 persons from the private sector, the civil society and local institutions (4 governorates, 16 provinces, 324 municipalities) engaged in climate change adaptation practices.** In line with the Paris agreement recommendation : *“governments, development agencies, and the private sector need to collaborate to strengthen knowledge and capacity for managing climate risks (...) and concerted capacity-building, particularly at the local level, is needed to move from improved information to better decisions”* the project will work with local institutions to ensure that proposed climate change adaptation practices and technologies will be able to grow in a setting that understands their benefits and that is ready to support communities with a local planning approach that is proactive and tailored to the needs of its communities. Additionally, the project will involve and support the capacity development process of both the civil society organizations and the private sector. Both play a critical role in reducing the adaptation deficit of target areas and in transferring practices and technologies as also recommended by the main policy frameworks addressing water and agriculture in Jordan (Additional details are available in Annex 2, pages 65→66).

70. **Local engagement and dissemination process:** The project will work with a range of civil society organizations in the project areas as well as national level and the local media to develop the appropriate approaches and actions to engage communities in project areas and develop a local engagement plan for maximum outreach and mainstream key climate change adaptation practices and technologies as well as provide information on the source of advice and additional information and learning materials. This will involve Coordination and gender inclusive consultation with local NGOs, CBOs and other representation of the civil society in project areas to develop the engagement plan, organization of logistic at the national level, preparation of information/training/knowledge sharing modules, execution of the local engagement plan and monitoring and evaluation of the local engagement plan.

71. **Technical Assistance to enhance local administration's and private sector actors' capacities to ensure adoption of introduced with climate resilient practices:** The project will support local administrations (governorate, province and municipalities) as well as the private sector (e.g. masons, plumbers, electricians, architects, including women technicians) in adopting gender-sensitive tools and practices that will contribute to increasing water savings and climate change adaptation among communities and administrations. This will include provision of trainings and technical assistance on how to comply with existing policy frameworks and practices as well as to address the limitation and bottlenecks preventing the adoption of climate change adaptation actions and specific water saving actions such as those promoted by the project. Gender-inclusive Consultation will be held with institutions (local) and the private sector and civil society in project areas to develop a tailored technical assistance plan. Also, the project will secure that the private sector will be constantly involved in project activities to ensure technology transfer and to stimulate the relation between demand and offer directly in the field. Companies involved in the agriculture inputs and equipment market as well as companies and workers involved in construction and provision of building equipment and inputs will be invited – among other - to participate the activities of the project via (I) Participation in the field farming schools<sup>48</sup>, (II) Dedicated technology field days; (III) Dedicated trainings, workshops and conferences on introduced technologies and practice; and (IV) Dedicated awareness and communication campaigns and events.

<sup>48</sup> Farmer Field School (FFS) is an approach based on people-centred learning. Participatory methods to create an environment conducive to learning: the participants can exchange knowledge and experience in a risk free setting. Additional details are available in Annex 2 page 66.

**Technical assistance and training to civil society organizations:** The project recognises the potential of the civil society organizations and their role in supporting beneficiaries in overcoming the adaptation deficit. Nonetheless, the knowledge and technical skills of Jordanian civil society organization and community-based organization appears still under capacitated and requires further support before their contribution can effectively and efficiently deployed in assisting rural communities in their path to adaptation and resilience. Therefore, the project will support this transition and capacity development process via: (I) Dedicated trainings, workshops and conferences on introduced technologies and practices including among others dedicated training to allow replication and scale up of FFS approaches and introduced practices<sup>49</sup>. (II) Climate adaptive technologies and practices in agriculture. In these regards the project will replicate for civil society organization and community-based organization the same set of trainings designed for the staff of the MoA. The project will work primarily with those civil society organizations (max 4 per governorate per year) that have a consolidated presence in the project areas and that have experience in the water and agriculture sectors. The process will be demand driven. Additionally, the project will link participants with other projects to enhance their knowledge on climate change adaptation practices. The activity will include the development of a clear and specific training and capacity development action plan to ensure full mainstreaming of CCA and water saving practices across the local civil society.

Table 7: Selection criteria of actions identified under component 3

<b>Component 3: Scaling-up climate adaptation into policy and across actors (institutions, private sector, civil society)</b>			
<b>Key Activity</b>	<b>Criteria</b>	<b>Stage Timing</b>	<b>By</b>
Policy and Regulatory Bottlenecks	Policies with a potential impact on water use. Policies that would encourage adoption of adaptation measures	During implementation	Technical Specialists based feedback from NCCC and TWG-A.
Specialized universities and vocational schools	Universities and vocational schools that have courses relevant to climate change adaptation (e.g. agriculture, engineering, architecture, masonry, plumbers, electricians, including women technicians) and water optimization.	Pre-identified at design. These will be confirmed during implementation	Technical Assistance and PMU
Selection of governorates, 16 provinces and 324 municipalities.	Personnel from all governorates, provinces and municipalities in the selectee four governorates of which at least 30% women.	Pre-selected during national engagement process and approved by the NDA, MWI and MoA..	Technical Service Provider
Selection of civil society organizations and private sector actors for participation.	Private sector engaged in supplying adaptation inputs and technologies as well as companies workers active in masonry, plumber and electricity.  Individuals/companies will be included based on their fiscal status (e.g. registration) and or proof of informal activity (e.g. self-declaration) of which at least 30% are women.  Civil Society organizations working in the project Governorates.	During implementation	PMU

<sup>49</sup> While there will be opportunities for CSO to participate in the FFS, the process is designed ad hoc for farmers therefore the two actions cannot be merged.

**B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)**

72. **FAO** will serve both as **GCF Accredited Entity**, responsible for supervising the BRCCJ project; and as **Executing Entity** for project execution. **The independence of the two roles** will be guaranteed by establishing two separate functions as follows:

73. **FAO as Accredited Entity.** The FAO's supervising role will be attributed to the FAO Regional Office for Near East (RNE) located in Cairo with support by the FAO Climate, Biodiversity, Land and Water Department (CB, located in Rome) and other technical divisions as required. In its role as the AE, FAO will undertake (i) all aspects of project appraisal; (ii) administrative, financial and technical oversight and supervision throughout project implementation; (iii) ensuring funds are effectively managed to deliver results and achieve objectives; (iv) ensure the quality of project monitoring, as well as the timeliness and quality of reporting to the GCF; and (v) project closure and evaluation. FAO will assume these responsibilities in accordance with the detailed provisions outlined in the Accreditation Master Agreement (AMA) between FAO and GCF. A **Lead Technical Officer (LTO)** will be appointed in the regional office and will have overall technical responsibility for project execution. The role of the LTO is central to FAO's comparative advantage for projects and to separate the functions of FAO in its role as Accredited Entity and as Executing Entity. The LTO will oversee and carry out technical backstopping for project execution, coordinating the supervision functions. The LTO will be responsible and accountable for providing or obtaining technical clearance of technical inputs and services procured by the Organization. In addition, the LTO through supervision missions may call other experts to participate and advice and will provide technical backstopping to the Project Team to ensure the delivery of quality technical outputs.

74. FAO Jordan will act as the budget holder (BH) of the project for funds from the GCF and assume the entire responsibility for the project delivery and reporting supported by the PMU. The diagram on flow of funds is given below. The funds will be disbursed by GCF based on Annual Work Plans to FAO-Headquarters from where the funds will be sent directly to FAO-Jordan. The GCF funds will be transferred from FAO to UNDP under a subsidiary agreement (UN to UN agreement). The internal control of the disbursement will follow FAO rules and regulations."

75. **FAO as Executing Entity.** A **project delivery team** will be set up in FAO-J, comprising staff covering all functions relevant to the execution of the envisaged activities. More specifically, following the principle to ensure the highest level of ownership and sustainability of the project investment at country level (i.e., within local institutions), FAO-J's role in the BRCCJ project will be **limited to the provision of quality assurance** throughout all project components, to enhance the success of the project and its potential replicability, and to **ensure coordination with UNDP, MoE, MWI, MoA as co-financiers/ executing entities** in charge of specific activities. Technical assistance will be provided by mobilizing FAO experts, or FAO supervised consultants and service providers. FAO's mandate as a global stakeholder in the field of agriculture, water management, and climate change, and its related expertise represents a comparative advantage in providing technical assistance and quality assurance. UNDP will be responsible for implementing activities related to roof-top water harvesting at the household level and the preparation of the Landscape Resilience Plans. The three co-financing Ministries and UNDP will execute the activities that they have identified as part of the contribution to the project and will be considered co-executing entities. UNDP and all three Ministries have provided letters confirming their commitment for co-financing (Annex 13.)

76. **UNDP as an Executing Entity:** The project will be executed by the Environment, Climate Change and Disaster Risk Reduction (DRR) portfolio at the UNDP Country Office. The execution will be supported by the Inclusive Growth and Sustainable Livelihoods team and will benefit from their experience of working with local communities in the project area. The Operations team at UNDP will facilitate the procurement of

goods and services during execution for the activities being executed by UNDP. In addition, the capacity from the regional hub in Amman and the procurement team in Copenhagen can be seconded to accelerate the process of procurement and execution when necessary. UNDP will apply its Social and Environmental Screening procedures (SESP) to identify potential social and environmental risks and opportunities associated with the proposed interventions and determine the appropriate type and level of social and environmental assessment. UNDP will prepare the Environmental Impact Assessments as needed and according to national laws and guidelines. UNDP will closely coordinate project execution with FAO at three different levels;

- The Resident Representative will offer guidance and the necessary support at policy level.
- The technical level where the team leader of the Environment, climate Change and DRR portfolio and the concerned team will ensure quality assurance.
- The UNDP project manager will closely coordinate with the FAO Project Management team.
- UNDP and FAO will have set up a joint coordination committee that will review execution progress and ensure integration and synergies.

77. The project will draw on the comparative advantages of FAO and UNDP<sup>50</sup> in Jordan and has assigned them roles and responsibilities in keeping with their strengths and experience. FAO has been involved in supporting activities in the agriculture sector including climate resilient agriculture and water management. In Jordan, FAO has worked to reduce the vulnerability of rural communities and support agricultural production and has focused on capacity development for intensifying Climate Smart Agriculture. FAO has also piloted conjunctive use of groundwater and captured surface water to ensure reliability of water supply for rural communities, strengthening capacities through the establishment of communities of practice and empowering local beneficiaries for the operation and maintenance in pilot areas. FAO has a strong in-country presence and has established strong relationships with key local stakeholders.

78. UNDP has considerable experience of working with the MoE and has supported a number of environmental policy reform actions in Jordan, notably in the climate change sector. It assisted with the development of the Integrated Investment Framework for Sustainable Land Management (2013), formulation of a water sector policy for drought management (2018), development of the Nationally Appropriate Mitigation Actions (NAMA), a plan for the phased introduction of low-emission technologies and enhancing institutional capacities to reduce disaster risk and integrate climate change. It supported the Government of Jordan (GoJ) in developing the pioneering National Policy on Climate Change (2013) which formed the backbone for the Climate Change agenda in the country. Moreover, UNDP has been supporting GoJ in the development of its national communication reports and Biennial Update reports which assist the country in mainstreaming and integration of climate change consideration into national and sectorial development policies. UNDP Jordan has been supporting climate change adaptation initiatives in accordance with international best practices to enhance sustainable water harvesting solutions as a mean to adapt to climate change impacts for local communities in different governorates in the country. The experience of UNDP has resulted in establishing network of partners that are working on water related issues. It is, therefore, intended to leverage the existing partnerships with different partners including private sector, research centres and civil society organizations to further advance water harvesting solutions in the targeted governorates by the project. UNDP with the support from the Goal Waters Programme has been working to strengthen the Drought Governance system in the country including the basin targeted by the project.

79. **Ministry of Water and Irrigation (MWI):** is the official body responsible for the overall monitoring of the water sector, water supply and wastewater system and the related projects, planning and management, the formulation of national water strategies and policies, research and development, information systems

<sup>50</sup> A list of projects and case studies related to FAO and UNDP work in Jordan is available here: <http://www.fao.org/countryprofiles/index/en/?iso3=JOR> and <https://www.io.undp.org/>

and procurement of financial resources. Its role also includes the provision of centralized water-related data, standardization and consolidation of data.

80. MWI was established in 1988 by-law issued by the executive branch of the Government under the Jordanian Constitution. The establishment of MWI was in response to Jordan's recognition of the need for a more integrated approach to national water management. Since its establishment, MWI has been supported by several donor organization projects that have assisted in the development of water policy and water master planning as well as restructuring the water sector. Seven directorates under the direction of the Assistant Secretary Generals for Finance and Administration and Technical Affairs as well as two units for Legal Affairs and Project Finances directly subordinate to the Secretary General fulfil the said functions. Units for public relations, internal monitoring and water security and protection are directly subordinate to the Minister of Water and Irrigation with responsibilities overarching MWI, the Water Authority of Jordan (WAJ) and the Jordan Valley Authority (JVA) (Ministry By-Law No.52 of 1992).

81. MWI embraces the two most important entities dealing with water in Jordan: WAJ in charge of water & sewage systems and JVA responsible for the socio-economic development of the Jordan Rift Valley, including water development and distribution of irrigation. This relative position with respect to WAJ & JVA reinforces MWI's leading role as Jordan's lead entity on water issues. With its extensive Water Information System, MWI has become a leader in the region that uses GIS-based digital tools for Water Master Planning activities, offering the framework, databases and tools necessary to manage water data and providing water specialists with data and information for water sector monitoring, management and planning. MWI regularly produces essential water sector information products including the Water Master Plan.

82. **Ministry of Agriculture (MoA):** was established during the era of the East of Jordan in the formation of the thirteenth ministry in 1929. Legislation has been issued related to the agricultural sector since the beginning of the establishment of the emirate. The organization and management of the Ministry is Regulation No. 82 of 2004 and its amendments issued in accordance with Article 120 of the Constitution and its amendments.

83. MoA is responsible for the agricultural sector, promoting self-sufficiency and rural development and linking the production to the requirements of the markets inside and outside Jordan. It also aims to promote plant production, control plant pests, preserve forests and pastures, and also regulate the establishment of breeding farms or livestock holdings, poultry farms, fish farms, amphibians, fishing, beekeeping, animal health and veterinary quarantine, as well as the role of the Ministry in the protection of wild birds and wild animals.

84. MoA consists of thirty-eight directorates and a central unit, including two directorates linked to the Minister, the directorate of the Minister's office and Directorate of Information, Communication and Parliamentary Affairs, Internal Control Unit, and Agricultural Risk Management Fund; six Assistance Secretary Generals, directorate of planning and institutional development, legal affairs unit, the directorate of the Secretary General's office, directly linked to the Secretary General in addition to twelve governorate agriculture directorates and thirty directorates of agriculture in the governorate brigades.

85. **Ministry of Environment (MoE):** established in 2003, is the main ministry responsible for climate change policies. Within it, the Climate Change Directorate (CCD), established in 2014, is the institutional hub for coordinating and developing all activities related to UNFCCC. MoE oversees the policy and legal frameworks that guide climate change mitigation and adaptation efforts. The core responsibility of MoE, especially for the CCD, is to reach out to stakeholders to develop actions for climate response, and to incorporate the resulting policies into executive decision-making. It has become the focal point for international climate treaties, including the UNFCCC, and the development of the National Communication

and the NDC to it. MoE also acts as Jordan's National Designated Authority (NDA) for the Adaptation Fund and the Green Climate Fund (GCF).

The responsible EEs for each project component and activity are summarized in Table 7.

Table 8 Executing Entities per Activity

Component	Activity	Executing Entity/ Co-Executing Entities
<b>Component 1</b>	Activity 1.1.1.1	FAO
	Activity 1.1.1.2	FAO
	Activity 1.1.1.3	Host Country (MWI, MoA, MoE), FAO
	Activity 1.1.1.4	UNDP
	Activity 1.1.1.5	Host Country, UNDP
	Activity 1.1.1.6	FAO
	Activity 1.1.2.1	Host Country, FAO
	Activity 1.1.2.2	FAO
	Activity 1.1.2.3	FAO
	Activity 1.1.3.1	Host Country , UNDP
	Activity 1.1.3.2	Host Country , UNDP
	Activity 1.1.3.3	UNDP
	<b>Component 2</b>	Activity 2.1.1.1
Activity 2.1.1.2		FAO
Activity 2.1.1.3		FAO
Activity 2.1.1.4		Host Country, FAO
Activity 2.1.1.5		FAO
Activity 2.1.1.6		Host Country, FAO
Activity 2.1.1.7		FAO
Activity 2.1.1.8		FAO
Activity 2.1.2.1		FAO
Activity 2.1.2.2		Host Country
Activity 2.1.3.1		FAO
Activity 2.1.3.2		FAO
Activity 2.1.3.3		FAO
Activity 2.1.3.4		FAO
Activity 2.1.3.5		FAO
Activity 2.1.4.1		FAO
Activity 2.1.4.2		FAO
<b>Component 3</b>		Activity 3.1.1.1
	Activity 3.1.1.2	FAO
	Activity 3.2.1.1	FAO
	Activity 3.1.2.2	FAO
	Activity 3.1.3.1	FAO
	Activity 3.1.3.2	FAO
	Activity 3.1.3.3	FAO
<b>PMC</b>	PMC	Host Country, UNDP, FAO

86. Each of the reported EE is directly involved in supporting the country with its COVID-19 recovery plan. Each of the proposed investments will contribute to increasing job opportunities in target areas and in

enhancing the capacity of households to apply the hygiene protocols established by the country and the WHO.

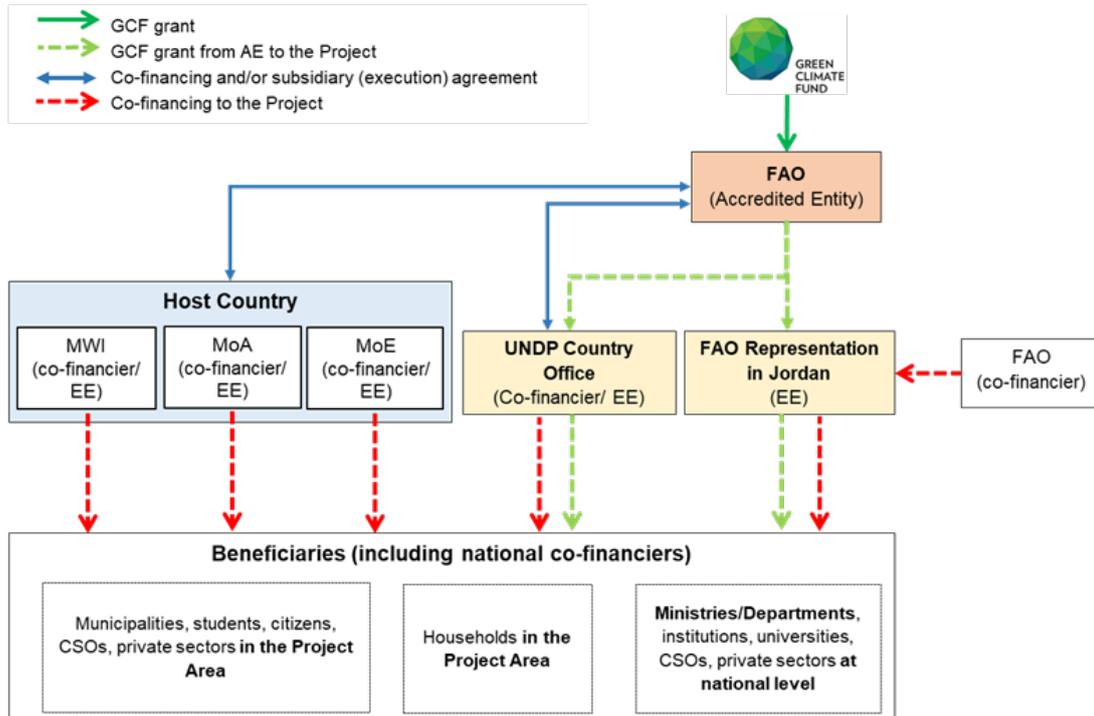
87. **Project Steering Committee and Technical Oversight:** At the level of strategic guidance and oversight, the project will use the National Climate Change Committee (NCCC) as its Steering Committee. The NCCC consists of 16 key Ministries including the Ministry of Environment (MoE), the Ministry of Water and Irrigation (MWI), the Ministry of Agriculture (MoA), the Ministry of Planning and International Cooperation (MoPIC), Ministry of Health, Ministry of Education and others. The Ministries are represented in the NCCC at the level of the Secretary General and meet on a quarterly basis. The NCCC ensures multi-sector coordination of all activities in Hashemite Kingdom related to climate change. The Commission is already operational and has a mandate to coordinate climate change activities across sectors and projects. It is expected that the NCCC will play a key role in the initiation of the policy reform agenda by ensuring coordination among institutional stakeholders and facilitating policy dialogue. A Technical Working Group (TWG) on adaptation has also been constituted by the Government of Jordan with 17 institutional members. In addition to some of those listed above, the TWG includes the Department of Statistics, the Jordan Metrological Department (JMD), the Royal Scientific Society, the Royal Academy for Nature Conservation, the Hashemite University (HU), the Jordan University of Science and Technology (JUST) and the National Agricultural Research Center (NARC). The TWG will support the coordination among institutional stakeholders and will support mainstreaming of practices and technologies across central and local institutions. Additionally, the TWG will be used for effective technical coordination and support as some of the members of the TWG such as JMD, NARC, JUST are also expected to play an important role in execution.

88. **Project Management Structure:** FAO will establish a Project Management Unit (PMU) nested in the Ministry of Environment which will provide regular reports and performance updates to the MoE. The PMU will be responsible for overall planning and coordination, developing annual work plans and budgets, day-to-day project management, provide technical backstopping, financial management and undertake procurement functions, project reporting and documentation. The PMU will be led by a Chief Technical Adviser (CTA) who will have overall responsibility for management and supervision of PMU staff and consultants on technical, administrative and operational aspects including procurement and financial management, Monitoring and Evaluation. Technical specialists such as a Water Engineer Specialist, an Agronomist and Climate Adaptation Specialist, Social Inclusion and Gender Specialist, Environment and Social Safeguards Specialist will support project the execution of the various component activities. The CTA will be supported by focal points/liaison officers from the MoE, MWI and MoA who will ensure that Government agencies provide the key staff and support required. The project will competitively select private sector firms for construction, civil society organizations for community mobilization and behaviour change and service providers for organizing events, capacity building and citizen engagement and communication campaigns. The selection of the firms will follow standard UN procurement processes in order to ensure the most efficient, cost-effective methods for the purchase of all goods and services under the project.

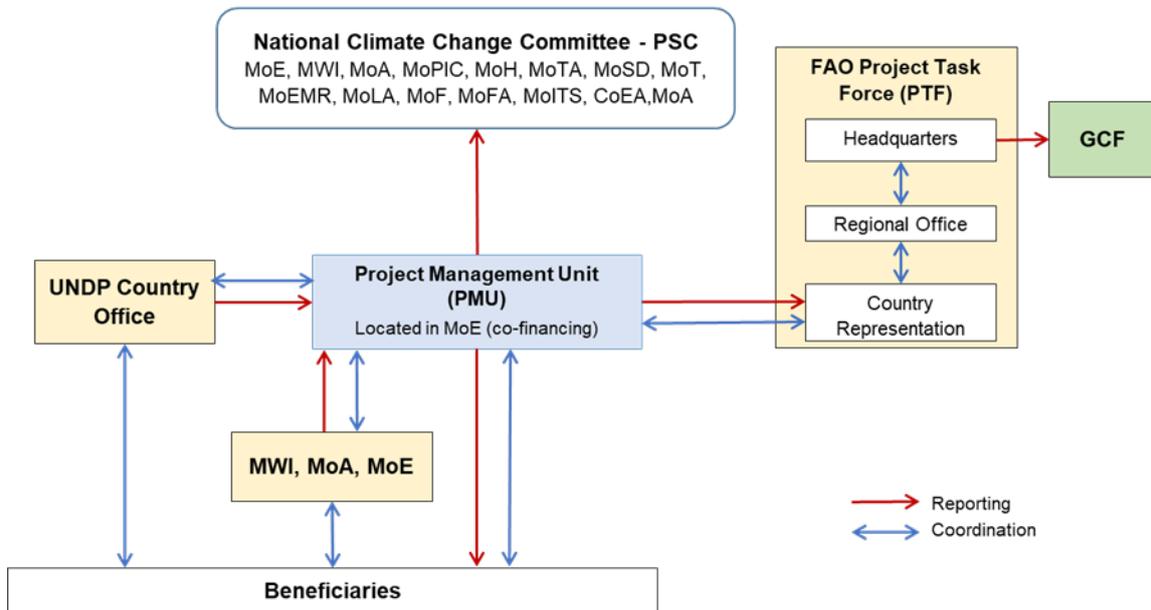
89. The three co-financing Ministries and UNDP will execute the activities that they have identified as part of the contribution to the project. The responsibility of each of the EEs in project execution is described in the section below. Grievance redress mechanisms will ensure that all beneficiaries have a mechanism through a hotline or through e-mail for direct contact with NCCC, FAO or GCF. A quick review of the responsibilities assigned to different partners for each of the components and sub-components is given below;

Figure 2: Project Organizational Structure

### Fund flows and contractual arrangements



### Implementation arrangements



90. **Component 1: Climate resilient water systems for enhanced water security** has three outputs for which FAO and UNDP will assume very specific responsibility. A water infrastructure specialist based at the PMU in the MoE will take overall responsibility for planning and coordinating the activities in the component. FAO will implement the roof top water harvesting structures in municipal and public buildings and the expansion of the storage tanks in the waste water treatment plants. FAO will contract a private

sector firm for the physical works on public buildings and the construction of the distribution networks for reclaimed water. A civil society organization will be hired competitively to develop the awareness raising campaign in schools among teachers and students. UNDP will undertake the execution of the roof-top water harvesting infrastructure at the household level and work closely with MWI to conduct the economic, technical and social feasibility assessment for the Landscape Resilience Plans<sup>51</sup>. UNDP and FAO will also contract with private sector contactors for the physical works and use a service provider to identify the households based on the selection and the financing criteria. UNDP will hire a civil society organization that will be responsible for the awareness raising campaign at the household level. UNDP will ensure that women are involved in providing their feedback on the design of the harvesting structures as the primary users of water. UNDP Jordan has in-house capacity with a team of engineers and procurement experts to design BOQ and process procurement of roof top harvesting activities at scale within a short time line. In the execution of the component, UNDP will use the opportunity to establish an internship programmes targeting youth to ensure knowledge sharing amongst local communities given that Jordan has one of the youngest population in the region with 63% of the population under 30 (DOS, 2019). UNDP will ensure strengthening the role the local NGOs/ CBOs with a focus on women association in the targeted governorates in executing some of the activities including outreach and awareness activities. Private sector suppliers of water saving gadgets and devices<sup>52</sup> at the household and farm level will also be involved to ensure that they understand technical aspects and maintain adequate stocks of materials for scaling-up of the technology. Table 8 outlines the share of GCF financing that will be executed by FAO and UNDP;

Table 9: Share of GCF financing that will be executed by FAO and UNDP

Costs per Component per implementing agency- GCF funding	FAO		UNDP		Total GCF funding	
	USD Million	%	USD Million	%	USD Million	%
<b>COMPONENT 1: Climate resilient water systems</b>	<b>5.82</b>	<b>39</b>	<b>9.05</b>	<b>61</b>	<b>14.9</b>	<b>59</b>
Output 1.1.1 By year 7 at least 8250 buildings retrofitted with water harvesting struct	3.7	32	7.88	68	11.55	78
Output 1.1.2 By year 7, reuse of reclaimed water from 3 Waste Water Plants is optimi	2.15	100	-	-	2.15	14
Output 1.1.3 By year 4, Landscape Resilience Investment Plan for part of the Dead Se	-	-	1.16	100	1.16	8
<b>COMPONENT 2: Climate Change resilience for Enhanced Livelihoods and Food Security</b>	<b>5.58</b>	<b>100</b>	<b>-</b>	<b>-</b>	<b>5.58</b>	<b>22</b>
Output 2.1.1 By year 7, 6,000 Farmers trained in climate resilient production practice:	3.90	100	-	-	3.90	70
Output 2.1.2 By year 7, 30 000 Farmers reached through e-extension	0.05	100	-	-	0.05	1
Output 2.1.3 By year 3, 400 Women trained as Change Agents for Climate Adaptation	0.88	100	-	-	0.88	16
Output 2.1.4 By year 7, 15,000 Persons sensitized for climate adaptive measures	0.75	100	-	-	0.75	13
<b>COMPONENT 3: Scaling-up climate adaptation</b>	<b>3.42</b>	<b>100</b>	<b>-</b>	<b>-</b>	<b>3.42</b>	<b>14</b>
Output 3.1.1. By year 6, specific policy and regulatory bottlenecks are identified and	2.11	100	-	-	2.11	62
Output 3.1.2 By year 6 at least 6 national curricula of vocational schools (masonry, plumbers and agriculture) and of specialized universities (agriculture, architecture, water engineering) are updated to include climate smart agriculture,	0.55	100	-	-	0.55	16
Output 3.1.3 By year 7 at least 6440 persons (4 governorates, 16 provinces, 324 municipalities) and private sector engaged in climate change adaptation practices	0.76	100	-	-	0.76	22
<b>PROJECT MANAGEMENT</b>	<b>1.13</b>	<b>100</b>	<b>-</b>	<b>-</b>	<b>1.13</b>	<b>5</b>
<b>Total</b>	<b>15.95</b>	<b>64</b>	<b>9.05</b>	<b>36</b>	<b>25.00</b>	<b>100</b>

91. **Component 2: Climate Change resilience for Enhanced Livelihoods and Food Security will be under the overall responsibility of FAO.** A Training Specialist will be recruited for the component who will plan and coordinate the activities under the component. The Farmer Field Schools and Field Days will be the overall responsibility of the Ministry of Agriculture who provide their extension agents as Master Trainers and Facilitators for implementing the activity. The National Agriculture Research Centre (NARC) will provide their technical knowledge about the adaptive technologies and practices developed by them for wider

<sup>51</sup> The landscape plans collect/structure hydrological information, including on aquifers, according to hydrological boundaries (i.e., water available in a specific sub-basin, flood risks). However, when it comes to presenting decision-relevant information needed to prioritize investments based on the hydrological analysis, the landscape plans will (1) present information at the administrative level because administrative entities will be in the end tasked with operationalizing the investment (2) provide national authorities with the evidence-base needed to prioritize interventions which is currently lacking.

<sup>52</sup> A host of these are available in the market such as water breaker, water pebble, shower drop, tap inserts, etc.

dissemination and use of their training centres and staff. The project will provide Technical Assistance to work closely with NARC to develop modules for the Farmer Field School and Field Days based on innovations available locally and internationally. The E-Extension services which are being implemented by the MoA under the MADAD project will be further strengthened by the project through the development of a smart application by a technical service provider. The application will allow interface with the e-extension and ICT4CA platforms of MoA, NARC and MoE and transmission of weather forecasts as well. The three Ministries will be responsible for developing the audio and video content on climate adaptation and dissemination from their own budgets as co-finance. The responsibility for implementing the sub-component on Women Change Agents will be undertaken by specific roles by several service providers; A local service provider will be recruited to select the women candidates as climate wise-agents. An international climate change specialist with a sound understanding of gender aspects will design the training module together with a University which will also be responsible for training of the women. The local service provider will also be responsible for guiding and monitoring the women wise climate agents and their deployment in the field.

92. **Component 3: Scaling-up climate adaptation into policy and across actors (institutions, private sector, civil society):** The Chief Technical Advisor (CTA) will assume the main responsibility for execution of this component. Technical Assistance will be recruited to address the gaps in policy and regulatory frameworks that could have a direct bearing in the ability of the country to adapt to climate change. The TA will work closely with the TWG on Adaptation to identify specific policy measures apart from those which have already been identified and develop a policy matrix and the steps that need to be implemented in furthering the reform agenda. The TWG will assist in coordinating and moving the agenda forward. Technical Assistance will be hired for examining and updating the existing curriculum of relevant facilities in Universities and vocational institutions. The project will assist in the development of modules for incorporation and coordinate with the TWG to advocate the adoption of these in the educational and vocational institutions. Citizen Engagement regarding awareness of climate change adaptation aspects will be implemented through the hiring of a service provider through organization of events and fairs at the national level as well as in Governorates. The service provider will also organize awareness raising sessions and training for staff from local administration, private sector and civil society.

93. FAO will be the executing entity of the Project in Component 2, Component 3 and the following activities in Component 1: Activities 1.1.1.1, 1.1.1.2, 1.1.1.3 and 1.1.1.6 (Output 1.1.1) and Activities 1.1.2.1, 1.1.2.2 and 1.1.2.3 (Output 1.1.2).

94. UNDP will be the executing entity for Activities 1.1.1.4 and 1.1.1.5 (Output 1.1.1) and Activities 1.1.3.1, 1.1.3.2 and 1.1.3.3 (Output 1.1.3).

95. Concerning Government collaboration with the executing entity, MWI will be jointly contributing to Activities 1.1.1.3 and 1.1.1.5 (Output 1.1.1), Activity 1.1.2.1 (Output 1.1.2), Activities 1.1.3.1 and 1.1.3.2 (Output 1.1.3) and MoA will be contributing in Activities 2.1.1.4 and 2.1.1.6 (Output 2.1.1) and Activity 2.1.2.2 (Output 2.12). Finally, MoE will collaborate with the PMU. A detailed description of activities and executing entities responsibilities is presented in E6.

#### **B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)**

96. The country has demonstrated strong commitment to putting in place measures for climate mitigation and adaptation as evidenced by its plans and priorities identified in the INDC, NCCP, NAMAs, TNC and the NAP. These measures are critical to its survival and the sustainable development of the country. The MoE has taken a leadership role in instituting many policy and institutional changes in response to climate change. The MoE has been engaged with a range of readiness activities for GCF such as Strengthening its role as

the NDA to deliver on the GCF Investment Framework, Improving Jordan's Readiness to Access Finance for Climate Change and Green Growth in Jordan and has been involved with the preparation of the current project concept for the last several years. The prospect of financing from GCF has generated high level interest and commitment from key Ministries including MoPIC, MWI, MoA and also energized communities, local governments and NGOs consulted during the process of proposal preparation. The staff of MWI, the extension agents of MoA, the technical specialists at NARC as well as the field staff from WAJ are keen to participate in project activities and work closely with FAO and UNDP to enhance their technical capacity and provide them with the opportunity to enhance the resilience of rural communities. The prospect of GCF support has brought forth a strong commitment from all executing entities to work together and provide financial and in-kind contribution. The opportunity to access GCF resources has put the limelight on the MoE and enhance their commitment to build the country capacity for both adaptation and mitigation.

97. While the resources requested from GCF are not significant, they are expected to be catalytic in demonstrating adaptive practices and technologies, inculcating behavior change and bringing about a transformation in the manner in which Jordan plans, budgets for and implements climate adaptation. While the Hashemite Kingdom of Jordan is currently classified as an upper middle-income country ([World Bank, 2019](#)), this classification does not consider the burden the country is facing of hosting refugees and there is little indication at the moment of how the corona pandemic will impact its economic status. The country does not want to add to its debt burden and there are growing concerns about its public debt which increased to JD 29.51 billion at the end of July 2019 constituting 94.4 per cent of the estimated gross domestic product (GDP).<sup>53</sup> In addition, the country's economy and society have faced significant shocks in the past few years. The regional conflicts in Syria and Iraq, the country's main trading partners, seriously damaged Jordan's trade routes and capital inflows. The population of Jordan was estimated to be 10.2 million in March 2020 ([Worldometer, 2020](#)) including 1.3 million Syrian refugees<sup>54</sup> and refugees from a host of other countries as well ([UNHCR, 2019](#)). The influx of refugees continues to exert tremendous pressure on, not only its infrastructure and social services, but also on its labour market and social cohesion. As a result, the country's macroeconomic indicators weakened, the fiscal deficit rose, and financing the external sector became challenging. GDP growth, which had averaged 6.4 percent during 2000–09, fell below 2.5 percent over 2010–18. Jordan is likely to continue to face considerable economic pressure to address the immediate humanitarian action, reducing overall public finance available to support planning and execution of Climate Change Adaptation (CCA). The investment by GCF is likely to demonstrate to decision-makers the high value added of investments to deal with climate change risks.

98. The proposed BRCCJ project is very important for helping rural households deal with climate risks in the water and agriculture sector. Despite its small contribution to national GDP, the agriculture sector is of critical importance in Jordan, for its socio-economic fabric, and role in political stability, as well as its central role in food security, rural development, providing job opportunities, and the forward and backward linkages it creates.<sup>55</sup> Jordan currently imports the vast majority of its basic food crops, including almost all of its cereals. The request for financing to GCF is premised on the GoJ's understanding that it needs to prioritize a series of measures and investments to deal with its vulnerability to climate change which further exacerbates its problems of water scarcity and rural growth and development. In recent years, the impact of flash floods on the all-important tourism sector that was evident in 2018 has also taken a toll on projected growth. Adverse impacts to the agricultural sector could significantly interfere with progress of the country related to poverty reduction, due to the greater dependence of the rural poor on the sector, their lower ability to adapt to climate change and the fact that the share of income of the poor spent on food is particularly high. Food security and rural economic growth are also expected to be adversely impacted. The COVID-19 pandemic is likely to worsen these pressures.

<sup>53</sup> Finance Ministry's monthly bulletin. July 2019. Government of Jordan.

<sup>54</sup> Jordan Economic Growth Plan 2018 - 2022 The Economic Policy Council. The Economic Policy Council.

<sup>55</sup> USDA Foreign Agricultural Service, 2015. Market Overview and Guide to Jordanian Market Requirements.

99. Reportedly [Combaz, 2019], climate adaptation and mitigation have proven challenging and remain highly conditional on the availability of financing and the lack of technical knowledge in the climate change domain. Current lack of finance is likely to impede implementation as Jordan's general budget has chronically been in deficit. Given the funding gap between Jordan's climate goals and its public finances, climate action will require a shift in national planning and budgeting (alongside international funding) [Combaz, 2019]. The GoJ is seeking to secure a grant from GCF, given the vulnerable nature of the agricultural producers in the Dead Sea Basin. Without GCF involvement to complement ongoing efforts and address barriers to build resilience in the face of changing climate, the GoJ cannot take adequate steps to help diversify water supply sources, enhance water productivity, and support vulnerable farmers and help the most disadvantaged families disproportionately impacted by climate change. GCF support will enable additional investments that allow scaling up existing efforts for transformative and behavior change on a sustainable basis across the country for climate adaptation. GCF finances will encourage wider participation and involvement in adaptation and encourage practical action to adapt to increase resilience. The paradigm shift that the project will encourage will have a long term impact on institutions and policy that will strengthen the climate adaptation capability in the country. There are no existing donors willing to invest in the selected Governorates. Despite its resource constraints and the demands on its resource envelope, the Government will be providing USD 6.2 million in kind and in cash from its own budgetary sources by contributing staff time and the use of its facilities as well as financing for some key investments. FAO and UNDP have also committed USD 2.06 million from their own budgets of which USD 500,000 from UNDP and USD 1,000,000 from FAO will be cash contribution. The GoJ is also contributing through tax exemptions on Goods and Services procured by the Project. This complementary contribution is estimated at USD 4.14 million.

#### **B.6. Exit strategy and sustainability (max. 500 words, approximately 1 page)**

100. The proposed project has been designed in close consultation with and involvement of relevant government agencies, technical line departments and communities in the project area. This has ensured that the components and activities proposed are in line with national policies and strategies with strong country ownership and relevance for local communities. The project has a strong emphasis on capacity building of local and community institutions, awareness and training of vulnerable households and private sector's actors in improved production and adaptation practices, strengthening of government capacity for delivering extension messages appropriate for adaptation, strengthening of policy and regulatory frameworks at the national level, institutionalization of the knowledge regarding adaptation to climate change in the educational curricula and engagement of private sector in the supply of the full range of technologies, inputs and innovations. These measures are designed to ensure that the results of the interventions are sustained beyond the project period by working on the demand side by enhancing awareness and supply side by creating links with private sector suppliers. The project will follow a demand-driven approach and expects that beneficiaries will contribute (i.e. component 1 activity 1.1.2) in the investment which will further ensure ownership of participating beneficiaries. The proposed strengthening of the coordination, knowledge generation, policy and regulatory mechanisms at the national level are expected to strengthen national capacity at the MoE, MWI and MoA to implement sector specific strategies more efficiently, while delivering on resilience to climate change.

101. All investments in water infrastructure will be undertaken in close collaboration with MWI, local entities and/or households. The roof-top water harvesting structures in public buildings will be maintained by the agency responsible for the operation and maintenance of the buildings. Individual households will maintain the roof-top water harvesting structures in their homes. Clear agreement and dedicated training on the responsibility for operation and maintenance will be determined as a key element for the selection of the investments in public infrastructure. At the household level, identified systems will only require basic maintenance (e.g. mesh filters, cleaning of the roofs, and checks on the diversion valve). Such actions do not require any specific skills and can be executed with no risk for the health or security of the person. In all cases the project, will: **A)** Provide beneficiaries with dedicated training and awareness on rain water

harvesting and RWH system maintenance; **B)** Provide beneficiaries with specific operation and Maintenance (O&M) guidelines and schedule. These will guarantee an effective and efficient operation and maintenance of the system during and after the project. Concerning the distribution of reclaimed water, the MWI already operates and maintains the waste water treatment plants and will continue to do so with the expanded storage that will be implemented under the Project. The preparation of the Landscape Resilience Investment Plans is expected to be a tool for building MWI capacity for undertaking proper technical, economic and social assessments for their planning in the future and will help to make their future investments more sustainable.

102. The activities designed at the household level for improving adaptation strategies for farmers are designed with a very clear exit in mind. All support and training activities are for a discrete period of time, at least one crop season, or as in the case of the demonstration of a specific practice or technology, it will be designed with a specific learning objective in mind. The training modules will be designed in close collaboration with the participating households to ensure their relevance. The FFS and field days are expected to enhance the resilience of households to the changing climate scenarios and as such are likely to be more sustainable than existing practices. In addition, the lead farmers will be expected to become mentors for others who may not have directly participated in the FFS for demonstrating the impact of the adaptation practices and technologies on yields. The experience with FFS in the past has shown that lead farmers tend to play a very significant role in disseminating the practice to others. The e-extension system will be operated and maintained by the MoA (DG-Extension and NARC) and MoE. These agencies already have staff working on producing and disseminating extension materials and will continue to undertake this function with financing from Government resources. The women change agents will undergo a period of training and deployment with support from the project. However, each of them is expected to find sustainable means of income by using a host of different strategies; offering technical services to individual clients on payment or securing employment for herself with a civil society or private organization.

103. The project will provide technical assistance to address policy gaps and assist the government in undertaking the necessary actions to initiate policy reform and the regulatory mechanisms that are needed for its implementation. No policy measure will be taken forward without finding a champion for the reform within the NCCC. Once the policy measures are acted into legislation and the regulation approved, it is expected to be enforced by the appropriate regulatory agencies in the country. The introduction of both theoretical and practical knowledge about adaptive measures in the education curricula will only require initial investment in developing the modules and guiding the instructors on the most appropriate pedagogical tools. These will be thereafter implemented by the academic and vocational institutions as part of their regular course content. The awareness raising about climate change at the level of the local municipalities and administrative tiers is expected to galvanize action by these agencies and be incorporated in their planning and budgeting. The engagement of private sector will enhance their understanding of the types of equipment and inputs and technologies to promote which they are expected to take to scale because of the market demand. The awareness of civil society and citizen engagement is expected to lead to the promotion and awareness of adaptation measures and strategies as part of their field activities.

## C. FINANCING INFORMATION

### C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)		Total amount		Currency	
		25		million USD (\$)	
GCF financial instrument		Amount	Tenor	Grace period	Pricing
(i)	Senior loans	Enter amount	Enter years	Enter years	Enter %
(ii)	Subordinated loans	Enter amount	Enter years	Enter years	Enter %

(iii)	Equity	Enter amount			Enter % equity return															
(iv)	Guarantees	Enter amount	Enter years																	
(v)	Reimbursable grants	Enter amount																		
(vi)	Grants	25																		
(vii)	Results-based payments	Enter amount																		
<b>(b) Co-financing information</b>		<b>Total amount</b>		<b>Currency</b>																
		8.25		million USD (\$)																
<b>Name of institution</b>	<b>Financial instrument</b>	<b>Amount</b>	<b>Currency</b>	<b>Tenor &amp; grace</b>	<b>Pricing</b>	<b>Seniority</b>														
GoJ-MWI	<u>In kind</u>	1.74	million USD (\$)	Enter years Enter years	Enter%	Options														
GoJ-MWI	<u>Grant</u>	2.21	Million USD (\$)	Enter years Enter years	Enter%	Options														
GoJ-MoA	<u>In kind</u>	1.86	million USD (\$)	Enter years Enter years	Enter%	Options														
GoJ-MoE	<u>In kind</u>	0.38	million USD (\$)	Enter years Enter years	Enter%	Options														
FAO	<u>Grant</u>	1.0	million USD (\$)	Enter years Enter years	Enter%	Options														
UNDP	<u>In kind</u>	0.50	million USD (\$)	Enter years Enter years	Enter%	Options														
UNDP	<u>Grant</u>	0.56	Million USD (\$)	Enter years Enter years	Enter%	Options														
<b>(c) Total financing (c) = (a)+(b)</b>		<b>Amount</b>		<b>Currency</b>																
		33.25		million USD (\$)																
<b>(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)</b>		<p>The Government will be providing use of its staff and facilities for the execution of project activities as well as budget support for some of the roof-top harvesting from its Capital Investment Plan. MWI invests annually around JOD 29 million (USD 40 mn) as its capital investment in the water sector, some of it will be for direct investments in capital investments in the selected project Governorates. While the in-kind contribution from beneficiaries and local institutions has not been shown in the costing table, it is also expected that all participating households will contribute by purchasing gadgets and water saving devices for domestic use valued at close to USD 785,000 as well as direct contribution for roof top water harvesting at around USD 3.83 million.<sup>56</sup> The specific Government contribution is shown in the Table 8 below;</p> <p style="text-align: center;">Table 10: Contribution of Jordanian Partners</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Ministry</th> <th colspan="2">USD</th> </tr> </thead> <tbody> <tr> <td><b>MWI</b></td> <td>3.947.000</td> <td>64%</td> </tr> <tr> <td><b>MoA</b></td> <td>1.864.000</td> <td>30%</td> </tr> <tr> <td><b>MoE</b></td> <td>380.000</td> <td>6%</td> </tr> <tr> <td><b>Total</b></td> <td>6.191.000</td> <td>100%</td> </tr> </tbody> </table>				Ministry	USD		<b>MWI</b>	3.947.000	64%	<b>MoA</b>	1.864.000	30%	<b>MoE</b>	380.000	6%	<b>Total</b>	6.191.000	100%
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<b>MoE</b>	380.000	6%																		
<b>Total</b>	6.191.000	100%																		
<b>C.2. Financing by component</b>																				
104. Total project costs amount to a total of US\$ 33.25 million. The budget for the project comprises a GCF grant of US\$ 25 million (75% of total project cost), Government of Jordan contribution of US\$ 6.2 million (19%), and FAO and UNDP co-financing of USD 2.06 million (1 million and 1.06 million respectively,																				

<sup>56</sup> The average cost for a household to install the water efficient devices is expected to be USD 100 per hh (7,850) and for public buildings (400) it is expected that the cost will be USD 200.

representing 6% of total costs). The current project is based on a request for a grant from the GCF. The beneficiaries are expected to provide leveraged finance of USD 4.6 million (as an investment in roof-top water harvesting systems and water saving devices and gadgets for domestic water conservation. This beneficiary contribution is considered parallel financing to leverage the set results of the Project and enhance the project sustainability. The following table illustrates Project costs by output and financer: FAO will be the executing entity of the Project except for Activities 1.1.1.4 and 1.1.1.5 (Output 1.1.1) and Activities 1.1.3.1, 1.1.3.2 and 1.1.3.3 (Output 1.1.3) where UNDP will be the executing entity. Concerning Government collaboration with the executing entity, MWI will be jointly contributing to Activities 1.1.1.3 and 1.1.1.5 (Output 1.1.1), Activity 1.1.2.1 (Output 1.1.2), Activities 1.1.3.1 and 1.1.3.2 (Output 1.1.3) and MoA will be contributing in Activities 2.1.1.4 and 2.1.1.6 (Output 2.1.1) and Activity 2.1.2.2 (Output 2.12). Finally, MoE will collaborate with the PMU. A detailed description of activities and executing entities responsibilities is presented in E6.

Table 11: Cost by Component and Financer

Component	Output	Indicative cost USD	GCF financing		Co-financing		
			Amount USD	Financial Instrument	Amount USD	Financial Instrument	Name of Institutions
<b>COMPONENT 1: Climate resilient water systems for enhanced water security</b>	Output 1.1.1 By year 7 at least 8250 buildings retrofitted with water harvesting structures	14,351,405	11,553,405	Grants	485,000	In-kind	UNDP
					2,205,000	In-cash	Government (MWI)
					108,000	In-kind	Government (MWI)
	Output 1.1.2 By year 7, reuse of reclaimed water from 3 Waste Water Plants is optimized	3,585,700	2,151,700	Grants	1,434,000	In kind	Government (MWI)
Output 1.1.3 By year 4, Landscape Resilience Investment Plan for part of the Dead Sea Basin	1,863,201	1,163,201	Grants	500,000	In-cash	UNDP	
				200,000	In kind	Government (MWI)	
<b>COMPONENT 2: Climate Change resilience for Enhanced Livelihoods and Food Security</b>	Output 2.1.1 By year 7, 6,000 Farmers trained in climate resilient production practices through FFS (4050) and field days (1950)	5,466,025	3,900,425	Grants	275,000	In cash	FAO
					1,290,600	In kind	Government (MoA)
	Output 2.1.2 By year 7, 30 000 Farmers reached through e-extension	823,400	50,000	Grants	573,400	In kind	Government (MoA)
					200,000	In-cash	FAO
Output 2.1.3 By year 3, 400 Women trained as Change Agents for Climate Adaptation	980,250	880,250	Grants	100,000	In-cash	FAO	
Output 2.1.4 By year 7, 15.000 Persons sensitized for climate adaptive measures	748,752	748,752	Grants	-			
<b>COMPONENT 3: Scaling-up climate adaptation into policy and across actors (institutions, private sector, civil society)</b>	Output 3.1.1. By year 6, specific policy and regulatory bottlenecks are identified and reforms initiated	2,383,280	2,108,280	Grants	275,000	In cash	FAO
	Output 3.1.2 By year 6 at least 6 national curricula of vocational schools (masonry, plumbing and agriculture) and of specialized universities (agriculture, architecture, water engineering) are updated to include climate smart agriculture, water efficiency and precision agriculture.	625,000	550,000	Grants	75,000	In kind	FAO
	Output 3.1.3 By year 7 at least 6440 persons (4 governorates, 16 provinces, 324 municipalities) and private sector engaged in climate change adaptation practices	763,501	763,501	Grants	-		
<b>Project Management</b>		1,660,486	1,130,486	Grants	75,000	In cash	FAO
					75,000	In kind	UNDP
					380,000	In kind	Government (MoE)
<b>Indicative total cost (USD)</b>		<b>33,251,000</b>	<b>25,000,000</b>		<b>8,251,000</b>		

**C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)**

C.3.1 Does GCF funding finance capacity building activities?

Yes  No

C.3.2. Does GCF funding finance technology development/transfer?

Yes  No

105. Based on identified lessons learned (Annex 2, pages 35→37) and following on the recommendation of the Paris Agreement<sup>57</sup> on capacity building and development, the total GCF financing for capacity building and technology transfer is estimated at USD 2,938,451 and USD 15,178,830 respectively (Total USD

<sup>57</sup> "Governments, development agencies, and the private sector need to collaborate to strengthen knowledge and capacity for managing climate risks (...) and concerted capacity-building, particularly at the local level, is needed to move from improved information to better decisions".

18,117,281) or 72% of the total GCF funding. The key technology transfer aspects (USD 15.178 mn) that will be promoted through the project include the dissemination of technologies such as roof-top water harvesting and adaptation technologies for the agriculture sector. Capacity building financed by GCF (USD 2.938 mn) for MWI including helping them with a more comprehensive and strategic approach to landscape investments. Training for MoA staff on extension approaches that enhance adoption rates, women climate change agents, students and private sector in understanding how to improve their technical capacity and skills for delivering services and technologies that help farming communities and households to become more resilient. The project also promotes the innovate approach of training women and deploying them in the field for communities. Table 10 below identifies the volume of financing in each component that is allocated for capacity building and technology transfer from the total budget and GCF.

Table 12: Financing for Capacity Building and Technology Transfer

	Total Cost					GCF Financing					
	Total Amount (USD)	Capacity Building (USD)	%	Technology Transfer (USD)	%	Total Amount (USD)	Capacity Building (USD)	%	Technology Transfer (USD)	%	
<b>Component 1</b>	\$ 19,800,306	\$ 1,708,188	9	\$ 13,616,749	69	\$ 14,868,306	\$ 1,508,201	10	\$ 11,303,405	76	
<b>Component 2</b>	\$ 8,018,427	\$ 880,250	11	\$ 5,739,625	72	\$ 5,579,427	\$ 880,250	16	\$ 3,875,425	69	
<b>Component 3</b>	\$ 3,771,781	\$ 550,000	15	\$ -	-	\$ 3,421,781	\$ 550,000	16	\$ -	-	
<b>PMU</b>	\$ 1,660,486		-		-	\$ 1,130,486		-		-	
<b>Total</b>	\$ 33,251,000	\$ 3,138,138	9	\$ 19,356,374	58	\$ 25,000,000	\$ 2,938,451	11.75	\$ 15,178,830	61	
Total GCF Capacity Building and TT							\$18,117,281				

## D.EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

### D.1. Impact potential (max. 500 words, approximately 1 page)

106. Climate change has adversely impacted food security and economic growth in vulnerable rural areas in Jordan.<sup>58</sup> The poor in rural areas are expected to face the most severe consequences of climate change through disruption of livelihoods especially for those that depend on agriculture and natural resources. The expected impacts of climate change, particularly the uncertain weather pattern and increased temperatures, threaten livelihoods and keep vulnerable people insecure. Poor families and households are the most vulnerable to the impacts of climate change.<sup>59</sup> In addition, it is estimated that 18.6 percent of the country's population experiences transient poverty.<sup>60</sup> Those at the margins of the poverty line are the most vulnerable to climate risks. In addition, climate change is also impacting water security for both domestic and agriculture sectors. Water use in Jordan is evenly divided between agriculture (51%) and domestic sectors (45%).<sup>61</sup> Climate change affects both sectors and can have particularly detrimental impact on women.

107. Research shows that the most significant issues Jordan will experience due to climate change are related to reduced access to water, directly and negatively impacting public health, agriculture and food security. In rural areas of Jordan, women are more vulnerable to the effects of climate change than men

<sup>58</sup> National Adaptation Plan to Climate Change in Jordan. MoE. February 2020.

<sup>59</sup> Ibid. February 2020.

<sup>60</sup> World Bank. 2010. <https://borgenproject.org/transient-poverty-in-jordan/>

<sup>61</sup> Jordan Water Sector Facts and Figures. <http://www.mwi.gov.jo/sites/>

are, particularly because women are more dependent for their livelihoods on natural resources that are threatened by climate change.<sup>62</sup> The project has the potential to make vulnerable households who suffer from water scarcity and livelihood vulnerability more resilient in facing the negative impacts of climate change. In particular, the project will focus on women and help to empower them to deal with climate risks and leverage their role as agents of change. The project has the potential to achieve two of the most significant fund level impacts namely; (i) increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions; and (ii) increased resilience of health and well-being, and food and water security.

108. The project's specific outreach and fund level impacts are expected to include the following;

- 212,416 people-of which 47% will be direct and indirect women beneficiaries made aware of climate threats and related appropriate responses (Table 11 below and (Table 37 in Annex 2).
- 83,743 people are expected to directly benefit from the project activities of which 33,684 or 40% are women beneficiaries.
- 128,673, people are expected to indirectly benefit from the project activities of which 65,732 or 51% are expected to be women.
- In the project area, the project is expected to benefit about 10% of the target population in the selected Governorates in the Dead Sea Basin and 2.1% of Jordan's total population (PMF-A Core 1).
- 20,550 people including 9,220 women benefitting from the adoption of diversified, climate resilient livelihood options (PMF.A.1.2)
- 57,910 people including 28,212 women with year-round access to reliable and safe water supply despite climate shocks and stresses (PMF A 2.3)

109. The Fund Level Outcomes Expected from the project include the following;

- At least five discrete policy and regulatory measures introduced for the water and agriculture sectors which provide an incentive for climate resilience from which about 167,818 people (82,902 women) nation-wide are expected to benefit (PMF-A.5.1).
- Increased use of climate information in water and agriculture sectors (PMF-A.6.1).
- 30,000 household use climate smart mobile application or Information Communication Technology for Climate Adaptation (ICT4CA) (PMF-A..1)
- 94,943 men and 39,914 women from *vulnerable households, communities, businesses and public-sector services use Fund-supported tools instruments, strategies and activities to respond to climate change and variability (PMF-A.7.1).*
- 135,623 men and 57,020 women *made aware of climate threats and related appropriate responses (PMF-A.8.1).*

At least 6 technologies introduced for climate adaptation of which 5 are useful for women. (PMF-ACrC1).

110. The project will contribute to several SDG targets which include the following;

- SDG 1: supporting farmers to adopt new technologies and practices that will increase their capacity to produce better and more productive crops and *reduce poverty*;
- SDG 2: *promoting sustainable agriculture and helping to reduce food insecurity and hunger*;
- SDG 5; helping to empower women and enhance their capacity as agents of change thereby *reducing gender inequality*;
- SDG 6: ensuring availability and *sustainable management of water* by reducing withdrawals from surface and groundwater and ensuring good ambient water quality;
- SDG 11; making *human settlements resilient and sustainable* through climate adaptive planning and green

<sup>62</sup> Rural Women and Climate Change in Jordan UN-Women. 2016. <https://data2.unhcr.org/en/documents/download/66494>

- SDG 13; *strengthening resilience and adaptive capacity to climate-related hazards* through a range of adaptation strategies and activities.

Table 13: Expected Beneficiaries<sup>63</sup>

Component 1	Units	People	Women
Roof-Top water harvesting public buildings (Output 1.1.1)	municipal staff and students	10,000	5,000
Roof-Top water harvesting at homes (Output 1.1.1)	citizens	43,175	21,328
Waste Water Treatment plants (Output 1.1.2)	Farmers	968	
Sub-total Component 1		54,143	26,328
<b>Component 2</b>			
FFS Climate –Smart (Output 2.1.1)	Farmers	4,050	1,200
Persons reached through E extension (Output 2.1.2)	Farmers	30,000	10,000
Farmer Field Days (2.1.2)	Farmers	6,000	1,800
Climate Wise Women (Output 2.1.3)	women		400
Persons sensitized to climate adaptive measures	people	15,000	10,500
Sub-total Component 2		55,050	23,900
<b>Component 3</b>			
Policy in the agriculture sector <sup>a</sup> (Output 3.1.1)	Farmers	167,818	82,902
Climate Smart Agriculture in Universities (Output 3.1.2)	Students	5,000	1,500
Climate Smart Agriculture in Vocational Institutes (Output 3.1.2)	Students	14,000	4,200
Local Engagement and Dissemination (Output 3.1.3)	citizens	4,800	2,400
Engagement of Local administration (Output 3.1.3)	municipal staff	640	192
Engagement of private sector (Output 3.1.3)	private sector	1,000	100
Civil Society Organizations	CSO staff, CBOs and Community Members	1,000	500
Sub-total Component 3		194,258	91,794
	<b>Total</b>	<b>303,451</b>	<b>142,023</b>
Reduced by 30% to compensate for double counting	Adjusted total	212,416	99,416

## D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

111. This project will shift the current paradigm in water use and management for agriculture and domestic needs from the current unsustainable and vulnerable to a system that is adaptive and resilient to the identified adverse impacts of the climate change. Such shift will happen at different levels: (i) household; (ii) farm; (iii) landscape level and (iv) national level.

112. At the household level, this paradigm shift involves changing the way in which people deal with increasingly unpredictable and scarce water resources (both for consumption and agricultural production). All household members both adults, women and children will be included in the awareness raising sessions regarding the necessity of using water more wisely and the imminent danger for future generations. This is expected to bring about a sustainable behavior change in the way all household members think about water and use it. The promotion of water harvesting and water saving practices through sustained behavior change at the household level is a cornerstone of Jordan's strategy to reduce pressure on scarce freshwater resources, notably groundwater. While there are existing building codes which require installing water harvesting structures in new buildings, these are very recent and only implemented in Amman. The project will expand the use of rooftop rainwater harvesting structures in the selected Governorates to enhance the

<sup>63</sup> The assumptions used are detailed and explained in Table 37 in Annex 2.

resilience of households to unpredictable and scarce freshwater resources. The project is promoting the use of these structure through its dissemination in public buildings, awareness raising campaigns and by incentivizing private households to invest through a grant based on a household's vulnerability and economic profile. There is expected to be increased demand at the household level, which will, at the end of the project, be fully financed by the households themselves through hiring of private contractors on their own and purchasing the water saving gadgets and devices. The strengthening of the building codes and their enforcement in the project Governorates is expected to be a strong incentive to comply. The capacity of the private sector contractors to deliver water harvesting techniques will be enhanced through technical assistance and they are expected to be increasingly engaged in promoting the technology.

113. The project will shift the paradigm in the agriculture sector from looking at crop productivity per unit of land to crop productivity per unit of water. A sharper distinction will be made between water quality (saline, brackish, underground saline, brine, reclaimed, etc.) and how each quality can be more effectively used multiple times for suitable agriculture and aquaculture given the added stress caused due to change in temperatures and precipitation levels in many areas of the country, especially the Dead Sea Basin. These new practices are expected to be integrated into the manner in which farming households think about water and use it in the future. At the farm level, there is significant potential to promote a paradigm shift through the adoption of climate resilient practices. The project will contract MoA and provide it technical assistance to develop suitable extension materials to deliver appropriate messages to farmers and extension staff to begin the shift in thinking about how to better adapt to climate change. NARC has experimented with a range of climate adaptive techniques, technologies, and developed seed varieties of cereals and horticulture crops which are more drought resistant as well as a range of water saving technologies which have been tested and are ready for dissemination. Over the medium to long-term, this is expected to bring about a paradigm shift in the farming systems through adoption of these practices. Over time, the Government regulation and policy framework will also encourage these practices by putting in place appropriate incentives and restrictions on the use of groundwater.

114. At the landscape level, there is potential to promote a paradigm shift in the way investments to enhance resilience to extreme climate events are identified and prioritized. While the need to adapt to extreme events is clear, there is a lack of understanding of suitable sites for these interventions and lack of strategic planning and investments which are part of the MWI's Capital investment Plan are made in an ad hoc and random manner. To address this key capacity gap, the project will use the development of the landscape investment plans as an entry point for strategic planning with the MWI. This element of the project emphasizes the importance of planning at the level of the hydrological basin for capitalizing on the impact of the investment in reduction of floods, maximizing ground water recharge, reduction in soil erosion and the positive impacts downstream. The development of the landscape resilience investment plans will lead to a paradigm shift in the way MWI identifies and prioritizes investments. MWI will move away from ad-hoc investment decisions towards holistic water planning for adaptation in the Dead Sea Basin with benefits for downstream areas.

115. At the national level, there is potential for a paradigm shift in climate policy and the regulatory framework to incentivize adaptation, protect vulnerable households from climate risk and incentivize transformative behavior change. While there is general awareness about the urgency of climate change adaptation in Jordan, there is need to address policy bottlenecks to promote the up-take of tools and practices that enhance climate resilience. The difficult policy issues which have to be negotiated include water tariffs, illegal water wells, green building codes, fodder subsidies and use of reclaimed water, etc. The Government's strong current institutional infrastructure through the establishment of the NCCC and the TWG-A is very opportune and can be a powerful mechanism to initiate policy reform. There is also an opportunity for educational and vocational institutions to integrate climate risk understanding and adaptation in their curriculum to train the next round of professionals and skilled workforce. The private sector represents one of the most important and under-utilized market-driven opportunities to scale up the use of climate adaptive

technologies, provision of services that could scale up the use of ICT4CA, climate information, digital financial and insurance services in the future. The project would capitalize on this opportunity by engaging the private sector in the project and enhance their awareness and understanding of the market opportunity that climate change adaptation represents.

116. At a broad social level, the project seeks to bring about change through gender transformative interventions which seek to transform gender roles and promote more gender-equitable relationships between men and women. Some of the activities that the project promotes such as deploying women change agents is likely to challenge the underlying perception regarding gender roles and inequality that is rooted in broad political, economic, and sociocultural structures. The gender-transformative approaches will seek to change rigid gender roles and relations and bring about change. This is critical at a time when the GoJ recognizes that depletion of natural resources and decreasing agricultural productivity may place additional burdens on women and may negatively impact their “health and reduce time available to participate in decision making processes and income generating activities.”<sup>64</sup>.

### D.3. Sustainable development (max. 500 words, approximately 1 page)

117. The project is expected to help realize wider benefits with respect to several of the Sustainable Development Goals. In the context of Jordan, helping vulnerable households adapt to climate change is expected to have an impact on their ability to combat poverty, hunger, enhanced health and well-being, improved health and sanitation, promote gender equality, reduce inequalities and promote climate action.

#### Environmental co-benefits

118. With respect to ecosystem health, the reuse of treated wastewater decreases use of scarce freshwater for irrigation, increasing water supply for aquatic ecosystems. It decreases the discharge of polluted waste water and contributes to decreased incidence of environmental pollution. Finally, the project is expected to achieve 3% to 3.5% reduction in groundwater overdraft and to contribute up to 4.5% to the water management goals in the National Water Strategy. Cumulative water savings are estimated at around 1.83 MCM in a 10-year period and 5.49 MCM for the project’s lifespan (30 years). In addition, 10,600 hectares of agricultural land area will be strengthened with climate-adaptive measures in the project area.

#### Social and institutional co-benefits

119. The BRCCJ will be implemented through a collective and community-based approach which promotes the organization of potential participants in groups for awareness raising as well as for organizing users of reclaimed water into water user associations and organize farmers into groups for the execution of the FFS for men and women. This is expected to increase the level of social cohesion in the communities where the project will be implemented. The project will also be developing special programmes for school children and teachers that agree to participate in RWH programme (Activity 1.1.1.4). The awareness among children is expected to generate additional benefits as young people are being recognized as the champions of climate change who will promote the climate change agenda as adults.

120. Additionally, investing in agriculture and water security of rural households will create new job opportunities in the construction sector (e.g. masonry and plumber) as well as in the private extension services one (e.g. irrigation management, agro-technology). Furthermore, households will dispose of an average of 15 m<sup>3</sup> of additional water that will also contribute to maintaining personal hygiene standards and ensure a more effective and efficient contrast of COVID-19 at the household level.

#### Economic co-benefits

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<sup>64</sup> National Adaptation Plan to Climate Change in Jordan. MoE. February 2020.

121. The project is expected to generate both quantitative and qualitative economic co-benefits. The benefits expected from each of the components are detailed in the sections below;

122. Under Component 1: *Climate Resilient Water Systems for enhanced water security*: Output 1: a) 7850 private households saving USD 127 per year (30 m<sup>3</sup> saved per HH) after implementing water saving devices and gadgets for home-consumption; b) 7,850 private households saving between USD 93 and USD 200 on purchasing water tankers in the absence of harvested rainwater (between 22 m<sup>3</sup> and 47m<sup>3</sup> saved per HH), depending on the rooftop area, tank size and rainfall levels; and c) 400 Public buildings saving between USD 363 and USD 585 of expenditure on purchased water in the absence of the harvested rainwater (between 87 m<sup>3</sup> and 137 m<sup>3</sup> saved). Output 2: a) 176 farmers generating around USD 620 of incremental income after benefiting from additional reclaimed water for agricultural production; and b) USD 210,000 saved per year due to the avoided cost of tertiary treatment of additional water storage in 3 Water Treatment Plants (for further details please see Annex 3. Economic and Financial analysis).

123. Under Component 2: *Climate Change resilience for Enhanced Livelihoods and Food Security*: *Benefits from the FFS and Field days are expected to lead to the adoption of technologies such as*; a) 1,425 farmers benefiting with a 30% increase in return to family labor due to the implementation of water saving and climate-adaptive technologies (improving yields and reducing the use of water and fertilizers); b) 525 women being reached to generate at least USD 130 additional value per year through the use of the new wicking beds technologies to produce herbs and vegetable beds in small- irrigated containers; c) 1260 farmers being trained to apply improved water management and climate adaptive techniques on 2520 hectares of fruits trees with between 22% to 43% additional profit margins per hectare; and d) 1950 farmers trained to apply improved water management and climate adaptive techniques on 6713 hectares of land under rain-fed crops that reports between 16% to 72% additional margins per hectare.

124. The increased availability of water from roof-top harvesting structures is expected to enable people to increase food production around the homesteads and improve nutrition, health and food security and generate co-benefits in terms of improved health and sanitation. The lack of water and secondary effects of these changes are considered as one of the highest threats to health in Jordan. In 2005, a WHO/UNEP project determining minimum water requirements for health in Jordan showed a linkage between the per capita water consumption and the incidence of diarrhea. The importance of washing hands to avoid the menace of coronavirus is a testament to the health impacts of increased water supply. The increased water availability from RWH is likely to generate improved health status of households, enhance hygiene – with subsequent reduction in the risk of disease transmission, reduce their health costs and reduce the pressure on Government health facilities. Other co-benefits will be generated in terms of increased business opportunities for entrepreneurs trained in installing RWH and the increased employment opportunities for the youth for employment in these enterprises. improved access to water harvested from the rooftop and reclaimed water: (i) economic impact of improved nutrition, health and food security; (ii) water subsidies public bill reduced; (iii) avoided downstream contamination from discharge of reclaimed water which has not undergone tertiary treatment. The investment in improved farming practices is also expected to generate additional benefits such as economic benefits of improved nutrition, health and food security, increasing productivity and reducing the amount of fertilizers used and the economic benefits of additional employments generated through the backward and forward multiplier effects in the project area.

#### **Gender-sensitive development impact**

125. Gender-sensitive development impact is expected to reduce gender inequalities in climate change impacts. The project will expand women's social and economic freedoms by focusing on their role as change agents, decision-makers and experts as well as increasing their access to resources required to meet their practical needs. It is expected that their participation in the project will serve to empower them, change societal perceptions and lead to their greater participation in other spheres of public and professional life. A cadre of young Climate Wise Women will be developed as advocates, repositories of knowledge and

technical guidance to support climate change adaptation in communities and informed interlocutors to influence the climate change agenda. Women will constitute 50 percent of the trainers leading all the FFS. They will be involved as key decision-makers in the use of domestic water, they will be supported in their role as farmers concerned with household food security through FFS tailored to their specific needs. An enabling environment for the recognition and expansion of women's role in climate change resilience will be created by reviewing relevant policies from a gender perspective and ensuring their inclusion in consultations and knowledge dissemination events. Young men will be involved through creation of employment opportunities in the project areas in vocational fields such as construction, plumbing and in private sector agencies selling water conservation technology and the use of inputs that are more water efficient, climate adaptive and lead to sustainable farming practices.

#### D.4. Needs of recipient (max. 500 words, approximately 1 page)

126. Vulnerability of Jordan and beneficiary groups: Jordan is one of the most water scarce countries in the world<sup>65</sup> and has a ND-GAIN<sup>66</sup> index ranking of 85 out of 181 countries for climate vulnerability (ranking 1 being the least vulnerable). Most of the country (92%) can be considered arid to semi-arid, having an average precipitation of less than 200 millimeters. Consequently, the water sector is considered to be extremely vulnerable to climate change and the scarcity and variability of the resource to be one of the significant barriers for the sustainable development of the Kingdom.<sup>67</sup> Rural poor across Jordan are the most vulnerable to CC due to their low adaptive capacity to the uncertain rainfall patterns and increase in temperatures. The small holder farmers in the South are highly dependent on rainfall. As it is, the poverty rate in the four Governorates in the project area is above the national average (13.3%), with 24.2% in Ma'an, 21.1% in Tafilah, 17.1% in Karak and 14.9% in Madaba.<sup>68</sup> These rates have been further exacerbated over time. According to the most recent official estimates, poverty rates have increased to an estimated 20% in 2016.<sup>69</sup> In addition, there is a large proportion of people who experience transient poverty and are especially vulnerable to climate risks. There is a critical need to help build the resilience of rural communities in the South and make them less vulnerable to climate threats. Additional details are available in Annex 2, section 1.

127. Economic and social development level of Jordan and affected population: Jordan's economy and society have faced significant shocks in the past few years with the lockdown from COVID-19 being the latest setback. The regional conflicts in Syria and Iraq, the country's main trading partners, have seriously damaged Jordan's trade routes and capital inflows. As a result, the country's macro-economic indicators weakened, the fiscal deficit rose, and financing the external sector became challenging. GDP growth, which had averaged 6.4 percent during 2000–09, fell below 2.5 percent over 2010–18 and is expected to stall in the aftermath of the pandemic. The official figures show that the poverty rate in 2017 was estimated to be 15.7% based on the Household Expenditure and Income Survey of 2017-18.<sup>70</sup> The rate has increased compared with the previously published data on poverty of 2010 which reported that the proportion of households living below the poverty line was 14.4%. The influx of refugees, continues to exert tremendous pressure on the country's natural resource base, water resources, infrastructure, social services and its labour market. The Government is increasingly concerned about the growing ranks of the unemployed. The unemployment rate is estimated to have reached 19.2% during the second quarter of 2019; (men 17.1%; and women 27.2% for females).<sup>71</sup> Youth unemployment is reported to have reached as high as 40 percent.<sup>72</sup> The country is taking some tough decisions to make the economy more business friendly and competitive, revive growth, and create jobs. The country needs assistance to build its resilience to climate change as it does not have the resources to undertake this investment on its own given the many challenges it faces.

<sup>65</sup> An assessment of policies, institutions and regulations for water harvesting, solar energy, and groundwater in Jordan, (FAO, 2018)

<sup>66</sup> The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience

<sup>67</sup> UNDC

<sup>68</sup> OCHA, 2012.

<sup>69</sup> The Economic Policy Council, Jordan Economic Growth plan 2018 - 2022

<sup>70</sup> [http://www.dos.gov.jo/dos\\_home\\_e/main/linked-html/household/2017/G4/Table1G4\\_Jor.pdf](http://www.dos.gov.jo/dos_home_e/main/linked-html/household/2017/G4/Table1G4_Jor.pdf)

<sup>71</sup> Department of Statistics, Government of Jordan, 2019

<sup>72</sup> Turning the Corner. Jordan's Path to Growth. Jordan Five Year Growth Matrix. 2019.

128. While a National Adaptation Plan (NAP) clearly establishes objectives, key investment areas and potential pathways, the implementation is being jeopardized by the absence of public and private sources of financing. From the public perspective, the current context shows high fiscal imbalances and very high public debt (IMF Press Release n°19/435- November 2019). There was a recent cut on public investment as “efforts to broaden the tax base and mobilize revenues to support Jordan’s fiscal and development needs have fallen short of expectations”. In the same report, the IMF suggests that as the “fiscal space will be limited... further international assistance will be critical in allowing for continued growth-enhancing reform”. This urgent need was repeated (Press release n°20/26- January 2020)- when the IMF recently reached an Agreement with Jordan on a Four-year Extended Fund facility but states that “financing support from Jordan’s international partners will be critical to support the government’s reform efforts.” and “the hosting of Syrian refugees is a testament to Jordan’s generosity and resilience. Jordan is one of the few countries in the region with some measure of political stability. The situation is fragile and justifies the requirement of the highest level of concessional finance to help the country deal with its complex political, social and environment issues.

129. Needs for strengthening institutions and implementation capacity. There has been little examination of the existing policies and regulatory frameworks with regard to their impact on encouraging adaptation practices among farming communities and households. These include policies on subsidies of cereals, purchasing policies of grains, animal feed and agriculture inputs and the policy of tariffs and fee on energy, water and reclaimed water. The country needs assistance in examining these policies and regulations and assessing how they can become an incentive for increased adoption of adaptation technologies and practices. The academic and vocational training institutions in the country have not fully incorporated climate change into their curriculum and the skills that they impart. This needs to be undertaken to build the operational capacity of the country to implement adaptation measures. The local municipal level staff, civil society organizations, private sector organizations and citizens have limited opportunities to be fully aware of climate change scenarios and the coping strategies that need to be in place. The country needs to invest in these aspects of awareness raising and building capacity for increased resilience in the broad range of local institutions and private sector who will be called upon in the future to address climate risks.

#### D.5. Country ownership (max. 500 words, approximately 1 page)

130. Jordan has displayed strong ownership and commitment to changing the business as usual scenario and take serious note of the climate change threats posed to the country. The Intended Nationally Determined Contribution (INDC) and the National Adaptation Plan (2020)<sup>73</sup> which was recently issued, reaffirm the Government priorities to bringing about transformative change and lists many of the activities in the current project as key priorities including promoting gender equality and empowering women. The ownership of the Policy and the NAP is shared among several Ministries and partners in civil, private and academic sectors who are all represented in the National Committee on Climate Change (NCCC). The existing GCF country programme was adopted by the NCCC in its meeting in February 2020. Jordan is planning to review its NDCs in 2020 and this provides a great opportunity to link its NAP document to the revised NDCs. Jordan will undertake its Fourth National Communication (FNC) exercise in 2020 resulting in the launching of the FNC report in 2021. The MoE is now in the process of preparing a new policy on Climate Change as part of its FNC.

131. The MoE has also strengthened its internal capacity for climate change by establishing a climate change unit and so have the MoA and the MWI. These three key stakeholders identified focal points for the project who participated in the extensive process of consultation, demonstrating their commitment and ownership of the climate change agenda. The NCCC will act as the Project Steering Committee for the current project and facilitate its implementation. The NDA will play a coordinating role for presenting to the

<sup>73</sup> MoE. Climate Change National Adaptation Plan.

NCCC the policy change agenda identified by key stakeholders and initiating the requisite reform process. The NDA will be responsible for overall monitoring and supervision of the performance of the BRCCJ Project and the PMU will report directly to the MoE.

132. The current project is well aligned with the **GCF country programme**<sup>74</sup> which has identified adaptation priority projects centered around four components, namely; Water Resources and Water Security, Agriculture and Food Security; Ecosystems and Disaster Risk Reduction and Human Health. As a commitment to climate change and specific to the Green Climate Fund, several readiness activities have been approved and are in the process of being undertaken such as *Strengthening NDA of Jordan to deliver on GCF Investment Framework*, Delivery Partner United Nations Environment Programme (UNEP)(June 2017); 300,000 USD; *Improving Jordan's Readiness to Access Finance for Climate Change and Green Growth in Jordan*, Delivery Partner: Global Green Growth Institute (GGGI)(July 2018); 660,000 USD. There are three regional grants which have been previously approved for the country but the **BRCCJ Project is the first and only country specific project which the MoE has included in the GCF Portfolio for submission during the first replenishment period of the GCF (2020-23)**. This clearly demonstrates the GoJ's commitment and ownership of the current submission.

133. The Accredited Entity (AE) for the project is the Food and Agriculture Organization of the United Nations, which is an international organization whose main goals are the eradication of hunger, food insecurity and malnutrition; the elimination of poverty and the sustainable management and utilization of natural resources. UNDP will undertake some key execution responsibilities for the project as an EE. Both UNDP and FAO have considerable experience in Jordan in promoting climate resilient and sustainable agriculture and food security. FAO and UNDP provide independent advice on technical issues and play a catalytic role based on their comparative advantage in providing high quality technical assistance and implementing innovative approaches. FAO is currently implementing a range of high impact projects in the country with financing from EU, the Government of Switzerland and others for climate change adaptation. UNDP is also in the process of implementing projects to assist with climate risks. FAO and UNDP have excellent relationship with the MoPIC and MoE. FAO is currently the lead coordinator for the UN Climate Action group consisting of seven agencies working on all aspects of Climate Change including WASH, DRR, Water re-use and Water efficiency in agriculture. The sector group liaises with the line ministries with a single voice to discuss challenges and gaps and will provide coordinated support to MoE in the development of the new Climate Change policy. FAO was registered as an Accredited Entity (AE) with the GCF on the 14th October 2016. Since then it has successfully submitted seven proposals to the GCF which are currently under implementation. FAO's capacity for implementation is further strengthened by its technical expertise at its headquarters in Rome, its sub-regional office in Cairo and its country office in Amman.

134. There are a large number of civil society organizations which are involved with a range of initiatives with respect to natural resource management and climate change adaptation. NGO's, grassroots movements and national organizations that represent local communities, farmers, women and other vulnerable groups such as the Jordan Environmental Society, Jordan River Foundation, Arab Women's Organization, JOHUD, Jordan Cooperative Society, General Union of Jordanian Farmers, agricultural engineers association, etc., Many of the CSOs have recognized the threats emanating from climate change and need to enhance their capacity for climate change adaptation approaches and strategies. Consultations with these agencies has indicated a strong commitment to be involved in enhancing their awareness and capacity to undertake adaptation practices.

135. The NAP process included private sector in the NCCC and involved a range of entities that have leverage and represent the private sector such as the Jordan Chamber of Industry, Jordan Chamber of Commerce, Association of Banks, EDAMA Association, Jordan Green Building Council (JGBC) and others.

<sup>74</sup> MoE. Draft Jordan GCF Country Programme. December 2019.

The private sector encompasses a wide and varied range of companies and businesses from large multinationals to small businesses. During stakeholders' consultations in Jordan's NAP process, the main barriers that emerged included lack of an enabling environment and market conditions as well as changing regulations which increase the risk for the private sector. The private sector is however gaining increased awareness of the benefits of engaging in climate change mitigation and adaptation as a viable business opportunity. The NAP views the private sector as a key interlocutor that can contribute to resilience by supplying the range of services required for climate change mitigation and adaptation such as renewable energy solutions, water saving irrigation technologies and other climate adaptive technologies and inputs. The private sector will also be expected to provide insurance services, ICT4CA solutions, digital financial services as opportunities for business promotion and resilience building.

## D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

### Financial and Economic Analysis

136. An analysis of the Value for Money Metrics of the Project shows that the project investment is highly justified based on both financial and economic analysis (Annex 3: Economic and Financial analysis). A comparison of BRCCJ Project's cost-effectiveness indicators with other GCF funded rural development projects in the region shows that it has a higher EIRR than most projects with a GCF cost per beneficiary of USD 117.70 and total cost per beneficiary of USD 156.50 which is well below the unit cost for similar projects (Annex 19, Section 3.6). The project is designed to stimulate demand for climate adaptation practices and technologies and is expected to attract and crowd in private sector investments for climate adaptation.

137. Financial profitability was assessed using twelve financial models that were developed based on the available climate-adaptive technologies for selected crops, taking into consideration their economic competitiveness in Jordan<sup>75</sup> and the current cropping pattern in the four governorates. These are given in Table 12 below and used tomato, cucumber, grapes, olive trees, rain-fed barley and wheat given the range of improved technologies relevant for climate adaptation improving expected yields and margins compared to the baseline situation. Overall, all models show positive Net Present Values (NPV) and Financial Internal Rate of Return (FIRR) ranging from 17.5% to 63.9% and net present values (NPV) that vary from JOD 179 to JOD 14,668. Consequently, all models are considered profitable for a financial discount rate at 9%. Additionally, expected increases in returns to family labor range from 19% to 317%. The following list summarizes profitability indicators for all the financial models. The project also demonstrated an Economic rate of return of 24.1% after applying conversion factors to obtain economic prices, incorporating economic models to include benefits of water saving interventions and aggregating economic incremental benefits to be compared with total project costs (excluding investment costs already considered in the models in order to avoid double-counting). The NPV reaches US\$ 80.16 million, and the Benefit Cost Ratio is 2.95, with an economic discount rate estimated at 4% (given the current Jordanian 10yr bond yields and the CBJ main interest rate), over the period of 30 years.

Table 15. Financial Profitability indicators per model

Item	FIRR %	NPV JOD	(%) incremental Returns to Family Labour
Rainfed Barley	17.5%	205	162%
Rainfed Wheat	18.7%	212	85%
Olive trees irrigated	n/a	4,594	317%
Olive trees non-I	n/a	3,139	35%
Grapes irrigated	n/a	10,346	25%
Tomatoes	n/a	12,945	26%
Wicking beds	21.9%	179	61%

<sup>75</sup> FAO (2015) Water along the food chain in Jordan. FAO Investment Centre. FAO/EBRD Cooperation.

Grow-bag GH Tomatoes conv	48.0%	11,666	19%
Grow-bag GH Tomatoes new	30.3%	6,807	46%
Grow-bag GH Cucumber conv	63.9%	14,668	37%
Grow-bag GH Cucumber new	36.4%	7,558	45%
Alfalfa	n/a	4,004	262%

### Sensitivity analysis

138. A sensitivity test was developed using different risk-occurrence scenarios. These included increase in project costs (10% and 20%), a reduction in project benefits (10% and 20%), and combined scenarios (of both benefits reduced by 10%, 20% and 30% and costs increased by 10% or 20%). Additionally, a delay in project benefits (1 and 2 years) and the reduction in benefits by 50% every 2 and 3 years due to the occurrence of climate change shocks were considered. NPV remains positive so the project is still considered to be profitable under the tested scenarios. Detailed assumptions and calculations are attached in Annex 3 and Annex 19. Table 13 below presents the main results of the sensitivity test. The analysis shows that the project is most sensitive to reduction in benefits.

Table 16 Sensitivity Analysis

Sensitivity Analysis							
	Δ%	Risk		EIRR	NPV (US\$)		
<b>Base scenario</b>				25.34%	86,079,814		
Benefits	-10%	Combined risks on sale prices, yields, adoption rates		22.85%	73,989,005		
	-20%			20.27%	61,898,195		
Costs	10%	Increase in expenses, input prices and unit costs		23.08%	82,596,986		
	20%			21.14%	79,114,158		
Delay 1yr in Benefits		Adoption rate / delays		20.97%	80,793,285		
Delay 2yr in Benefits				18.04%	75,710,084		
External Shock every 2 yr	50% Benefits	External shock (prices, quantities, climate)		21.73%	45,005,646		
External Shock every 3 yr	50% Benefits			22.98%	71,435,701		
Mixed Scenarios		Costs	Benefits	10%	20.75%	70,506,177	
				10%	-20%	18.33%	58,415,367
				20%	-20%	16.65%	54,932,539
		20%	-30%	10.20%	22,142,939		
		20%	-10%	18.94%	67,023,349		

## E. LOGICAL FRAMEWORK

### E.1. Paradigm shift objectives

- Increased climate resilient sustainable development

### E.2. Core indicator targets

E.2.4. Expected total number of direct and indirect beneficiaries, (disaggregated by sex)	Direct	83,743 <sup>76</sup> 40% or 33,497 female
	Indirect	128,673 51% or 65,623 female
E.2.5. Number of beneficiaries relative to total population (disaggregated by sex)	Direct	83,743 (0.8% of country) 2% direct beneficiaries as proportion of female population and 10% as proportion of project area population and 34% as proportion of farming households in the project area.
	Indirect	128,673 (1.3% of country) 1.3% indirect beneficiaries as proportion of female population and 15% as proportion of project area population.

### E.3. Fund-level impacts

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	Reports from Independent and external household surveys in year 0 and 7.	0	5,138 people  (3,193 men and 1945 women)	20,550 people  (12,770 men and 7,780 women)	Economic social and political situation in the Country and in target areas remains stable.  It is assumed that 4050 of those in FFS and 50% of those in the field days and 25% of those receiving e-extension and 40% of those reached by climate wise women adopt a resilient practice, input or technology.
A2.0 Increased resilience of health and well-being, and food and water security	A2.3 Number of males and females with yearround access to reliable and safe water supply despite climate shocks and stresses	Reports from Independent and external household surveys for hhs fitted with RWH structures and water saving devices in year 3 and 7.	3,767 people  (1884 men and 1884 women)	16,308 people  (8,154 men and 8,154 women)	57,910 people  (28,955 men and 28,955 women)	Beneficiaries will benefit from about 20 m3 of water at the household level and about 255, 000 m3 from reclaimed water for irrigation <sup>77</sup> . Water safety will be measured according to national and international standards. Monitoring will be done on a yearly bases by the Ministry of Health, the Ministry of Water and Irrigation and the Ministry of Environment.  Absence of major natural disaster in the country and in target areas. It is expected that all those using public buildings, receiving support from RWH, WWT benefit from year round access plus baseline.

<sup>76</sup> Details and methodology related to the selection of beneficiaries are available in Annex 2 page 79→80, Table 39)

<sup>77</sup> Details are available in Annex 2 page 55→61

#### E.4. Fund-level outcomes

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
A5.0 Strengthened institutional and regulatory systems for climate-responsive planning and development	<i>A5.1 Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation</i>	Official Report by Monitoring and Learning (MRL) Reports of the National Adaptation Plan by Climate Directorate of MoE.	1 the country disposes of standards for reclaimed water from waste water harvesting plants  0 RWH incentive mechanisms is currently in place	(2) Incentives to scale-up adoption of RWH through grants for installation, integration of water saving devices and; upgrading of standards for the use of reclaimed water.	(6) Incentives to scale-up adoption of drought tolerant grains and fruits; and water optimization technologies.	Economic, social and political situation in the country and in target areas remains stable.  There is political appetite for reform.  Incentives will be negotiated with stakeholders during execution. Standards will be prepared jointly with the Ministry of Water and Irrigation, the Ministry of Finance and the Ministry of Environment. Both will be prepared according to the principles stated in the national strategies.
	<i>A6.1 Use of climate information products/services in decision-making in climate sensitive sectors</i>	Reports from Independent and external surveys on use of climate information and adoption of technologies.	0	10,000 <sup>78</sup> hhs use climate smart mobile application (ICT4CA) of which at least 70% use the information and . 28,000 ha of arable land is farmed applying introduced practices.	30,000 <sup>72</sup> hhs use climate smart mobile application (ICT4CA). of which at least 70% use the information and . 84,000 ha of arable land is farmed applying introduced practices.	The project will support the Ministry of Agriculture the Ministry of Environment and the National Center for Agriculture research.in reaching out farmers. The project will support the creation and transfer to the NARC of a specific app that will support the climate communication and training efforts of stakeholders. Involved ministries will also disseminate the info and products via radio/media/social media climate.  A complete description of the technologies and innovative solutions transferred to beneficiaries and stakeholders is reported in Annex 2 page 68. Monitoring will be secured by the project through the reports from the FFS activities as well as from the independent and external surveys that the project will commission.
A6.0 Increased generation and use of climate information in decision-making	<i>Number of technologies and innovative solutions transferred or licensed to promote climate resilience as result of GCF support</i>		0	4	8	

<sup>78</sup> There will be three level of targeting. First: total number of reached persons, Second: level of use of the app and related contents, Third: impact of this usage on farming practices. The project will monitor targeted people and use of the app via the reports generated by the app. Impacts will be monitored via remote sensing analysis on the plots georeferenced by the app.

<p>A7.0 Strengthened adaptive capacity and reduced exposure to climate risks</p>	<p><i>A7.1 Use by vulnerable households, communities, businesses and public-sector services of Fund-supported tools instruments, strategies and activities to respond to climate change and variability</i></p>	<p>Reports from Independent and external household surveys  Annual Performance Reports</p>	<p>0</p>	<p>5,138  (3,193 men and 1,945 women)  increase their adaptive capacity</p>	<p>20,550  (12,770 men and 7,780 women)  increase their adaptive capacity</p>	<p>The fund supported tools are the irrigation technologies and practices introduced (e.g. drip irrigation, soil less productions, Wicking beds, fertigation, on farm water harvesting and others) Assuming the project is implemented on time.  Assuming the private sector is able to upscale and replicate the technologies and inputs introduced.</p>
<p>A8.0 Strengthened awareness of climate threats and risk-reduction processes</p>	<p><i>A8.1 Number of males and females made aware of climate threats and related appropriate responses</i></p>	<p>Reports from Independent and external household surveys  Reports by Service providers and IPs.  Annual Performance Reports</p>	<p>Limited systematic awareness about climate change threats and responses.</p>	<p>33,908 people (19,653 men and 14,255 women) made more aware of which 80% report that they are now aware about climate risks and have strategies to deal with them.</p>	<p>135,633 people (78,613 men and 57,020 women) made more aware of which 80% report that they are now aware about climate risks and have strategies to deal with them.</p>	<p>Assuming that all participants in project activities are made aware of climate risks.</p>

**E.5. Project performance indicators**

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term	Final	
Component 1: Expected Result 1: Enhanced water availability to address climate change risks	Increased diversity products grown from home-gardens in target areas through the use of RWH systems.	Reports from Independent and external household surveys  Annual Performance Reports  Reports by Service Providers.	2 crops	3 crops	6 crops	Beneficiaries will dispose of additional water sources to cover basic domestic needs (i.e. hygiene) and to irrigate home-gardens. Households will be able to improve irrigation for the existing crops (average hh plant olive trees and thyme) and increase the diversity of crops to at least 6 by the end of the project (e.g. olive oil, thyme, tomato, lady fingers, sage, and rosemary). These type of crops do not require intense and constant irrigation but only water after planting (6 months) and during severe droughts. By providing alternative and sustainable sources of water (e.g. rainwater collected from the roof) and by optimizing the use of already available water (e.g. water saving devices), the project will allow households to maximize the use of potable water and increase their capacity to grow crops.
	No of people with increased access to reclaimed water in		3,767 people	16,308 people	57,910 people	Project is initiated according to planned timelines and there are no political, economic or

	target areas and overdraft of groundwater reduced by at least 3% from the baseline.		Overdraft = 26.9 MCM/Year	Overdraft =26.6 MCM/Year	Overdraft = 26 MCM/Year	health risks that stall progress.  Resilience will be based on <a href="#">RIMA II</a> methodology that was created by FAO and that considers the combined effect of climate changes, economic forces and social conditions.  The indicator will measure at midterm and at the end of the project changes in the resilience matrix established at inception.
Component 2: <i>Expected Results 2: Enhanced capacity of people to deal with climate change risks.</i>	Number of people who report increased resilience to climate risks based on improvements of the RIMA II indicator (FAO)	Reports from Independent and external household surveys. RIMA II Index Value <sup>79</sup> (Resilience Composite Index – RCI) against the project's baseline.	0	23,736 people	94,943 people	
Component 3: <i>Expected Results 3: Gender sensitive resilience tools and practices to adapt to climate change are mainstreamed into the national policy, educational, administrative and social frameworks</i>	<i>No of University (U) and vocational training institutes' (VTI) curricula incorporating climate change adaptation.</i>	Official publication from partners (University and MoE) in the respective websites reporting the new curricula	0	4 <sup>80</sup>	6 <sup>81</sup>	The project will sign in (Y1) an MOU with universities and with the Ministry of Education and VTI. The new curricula will include climate awareness, risk analysis adaptation and mitigation approaches and strategies.
	<i>No of local level public functionaries trained and capacitated in climate change management planning and budgeting.</i>	Annual Performance Reports informed by independent external surveys (y4, Y8) of institutions in target areas	0	At least 160	At least 344	The project will sign a MOU with each project governorate and target key administrative tiers (4 governorates, 16 provinces and 324 municipalities).  Absence of political, economic or health risks that stall progress
	<i>No of civil society organizations that are adopting and disseminating at least 2 of the climate adaptation approaches introduced by the project.</i>	Annual Performance Reports informed by Independent external surveys (y4, Y8) of CSOs in target areas.	0	At least 5 CSOs	At least 15 CSOs	The project will involve key CSOs active in target areas regardless of their mandate to ensure mainstreaming of adaptation measures.  Absence of political, economic or health risks that stall progress
	<i>No of private sector actors/companies that are trained and that will start providing climate resilience technologies and inputs introduced by the project in target areas.</i>	Annual Performance Reports informed by independent external surveys (y4, Y8) of private sector in target areas	0	81	162	The project will target registered companies in collaboration with the Ministry of Trade and Chamber of Commerce. Companies will be assessed at inception and monitored throughout the project. The project will monitor changes in the technologies offered in the field of irrigation and farm management to assess how many will initiate offering introduced technologies and services.  Absence of political, economic or health risks that stall progress.

<sup>79</sup> RIMA methodology can be consulted at: <http://www.fao.org/emergencies/resources/documents/resources-detail/en/c/416587/>. RIMA-II directly measures resilience through the Resilience Capacity Index (RCI) and the Resilience Structure Matrix (RSM): the first estimates the capacity of households to cope with shocks and stressors and avoid long-term damages, while the second explains how much each pillar contributes in determining the resilience capacity.

<sup>80</sup> 2 Universities (Architecture, and Civil Engineering) and 2 Vocational Training Institutes (Masonry, plumber).

<sup>81</sup> 3 Universities (Architecture, Civil Engineering and Agriculture) and 3 Vocational Training Institutes (Masonry, plumber and agriculture).

E.6. Activities			
Activity	Description	Sub-activities	Deliverables
Component 1: Making Water Systems Climate resilient			
Activity 1.1.1.1 Provide Technical assistance and oversight for water resilient systems	A team of technical specialists comprising a water engineer and an M&E specialist will provide guidance to MWI and oversight of service providers on all technical aspects of component 1	<ul style="list-style-type: none"> <li>• Consultation and continued dialogue with national and district-level administrative bodies</li> <li>• Random inspections to project sites to ensure delivery to beneficiaries identified</li> <li>• Development of gender-sensitive knowledge products describing project design, approach and achievements</li> </ul>	At least 14 random inspections made by year 7 2 surveys made by year 7 2 knowledge products by year 7
Activity 1.1.1.2 Selection of public buildings and awareness on water conservation schools and municipal officials	The PMU will contract a service provider to pilot and implement a gender sensitive methodology to select public buildings where rooftop rainwater harvesting systems will be installed. The service provider will also be in charge of developing and implementing campaigns in the targeted public buildings especially in schools to raise awareness about the functioning and benefits of rooftop rainwater harvesting tanks and inculcating behavior change in water use.	<ul style="list-style-type: none"> <li>• Identify target public buildings where rainwater harvesting systems and water saving devices will be installed</li> <li>• Carry out one gender sensitive campaign to raise awareness about the importance of harvesting and saving water among the users of public buildings, to make sure that users are aware of the usefulness and intended impact of the proposed intervention</li> </ul>	1 awareness raising campaign delivered to users of targeted public buildings
Activity 1.1.1.3 Construction of Rooftop rainwater harvesting system in public buildings	This entails the construction of rooftop rainwater harvesting systems and the installation of water saving devices in public buildings	<ul style="list-style-type: none"> <li>• Construction of rooftop rainwater harvesting systems</li> <li>• Installation of water saving devices</li> <li>• Random inspections by PMU to ensure that construction is taking place at targeted buildings</li> <li>• Mobilize MWI staff to supervise and certify construction</li> </ul>	400 public buildings fitted by year 7
Activity 1.1.1.4 Select beneficiaries, provide orientation on water conservation to households	The PMU will contract a service provider to implement a methodology to select households where rooftop rainwater harvesting systems will be installed. The service provider will also be in charge of developing and implementing campaigns in all households to raise awareness on the operation and benefits of rooftop rainwater harvesting well as efficient use of water and inculcating long-term behavior change. Women	<ul style="list-style-type: none"> <li>• Identify target households where rainwater harvesting systems and water saving devices will be installed</li> <li>• Carry out gender-sensitive campaigns to raise awareness about the importance of harvesting and saving water in the targeted households, to make sure that beneficiaries are aware of the benefit of the proposed systems and how to operate these systems properly</li> </ul>	1 gender-sensitive awareness raising campaign delivered to beneficiaries in targeted households

	headed households will be especially identified.	<ul style="list-style-type: none"> <li>• Consult women in target households while designing and selection of materials and location of outlets of rainwater harvesting systems to ensure that system responds to their needs and minimizes labour.</li> </ul>	
Activity 1.1.1.5 Construction of Rooftop rainwater harvesting system in households	This entails the construction of rooftop rainwater harvesting systems and the installation of water saving devices in private households as well as ensuring that women are consulted during construction and installation as the primary users of domestic water.	<ul style="list-style-type: none"> <li>• Construction of rooftop rainwater harvesting systems</li> <li>• Installation of water saving devices by households.</li> <li>• Random inspections by PMU to ensure that construction is taking place in targeted households following design specifications and requirements including consultations with women</li> <li>• Mobilize MWI staff to supervise and certify construction and ensure that beneficiaries are trained on the use of the systems.</li> </ul>	7,850 households fitted by year 7
Activity 1.1.1.6 Independent Impact assessment for component 1	The PMU will contract and supervise a service provider to conduct an independent impact assessment to determine the impact on HHs especially women.	<ul style="list-style-type: none"> <li>• The service provider conducts an independent sex-disaggregated, gender-sensitive impact assessment of the activities 1.1.1.1 to 1.1.1.5</li> </ul>	1 overall impact assessment by year 4 1 impact assessment by year 7
Activity 1.1.2.1 Build storage and distribution infrastructure to maximize reuse of reclaimed water from existing WWT plants	New reservoirs and distribution systems constructed to maximize the reuse of reclaimed water produced by existing WWT. The reservoirs allow for storing the reclaimed water produced during the winter months to meet water demands during the summer months. The distribution and use of the reclaimed water for irrigation will follow established procedures of the MWI, including the Jordanian Standard for Reuse of Reclaimed Water which defines the type of crops (Field Crops, Industrial Crops and Forest Trees) that can be irrigated with reclaimed water. Women members of HHs will be included in areas where women play a role in the use of reclaimed water.	<ul style="list-style-type: none"> <li>• Carry out site inspections at WWT to check proposed reservoir sizes and extent of distribution networks</li> <li>• Develop terms of reference for a service provider to build reservoirs and distributions systems according to specifications</li> <li>• Contract a service provider.</li> <li>• Construction of storage and distribution infrastructure to maximize reuse</li> <li>• Mobilize MWI staff to supervise and certify construction.</li> </ul>	3 reservoirs to store reclaimed water constructed and at least 3km of water distribution systems installed by year 7
Activity 1.1.2.2 Technical assistance to MWI and Ministry of Health to assure compliance with environmental standards	Given the moderate environmental risks linked with the reuse of reclaimed water, this activity aims to assure compliance with Jordanian environmental standards for reuse of reclaimed water. To this end, the activity carries out periodic testing the quality of	<ul style="list-style-type: none"> <li>• Develop terms of reference for a service provider to carry out regular inspections, sampling and laboratory testing of the water and soil quality around the targeted WWT</li> <li>• Contract a service provider to carry out regular</li> </ul>	At least 63 soil and water samples collected and tested by year 7

	the reclaimed water stored and also the soil quality of areas where the reclaimed water is applied.	<i>inspections, sampling and laboratory testing of the water and soil quality around the targeted WWT</i> <ul style="list-style-type: none"> <li>• <i>Communicate results to WWT plant operators, MWI and Ministry of Health.</i></li> </ul>	
Activity 1.1.2.3 Technical assistance to promote demand and safe reuse of reclaimed water, including building local capacity of farmers and Water User Associations	This activity promotes safe reuse of reclaimed water among target beneficiaries (farms surrounding wastewater treatment plants), including building local capacity of farmers especially ensuring the inclusion of women in areas where they are involved in agriculture.	<ul style="list-style-type: none"> <li>• <i>Develop Tors.</i></li> <li>• <i>Contract a service provider</i></li> <li>• <i>Develop gender-sensitive communication and outreach material to promote demand and safe reuse of reclaimed water among beneficiaries including both men and women.</i></li> <li>• <i>Ensure continuous communication between MWI, WWT plant operators and farmers</i></li> </ul>	At least 4 Water User Associations trained on safe reuse of reclaimed water with inclusion of women and men from the same land-owning household.
Activity 1.1.3.1 Establish plan objectives and criteria	A service provider is contracted to work closely with an international water specialist to establish plan objectives and criteria for selecting and prioritizing interventions. This <i>a priori</i> definition of decision criteria will be based on an elicitation of involved stakeholders, which will be identified through a stakeholder mapping exercise carried out by the service provider. At the broadest level, the plans aim to identify priority interventions to increase landscape resilience through enhanced groundwater recharge and reduced flash flood risk	<ul style="list-style-type: none"> <li>• <i>International water specialist liaises with PMU to developed ToR for service provider</i></li> <li>• <i>Contract service provider</i></li> <li>• <i>Carry out a stakeholder mapping exercise to identify involved stakeholders among government, civil society, private sector and water user associations with a focus on the inclusion of women</i></li> <li>• <i>Elicit plan objectives and decision criteria from relevant stakeholders from national government agencies and ministries</i></li> <li>• <i>Develop a set of plan objectives and criteria including interventions prioritized by women</i></li> <li>• <i>Initiate development of landscape resilience investment plan for the project area</i></li> </ul>	1 set of gender-sensitive criteria and objectives for the landscape resilience investment plans established
Activity 1.1.3.2 Execute technical, economic, environmental and social feasibility studies for the development of Landscape Resilience Investment Plans.	This activity is the core of the landscape resilience investment plans, and consists of the development of technical feasibility studies for the project area including social and environmental plans. The consultation with women will be considered key during the preparation of the plans. This activity contributes to a strategic planning framework for the CIPs of the MWI	<ul style="list-style-type: none"> <li>• <i>Prepare a list of preliminary actions including consultations with communities including both men and women.</i></li> <li>• <i>Assesses feasibility of proposed preliminary actions, relying on multiple data sources and on advice from international water specialist</i></li> <li>• <i>Define a portfolio of interventions which meet plan criteria and are feasible</i></li> </ul>	1 landscape resilience investment plan completed

<p>Activity 1.1.3.3 Disseminate and validate investment Plan</p>	<p>Working closely with PMU and the international specialist, the service provider develops a plan to disseminate results from the investment plans. This includes workshops with interested stakeholders from local and national government bodies, civil society, the private sector including men and women in the catchment area. The outreach activity also involves reaching out to donors and financiers who will help to identify potential opportunities to finance the investment priorities identified in the report</p>	<ul style="list-style-type: none"> <li>• <i>Prepare dissemination and outreach material based on findings from landscape resilience investment plans</i></li> <li>• <i>Organize and publicize dissemination and validation workshops</i></li> <li>• <i>Dissemination and validation workshops in each of the four project governorates with inclusion of women.</i></li> <li>• <i>Invite donors and financiers at roundtables to discuss investment priorities identified in the landscape resilience investment plans and pin-down potential sources of funding</i></li> </ul>	<p>4 dissemination and validation workshops and 2 roundtables with donors and financiers</p>
<p>Component 2: Climate Change resilience for Enhanced Livelihoods and Food Security</p>			
<p>Activity</p>	<p>Description</p>	<p>Sub-activities</p>	<p>Deliverables</p>
<p>Activity 2.1.1.1 Provide Technical assistance and oversight for climate change adaptation</p>	<p>The PMU will competitively procure the services of a Climate Change Adaptation specialist to organize and plan all the activities associated with this component.</p>	<ul style="list-style-type: none"> <li>• <i>Prepare TORs for the Specialist with specific requirements for mainstreaming gender by consulting women farmers.</i></li> <li>• <i>Advertise and Procure the services</i></li> </ul>	<p>An agronomist/climate change adaptation specialist is recruited.</p>
<p>Activity 2.1.1.2 Design appropriate modules for Climate Smart FFS</p>	<p>This activity is designed to develop the modules for the Farmer Field Schools in a participatory manner. The modules will be designed in a manner that is gender sensitive so that the role of men and women are both addressed in the development of the modules. The topics will be chosen based on those which are relevant for climate change adaptation and keep in mind the cropping pattern in the selected area. Climate smart-FFS for women customized to suit women's specific needs (homestead gardens, medicinal plants and herbs, small-scale water efficient technologies etc ) and preferences in terms of frequency, duration, timing, location will be separately designed.</p>	<ul style="list-style-type: none"> <li>• <i>Identify in consultation with NARC, MoA, local extension staff and farmers both men and women in identifying the most appropriate modules topics, location, duration, timing, frequency, etc., International and local consultants will be paired to select topics, develop the lesson plans, determine the duration, the inputs required, develop the training materials required and the implementation plan for the different modules. A two-year plan will be developed at the start with two subsequent year plans made at the end of each two-year period.</i></li> </ul>	<p>6 modules developed for conducting FFS</p>
<p>Activity 2.1.1.3 Training a team of Master Trainers/Facilitators</p>	<p>Extension staff from the four selected Governorates and from some of the adjoining districts in the Dead Sea Basin will be selected for training as Master Trainers to conduct the FFS.</p>	<ul style="list-style-type: none"> <li>• <i>Select the candidates from the extension staff (50% women) interested in conducting FFS.</i></li> <li>• <i>Make a training calendar for their training in both theoretical and practical aspects.</i></li> </ul>	<p>40 Master Trainers of whom atleast 20 will be women</p>

		<ul style="list-style-type: none"> <li>• Determine the venue and conduct the training.</li> <li>• Organize refresher training in year 4 and replace any drop-outs.</li> </ul>	
Activity 2.1.1.4 Identify target groups in Project Area	Identification of men and women candidates for the training based on a criteria that measures climate change risk, relevance of the training based on crops grown, commitment to complete the course.	<ul style="list-style-type: none"> <li>• Extension staff will conduct a survey of households and identify men and women interested in the training based on the targets for each year and register them in clusters based on proximity. The candidates will be informed of training calendar, training duration and topics.</li> </ul>	Identification of 4050 candidates for training of whom 1050 will be women.
Activity 2.1.1.5 Scaling-up FAO mobile geo-referenced monitoring application of adoption rates	The application is designed to provide an efficient system for collection of adoption rates of adaptation practices and technologies.	<ul style="list-style-type: none"> <li>• The selected master trainers will be provided the FAO application and trained in its use.</li> <li>• The Master Trainers will collect the information at the end of the first year of training and monitor adoption rates on an annual basis.</li> </ul>	Trend analysis of adoption rates of climate adaptive technologies and practices.
Activity 2.1.1.6 Conduct Climate Smart FFS	Famer Field schools are a gathering of 10 to 20 people for the duration of a crop cycle or for a longer period depending on what is being demonstrated. The FFS has proved to be an effective methodology for getting farmers together to work on the farmer's field in groups for learning and sharing a range of crop technologies and practices. The project will organize FFS in the four project Governorates with an average of 15 participants each.	<ul style="list-style-type: none"> <li>• The training plan at the start of each year will be developed for planning and budgeting purposes.</li> <li>• Training venue will be identified with suitable logistics and refreshments.</li> <li>• Facilitators will be selected and provided with logistics.</li> <li>• Required Inputs and training materials will be made available</li> <li>• Trainees will be evaluated at the end.</li> <li>• Certificates will be prepared and awarded to participants.</li> <li>• Trainees will give their feedback on the session which will be recorded and reported.</li> </ul>	270 FFS sessions of which 70 exclusively for women.
Activity 2.1.1.7 Field demonstration of tested climate-adaptive innovation and practices	Field days are a short one-or-two- hour sessions held at a public place that are used to demonstrate new technologies and practices. NARC has used this effectively for transfer of technology.	<ul style="list-style-type: none"> <li>• Identify the technology or the practice to be demonstrated.</li> <li>• Make an annual field demonstration plan as part of the AWPB and submit for approval.</li> <li>• Publicize the event at least two weeks in advance with the venue identified.</li> <li>• Inform extension staff and NAC centers about the event.</li> <li>• Arrange logistics and demonstrate the new practice or technology.</li> <li>• Record the attendance and obtain beneficiary feedback.</li> </ul>	6000 men and women farmers participate in field days that demonstrate climate adaptive practices with a minimum of 1200 women.

		<ul style="list-style-type: none"> <li>• Report the event and track beneficiary feedback at the event.</li> </ul>	
Activity 2.1.1.8 Independent Impact assessment for C2	A Third-Party assessment of the FFS, field days to assess beneficiary feedback, adoption rates and impact on climate adaptation disaggregated by sex.	<p>Prepare Terms of Reference For the competitive procurement of the services of an Independent Evaluator specifying requirement for gender-sensitive impact assessment report with sex-disaggregated data</p> <p>Conduct the assessment in Year 7.</p>	Independent Impact Assessment Report.
Activity 2.1.2.1 Developing climate-smart IT solutions for smart devices	The MOA, NARC and MoE are increasingly relying on information technology for dissemination of extension messages. The e-extension platform can also be used for outreach at scale for climate adaptation messages and technology transfer at the national level.	<p>Recruit a technical specialist to review the platforms being used by the MoA, NARC and MoE.</p> <p>Develop an application which is compatible with the ICT systems being used by the MoA and MoE.</p>	A smart application for transfer of knowledge using ICT4CA.
Activity 2.1.2.2 Disseminating climate smart-solutions and weather forecast through smart devices	Gender-sensitive video and audio content will be developed by the MoA and MoE including weather information that is useful for farmer and disseminated through the smart application developed with assistance from the project.	<ul style="list-style-type: none"> <li>• Identification of technologies that are ready for dissemination.</li> <li>• Preparation of gender-responsive messages in the appropriate sound-byte or video content for transmission in consultation with women.</li> <li>• Pilot testing of messages through audience (women and men) feedback.</li> <li>• Refinement of messages and dissemination.</li> </ul>	Audio and video messages transmitted nationwide.
Activity 2.1.3.1 Technical assistance in climate adaptive agriculture	Technical assistance will be procured for development of a short-course for training of climate wise-women as change agents.	<ul style="list-style-type: none"> <li>• Development of TORs for the international and local expert.</li> <li>• Recruitment of an international and local consultant for development of the course for Master trainers for women agents.</li> <li>• Conduct field visits to assess the key issues in adaptation for women</li> <li>• Develop the course and field test it.</li> </ul>	Training course for training of women Master trainers
Activity 2.1.3.2 Development of training manuals and certification requirements	A training manual and certification procedure will be developed for the training of women wise agents who will be given a certificate after the completion of the course.	<ul style="list-style-type: none"> <li>• Development of TORs for support of a University for the purpose.</li> <li>• Contact with a University for the development of the manual and the certification.</li> </ul>	Training manual and certificates.
Activity 2.1.3.3 Scholarship for young women trainers	A scholarship for a 7-week course on Climate Change Adaptation, delivered over 6 months, will be provided to 8 young women agronomists to train them as Master Trainers for training Climate Wise	<ul style="list-style-type: none"> <li>• Form a committee for the selection of the candidates.</li> <li>• Finalize the selection criterion.</li> <li>• Advertisement for the selection of the Master Trainers.</li> </ul>	8 Master Trainers selected and trained.

	Women from the four target Governorates.	<ul style="list-style-type: none"> <li>• Short-list and interview the candidates.</li> <li>• Finalize the selection and announce the awards.</li> </ul>	
Activity 2.1.3.4 Competitive selection of candidates for climate wise-women	Service providers will be hired in each Governorate for the identification of the 400 young women, with 100 women from each Governorate and at least one woman from each village. The candidates will be competitively selected based on a criteria that is finalized during implementation.	<ul style="list-style-type: none"> <li>• Constitute a board comprising of representatives from the PMU, Government Extension Departments, Master Trainers and the Service provider (SP) NGO to oversee the selection process.</li> <li>• Finalize the preliminary selection criteria.</li> <li>• Develop Tors of reference for SP.</li> <li>• Competitively select the SP for each Governorate.</li> <li>• SPs to develop and run an information dissemination campaign for the recruitment of the 400 young women.</li> <li>• Select 100 women from each Governorate based on the selection criteria.</li> <li>• Develop a contract for the Climate wise women agents.</li> <li>• Signature of the contracts with each selected candidate to confirm training and terms of deployment.</li> </ul>	400 women selected and signed agreement to participate in the training.
Activity 2.1.3.5 Trainings developed for climate wise-women	The selected candidates will be trained for a 16-week period in climate adaptation practices.	<ul style="list-style-type: none"> <li>• Develop TORs for selection of service providers to organize the training for 400 young women from rural areas in the four Governorate.</li> <li>• The Training will be delivered by the young women Master Trainers prepared by the project. Identify the training venue and organize the logistics including transport, seating, training materials and safe transport.</li> <li>• Administer a trainee feedback survey at the end of the session.</li> <li>• Prepare a training report with recommendations.</li> </ul>	400 climate wise-women agents trained.
Activity 2.1.4.1 Conducting community dialogues for gender sensitive climate adaptation measures	The Climate Wise Women (CWW) will hold dialogues with groups of women, men and youth in the communities to	<ul style="list-style-type: none"> <li>• The climate wise women will develop a plan of action for visits in her community.</li> </ul>	10 dialogues and 25 house visits by each CWWs.

	<p>enhance their awareness about climate change and how best to cope with the risks associated with it and enhance their resilience. The women wise agents will undertake household visits to advise people on adaptation measures at the domestic and farm level. These could include information about water-saving devices and practices at the domestic level, setting up of simple greenhouses, drip irrigation systems, production and use of growbags etc.</p>	<ul style="list-style-type: none"> <li>• This will consist of dialogues and home visits.</li> <li>• The women-wise agents will submit monthly reports.</li> <li>• Payment of a small stipend on a monthly basis.</li> <li>• The CWW will give feedback on how to make her work more effective.</li> <li>• The service provider will develop a plan of supervision and monitoring to assess the impact of the community level interactions.</li> </ul>	
<p>Activity 2.1.4.2 Organizing multi-stakeholder climate-wise women forums</p>	<p>The Climate Wise Women Forums will be organized in Year 4, 5 and 6 of the project. These events will serve to highlight the role of women as change agents; identify achievements and challenges for climate adaptation at the community level for women, men and youth; provide feedback to the Jordanian government on actions required at multiple levels to address climate change.</p>	<ul style="list-style-type: none"> <li>• Identify one of the service providers to host the forum. Identify the location and list of participants including representatives from the GoJ , CSOs and the CWWs and other key stakeholders.</li> <li>• Prepare an agenda for the forums using the highly interactive modern techniques like World Café and the Gender Action Learning System Tools.</li> <li>• Report on the findings and key recommendations.</li> <li>• Incorporate lessons and recommendations for wider dissemination.</li> </ul>	<p>Three forums organized in year 3, 4 and 5 and lessons and recommendations reported for incorporation for future climate adaptation programmes and national policies.</p>
<p>Component 3: Scaling-up climate adaptation</p>			
<p>3.1.1.1 Technical assistance to the Ministry of Environment, the Ministry of Agriculture and the Ministry of Water and Irrigation to initiate the process of policy reform.</p>	<p>A team of international and national expert will advise and support stakeholders in initiating the necessary policy reform processes to address identified bottlenecks:</p> <ul style="list-style-type: none"> <li>• 1: Design and promotion of climate adaptive subsidies vs current ones (e.g. cereal price and purchase policy);</li> <li>• 2: Lack of application/execution of the green building code to rural areas that is reducing the capacity to optimize water resources in the most vulnerable governorates (project areas);</li> <li>• 3: Public incentives, investments and actions to ensure adoption of climate change adaptation practices related to water scarcity by local administration and communities;</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Develop terms of reference for international and national expert specifying requirement to review policies from the gender perspective</i></li> <li>• <i>Gender-inclusive Consultation with institutions (national and local), private sector, academia, civil society organizations to address identified bottlenecks.</i></li> <li>• <i>Preparation of recommendations and presentation to the TWG-A and to the NCCC of the proposed policy options and strategy.</i></li> <li>• <i>Information and mainstreaming of proposed changes at local level via dedicated workshops and events.</i></li> </ul>	<p>5 policy recommendation that include action plans and financial needs</p> <p>5 policy reform processes initiated</p> <p>1 National Committee strengthened (TWG-A)</p>

	<ul style="list-style-type: none"> <li>• 4: Role of public infrastructures to contribute to climate change adaptation by contributing to water harvesting and reducing water needs among rural populations;</li> <li>• 5: Public incentives, investments and actions to introduce climate change adaptation in agriculture and related extension services.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Monitoring and follow up of the approval process with relevant institutions.</i></li> </ul>	
3.1.1.2 Technical Assistance to support the MWI in enhancing the quality of effluent to enlarge the possible farming options and upgrade the related policy framework	<p>A team of national and international experts will support stakeholders (e.g. MoE, MoH, MoA, MWI, WUA) in ensuring the upgrade of water quality standards, develop the incentives to enhance the use of reclaimed water and ensure that downstream uses of reclaimed water are included in planning and designing of new plants or expansion of the existing ones.</p>	<ul style="list-style-type: none"> <li>• <i>Gender-inclusive Consultation with institutions (national and local), private sector, academia, civil society and water users associations to guarantee water quality standards, enhance.</i></li> <li>• <i>Preparation of recommendations and presentation to the MWI, the MoH, the MoA and the MoE of the proposed changes, strategy and investment plan.</i></li> <li>• <i>Information and mainstreaming of proposed changes at local level via dedicated workshops, awareness campaigns and events.</i></li> <li>• <i>Follow up of the approval process with relevant institutions.</i></li> </ul>	1 standard (reclaimed water use) improved
3.1.2.1 Technical Assistance to the Ministry of Education and main Universities to update the national curricula	<p>A team of national and international experts will support the structures and actors within the Ministry of Education and universities to introduce gender-sensitive climate change adaptation practices and technologies promoted by the project as well as other in the national curricula of vocational schools (e.g. agriculture, light industry and construction) and degrees (e.g. agriculture, architecture and civil engineering).</p>	<ul style="list-style-type: none"> <li>• <i>Gender-inclusive Consultation with public and private actors active in the vocational and superior to prepare the new curricula for vocational schools and universities in the CC/Agriculture/Water sectors.</i></li> <li>• <i>Information and mainstreaming of proposed changes at national level via dedicated workshops and events.</i></li> <li>• <i>Monitoring and follow up of the approval process with deputed institutions.</i></li> </ul>	6 national curricula updated (Vocational schools: masonry, plumbery and agriculture. Specialized Universities: agriculture, architecture, water engineering)
3.1.2.2 Training for teachers and professors to enable the teaching and practice of the new curricula	<p>The project will work with the Ministry of Education and Universities to develop a gender-sensitive update/upgrade climate change adaptation course for national teachers/trainers/professors (. The course will be the base to mainstream climate change adaptation practices and technologies among teachers,</p>	<ul style="list-style-type: none"> <li>• <i>Organization of logistic at the national level.</i></li> <li>• <i>Training of trainers.</i></li> <li>• <i>Preparation and distribution of learning materials.</i></li> <li>• <i>Execution of the training modules.</i></li> <li>• <i>Monitoring and evaluation of the trainings.</i></li> </ul>	<p>1 training course developed for teachers.</p> <p>1 training manual developed.</p>

	instructors and university professors.		
3.1.3.1 Local engagement and dissemination process	The project will work with all the expressions of the civil society in project areas as well as national and local media to develop the appropriate approaches and actions to engage communities in project areas and develop a local engagement plan to reach out the largest possible number of people and mainstream key climate change adaptation practices and technologies as well as inform on where to ask for advice and/or find additional information and learning materials.	<ul style="list-style-type: none"> <li>• <i>Coordination and gender inclusive consultation with local NGOs, CBOs and other representation of the civil society in project areas to develop the engagement plan.</i></li> <li>• <i>Organization of logistic at the national level</i></li> <li>• <i>Preparation of information/training/knowledge sharing modules.</i></li> <li>• <i>Execution of the local engagement plan.</i></li> <li>• <i>Monitoring and evaluation of the local engagement plan.</i></li> </ul>	<p>1 Engagement plan developed.</p> <p>At least 56 local events organized and executed.</p> <p>At least 6 gender-sensitive media campaigns developed (e.g. improved varieties, how to cope with increased temperatures, how to cope with water scarcity, CCA technologies: where, when, who, how much? and others).</p>
3.1.3.2 Technical Assistance to enhance local administration's and private sector actors' capacities to comply with the national green construction and water saving policy frameworks	The project will support local administrations (governorate, province and municipalities) as well as the private sector (e.g. masons, plumbers, electricians, architects, prioritizing the inclusion of women technicians) in adopting gender-sensitive tools and practices that will contribute in increasing water savings and climate change adaptation among communities and administrations. This will include provision of trainings and technical assistance on how to comply with existing policy frameworks and practices as well as to address the limitation and bottlenecks preventing the adoption of climate change adaptation actions and specific water saving actions such as those promoted in the green building code.	<ul style="list-style-type: none"> <li>• <i>Gender-inclusive Consultation with institutions (local) and the private sector and civil society in project areas to develop a tailored technical assistance plan.</i></li> <li>• <i>Organization of logistic at the local level.</i></li> <li>• <i>Execution of the trainings.</i></li> <li>• <i>Follow up with administrations and beneficiaries.</i></li> <li>• <i>Monitoring and evaluation of the trainings.</i></li> </ul>	<p>1 Technical assistance plan developed.</p> <p>1 Full training package prepared.</p> <p>1 Training manual developed.</p> <p>32 update courses executed.</p>
3.1.3.3 Technical assistance and training to local institutions and civil society organizations	The project will transfer to national and local NGOs and CBOs the technologies and practices introduced by the project and will link participants with other project to enhance their knowledge on climate change adaptation practices. The activity will include trainings and capacity development processes to allow involved organizations and groups to expand the basin of people to be involved and trained on technologies	<ul style="list-style-type: none"> <li>• <i>Coordination and gender-inclusive consultation with local NGOs, CBOs and other expressions of the civil society.</i></li> <li>• <i>Organization of logistic at the local level.</i></li> <li>• <i>Preparation and distribution of gender-sensitive learning materials</i></li> <li>• <i>Execution of the training/awareness modules.</i></li> <li>• <i>Monitoring and evaluation of the trainings.</i></li> </ul>	<p>1 Technical assistance plan developed.</p> <p>1 Full training package prepared.</p> <p>1 Training manual developed.</p> <p>15 update courses executed.</p>

	<p>and practices introduced by the project. The activity will include the development of a clear and specific training and capacity development action plan to ensure full mainstreaming of CCA and water saving practices across the local civil society.</p>		
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### E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

139. A Monitoring and Evaluation System will be established for the BRCCJ project in keeping with the guidelines of GCF to report on the Performance Measurement Frameworks (PMF) designed to measure the key indicators. The key reports that will be submitted have been identified in the M&E Reporting Matrix given below together with their timelines and reporting responsibility. More details are provided in Section 8, Annex 2 and Annex 11. The PMU will assume overall responsibility for all M&E functions, including measuring and reporting, and providing key performance data and tools to support the strategic planning and real-time decision-making. An M&E Unit will be established within the PMU and Monitoring and Evaluation Specialists will be recruited to head the unit and oversee the monitoring of all key components. The M&E Officer will develop an MIS system which will geo-reference all activities using FAO's Remote Sensing application Earth Map. The MIS system will also record beneficiary phone numbers for feedback from participants. The MIS system will also be used for tracking beneficiaries over time and assessing impact.

140. The PMU will formulate an Annual Work Plan & Budget based on the annual physical targets indicated in the proposal and monitor performance against the plan. Formats will be developed for each of the reports namely the monthly statistical reports, the quarterly statistical and narrative reports and the Annual Performance Reports (APRs) by the M&E Unit with support from the CTA. As the AE of the GCF, FAO will take the lead in the preparation and submission of the APRs. In order to report on the progress made towards the targets of the indicators in PMFs and any additionally identified project level indicators using sex-disaggregated data. APRs will also contain a narrative with updates on the progress of each output and outcome envisaged at the project level. APRs will include an update on the status of the achievement of the GCF investment criteria. Annual results and related analysis, jointly reviewed by FAO and the PMU, will form the basis for each annual year planning exercise and the preparation of the AWPB. These will be presented to the NCCC in order to support its strategic role and to secure transparency and evidence-based strategy development.

141. All partners such as private contractors, service providers, technical experts and UNDP as an EE for some of the activities will be responsible for maintaining records on the standard format designed as part of the project MIS and the reporting system. Partners will be trained in the use of the geo-referencing tool and will be required to maintain MIS records consistent with the overall system designed for the project and adopt the reporting formats developed by the project. All implementing partners will be required to provide sex-disaggregated information on the core indicators, impact, outcome and output level indicators specified in the PMF. Gender-sensitive indicators drawn from the Climate Smart Agriculture Source Book ([FAO, 2020](#)) identified below will be used in the surveys and reports where appropriate. Service providers will be required to annually report on physical and financial progress but also on key performance indicators and outputs if needed. The contracts with each partner will specify their reporting responsibilities, the frequency of the reports to be produced and provide them with the formats to be used. All partners will be required to review the Gender Action Plan which is an integral part of the proposal and report on the implementation and indicators of specific aspects related to gender. All implementing partners will also provide requisite sex-disaggregated data for the mid-term and final impact evaluations and make themselves available and open for any external financial and performance audits.

## Gender Indicators to Monitor FFS

- The number of gender-responsive technologies applicable for climate-smart agriculture
- The rate of participation of men and women in the selection process for a climate-smart practice or technology
- The number or percentage of women and men participating in climate-smart agriculture-related Farmer Field Schools or farmer-to farmer extension services
- The number of women farmers and number of men farmers who have regular access to weather and climate information services and price information services, and make use of them
- Perceptions of women and men on the usefulness of the climate-smart agriculture technology and that benefits that would accrue from its adoption
- Percentage change in crop yield per hectare and year as result of the climate-smart agriculture intervention, with figures disaggregated by female-headed households and male-headed households and household members
- Farmers who consider themselves better off (e.g. in terms of livelihood, income, nutrition, wellbeing, social status or empowerment) due to the climate-smart agriculture intervention, with the numbers disaggregated by sex.
- The number of women in leadership and decision-making roles or positions in the community
- The changes in the labour burden of women and men (e.g. number of persons reporting a significant reduction in the time spent for collecting water or fuel).

142. The M&E unit will be responsible for periodic checks on some of the data collected on different project activities and verify randomly the GPS coordinates provided. The Unit will also work closely with staff from the relevant Ministries to conduct sex-disaggregated beneficiary feedback sessions in the field. The MWI will be involved in the feedback from those participating in the RWH investments, the use of reclaimed water and those who participated in the preparation of the LRIPs. Similarly, the DG Extension and senior staff from NARC will be responsible for the feedback sessions with participants of the FFS and field days. MoA will be required to track adoption rates and the impact on capacity for resilience using the tool developed by FAO for the purpose. MoA and MoE will develop a system for feedback on the e-extension system and obtain feedback for improving the system and reporting on its utility and effectiveness using their own co-finance. As a first step the number of men and women users who have downloaded the application will be tracked together with those who are viewing the content in the audio, video and text formats. The trends in usage and the location of most use will also be used to conduct a geo-spatial analysis of the e-extension system. The women extension staff from the project Governorates will assist in conducting sessions with the Climate Wise women (CWW) and assess how the project can facilitate their work and also report on their performance as agents of change. Those providing technical assistance will be required to provide detail reports which track the core indicators, the impact and outcome and output level indicators specified in the PMF.

143. The M&E database will be maintained by the PMU and information will be supplied by all service providers on a monthly basis or in real time if a link can be established with the central service at the M&E unit. Within the first quarter of the second year, when activities have been initiated and sufficient outreach has been achieved and the M&E data base begins to get populated, thematic maps will be generated by the project and will be monitored through consolidated remote sensing practices or geospatial analysis. This is expected to yield a better understanding of trends and patterns and make the analysis more meaningful in understanding the relationship between climate parameters and the pattern of adoption and participation in project activities. Data collected through reports prepared by service providers and implementing partners and verified with beneficiaries will be sex-disaggregated.

144. Each executing entity will also establish a mechanism for sex-disaggregated beneficiary feedback and demonstrate how they have incorporated the feedback in improving their implementation approach. A beneficiary feedback will also be prepared by each implementing partner on an annual basis and will form part of the Annual Performance Report (APR). The PMU will also establish a grievance redress system and will be communicated by each executing entity to the participants so that the participant can directly access the system in a manner which guarantees their confidentiality. FAO's Guidelines for Compliance Reviews will Follow the procedures for Complaints Related to the Organization's Environmental and Social Standards which specify that complaints "... will be sent to the PMU, where someone will be designated as the he Safeguards Specialist, and will act as the Grievance Redress Mechanism Focal Person" ([FAO ESS, 2015](#)).

145. The project will commission a Baseline Survey by a third party in year one against which subsequent changes and impact will be measured. The project will also undertake surveys at mid-term and at completion to assess the performance of the project, draw important lessons and incorporate beneficiary feedback. The mid-term survey will incorporate key aspects of impact on the targeted households. At project completion, a final impact assessment will be undertaken to assess the overall impact of the project on the beneficiaries. The mid-term and impact will compare projects results with the expected outreach, adoption of climate adaptation practices and assess the overall impact on the paradigm shifts outlined in the project log-frame and the indicators of resilience outlined at the impact level. All surveys and impact assessments will be sex-disaggregated and key gender-sensitive indicators both quantitative and qualitative outlined in the Gender Action Plan will be captured in the initial and subsequent surveys and findings. The Surveys will be conducted in close consultation with the FAO Office of Evaluation. In addition, all impact evaluations will be conducted by external parties under OED supervision to ensure independence and quality.

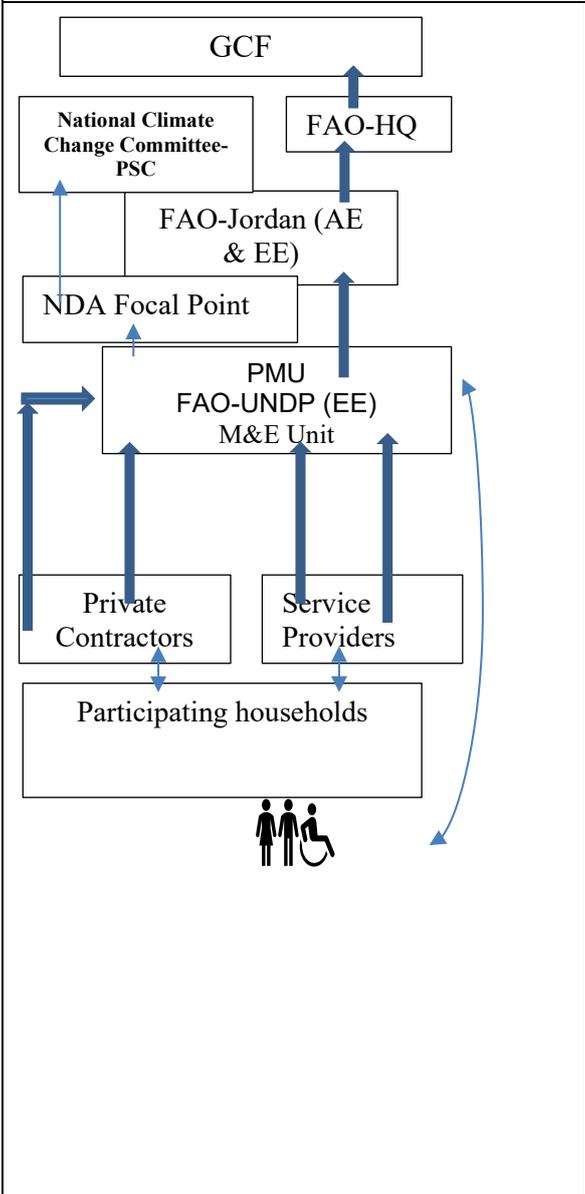
146. In accordance with the AMA between FAO and GCF, the FAO Office of Evaluation will be responsible for the independent interim and final evaluations. The evaluations will be conducted using a question-driven approach, and may include assessments against the criteria of relevance, effectiveness and sustainability, among others. The interim evaluation will be instrumental in contributing – through operational and strategic recommendations –to improve implementation, setting out any necessary corrective measures for the remaining period of the project. The final evaluation will assess the relevance of the intervention, its overall performance, as well as sustainability and scalability of results, differential impacts and lessons learned. The evaluation will also assess the extent to which the intervention has contributed to the Fund's higher-level goal of achieving a paradigm shift in adaptation to climate change in Jordan. Special attention will also be given to the involvement of most vulnerable groups and individuals, to the establishment of synergic and innovative partnerships leading to impact and on the establishment of a clear pathway to transformational change. To measure attributable changes, the evaluation will draw on mixed-methods, using qualitative methods (e.g. participatory rural appraisal, focus group discussions, key informant interviews, etc.) in combination with counterfactual analysis (e.g. quasi-experimental methods, depending on the existence of reliable control group data from the project's baseline and completion surveys, which will be confirmed during project inception). In addition to primary data collected by the evaluators and secondary national data, both interim and final evaluations will draw on the mid and end line surveys and monitoring reports and activities prepared by project staff. The final evaluation will draw on results of the impact evaluation and both processes impact and final evaluation will be carried out under OED's responsibility. Careful attention will be paid to the disaggregation of data, results and outcomes by gender. The innovative aspects of the project with respect to gender will be especially highlighted in the assessments and evaluations with key lessons drawn for the future.

147. Learning and knowledge management: The Project will also synthesize the lessons that emerge from the Project in a separate section in the APRs, including lessons on mainstreaming gender. These lessons will be shared with the NDA and the NCCC to enable them to incorporate them in the strategies and plans being developed by the country in its NAP and other key strategy documents. The project will work with the

Secretariat in identifying and developing both specialized and non-technical knowledge products that can be circulated more widely. TAs working on specific topics and policy briefs will be required to develop these products. FAO will also capitalize on its in-house experience to undertake the development of knowledge products for wider dissemination.

148. Communication: All the interventions, data and results generated by the project will be effectively communicated and disseminated to the different stakeholders and beneficiaries. Specialized services will be contracted to implement gender-sensitive communications campaigns which will include the use of knowledge-sharing platforms and social-media networks to promote participation, awareness raising and to strengthen project’s partnerships. Communication services will also make sure that all the documents requiring multi-lingual support will be available in Arabic and English.

TABLE 17: REPORTING MATRIX, REPORT AND TIMELINES -GCF-BRCCJ

Reporting Relationships	Types of Reports	Reporting Timeline	Responsibility
	Baseline Survey	Year 1	Independent Third Party
	Annual Work Plan and Budget	Two months prior to the start of the relevant PY.	PMU-CTA
	Geo-Referencing of all activities using FAO’s Remote Sensing application “Earth Map”.	Real time sex-disaggregated tracking and recording of all participants	PMU- M&E Unit
	Beneficiary Feedback Analysis with both men and women.	On a regular basis at the completion of key project investments.	PMU- M&E Unit
	Monthly statistical reports on physical and financial progress.	At the end of the first week of the relevant month.	EEs-UNDP and FAO, Service providers and contractors.
	Quarterly Statistical and Narrative Reports on physical and financial progress.	Two weeks after the end of the relevant quarter.	PMU- M&E Unit
	Environmental & Social Safeguards Quarterly Report	Two weeks after the end of the relevant quarter	Environmental and Social Safeguards Specialist
	Policy notes and briefs to highlight the project progress with policy and regulatory reform.	On a periodic basis at each significant point of reform.	Technical Assistance
	Annual Progress report on outputs and key performance indicators.	One month after the end of the relevant PY.	Service providers and contractors.
	Annual Performance Reports.	Two months after the end of the relevant PY.	PMU- M&E Unit
	Report on Co-financing in absolute numerical terms in accordance with the provisions of the relevant legal agreements between the AE and the GCF.	One month after the end of the relevant PY.	PMU-Financial Specialist and MWI, MoA and MoE.
	Geospatial analysis through thematic maps.	The first quarter of PY 2 and thereafter annually.	PMU- M&E Unit

	Learning and Knowledge Products	Periodically	TA	
	Mid-Terim Survey	Year 4	Third party Survey with coordination from FAO Office of Evaluation.	
	Interim Evaluation	Year 4	FAO Office of Evaluation	
	Completion Survey	Three months prior to end of the project in PY 7.	Independent Third Party with coordination from FAO Office of Evaluation.	
	Final Impact	Three months prior to end of the project in PY 7.	Independent Third Party	
	Final Evaluation	Three months prior to end of the project in PY 7.	FAO Office of Evaluation	Th pri prc

## F. RISK ASSESSMENT AND MANAGEMENT

### F.1. Risk factors and mitigations measures (max. 3 pages)

#### Selected Risk Factor 1

Category	Probability	Impact
Governance	Medium	Low

#### Description

149. Expected contribution from the Government could be jeopardized due to the budget deficit. The Government faces a tough balancing act as it tries to reduce its debt burden by lowering its borrowing, cut public expenditure and avoid raising its revenue from new taxes. Besides, the Government does not intend to impose new taxes in its proposed 2020 budget and intends to seek other means, such as a crackdown on pervasive tax evasion, to help boost national revenue crucial to lowering its record public debt. The Government's reluctance to impose new taxes springs from its past experience when demonstrations were triggered in 2018 when steep tax hikes pushed by the IMF came into effect. At the same time Parliamentarians have warned that they would reject any proposals to raise water or electricity fees and urged the government to reduce sales taxes on essential food items to help low-income Jordanians struggling with rising poverty. High outstanding public-sector debt (94% of GDP) makes the economy heavily reliant on continuing international donor inflows to support Syrian refugees and develop physical infrastructure to accommodate them. Jordan's government is thus susceptible to both internal and external pressure. In view of the economic shut down of the country the risk of this has further increased.

#### Mitigation Measure(s)

150. Due to the limited fiscal space that the Government has and its reluctance to borrow additional finance given its high debt ratio, the project does not impose any additional financial burden on the Government. 66% of the Government's expected co-financing for the project is in-kind and entails using its existing facilities and staff, promoting the Farmer Field School approach and innovative e-extension technologies to avoid overcharging the extension Staff. Government's direct contribution (estimated at USD 2.1 Million in a seven year period, mainly for the scaling-up of rainwater harvest rooftops in C2) is already part of the MWI Investment Plan for 2016-2025 and there is no any other direct financial contribution from the GoJ which could have placed an additional fiscal burden on. On the contrary, water saving generated by the project is expected to reduce the burden of the water subsidies in the country. Finally, the project's profitability was verified with different scenarios, considering the shortfall of funds of the Government direct contribution (that accounts only for 25% of the total number of Household Rainwater harvesting Systems). Thus, the level of risk with respect to the project dependence on Government funds has been eliminated.

#### Selected Risk Factor 2

Category	Probability	Impact
Governance	Medium	High

#### Description

1. The project approach relies on strong political will and appetite for policy change especially in some sectors where the Government might not be willing to take decisions which are likely to be unpopular such as strict enforcement of existing policies or reconsidering the policy regarding water, fodder crops and practices which do not use water very efficiently.

#### Mitigation Measure

2. The Project will work closely with the senior policy makers with the NDA and NCCC and only select issues on which there is broad consensus. In addition, the project will provide technical analysis and evidence so that the

government can carefully consider the pros and cons and weigh the decisions carefully and make decisions that are in the interest of long-term sustainable development in the country.

### Selected Risk Factor 3

Category	Probability	Impact
Other	Medium	Low
Description		

151. Over the last two decades, the Jordanian government has been committed to women's rights and increasing female participation in the workplace. However, only 15.8 percent of women enter the workforce, despite relative gender equality in educational achievement in Jordan. Apart from other factors, it appears that a **fear of safety in the work place could** be a factor in preventing women from taking up employment in the country and could also limit women's participation in project activities. Social, institutional and material barriers get in the way of women feeling safe at work and achieving justice against violations committed at the workplace. It is reported that the more precarious or informal the work, the higher the risk of women facing sexual harassment.<sup>82</sup> The project expects to involve women as direct beneficiaries of its activities. It is expected that at least 47% of the direct beneficiaries will be women as recipients of RWH installations, use of reclaimed water, as participants in FFS, field days and as agents of change who can influence how women from vulnerable households cope with the impacts of climate change and learn to adapt to the associated risks. Women Extension Agents from the extension service and technical specialist from NARC are also expected to participate as Facilitators and Field Day Specialists in training the participants of FFS and conducting Field Days. At least 20 of the extension agents in the four project Governorates are women. Thus, it is very important that women feel safe in participating in project activities.

### Mitigation Measure(s)

152. The project has a strong focus on inclusion of women and socially marginalized groups. The project will ensure that women facilitators and women participants feel secure in their participation in project activities. The project will ensure that all activities in which women are expected to participate are conducted in secure settings in terms of the timing of the sessions as well as the location. In case, some of the women participants want to be accompanied by someone from their household to participate in project activities, arrangements will be made to enable them to do so. Seventy of the FFS will be women-only thus ensuring that women who may face cultural barriers in attending mixed gender FFS will be able to access capacity-building opportunities. In addition, fifty percent of the facilitators of FFS and field days will be women. The young Climate Wise women (CWW) will be trained by women master trainers. A service provider will be responsible for ensuring safe transport to the training venue and safety of the CWW during their field work. The project will also organize sessions with women on an annual basis to invite their feedback on their participation, security and safety and other aspects of participation. In addition, the project will designate a woman in each Governorate to whom a complain can be lodged in case any woman feels insecure or has a complain to lodge. The project will also make arrangements for a grievance redress mechanism at the level of the PMU and establish a hotline for complaints directly to the CTA/FAO for any complaints or grievances that are not resolved at the local level or in case someone does not feel comfortable reporting at the Governorate level. These complaints will be strictly confidential and the FAO system for grievance redress and investigation of cases will be used for the purpose. The project will publicize these arrangements in all locations where project activities are conducted through a flier and the hotline numbers.

<sup>82</sup>A report by women's Rights Campaigners. <https://www.middleeasteye.net/news/jordanian-women-risk-violence-work-despite-reforms-report>. Action Aid.

Selected Risk Factor 4

Category	Probability	Impact
Technical and operational	Low	Medium

Description

153. A new health risk has emerged which is due to the COVID-19 pandemic which illustrates how quickly everything can come to a grinding halt as it did during the preparation of the project.

Mitigation Measure(s)

154. In case of a health emergency such as presented by a similar pandemic or the unbaiting nature of the current virus, the UN emergency health advisories and procedures will immediately come into play to restrict travel and follow the laid down procedures. This will also entail a halting of all project activities in the field and will imply extending the project execution period to complete all activities.

## G. GCF POLICIES AND STANDARDS

### G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

155. In accordance with FAO and GCF's Environmental and Social Policy (ESSP), the BRCCJ underwent an environmental and social assessment following FAO's environmental and social safeguards ([FAO, 2015](#)). There will be no significant or irreversible negative environmental impacts associated with the project – on the contrary, the project will build the adaptive capacity of communities and institutions in Jordan, address the needs of vulnerable groups with an emphasis on women, and increase the resilience of water management systems as well as agricultural resources to climate change. Project components were identified through a consultative process, and are prioritized in Jordan's Climate Change policy and its National Adaptation Plan (2020). These include water use efficiency, water harvesting and the use of non-conventional water sources, building adaptive capacity of farming households and a range of institutions at the national and Governorate level. Promoting gender equality and empowering women is considered an important element of climate change adaptation in the NAP and is mainstreamed in project interventions with specific activities also identified to promote women's agency.

156. The ESMF identifies policy triggers for the project, screening criteria for activities, environmental and social impacts of the activities, and measures to mitigate identified risks. Mitigation actions will avoid, minimize and mitigate negative impacts during project implementation and operation. Mitigation actions will be in line with FAO and GCF ESS policy, and national legislation, and adhere to whichever is most stringent. The ESMF also sets out the modalities for stakeholder engagement, and the procedure and process for dealing with complaints, through the Grievance Redress Mechanism.

157. The ESMF will be disclosed on relevant portals, and shared with stakeholders during stakeholder engagement consultations, so they are aware of potential consequences of project activities. Consultations with stakeholders during project execution will take place yearly, at the time of the preparation of the Annual Work Plan and Budgets (AWPB). The AWPB will be presented by the PMU to the NCCC and reviewed by all stakeholders, including at the national, Governorates and community levels. During these stakeholder consultations, the Grievance Redress Mechanism will also be presented and explained.

158. In order to ensure a smooth and effective ESMF process, there will be a technical specialist responsible for the environmental and social safeguards process (including GRM and stakeholder engagement) who will interact on a regular basis with key stakeholders and be available to respond to any grievances.

159. Proposed project investments are designed to have positive social and environmental benefits; the project has however been classified as moderate risk (Category B) largely due to works associated with water resources. FAO ESS triggered are:

160. ESS 1 (natural resources management). Risks are related to the installation of rooftop rainwater harvesting structures and water saving devices for households (HH) and public buildings; and regulation, storage and distribution of hydraulic structures built to maximize use of reclaimed water from the Wastewater Treatment Plants. Jordanian legal frameworks, and international standards (e.g. WHO *Guidelines for the safe use of wastewater, excreta and greywater: v. 2. Wastewater use in agriculture*) on these issues will be followed, as applicable. Best practice for optimal rainwater harvesting, including process and materials will be implemented; all left-over construction material will be disposed of at an appropriate site in an appropriate manner.

161. ESS 3 (plant genetic resources for food and agriculture). Drought-tolerant and water efficient seed varieties will be used, such as cultivars of barley and fruits. These varieties are old varieties and have been tested and patented by NCARE, under the MoA. If and as applicable, internal FAO clearance will be sought

for all procurement of seeds and planting materials. The project will use the Farmer Field School (FFS) approach as well as field days to demonstrate the tested and approved practices and technologies.

162. ESS 7 (decent work). Potential risks could be related to equitable benefitting from project activities. To address this, project activities specifically target women and also youth (ref. Gender Action Plan). Occupational health and safety risks will be dealt with by providing training, and protective measures and gear. Where the project hires workers, employees' rights as per UN/FAO standards will be respected. The employment of project workers will be based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship

163. Annex 6 provides the Environmental and Social Management Plan (ESMP) and Annex 7 provides a summary of consultations and the stakeholder engagement plan.

## **G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)**

164. In keeping with GCF's Gender Policy, the project design was based on the understanding that gender relations, roles and responsibilities exercise important influences on women's and men's access to and control over decisions, assets and resources, information, and knowledge. This in turn influences their resilience and capacity to adapt to climate change risks. Thus, during the design, separate consultations were held with women who were considered an important stakeholder in the process. The gender assessment was undertaken by a local consultant who was supported by an International Gender and Social Inclusion Specialist. Field visits were conducted in the project area and dialogues were held with both men and women. The design team met with staff from all the Ministries and with the Extension staff of the MoA at the Governorate level, civil society organizations working on gender issues as well as key agencies working on gender issues such as UN Women, Jordan River Foundation (JRF), Jordan Hashemite Fund for Human Development (JOHUD), etc. The International and national gender experts worked closely with the technical specialists on the team to ensure that gender aspects were mainstreamed in each of the main components of the project as well as the project management arrangements. The project has identified some very innovative ways in which it can involve women as change agents by developing a cadre of Climate Wise Women (CWW) to be deployed at the community level. A Gender Assessment and a Gender Action Plan has been developed for the project and is elaborated in Annex 8.

165. Women are among the most vulnerable to climate change as they have the main responsibility for many of the tasks for which there is a much greater reliance on natural resources. This includes their role in collection and use of domestic water, livestock feed and food for the households. Women are disproportionately affected by climate change due to unequal access to resources, barriers to decision-making processes and limited mobility. In the country, almost 9.1% of female-headed households are food insecure or vulnerable to food security, compared to 5.7% of male-headed families (DoS 2013). Women face significant social, economic, and political barriers that negatively affect coping capacities. However, they have a critical role to play as educators, caretakers, practitioners, and agents of change in climate resilience as reflected in key documents such as the Climate Change Gender Action Plan (2010) and the National Climate Change Policy of Jordan (2013).

166. The Gender Action Plan of the project aims to have a transformative impact on women's role in climate change through their engagement in the agriculture and water sectors in the country. It also ensures that 47% of all direct and indirect beneficiaries are women. In Component 1, the GAP ensures that (i) women are involved as decision-makers at multiple levels (ii) women's practical gender need for ease of access to water is addressed (iii) vulnerable women are prioritized and provided access to water (iii) women's 'voice' is included in socio-economic feasibilities for developing water sources and in assessing the impact of the

intervention. In Component 2, the GAP ensures that (i) women's role as agents of change for climate resilience is made visible and they are equipped with the knowledge, skills and resources they need to play that role (ii) women have increased and equitable access to knowledge and skills for climate adaptation through interventions tailored to their specific priorities and needs (iii) increased availability of food from homestead garden (iv) women have increased access to modern technologies (v) women have the profile and visibility to be informed interlocutors in the national dialogue on climate change (vi) women have the opportunity to network with each other, government and key stakeholders across governorates (vii) gender differentiated impact of the interventions in this component are captured. In Component 3, the GAP focusses on ensuring (i) institutionalizing visibility of women's role, needs and priorities in climate change adaptation (ii) increasing women's opportunities to adopt climate adaptive practices (ii) increasing access of women educators and women's grassroots organizations on climate (iv) increasing women's voice in shaping project interventions. In project management responsibility for mainstreaming gender will be included in the ToR of the CTA. Data collected on project indicators will be sex and age disaggregated and project reports will include sex-disaggregated findings, analysis and recommendations.

### G.3. Financial management and procurement (max. 500 words, approximately 1 page)

167. FAO will be the Accredited Entity which will execute the project in accordance with FAO rules, regulations, policies and procedures. Financial management and procurement under this project will be guided by relevant FAO rules and regulations as relevant provisions in the Accreditation Master Agreement (AMA) signed between FAO and GCF. These rules and regulations were reviewed by GCF and deemed satisfactory by the GCF Secretariat and Accreditation Panel as part of FAO's accreditation to GCF.

168. FAO has deployed an Oracle based resource planning system termed the Global Resources Management System (GRMS) which provides FAO personnel with travel, human resources, procurement and finance functionalities. The system has improved the flow of financial information and supports financial monitoring and reporting, increases transparency and visibility and strengthens internal control. FAO maintains a Chart of Accounts that allows for the separation of income and expenditure by donor and project. The system is based on a standardized coding structure that enables data to be recorded, classified and summarized to facilitate internal management and meet external reporting and audit requirements.

169. Direct procurement by FAO will be undertaken under the project in accordance with the FAO manual procedures for procurement of Goods, Works and Services (502) and for sub-contracting the delivery of specific activities to service providers and ensuring value for money (507) and to sub-contract for agreed results as provided for in the operational partners implementation modality (701). The project will be subject to FAO's audit regime including the external audit and internal audit function. An 18<sup>th</sup> month procurement plan has been provided based on the project budget (Annex 4) and the expected timelines (Annex 5) using the FAO procurement procedures and thresholds and is given in Annex 10. This plan has been coordinated with UNDP and its procurement is also included in the main Annex 10. However, consistent with the overall procurement plan, a plan by UNDP is also attached at Annex 10:A if required. Responsibility for UNDP's procurement is decentralized, meaning that the entire procurement cycle – from sourcing to contract management – is done locally. The head of the Country Offices, the Resident Representative (or his or her designee) oversees the process. The Country Office will enter into contracts with vendors, which may be companies or individuals. Headquarters plays a limited role with the Procurement Services Unit (PSU) providing support and specialized assistance. The Procurement Oversight Unit (POU), an independent unit within the Bureau for Management Services, approves contracts exceeding 150,000 USD. The POU ensures that procurement undertaken by UNDP all units complies with relevant guidelines, and that procurement risks are properly assessed and mitigated. With offices all over the world and with a broad mandate to work for sustainable human development, UNDP buys both goods and services to be able to carry out projects and programmes together with partners.

170. FAO's Financial Regulations provided that the External Auditor shall be the Auditor-General (or person exercising an equivalent function) of a Member Nation, selected through a transparent bidding process by FAO's Governing Bodies. In 2019, the Comptroller and Auditor General of India was appointed by the Counsel of FAO for the six-year period 2020-25. The FAO Rules and Regulations for audit apply to all funds and activities managed by FAO, including projects funded by donors. The audit opinion and report of the External Auditor on the FAO Accounts therefore cover all FAO projects. All the Organization's funds and activities are similarly open to review and report by FAO Internal Audit to the Director-General and governing bodies.

171. For UNDP, the Contribution shall be subject exclusively to the internal and external auditing procedures provided for in the financial regulations, rules, policies and procedures of UNDP. Should the annual Audit Report of the UN Board of Auditors to its governing body contain observations relevant to the Contribution, such information shall be made available to the Donor by the country office.

#### G.4. Disclosure of funding proposal

No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

## H. ANNEXES

### H.1. Mandatory annexes

- Annex 1 NDA no-objection letter
- Annex 2 Feasibility study
- Annex 3 Economic and/or financial analyses in spreadsheet format
- Annex 4 Detailed budget
- Annex 5 Implementation timetable including key project milestones
- Annex 6  Environmental and Social Management Plan (ESMP)
  
- Annex 7 Summary of consultations and stakeholder engagement plan
- Annex 8 Gender assessment and project level action plan
- Annex 9 Legal due diligence (regulation, taxation and insurance)
- Annex 10 Procurement plan
- Annex 11 Monitoring and evaluation plan
- Annex 12 AE fee request
- Annex 13 Co-financing commitment letter, if applicable
- Annex 14 Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

### H.2. Other annexes as applicable

- Annex 15 Evidence of internal approval
- Annex 16 Map(s) indicating the location of proposed interventions
- Annex 17 Theory of Change
- Annex 18 Project Contribution to SDGs
- Annex 19 Working Paper on Economic and Financial Analysis
- Annex 20 Similar experiences of the Involved Ministries in Executing Similar Projects



Ministry of Environment

Ref.No 13/4/2757  
Date 19/4/2020

**Mr.Yannik Glemarec**  
**Excutive Director**  
**The Green Climate Fund ("GCF") Secertariat**  
**G-Tower,123 Central Street**  
**Songdo-dong,206840,Republic of Korea**

**Subject:** Funding proposal for the GCF by the Food and Agriculture Organization regarding the project titled "Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCC)"

**Dear Mr. Glemarec,**

We refer to the project titled "*Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCC)*" in Jordan as included in the funding proposal submitted by the Food and Agriculture Organization of the United Nations (FAO) to us on March 31, 2020.

The undersigned is the duly authorized representative of the Ministry of Environment the National Designated Authority/focal point of Jordan.Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the funding proposal.

By communicating our no-objection, it is implied that:

- The government of Jordan has no-objection to the project as included in the funding proposal;
- The project as included in the funding proposal is in conformity with Jordan's national priorities, strategies and plans;
- In accordance with the GCF's environmental and social safeguards, the project as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the project as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the project.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

**Eng. Belal Shqarin**

**Director of Climate Change**  
**Directorate**

**Eng. Ahmad Al Qatarneh**

**Secretary General**

**Environmental and social safeguards report form pursuant to para. 17 of the IDP**

<b>Basic project or programme information</b>	
<b>Project or programme title</b>	Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCCJ)
<b>Existence of subproject(s) to be identified after GCF Board approval</b>	No
<b>Sector (public or private)</b>	Public
<b>Accredited entity</b>	Food and Agriculture Organization of the United Nations (FAO)
<b>Environmental and social safeguards (ESS) category</b>	Category B
<b>Location - specific location(s) of project or target country or location(s) of programme</b>	Hashemite Kingdom of Jordan
<b>Environmental and Social Impact Assessment (ESIA) (if applicable)</b>	
Date of disclosure on accredited entity's website	Sunday, February 7, 2021
Language(s) of disclosure	English and Arabic
Explanation on language	Arabic is the official language of Jordan and the language most commonly spoken and understood in the districts targeted by this project.
Link to disclosure	English: <a href="http://www.fao.org/3/cb3276en/cb3276en.pdf">http://www.fao.org/3/cb3276en/cb3276en.pdf</a>  Arabic: <a href="http://www.fao.org/3/cb3276ar/cb3276ar.pdf">http://www.fao.org/3/cb3276ar/cb3276ar.pdf</a>
Other link(s)	FAO disclosure portal: <a href="http://www.fao.org/environmental-social-standards/disclosure-portal/en/">http://www.fao.org/environmental-social-standards/disclosure-portal/en/</a>  FAO Regional Office for Near East and North Africa: English: <a href="http://www.fao.org/neareast/en/">http://www.fao.org/neareast/en/</a>  Arabic: <a href="http://www.fao.org/neareast/ar/">http://www.fao.org/neareast/ar/</a>
Remarks	An ESIA consistent with the requirements for a Category B project is contained in the "Environmental and Social Management Framework (ESMF)".
<b>Environmental and Social Management Plan (ESMP) (if applicable)</b>	
Date of disclosure on accredited entity's website	Sunday, February 7, 2021
Language(s) of disclosure	English and Arabic

Explanation on language	Arabic is the official language of Jordan and the language most commonly spoken and understood in the districts targeted by this project.
Link to disclosure	English: <a href="http://www.fao.org/3/cb3276en/cb3276en.pdf">http://www.fao.org/3/cb3276en/cb3276en.pdf</a> Arabic: <a href="http://www.fao.org/3/cb3276ar/cb3276ar.pdf">http://www.fao.org/3/cb3276ar/cb3276ar.pdf</a>
Other link(s)	FAO disclosure portal: <a href="http://www.fao.org/environmental-social-standards/disclosure-portal/en/">http://www.fao.org/environmental-social-standards/disclosure-portal/en/</a> FAO Regional Office for Near East and North Africa: English: <a href="http://www.fao.org/neareast/en/">http://www.fao.org/neareast/en/</a> Arabic: <a href="http://www.fao.org/neareast/ar/">http://www.fao.org/neareast/ar/</a>
Remarks	An ESMP consistent with the requirements for a Category B project is contained in the “Environmental and Social Management Framework (ESMF)”.
<b>Environmental and Social Management (ESMS) (if applicable)</b>	
Date of disclosure on accredited entity’s website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
<b>Any other relevant ESS reports, e.g. Resettlement Action Plan (RAP), Resettlement Policy Framework (RPF), Indigenous Peoples Plan (IPP), IPP Framework (if applicable)</b>	
Description of report/disclosure on accredited entity’s website	N/A
Language(s) of disclosure	N/A
Explanation on language	N/A
Link to disclosure	N/A
Other link(s)	N/A
Remarks	N/A
<b>Disclosure in locations convenient to affected peoples (stakeholders)</b>	
Date	Wednesday, February 10, 2021
Place	Hard copies of the ESMF are available for public consultation in FAO Jordan Country Office as locations closer to project stakeholders.

	<p>FAO Jordan: Dabouq, Alshaab Street, Building no. 267 Amman, Jordan</p> <p>FAO Jordan Country Office website: English: <a href="http://www.fao.org/countryprofiles/index/en/?iso3=JOR">http://www.fao.org/countryprofiles/index/en/?iso3=JOR</a></p> <p>Arabic: <a href="http://www.fao.org/countryprofiles/index/ar/?iso3=JOR">http://www.fao.org/countryprofiles/index/ar/?iso3=JOR</a></p>
<b>Date of Board meeting in which the FP is intended to be considered</b>	
Date of accredited entity's Board meeting	N/A
Date of GCF's Board meeting	Tuesday, March 16, 2021

**Note: This form was prepared by the accredited entity stated above.**

## Secretariat's assessment of FP155

Proposal name:	Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCCJ)
Accredited entity:	Food and Agriculture Organization of the United Nations (FAO)
Country/(ies):	Hashemite Kingdom of Jordan
Project/programme size:	Small

### I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The project has a strong gender focus through which climate wise women will be trained in climate-resilient agriculture practices; women perform critical tasks in the agriculture sector in Jordan and can be a key change agent in transforming behaviour towards adopting adaptive practices at household level.	The reclaimed water treated under the project component is only suitable for fodder crops. This means only those farmers who grow alfalfa and other fodder would benefit directly. Short supply of fodder requires it to be imported and, when drought affects the entire region, prohibitive fodder costs result in a sharp drop in livestock numbers including sheep, goats and cattle. Wastewater reclaimed in this project is unsafe for domestic use and for irrigating food crops according to Jordanian water quality standards.
The water conservation component will help alter household behaviour to encourage them to reduce water usage through provision of water saving devices and rainwater harvesting systems (RHS).	The theory of change links three disparate strategies (wastewater recycling, adoption of resilient cropping systems, and policy reform to incentivize water use efficiency) to a common objective of economizing use of groundwater.

2. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XVII, titled "List of proposed conditions and recommendations".

### II. Summary of the Secretariat's assessment

#### 2.1 Project background

3. This is Jordan's first single-country adaptation project submitted to GCF for possible funding, and is designed to further the objectives of the country's Climate Change Policy and

National Adaptation Plan. Jordan has a severe water scarcity problem, which is further exacerbated by unsustainable agriculture practices and inefficient water use. Many vulnerable communities in the project sites are poor and dependent on agriculture for livelihoods. The project was submitted with a bigger scope initially but, following exchanges with the accredited entity (AE), the adaptation focus of the project was further refined and clarity on beneficiaries selection and impact improved. The project will be executed jointly by FAO, the Ministry of Environment (MoE), Ministry of Agriculture (MoA), and Ministry of Water and Irrigation (MWI) of Jordan and the United Nations Development Programme (UNDP). It builds on the established institutional arrangements in the country that serve to highlight the climate change agenda such as the National Climate Change Committee (NCCC) and the Working Group on Climate Adaptation.

4. Jordan is one of the most water scarce countries in the world and climate change is further exacerbating aridity due to increasing temperatures and reduced/more erratic rainfall patterns. To adapt to these climate risks, the project is aimed at increasing new supplies of water from wastewater recycling and rainwater harvesting, and by reducing demand on groundwater sources through more efficient cropping and water use practices among vulnerable farmers, and through household adoption of water efficiency devices. Innovative training and mobilization of “climate wise women” will be introduced to promote sustainable cropping and household water-saving devices.

5. Total project costs are estimated to be USD 33.25 million. This project requests for a grant from GCF of USD 25 million (75 per cent of total project cost). The Government of Jordan is committed to providing USD 6.2 million (19 per cent), and FAO and UNDP will co-finance USD 2.06 million (1 million and 1.06 million, respectively, representing 6 per cent of total costs). The beneficiaries are expected to provide USD 4.6 million for investments at the household level on in-kind basis.

## 2.2 Component-by-component analysis

*Component 1: Climate resilient water systems for enhanced water security (total cost: USD 19.65 million; USD 14.7 million or 75 per cent to be funded by GCF)*

6. This component will invest in proven water saving solutions, such as rooftop rainwater harvesting, use of water saving domestic devices and use of reclaimed water that will be upscaled in the project area, which would be used as an entry point for initiating awareness and orientation about water conservation measures. The project will support the installation of RHS (10-20 m<sup>3</sup>) covering 7,850 household rooftops and 400 public buildings. Mitigation measures will be put in place via the project’s Environmental and Social Management Framework to ensure that environmental and social risks are adequately managed in the final design and construction of RHS. Households will be selected through technical feasibility and potential for using the water. A service provider that will be competitively selected among non-governmental organizations will identify households and develop a behaviour change strategy for more efficient water use in homes and in the public sphere such as schools, mosques and other public places. The provision of RHS will be awarded via specific tenders to contractors for civil works. In coordination with the Project Management Unit (PMU), the awarded contractors will provide and install RHS in selected households. The households that benefit from RHS will be expected to contribute part of the costs based on criteria that favours, among other things, women-headed households, refugee and poor households, and those reliant solely on agriculture.

7. Given that almost half the water use in the country is for domestic purposes, households will also be introduced to water conserving devices and gadgets through private sector engagement to further enhance the efficiency with which the water is used at the domestic level. The activity will be introduced in a phased manner based on technical specifications. The phased approach envisages that the project will invest based on beneficiaries’ readiness and

capacity to receive RHS. Beneficiaries will be involved in a series of awareness events (phase I) on topics that will include climate change and water scarcity. Awareness and training events for identifying feasibility and optimal operation and maintenance of installed systems (phase II) will end by demonstrating the key role of each household in ensuring water security (phase III).

8. The proposed activities aim to address this problem by providing additional water storage infrastructure to the wastewater treatment plants where reclaimed water will be stored during the winter months and distributed to farmers during the dry season when water demand is at its highest. Water distribution during the dry season will be managed by farmers and facility managers depending on the needs and storage capacity of farmers. This will allow for storing water when available and distributing it when needed by farmers, mitigating some of the adverse impacts of climate change (i.e. reduced and erratic precipitation patterns). According to Jordanian law, farmers are only allowed to use this reclaimed water for fodder irrigation.

*Component 2: Climate change resilience for enhanced livelihoods and food security (total cost: USD 7.94 million; USD 5.57 million or 70 per cent to be funded by GCF)*

9. This component is intended to strengthen the capacity of farming households to better adapt to climate change and build their resilience through farmer field schools (FFS) and e-extension services enhancement. FAO has extensive experience in this area and will use its existing capacities at local levels to strengthen the extension work and FFS curricula. The project will finance 270 FFS with a total of 4,050 participants, including separate FFS (at least 70) for women by identifying topics of interest to them but also encouraging women to participate in the main FFS where appropriate. The project will also sponsor field days and workshops to scale up tested techniques and practices. The project will especially encourage lead farmers to demonstrate practices and technology to others in the area.

10. The project will further strengthen and consolidate the efforts of the MoA (Director General-Extension and National Agricultural Research Centre) and MoE in disseminating information on climate change adaptation and weather forecasts through the model of e-extension or ICT4CA, which they have put in place.

*Component 3: Scaling up climate adaptation into policy and across actors (institutions, private sector, civil society) (total cost: USD 3.77 million; USD 3.42 million or 90 per cent to be funded by GCF)*

11. This component will scale up impacts, ensure long-term sustainability of identified climate change adaptation practices and technologies and guarantee national ownership of the identified transformative path. The main outcome of this component will be to mainstream gender sensitive adaptive tools and practices to adapt to water scarcity in the national policy and educational framework as well as in the administrative, economic and social frameworks of target areas. This will be secured by addressing identified policy bottlenecks with stakeholders and upgrading the capacities of those actors (local institutions, civil society organizations and private sector) that constitute the front line of adaptation in rural areas.

### **III. Assessment of the performance against investment criteria**

#### **3.1 Impact potential**

*Scale: High*

12. The project is expected to reach 212,416 people of which 47 per cent will be direct and indirect women beneficiaries made aware of climate threats and related appropriate responses. 83,743 people are expected to directly benefit from the project activities of which 33,684 or 40 per cent are women beneficiaries.

### 3.2 Paradigm shift potential

*Scale: High*

13. The project will shift the paradigm in the agriculture sector from looking at crop productivity per unit of land to crop productivity per unit of water. A sharper distinction will be made between water quality (saline, brackish, underground saline, brine, reclaimed, etc.) and how each kind can be more effectively used multiple times for suitable agriculture and aquaculture given the added stress caused by change in temperatures and precipitation levels in many areas of the country, especially the Dead Sea basin.

14. At the farm level, there is significant potential to promote a paradigm shift through the adoption of climate-resilient practices. The project will contract MoA and provide it technical assistance to develop suitable extension materials to deliver appropriate messages to farmers and extension staff to begin the shift in thinking about how to better adapt to climate change.

15. At the household level, this paradigm shift involves changing the way in which people deal with increasingly unpredictable and scarce water resources (both for consumption and agricultural production). All household members, both adults and children, will be included in the awareness raising sessions regarding the necessity of using water more wisely and the imminent danger for future generations.

16. At the national level, there is potential for a paradigm shift in climate policy and the regulatory framework to incentivize adaptation, protect vulnerable households from climate risk and incentivize transformative behaviour change.

17. As water users become accustomed to the use of recycled wastewater, there is potential for regional recognition of wastewater recycling facilities as an asset class for private investment in arid countries.

### 3.3 Sustainable development potential

*Scale: Medium-high*

18. The project is expected to help realize wider benefits with respect to several of the Sustainable Development Goals. In the context of Jordan, helping vulnerable households adapt to climate change is expected to have an impact on their ability to combat poverty and hunger, enhance health and well-being, improve health and sanitation, promote gender equality, reduce inequalities and promote climate action.

### 3.4 Needs of the recipient

*Scale: High*

19. Jordan is one of the most water scarce countries in the world and has an ND-GAIN<sup>1</sup> index ranking of 85 out of 181 countries for climate vulnerability (ranking 1 being the least vulnerable). Most of the country (92 per cent) can be considered arid to semi-arid, having an average precipitation of less than 200 millimetres. Consequently, the water sector is considered to be extremely vulnerable to climate change and the scarcity and variability of the resource to be one of the significant barriers for the sustainable development of Jordan.

### 3.5 Country ownership

*Scale: High*

20. The current project is well aligned with the GCF country programme, which has identified adaptation priority projects centred around four components, namely: water resources and water security; agriculture and food security; ecosystems; disaster risk reduction; and human health. The project is the first and only country-specific project the MoE

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<sup>1</sup> The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.

has included in the GCF portfolio for submission during the first replenishment period of the GCF (2020–2023).

### 3.6 Efficiency and effectiveness

*Scale: High*

21. The project's cost-effectiveness indicators, compared with other GCF funded rural development projects in the region, show that it has a relatively higher economic internal rate of return than most projects with a GCF cost per beneficiary of USD 117.70 and total cost per beneficiary of USD 156.50, which is well below the unit cost for similar projects. The project also demonstrated an economic rate of return of 24.1 per cent after applying conversion factors to obtain economic prices, incorporating economic models to include benefits of water saving interventions and aggregating economic incremental benefits to be compared with total project costs (excluding investment costs already considered in the models).

## IV. Assessment of consistency with GCF safeguards and policies

### 4.1 Environmental and social safeguards

22. The project seeks to increase Jordan's resilience to climate change through improving water use efficiency in the agriculture sector. It proposes to build the capacity of communities and institutions, address the needs of vulnerable groups, and increase the resilience of water management systems and agricultural resources. Three interrelated project components are planned to address an existing lack of infrastructure, limited capacity of rural farming households, and weak institutional capacity. The components include (i) climate-resilient water systems; (ii) climate change resilience for enhanced livelihoods and food security; and (iii) scaling up climate adaptation.

23. The AE and its executing partners (UNDP and the Ministries of Environment, Agriculture and Water and Irrigation of Jordan) anticipate that the project will deliver positive social and environmental benefits with no significant or irreversible negative environmental impacts. Its classification as category B (moderate risk) is due to potential risks associated with construction of water harvesting structures and expanding size of irrigation schemes. The Secretariat confirms the categorization and that it is within the AE's environmental and social risk accreditation level.

24. The positive impacts of the project can be attributed to, among others, establishing more efficient water use and effective water harvesting structures, hence reducing the demands for surface and groundwater withdrawals as well as preventing occurrence of floods and soil erosion. The increased storage and use of reclaimed wastewater are also expected to generate ecological benefits by reducing the volume that is discharged into rivers, decreasing the use of scarce freshwater for irrigation, contributing to the recharge of aquifers and increasing the water supply for aquatic ecosystems. The potential negative impacts are mainly related to construction works for rooftop RHS structures and storage and distribution infrastructure for the reuse of reclaimed water from wastewater treatment plants. Other social risks identified is related to non-engagement of stakeholders, and potential exclusion of some farmers resulting from the development of a strategy for subsidizing the use of drought-tolerant (locally climate-adapted) seeds.

25. The following are the key risks/impacts relating to the GCF environmental and social safeguards (ESS) standards and how they are addressed in the proposal.

26. **ESS1 - assessment and management of social and environmental risks and impacts.** In accordance with the AE and GCF ESS standards, the AE has prepared an

environmental and social management framework (ESMF) that identifies risks and policy triggers for the project, screening criteria and analysis of environmental and social (E&S) risks and impacts and mitigation measures to address the identified risks and impacts. The AE notes that the ESMF constitutes the project's initial E&S impact assessment, and that further assessments will be undertaken once project sub-activities and target areas have been identified. The ESMF is a thorough analysis of the project's E&S aspects including detailed information on stakeholder engagement activities that took place during formulation of the proposal, and planned engagement and grievance redress activities following project approval.

27. **ESS2 - labour and working conditions.** The project will employ workers that may be exposed to occupational health and safety risks. The project will manage this risk through provision of training and supply of personal protective equipment. The workers' and employees' rights will also be respected using AE standards. The project will engage workers on the basis of the principle of equal opportunity and fair treatment, free from discrimination with respect to any aspects of the employment relationship. The project will likewise exclude from financing activities that will involve harmful, exploitative, involuntary or compulsory forms of labour, forced labour, child labour or significant occupational health and safety issues.

28. **ESS3 - resource efficiency and pollution prevention.** The project will promote efficient use of resources and prevent pollution during the construction and operation of the facilities. The project intends to adopt best practices for optimal use of rainwater through installation of harvesting structures in houses and in public buildings. During construction, measures for efficient reuse of resources include backfilling of soils removed through any excavation activities at the project site; avoiding construction during periods of anticipated rainfall to prevent soil erosion; and collection and recycling of concrete waste if possible.

29. **ESS4 - community health, safety and security.** The activities of the project are not expected to have adverse impacts on the health and safety of the communities. The rainwater harvesting infrastructures are expected to be small in scale, which will not serve as hazards to public safety. While there is potential risk for inappropriate use of reclaimed water from the wastewater treatment plants, the project will apply national legal frameworks and international standards (e.g. World Health Organization publication titled "Guidelines for the safe use of wastewater, excreta and greywater - Volume 2: Wastewater use in agriculture") to mitigate this risk. The project will also ensure that the water will be used only for non-direct consumption "raw" crops (i.e. fodder and tree crops). In addition, the project will provide technical assistance to promote the safe reuse of reclaimed water, including building local capacity of farmers and the water user association.

30. **ESS5 - land acquisition and involuntary resettlement.** The AE indicated that this is not applicable to the project as there will be no involuntary resettlement nor displacement that is expected to occur in the implementation of the project activities and land tenure and any related infringements upon those are not considered an issue. The water harvesting structures will be constructed on existing houses and on existing public facilities.

31. **ESS6 - biodiversity conservation and sustainable management of living natural resources.** The project will employ drought-tolerant and water-efficient seed varieties such as cultivars of barley and fruits, which are old varieties that have been tested and patented by the National Agricultural Research Centre, hence the risk of accidental introduction of alien or non-native species of flora and fauna into the target areas is minimized, if not avoided. Internal FAO clearance will also be sought for all procurement of seeds and planting materials and through the FFS approach, and integrated pest management or other ecological pest management practices will be promoted.

32. **GCF Indigenous Peoples Policy and ESS 7.** In its review, the AE has indicated that this is not applicable to the project. The AE furthermore indicates that should it become applicable through the course of the field level review, free, prior and informed consent will be applied.

33. **ESS8 - cultural heritage.** The project is not expected to have negative impacts on cultural heritage. The ESMF also excludes supporting activities that will cause damage or loss to cultural property, including sites having archaeological (prehistoric), paleontological, historical, religious, cultural and unique natural values.
34. **Implementation arrangements.** A PMU nested in MoE will be established by the AE and will be comprised of technical specialists including a Social Inclusion and Gender Specialist and an Environment and Social Safeguards Specialist who will support project execution of the various component activities. UNDP, as the EE responsible for implementing the activities related to rooftop water harvesting at the household level and the preparation of the landscape resilience plans, will apply its social and environmental screening procedures to identify potential social and environmental risks and opportunities associated with the proposed interventions and determine the appropriate type and level of social and environmental assessment. UNDP will conduct assessments as required in accordance with national laws and guidelines and will coordinate with the AE to provide support at the policy, technical and operational levels.
35. **Stakeholder engagement and grievance redress mechanism.** During project scoping and preparation, a comprehensive effort was undertaken to elicit feedback from key stakeholders—including local communities and government agencies in the water and agriculture sectors—and to incorporate that feedback into the final BRCCJ proposal. During these consultations, national priorities (i.e. agriculture, climate change, environment and rural and social development) were considered, as were identification of gaps, project target areas, and broad inclusion of stakeholders. Engagement with technical experts was also conducted to better understand the technical feasibility of the proposed activities.
36. Proposed engagement activities to be implemented upon project approval will continue to focus on technical and national-level stakeholders as well as households and communities at the local level. The AE commits to working with a range of civil society organizations and local media in the selected subproject areas to develop appropriate approaches to engaging communities; developing local engagement plans that reach a broad range of stakeholders; rolling out appropriate grievance redress processes; mainstreaming climate change adaptation practices and technologies; and providing information and learning materials. The ESMF commits that consultations with stakeholders will take place yearly during project implementation, in conjunction with the preparation of annual work plans and budgets. They will be presented by the PMU to the NCCC, and are to be reviewed by all stakeholders both at the national and community levels. During these yearly consultations, the grievance redress mechanism is to be presented and explained.
37. The ESMF lays out a clear grievance redress structure for the project, involving various levels of complaint handling. The structure requires efforts to first address concerns at the level closest to the specific issue or project context. Project-level grievance mechanisms will be established at the field level for filing of formal complaints, and guidance has been provided regarding the process for filing, disclosing, and resolving or escalating resolution of issues. The PMU will be responsible for addressing grievances regarding ESS standards, and for documenting and reporting on any grievances received and how they were addressed. If grievances are not resolved through consultations and measures at the PMU level, a request for a compliance review can be filed with the AE's Office of Inspector-General.

## 4.2 Gender policy

38. The AE has provided a gender assessment and gender action plan (GAP), and therefore complies with the requirements of the Gender Policy of the fund.

39. The gender assessment demonstrates the commitment of Jordan towards gender equality and women's empowerment. Jordan ratified the revised Convention on the Elimination of all Forms of Discrimination Against Women in 2007. Equality before the law for all is guaranteed by Article 6 of the Jordanian Constitution. However, the constitution does not include an article addressing gender inequalities or criminalizing discrimination on the basis of sex. Women have reduced legal rights in comparison with their male counterparts with restricted residency and citizenship rights for their children. The treatment of women as legal minors leaves women and girls under male legal guardianship on matters of marriage, divorce, alimony and financial guardianship of their children. Rape is criminalized and sexual harassment punishable by law. The Law on Protection from Domestic Violence, No. 15 of 2017 protects women against domestic violence, but "honour crime", is still permitted. Women are entitled to inheritance at a level of half the share allotted to sons. Also, there are no labour laws that require equal pay for men and women. By many measures Jordan is a country with one of the lowest gender equality and highest gender gaps in the world (ranked 138 out of 152). According to the United Nations Population Fund scorecard for gender-based violence for Jordan, 79 per cent of women between 18–64 years old have experienced domestic violence in their life. In 2018 the adult female literacy rate was 7.2 per cent. Jordan also has the lowest female labour force participation in the world of a country not at war, and is about a fifth of the labour force participation rate of men. The highest gender gap is evident in the agricultural sector where women make up 65 per cent of farm laborers. However, the percentage of agricultural holdings headed by women amounted to only 7 per cent in Jordan in 2017. Only 44 per cent of households headed by women own agricultural land and 30 per cent own livestock. This contrasts with the fact that 68 per cent of households headed by men own land and 36 per cent of them own livestock.

40. The assessment provides an overview of the gender differences, gaps and dynamics in Jordan, with particular focus on the impact of climate change on women and their role in adapting to it. The Hashemite Kingdom of Jordan has recently approved and adopted the 2020–2025 National Strategy for Women in Jordan and a newly formed gender unit in MWI that is developing a gendered water strategy. They have also developed a Climate Change Gender Action Plan (ccGAP) with the support of the International Union for Conservation of Nature. The main priority sectors of ccGAP include water, energy, agriculture and food security, and waste reduction and management. It identifies key gender issues in climate change adaptation and strategies for increasing women's agency in development interventions for climate resilience through a review of relevant national policies, plans, research studies, donor initiatives and stakeholder consultations.

41. The gender analysis recognizes that climate change, the depletion of natural resources and decreasing agricultural productivity will place additional burdens on women's health and reduce time available to participate in decision making processes and income generating activities. The key findings from stakeholder consultations indicate that women are disproportionately affected by climate change with unequal access to resources and assets, barriers to decision-making and limited mobility. It also indicates that women have a critical role to play as agents of change in climate resilience and their full capacity and agency need to be unlocked through promoting awareness; building women's knowledge of climate change and adaptation practices; promoting networking and leadership opportunities; and promoting affirmative action, including setting quotas to create a level playing field for women's increased access and control over resources. As the main custodians of households, women play an important role in water management and household sanitation and waste management. Their role is also fundamental to all efforts of introducing low emission, clean energy into households as women are the principal caretakers of animals and home gardens, and decision makers about household nutrition, making the majority of decisions on consumption for the household. The gender unit in the MWI has conducted a study on the status of women in the water sector. The study recommended developing a gender responsive planning and management system with

the objective of enhancing training opportunities, developing better positions in leadership roles for women, raising gender awareness and emphasizing the capability of women to be efficient in the workplace.

42. The GAP provides activities that address the challenges faced by women and includes baseline data, indicators, targets, timelines and budgets. The activities and measures proposed in this project's GAP are designed to directly contribute to the ccGAP of Jordan. The AE will hire a full-time social inclusion and gender expert to mainstream gender throughout the project along with gender consultants for specific GAP activities. The GAP is inclusive of women, women-headed households, youth and the elderly. It includes measures to mitigate gender-based violence and provides access to grievance mechanisms for women. The GAP focuses on women's visibility and agency as farmers, primary managers of water in the household and, more broadly, climate change agents at the community, governorate and national levels. It adopts a two-pronged approach, the first of which is designed to ensure that all activities are gender-inclusive while the second includes specific activities to enhance women's agency thus exclusively targeting women.

43. The Water Wise Women initiative, which is central to the project, focuses on increasing women's agency and breaking limiting social norms that dictate, for example, that only men can be plumbers and do not recognize women's key role in water management inside the house. The initiative recognizes the significant role women play in water management at the household and community levels and adopts an approach designed to lead to sustainable, efficient water use by engaging women as change agents. Measures to support women's empowerment and decision-making capabilities are woven into the training with the objective of facilitating changes in perceptions and practices around gender-based roles. Activities include those designed to strengthen rural women's voices and leadership capacities to advocate for gender-sensitive strategies and policies of adaptation to climate change. Activities are both gender sensitive and gender transformative in that they are designed to support women's safety and well-being through a variety of measures such as safety protocols, provision of safe transport and logistical arrangements, and access to grievance mechanisms and helplines to report gender-based violence while also engaging men in the process and investing in awareness raising activities.

## 4.3 Risks

### 4.3.1. Overall programme assessment (medium)

44. The proposal requests a grant from GCF of USD 25 million for increased climate-resilient sustainable development in Jordan. The project consists of three components addressing climate change vulnerability via: water infrastructure, household adaptation capacity and institutional capacity at various levels. Co-financing is to be provided by the Government of Jordan (USD 6.2 million), FAO (in-kind USD 1 million) and UNDP (in-kind USD 0.6 million and grant USD 0.5 million).

### 4.3.2. Accredited entity/executing entity capability to execute the current programme (medium)

45. FAO will serve both as the accredited entity, responsible for supervising the project, and as one of the executing entities for the project. FAO has a track record in implementing agricultural and climate resilience projects and has presence in Jordan. In Jordan, FAO has worked to reduce the vulnerability of rural communities and support agricultural production. FAO will establish a PMU to coordinate the activities of the executing entities.

46. UNDP will be a co-executing entity with the Government of Jordan for several activities under component 1 of the programme. UNDP has an extensive track record in implementing

projects and has considerable experience in working with MoE. It has also supported a number of environmental policy reform actions in Jordan.

47. The Hashemite Kingdom of Jordan will be an executing entity of the programme through MWI, MoA and MoE, with MoE acting as Jordan's national designated authority for GCF. For strategic guidance and oversight, the project will use the NCCC, which consists of 16 ministries, as its steering committee. The PMU established by FAO will have a seat in MoE and be supported by focal points/liason officers of MWI, MoA and MoE.

#### 4.3.3. Project specific risks (medium)

48. Political and governance risk: The AE identified political and governance matters as risks for project execution with medium probability. Policy changes such as strict enforcement of existing policies or changes in water efficiency policies could be sensitive to political risk. Reassurance can be derived from the government involvement in the project and experience of UNDP and FAO in the host country.

49. Construction risk: installations of household rainwater systems are exposed to construction and maintenance risk. Reassurance can be derived from the commitment of FAO to implement only after technical clearance and individual feasibility assessments.

50. Participation and uptake: low participation in the farm schools or limited uptake of climate-resilient practices would reduce the impact of the programme. Reassurance is derived from (i) exclusive farm schools for woman to encourage participation and (ii) expected financial benefits to end beneficiaries.

51. The AE notes that expected contribution from the Government could be jeopardized due to budget deficit and high outstanding public sector debt (94 per cent of GDP). Reassurance can be derived from (i) co-financing commitment from the Government, (ii) financial benefits of the projects and (iii) partial approval of expenditures in Government plans.

#### 4.3.4. Project viability and concessionality

52. The project also demonstrated an economic rate of return of 24.1 per cent including benefits of water saving interventions and aggregating economic incremental benefits to be compared with total project costs. The models show positive net present values and financial internal rate of return ranging from 17.5 per cent to 63.9 per cent over the 20 years. Expected increases in household incomes are estimated between 15 per cent for the average total incomes and 35 per cent on average for the vulnerable households. For component 1, the eligibility criteria have different amounts of support per target group to target concessionality to more vulnerable households.

#### 4.3.5. GCF's portfolio concentration risk (low risk):

53. In case of approval, the impact of this proposal on the GCF portfolio concentration in terms of result area and single proposal is not material.

#### 4.3.6. Compliance

54. Jordan is not subject to United Nations Security Council resolutions. FAO, as the AE, confirmed that it implements/executes all of its projects in full compliance with the United Nations Security Council.

55. FAO conducted an assessment of risks for money-laundering, terrorist financing and prohibited practices, and considers such risks to be very marginal. Procurement and many other activities involving the expenditure of GCF funds will be managed by FAO and UNDP directly.

56. In addition, FAO advised that the project does not include any private investments as co-finance and the government co-financing is originated only from the public funds. No particular activities and procurement lines indicate a unique potential risk of compliance issues, such as money-laundering, terrorist financing and prohibited practices. The project will monitor closely the use of funds transferred in accordance with AE procurement rules and guidelines. The PMU and FAO will ensure reporting and close monitoring during implementation.

57. FAO has confirmed that the project will not distribute vouchers, cash, commodities, or other items of value directly or indirectly to beneficiaries, NGOs and other stakeholders as part of any activity in this project.

58. FAO advised that the project will monitor closely the use of funds transferred in accordance with AE procurement rules and guidelines (FAO Manual Sections). The PMU and FAO will ensure reporting and close monitoring during the implementation.

59. FAO confirmed that the project will establish a grievance mechanism at field level to file complaints during project inception phase. The PMU will be responsible for addressing incoming grievances regarding environmental and social standards. As part of the safeguards performance monitoring, the Project Coordinator of the PMU will be responsible for documenting and reporting on any grievances received and how they were addressed.

11. GCF would like to remind FAO, as the AE, of its continuing obligations and responsibilities with regard to monitoring and reporting any risks for money-laundering, terrorist financing or prohibited practices among the intended counterparties, EEs, beneficiaries, persons involved, or any of the proposed activities.

#### 4.3.7. Summary risk assessment and recommendations

60. It is recommended that the Board consider the above factors in its decision.

Summary risk assessment		Rationale
Overall programme	Medium	The impact of the programme depends on continued government support and sufficient participation in and uptake of the climate-resilient practices.
Accredited entity/executing entity capability to implement this programme	Medium	
Project-specific execution	Medium	
GCF portfolio concentration	Low	
Compliance	Medium	

## 4.4 Fiduciary

61. FAO will act as the AE and one of the executing entities (EE) for the project. The Hashemite Kingdom of Jordan, acting through MWI, MoA and MoE, and UNDP will be the other EEs.

62. As the AE, FAO's supervising role will be attributed to the FAO Regional Office for Near East and North Africa located in Cairo with support from the FAO Climate, Biodiversity, Land and Water Department located in Rome and other technical divisions as required. FAO, as the AE, will undertake (i) all aspects of project appraisal; (ii) administrative, financial and technical oversight and supervision throughout project implementation; (iii) ensuring funds are

effectively managed to deliver results and achieve objectives; (iv) ensuring the quality of project monitoring, as well as the timeliness and quality of reporting to GCF; and (v) project closure and evaluation. FAO Jordan will act as the budget holder of the project for funds from GCF and assume the entire responsibility for project delivery and reporting supported by the PMU. The funds will be disbursed by GCF based on annual work plans to FAO Headquarters from where the funds will be sent directly to FAO Jordan. The GCF funds will be transferred from FAO to UNDP under a subsidiary agreement (UN to UN agreement). The internal control of the disbursement will follow FAO rules and regulations.

63. As an EE, FAO will set up a project delivery team in FAO Jordan, comprising staff covering all functions relevant to the execution of the envisaged activities. More specifically, FAO Jordan's role in the BRCCJ project will be limited to providing quality assurance throughout all project components, enhancing the success of the project and its potential replicability, and ensuring coordination with MoE, MWI, MoA and UNDP as co-financiers/EEs in charge of specific activities. UNDP will be responsible for implementing activities related to rooftop water harvesting at the household level and the preparation of the landscape resilience plans. The operations team at UNDP will facilitate the procurement of goods and services for the execution of the activities under UNDP. MWI is the official body responsible for the overall monitoring of the water sector, water supply and wastewater system; the related projects, planning and management; the formulation of national water strategies and policies; research and development; information systems; and procurement of financial resources. MoA is responsible for the agricultural sector, promoting self-sufficiency and rural development and linking production to the requirements of the markets inside and outside Jordan. MoE covers the policy and legal frameworks that guide climate change mitigation and adaptation efforts and will collaborate with the PMU.

64. FAO will establish a PMU nested in MoE that will provide regular reports and performance updates to MoE. The PMU will be responsible for overall planning and coordination, developing annual work plans and budgets, day-to-day project management, providing technical backstopping, financial management, and undertaking procurement functions, project reporting and documentation.

65. FAO as the AE will execute the project in accordance with FAO rules, regulations, policies and procedures. Financial management and procurement under this project will be guided by relevant FAO rules and regulations as relevant provisions in the accreditation master agreement signed between FAO and GCF. The project will be subject to FAO's audit regime including the external audit and internal audit function.

## 4.5 Results monitoring and reporting

66. The stated outcomes of the theory of change are defined in a manner that is clearly supportive of meeting the ultimate project goal. However, the AE is guided to reformulate the "if, then, because" statement as follows: IF investments in water efficient infrastructure, farmers' knowledge of water saving and conserving technologies and awareness of climate adaptive technologies and practices are put in place, as well to government capacity in planning, information dissemination and policy development is improved THEN the adaptive capacity and resilience of vulnerable communities will be strengthened BECAUSE the exposure to climate change risks to their livelihoods, health and well-being and food security are lessened.

67. At the core indicator level, the logical framework has been designed with relevant details, as per the GCF results management framework and performance measurement frameworks. This includes reporting on the appropriate core indicator for adaptation (number of direct and indirect beneficiaries disaggregated by sex).

68. At the impact level, the targeted result areas of increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions (A1.0) and increased resilience of health and well-being, and food and water security (A2.0) are properly articulated. Indicator means of verification and baselines have been appropriately defined along with assumptions. Given the project's goals, impact indicator A2.2 (number of food-secure households in areas/periods at risk of climate change impacts) would be required. However, the AE has noted that increases in food security will not be direct nor fully monitorable due to a lack of reliable baseline data.

69. At the fund outcome level, the AE has properly included the indicator for technologies and innovative solutions transferred as a result of GCF support with relevant midterm and final targets. For indicator A5.1, a qualitative indicator, the AE has established the appropriate baseline based on the country-specific circumstances. In parallel, the incentives that can improve CR and their effective implementation will be negotiated with stakeholders during project execution and this has been articulated in the assumptions column.

70. With respect to indicator A7.1, (use by vulnerable households, communities, businesses and public-sector services of GCF-supported tools, instruments, strategies and activities to respond to climate change and variability), the AE has appropriately defined the tools that will be used to respond to climate change and variability but is cautioned to ensure that it is the use of those tools that must be measured, not just the number of tools.

71. At the project performance level, the indicators have been refined to include, for instance, the reduction in overdraft of groundwater. Finally, a RIMA assessment will be done at inception to set the baseline to establish the change in the number of people who report increases in resilience. That indicator will be measured at midterm and at the end of the project.

72. The implementation timetable for the funding proposal has been completed appropriately. It shows all activities and key milestones associated with each phase of the project and they are consistent with the logical framework.

73. The arrangements for monitoring, evaluation, and reporting are adequate.

## 4.6 Legal assessment

74. The accreditation master agreement (the "AMA") was signed with the AE on 8 June 2018, and it became effective on 4 October 2018.

75. The AE has provided a certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

76. The proposed project will be implemented in the Hashemite Kingdom of Jordan, a country in which GCF is not provided with privileges and immunities. This means that, among other things, GCF is not protected against litigation or expropriation in this country, which are risks that need to be further assessed. The GCF Secretariat sent a draft agreement together with a background note on privileges and immunities to the national designated authority of Jordan in December 2015 and again in May 2016; however, no response to the draft has been received thus far.

77. The Heads of the Independent Redress Mechanism and the Independent Integrity Unit have both expressed that it would not be legally feasible to undertake their redress activities and/or investigations, as appropriate, in countries where GCF is not provided with relevant privileges and immunities. Therefore, it is recommended that disbursements by GCF be made only after GCF has obtained satisfactory protection against litigation and expropriation in the country, or has been provided with appropriate privileges and immunities.

#### 4.7 List of proposed conditions (including legal)

78. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

- (a) Signature of the funded activity agreement in a form and substance satisfactory to the Secretariat within 180 days from the date of Board approval; and,
- (b) Completion of legal due diligence to the satisfaction of the Secretariat.

## Independent Technical Advisory Panel's assessment of FP155

Proposal name:	Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCC)
Accredited entity:	Food and Agricultural Organization of the United Nations (FAO)
Country/(ies):	Hashemite Kingdom of Jordan
Project/programme size:	Small

### I. Assessment of the independent Technical Advisory Panel

#### 1.1 Impact potential *Scale: High*

##### 1.1.1. Adaptation impact

1. The project seeks to enhance the climate resiliency of the population of four targeted governorates in the Dead Sea basin (Karak, Ma'an, Madaba and Tafilah) by improving their capacity to cope with water scarcity which, the funding proposal claims, is their greatest climate vulnerability and is being exacerbated by climate change. This would be achieved through investments in water systems and the promotion of climate-resilient agricultural practices.

2. Component 1 focuses on increasing water supply through: (1) the installation of rainwater harvesting (RWH) systems in 400 public buildings and 7,850 households; (2) the construction of storage tanks and distribution systems for the use of reclaimed wastewater for the irrigation of fodder; and (3) the design of an investment portfolio for, inter alia, infrastructure for the recharge of the aquifers in the Dead Sea basin, flood protection works, weirs and delay action dams, storage ponds and water diversion structures.

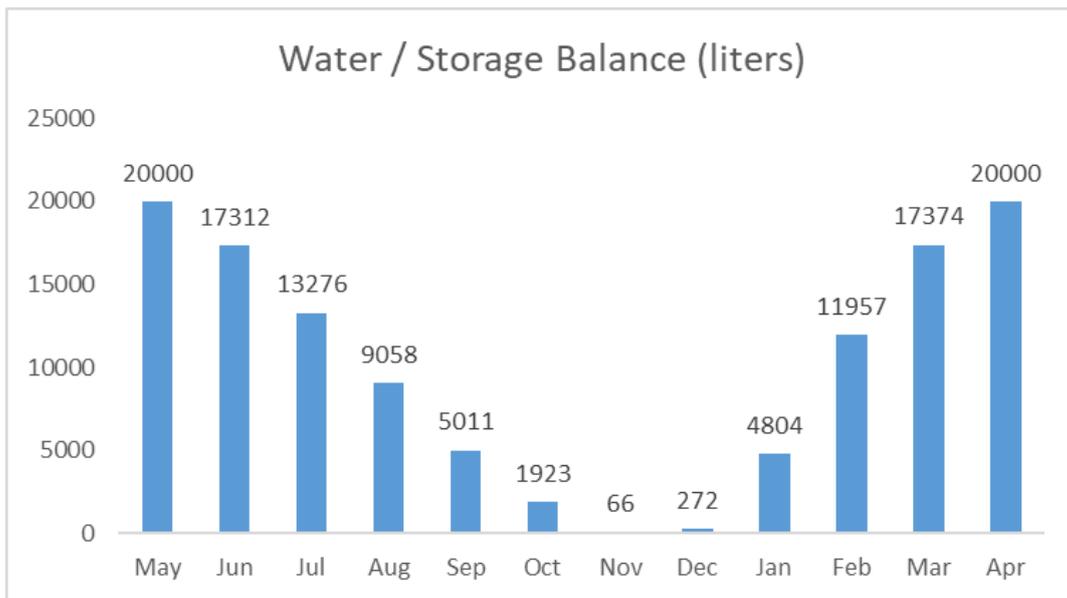
3. As described in the proposal,<sup>1</sup> the sizing of the tanks for RWH was done using a "supply side approach". This method is used for low rainfall areas, and the capacity of the tank is calculated as the greatest excess of water over and above consumption, based on expected monthly rainfall, demand and rooftop area. The mean annual rainfall in the targeted governorates is 200–350 millimetres (mm), concentrated between October and May. From May to October, monthly rainfall drops to less than 10 mm. Household rooftops in the targeted area are approx. 100–200 square metres (m<sup>2</sup>) and storage tanks would be 5–30 cubic metres (m<sup>3</sup>). Harvested water would be used for domestic purposes (except for drinking), irrigation of homestead gardens and drinking water for cattle.

4. Seasonal rainfall patterns vary drastically in Jordan. The independent Technical Advisory Panel (iTAP) questioned the lack of an adequate water mass balance around the RWH systems. The water mass balance needed to be based on monthly rainfall and consumption data, so as to consider the seasonal variation observed in the precipitation data rather than yearly average rainfall (as originally presented by the accredited entity (AE) in Annex 2). The AE responded with an adequate water/storage mass balance based on monthly rainfall data to the satisfaction of the independent TAP. The AE indicated that *"This activity [RWH] aims to build climate resilience through improved access to water and efficient water use at the household level*

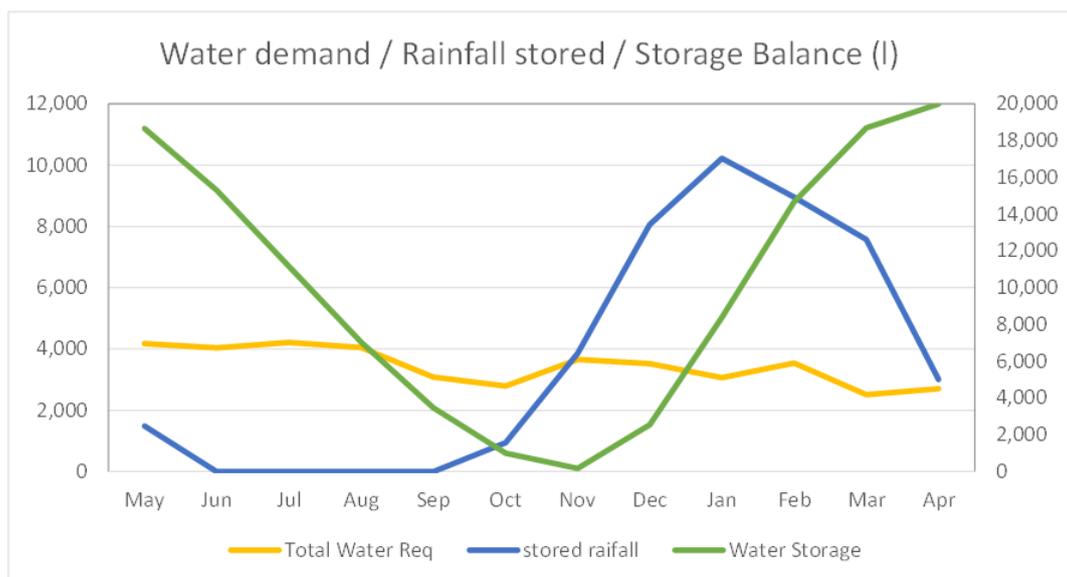
<sup>1</sup> Appendix 1 of the Feasibility Study.

for both domestic use and for crops planted in the homestead gardens that do not require constant irrigation and that are drought-tolerant. To this end, the project considered that households would use about 23 per cent of the stored water for domestic purposes and the rest for crops. From the simulations made by the project, the following pattern for a 20 m<sup>3</sup> system that included irrigation of crops equivalent to about 20 m<sup>2</sup> planted with olive oil trees (2 to 3 trees) and about 50 m<sup>2</sup> planted with mixed vegetables, the system will always be filled with water.” This clarification and the water mass balance provided by the AE satisfied the independent TAP requirements and guarantees adequate application of RWH in the target areas, as presented in the following figures.

**Figure 1 – Water balance I**



**Figure 2 – Water balance II**



5. Although 95 per cent of the population in Jordan has access to safe drinking water on an intermittent basis and 63 per cent are connected to the public sewer system, the proposal gives no details on the coverage of the water network for the areas targeted for the installation of rainwater harvesting systems. However, the proposal states that “people in the project area

complained that they were only supplied water once a week”.<sup>2</sup> In any case, the RWH system would serve as a complementary water source. Assuming a household would use 200 litres/day of rainwater for domestic and agricultural purposes during the dry season, a system with a storage capacity of 15 m<sup>3</sup> would last, assuming no recharge, for 75 days.

6. To enhance capacities to use reclaimed wastewater for the irrigation of fodder crops, the project selected the Madaba, Karak and Tafilah wastewater treatment plants, where storage capacity would be increased to 90,000 m<sup>3</sup>, 25,000 m<sup>3</sup> and 30,000 m<sup>3</sup> respectively. The calculation of additional storage capacity was based on on-site land availability and surplus wastewater currently being discharged in winter (rainy season) for lack of storage capacity.<sup>3</sup> As with rainwater harvesting, the supply side here is also the limiting variable. There are uncultivated areas due to the lack of water surrounding the wastewater treatment plants, which are 1.5 to 2 times greater than what is currently under cultivation.

7. Given that secondary wastewater treatment plants using activated sludge and trickling filter technologies generally do not remove nematodes, the independent TAP asked the AE about the prevention and mitigation of contamination from nematodes while reusing treated wastewater. The AE responded that *“As reported by the Ministry of Water and Irrigation, the presence of nematode eggs appears to be null”* and provided laboratory data for the period 2019–2020, plus a letter from the Ministry of Water and Irrigation that supported this statement. In addition to this, the AE indicated that *“the project will ensure that the design of identified tanks and their construction follows the Jordanian and World Health Organization standards to reduce the risks related to parasites. To this end, the project will work with the wastewater treatment plants and the Ministry of Water and Irrigation to further decrease risks related to contamination. The entire set of studies related to technical specifications of reclaimed water tanks and their management and maintenance will be secured at start up.”*

8. Activity 1.1.3 consists of the development of a portfolio for infrastructure investments for the recharge of the aquifers in the Dead Sea basin, flood protection works, weirs and delay action dams, storage ponds and water diversion structures.

9. **Component 2** is basically focused on capacity-building and communication to enhance livelihoods and food security. Six thousand farmers would be trained through farmer field schools and field days in climate-resilient agricultural techniques, inter alia, the introduction of seed varieties and crops which are much more drought tolerant, water-efficient irrigation technologies, water harvesting soft infrastructure (gully plugs, contour bunds), conservation agriculture, wicking beds, and aquaponics and hydroponics. In addition, 400 young women would be trained and certified in state-of-the-art techniques for climate adaptive agriculture, agri-business planning and development, and the use of social media for climate change adaptation advocacy. To increase the use of climate information in decision-making, the project would develop smart applications to be used by the Ministry of Agriculture, the Ministry of Environment and the National Agriculture Research Council (NARC) for disseminating information on climate change adaptation and weather forecasts. It is expected that this component will result in the implementation of climate-adaptive practices in over 10,000 hectares.<sup>4</sup>

10. The proposal identifies the main institutional barriers which delay climate change adaptation in the water and agriculture sector in Jordan as the lack of coherence of national strategies and the lack of technical skills and resources. **Component 3** would promote the mainstreaming of tools and practices that increase resiliency to water scarcity into the national policy and educational, administrative, economic and social frameworks.

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<sup>2</sup> Funding proposal, page 14.

<sup>3</sup> Feasibility study, page 60.

<sup>4</sup> Funding proposal, page 53.

11. Policies and the regulatory framework would be assessed and updated to promote the use of drought-tolerant grains, water-efficient agricultural techniques, RWH systems for rooftops in rural areas and water-saving devices. This would be sought through, inter alia, the incorporation of tax benefits, subsidies and new tariff structures.
12. The independent TAP requested the AE to substantiate the claim made in the funding proposal that the use of water saving devices would reduce water use by 30 per cent. In response, the AE presented references to support this statement and indicated that this activity will be executed by beneficiaries with their own resources and that it is not included as co-financing nor procured through GCF funds.
13. Activity 3.1.1.1 includes the provision of technical assistance to improve the monitoring protocols of farms irrigated with reclaimed water.
14. A team of international and national experts would provide technical assistance to stakeholders to identify and initiate the necessary policy reforms related to water quality standards for the use of reclaimed water for irrigation, monitoring protocols for farms irrigated with reclaimed water, incentives for the use of reclaimed water, and the inclusion of this practice in the planning and designing of new wastewater treatment plants or the expansion of the existing ones.
15. The curricula of vocational schools (e.g. masonry, plumbing and agriculture) and of specialized universities (e.g. agriculture, architecture and water engineering) would be updated to include the key concepts of climate change adaptation, climate-smart agriculture, climate-adaptive water management and climate-adaptive technologies, principles and elements of RWH, irrigation technologies, and water-saving devices and water-saving techniques in construction. Also, 6,440 people from the private sector, civil society and local institutions would receive capacity-building on how to comply with policy frameworks and practices and address barriers that hinder climate change adaptation, and on specific water-saving actions and climate change adaptation practices. Civil society organizations with consolidated presence in the project areas and experience in the water and agriculture sectors<sup>5</sup> would receive training on introduced climate adaptive technologies and practices in agriculture and water use.
16. Expected direct beneficiaries are defined as the people benefitting from investments under component 1 (RWH and reclaimed water) and people who would receive capacity-building under components 2 and 3, which totals approximately 80,000 people. Indirect beneficiaries would be the 15,000 people sensitized to climate-adaptive measures through Community Dialogues in each governorate and the Climate-Wise Women's Forum, and the almost 170,000 people who would be positively affected by the policy and regulatory upgrades in the agriculture and water sectors.<sup>6</sup>

## 1.2 Paradigm shift potential

*Scale: Medium*

### 1.2.1 Innovation

17. The promotion of climate-resilient agricultural techniques, wastewater reuse and RWH, combined with water-saving devices, are not new to Jordan. As a matter of fact, the calculations of the benefits these technologies bring in the area of influence of this funding proposal are based on previous experiences in Jordan. However, conservation agriculture, wicking beds, and aquaponics and hydroponics, as well as the development of smart applications for the communication of information on climate change adaptation and weather forecasts, can be considered an innovative aspect of this funding proposal.

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<sup>5</sup> Maximum of four per governorate.

<sup>6</sup> Feasibility study, page 78.

### 1.2.2. Potential for knowledge and learning

18. Capacity-building activities are present in all project components. The installation of RWH systems would be complemented by awareness-raising and orientations on water conservation at the household level, for municipal staff in public buildings and children and teachers in schools. Component 2 is completely focused on introducing climate-resilient agricultural practices, mainly through training activities. Component 3 includes updating the curricula of vocational schools and universities to include climate change adaptation and related topics and providing capacity-building to 6,440 people from the private sector, civil society and local institutions.

### 1.2.3. Contribution to the creation of an enabling environment

19. Regarding the storage and distribution infrastructure for reclaimed water, the Ministry of Water and Irrigation and the Water Authority of Jordan signed a formal agreement assuming responsibility for the operations and maintenance (O&M) costs during and after the project, with the participation of local farmers.<sup>7</sup> Activity 1.1.2.3 would provide capacity-building for existing and new Water User Associations regarding O&M at the field level and the costing and rational water-sharing rights among farmers.

20. The RWH structures in public buildings would be maintained by the agency responsible for the O&M of each building, and individual households would maintain their own RWH structures. Beneficiaries would sign an agreement of commitment and receive training on O&M. Household RWH systems have low maintenance costs and can be expected to be affordable even for low-income families.

### 1.2.4. Contribution to the regulatory framework and policies

21. Activity 3.1.1 is dedicated to advancing the policy and regulatory framework to incentivize the adoption of climate-resilient agricultural practices and the use of RWH systems and water-saving devices, and would support stakeholders in enhancing standards for the monitoring process of farms irrigated with reclaimed water.

### 1.2.5. Scalability and replicability

22. The main characteristic that contributes to the upscaling potential of the project is its strong emphasis on capacity-building, awareness-raising and institutional strengthening, and the incorporation of climate change in the curricula of the academic and vocational institutions.

23. The engagement of the private sector is expected to support the replicability of the practices promoted by the project. Companies involved in the market for agricultural inputs and equipment and those involved in construction and the provision of building equipment would be invited to participate in the field farming schools, field days, trainings, workshops and conferences on introduced technologies and practices, and on awareness-raising and communication campaigns and events.

## 1.3 Sustainable development potential

*Scale: High*

24. The project will contribute to a number of Sustainable Development Goals (SDGs), for example: SDG 2 (Zero hunger), SDG 3 (Good health and well-being), SDG 5 (Gender equity), SDG 6 (Clean water and sanitation) and SDG 13 (Climate action), among other SDGs.

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<sup>7</sup> Annex 13, Co-financing letter from the Ministry of Water and Irrigation.

### 1.3.1. Environmental co-benefits

25. The increase in the use of reclaimed water and rainwater would take pressure off sources of surface water, benefiting the aquatic ecosystems that depend on them. The use of reclaimed water would decrease the flow of treated wastewater that is currently being discharged to the environment. In addition, some climate-adaptive practices, such as conservation agriculture, which would be implemented on over 10,000 hectares, would have positive effects on soil quality.

### 1.3.2. Social co-benefits

26. The implementation of climate-resilient agricultural practices and the increased availability of water for homestead agricultural activities and fodder production would improve food security and, consequently, the health status of the population.

### 1.3.3. Economic co-benefits

27. Economic co-benefits would include savings in water that, without the project, would be purchased from tankers, reduced consumption of water through the use of water-saving devices, and incremental revenues for farmers using reclaimed water for fodder irrigation.

### 1.3.4. Gender-sensitive development impact

28. Capacity-building in climate-resilient agriculture is strongly focused on empowering women. Activity 2.1.3 would create a group of 400 “climate-wise women” to act as agents of change for climate adaptation. These women would have the task of undertaking community dialogues and household visits to raise awareness of the importance of the role women can have in climate change adaptation at household level and in the agriculture sector, and inform them on climate change phenomena, the possible impacts on their lives and adaptation measures, such as water-saving devices and practices at the domestic level, simple greenhouses, drip irrigation systems, and the production and use of growbags.

## 1.4 Needs of the recipient

*Scale: High*

### 1.4.1. Climate rationale

29. The original funding proposal states that, according to Jordan’s Third National Communication to the United Nations Framework Convention on Climate Change (TNC), annual mean maximum and minimum temperatures in the country have increased since 1960 by 0.3–1.8 °C and 0.4–2.8 °C, respectively, and that the mean annual temperature increased by 0.89 °C since 1900.<sup>8</sup> Annual precipitation decreased at most meteorological stations, and according to the International Center for Agricultural Research in the Dry Areas, precipitation in the Dead Sea basin decreased by up to 20 per cent in the period 1901–2016. However, the source data for these conclusions is not presented in the proposal. The graphs showing the evolution of annual precipitation and annual mean maximum and minimum temperatures for the period 1979–2019 present data from the European Centre for Medium-Range Weather Forecasts (ECMWF) ERA5 dataset. The in-country observational data records are important to establish that climate change is already affecting the project area. Questioned by the independent TAP about the sources of data used to establish precipitation and temperature trends, the AE responded that the main source of data related to climate change is the TNC, which is based on local records from 19 meteorological stations, and that 13 of these stations showed downward trends in

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<sup>8</sup> Feasibility study, page 21–22.

annual precipitation and increasing trends in both minimum and maximum temperatures (reference period 1980–2010). The proponent submitted historical data from the five relevant and existing meteorological stations of Karak, Madaba, Shaubak, Tafilah and Wadi Musa, showing a decreasing precipitation trend and increasing temperature trends. Also, the proponent explained that the ECMWF ERA5 dataset is produced by the Copernicus Climate Change Service and uses data from both satellite sensors and in-situ data, including meteorological stations.

30. Without data on temporal distribution, mean annual values are insufficient to assess the real impact rainfall variability would have on the occurrence of droughts. Following a request from the independent TAP, the AE presented data on the observed variation of monthly temperature and rainfall values.

31. The sources of the precipitation and temperature projections are not clear, nor is whether the models were validated against locally recorded historical data. Questioned by the independent TAP on this matter, the AE responded that *“The project used existing precipitation and temperature projection models that were officially communicated by the country in the TNC. These models were validated against local historic climatic variables obtained from local weather stations (19 total). Dynamic downscaling based on the Coordinated Regional Climate Downscaling Experiment (CORDEX) system has been used in the by the TNC for the projections utilized within the feasibility study. This was achieved using the Africa CORDEX domain in which 43 grid points with 50-kilometre resolution were crossed throughout the country. Nine different GCMs coupled with two RCMs for two RCPs (4.5 and 8.5) were used to assess future projections as compared to reference historical data (1980–2010). Three time horizons were selected: 2020–2050, 2040–2070, and 2070–2100. A full description of these models – representing the official projections reported by the country – is available in the TNC (pages 110 to 120). These models are largely used by Jordanian institutions as well as reported in international literature consulted to assess the climate change scenario for the project”*. In a second set of responses, the AE indicated that *“the nine selected models were further processed for the uncertainty analysis, including both validation and debiasing using local historic climatic variables obtained from local weather stations. Debiasing was achieved using (1) the delta method; and (2) the quantile-quantile method (Météo-France and French INRA<sup>9</sup>). Four time horizons were selected for interpolating climate variable projections: (1) 1980–2010 was used as a reference period and was centred on the year 1995; (2) 2020–2050 was used for initial future projections and was centered on the year 2035; (3) 2040–2070 was used for middle future projections and was centered on the year 2055; and (4) 2070–2100 was used for far future projections and was centered on the year 2085.”* This response and the data presented to support the statements made satisfied the climate rationale requirements of the independent TAP.

#### 1.4.2. Vulnerability of the country, vulnerable groups and gender aspects

32. The households that benefit from the RWH system would be expected to contribute part of the cost of the system, except for the most vulnerable groups, which would be financed 100 per cent by the project. The proposal identifies the most vulnerable groups as women-headed households, those identified as poor households with potential to use water for homestead gardens, and those dependent entirely on agriculture having up to one hectare of land with the possibility of planting around the homestead. Households with a person with a disability or more than six dependents would be required to pay 30 per cent of the total, and other households would have to pay 65 per cent of the cost.

33. The number of vulnerable households in the project area is estimated at 40,000 with a total of about 24,000 rural people living in the four targeted governorates. There are about 20 regions in Jordan with a poverty rate of more than 25 per cent, consisting of 254 communities,

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<sup>9</sup> Institut National de la Recherche Agronomique

with a population of about half a million citizens. These areas of poverty are distributed in 9 of the 12 governorates in Jordan. The governorate of Ma'an has six of these regions, the governorate of Karak has three, and the governorate of Tafilah has one.<sup>10</sup>

34. The high vulnerability of households that depend on agriculture is because a high proportion of farmers practice rain-fed agriculture.

35. With regard to water service, 94 per cent of the population in Jordan has access to safe drinking water, 93 per cent has access to improved sanitation and about 63 per cent of households are connected to the public sewer system. Compliance with the microbiological indicators of the World Health Organization for the water supplied in the entire country was 99.7 per cent.

36. About 90 per cent of the reclaimed wastewater produced is reused directly by farmers or indirectly through mixing with rainwater and surface water in dams.

#### 1.4.3. Economic and social development

37. As a result of the conflicts in Iraq and Syria, which are Jordan's main trading partners, the country's macroeconomic situation worsened and the fiscal deficit rose. The gross domestic product growth, which averaged 6.4 per cent during 2000–2009, fell below 2.5 per cent over 2010–2018 and is expected to decrease as a result of the current pandemic. By Jordanian standards, the poverty rate in 2017 was estimated to be 15.7 per cent. The refugee crisis adds pressure to the country's natural resource base, water resources, infrastructure, social services and the labour market. The unemployment rate is estimated to have reached 19.2 per cent in 2019, and youth unemployment is reported to be as high as 40 per cent.

38. The socioeconomic development of each targeted governorate is briefly described in the feasibility study.

#### 1.4.4. Absence of alternative sources of financing

39. Resources to build resilience to climate change are very limited. The current context shows high fiscal imbalances and very high public debt (International Monetary Fund Press Release N.º19/435-November 2019), and there was a recent cut in public investment.

#### 1.4.5. Need for strengthening institutions and implementation capacity

40. Weak institutional capacity is one of the main barriers to climate adaptation identified in the proposal and would be address through activity 3.1.1.

## 1.5 Country ownership

*Scale: High*

### 1.5.1. Alignment with the national climate strategy and policies

41. The project is aligned with Jordan's National Green Growth Plan (2017), which stresses the importance of the efficient use of water resources, knowledge transfer, and the introduction of drought-tolerant varieties, which are the objectives of the National Climate Change Policy (2013–2020), the National Adaptation Plan (2020) and the intended nationally determined contribution (2015).

### 1.5.2. Capacity of accredited entities or executing entities to deliver

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<sup>10</sup> Appendix 1 of Annex 2 – Feasibility study, page 19.

42. The AE for the project is the Food and Agriculture Organization of the United Nations (FAO).

43. The executing entities (EEs) would be the FAO, the United Nations Development Programme (UNDP) and the Government of Jordan acting through the Ministry of Agriculture, the Ministry of Environment, the Ministry of Water and Irrigation and the nationally designated authority.

44. Both UNDP and FAO have experience in Jordan in the implementation of projects related to climate-resilient agriculture and food security. FAO is currently implementing a range of high-impact projects in the country with financing from the European Union, the Government of Switzerland and other entities for climate change adaptation. UNDP is also implementing climate-related projects.

### 1.5.3. Engagement with civil society organizations and other relevant stakeholders

45. The formulation process included consultations and meetings with relevant ministries, NARC, other United Nations agencies (e.g. UNDP), non-governmental organizations (NGOs), multinational and bilateral organizations (e.g. German Agency for International Cooperation (GIZ), United States Agency for International Development (USAID)), officials from governorates, local communities, and key agencies working on gender issues such as the Jordan River Foundation, the Jordan Hashemite Fund for Human Development and the United Nations Entity for Gender Equality and the Empowerment of Women. To further assess the impact of climate change on livelihoods and the potential impact of the proposed measures, members of local farming communities were also consulted.

46. Component 3 includes a local engagement and dissemination process. Working together with civil society organizations and the local media, the project would develop appropriate approaches and actions to engage communities in project areas and develop a local engagement plan for maximum outreach and mainstreaming of key climate change adaptation techniques.

## 1.6 Efficiency and effectiveness

*Scale: Medium*

### 1.6.1. Cost-effectiveness and efficiency

47. As shown in the response of FAO to the independent TAP questions,<sup>11</sup> the delivery system for the reclaimed water (i.e. pipelines) makes up for more than 70 per cent of the total investment for optimizing the use of reclaimed water. However, the technical details of the systems are not presented in the proposal, and for this reason it is not possible to assess the adequacy of the budget for this activity.

48. The budget for the installation of RWH systems in households and public buildings is in the range of normally expected costs.

49. As per the project budget, the new storage and distribution infrastructure for reclaimed water that would benefit 176 farmer households (968 people) would have an annual O&M cost of USD 315,000. If the Ministry of Water and Irrigation was to design a tariff structure to cover all O&M costs through the users, each farmer household would have to pay, on average, USD 1,780 per year. As a point of comparison, these farmers are expected to generate an incremental income from the use of reclaimed water of USD 620 per year.<sup>12</sup>

50. The funding proposal indicates that each farmer that uses reclaimed water for irrigation would generate an incremental revenue of USD 620 per year, and that the water utility would

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<sup>11</sup> Response to question 6.

<sup>12</sup> Funding proposal, page 54.

save USD 210,000 per year due to the avoided cost of tertiary treatment of the treated wastewater that the project would use for irrigation. However, the three selected wastewater treatment plants have secondary treatment,<sup>13</sup> and there is no mention of wastewater treatment plants with tertiary treatment. Thus, if in the baseline scenario there is no tertiary treatment, there is no reason to count avoided tertiary treatment as a saving. The assumption that tertiary wastewater treatment is the alternative way to generate wastewater for reclamation is not substantiated in the funding proposal. In the opinion of the independent TAP, to meet Jordan's reuse regulations for Type C crops (e.g. fodder), tertiary treatment is not necessarily needed. Thereby its use to calculate the economic return of the project is flawed. However, based on the experience of numerous wastewater reuse systems elsewhere, the independent TAP conclusion is that wastewater reuse, in a country with such levels of water stress, always pays back if adequately implemented.

### 1.6.2. Amount of co-financing

51. Total project costs are estimated to be USD 33.25 million. GCF would provide USD 25 million (75 per cent of total project cost) and the Government of Jordan is committed to providing USD 6.2 million (19 per cent). FAO and UNDP would co-finance USD 2.06 million (1 million and 1.06 million, respectively, representing 6 per cent of total costs). The beneficiaries are expected to provide USD 4.6 million for investments at the household level.

### 1.6.3. Financial viability

52. The proposal estimates that households that receive RWH systems would save USD 127 per year (assuming a household would save 30 m<sup>3</sup> of water per year) due to the implementation of water-saving devices, and between USD 93 and USD 200 per year from harvested water they currently purchase from tankers, and the public buildings would save between USD 363 and USD 585 due to reduced use of purchased water (assuming savings of 87 m<sup>3</sup> to 137 m<sup>3</sup>).

53. As it is, the economic analysis for the RWH and reclaimed water has the following results:

**Table 1 – Economic Analysis of RWH**

Model		EIRR	NPV (USD)	B/C Ratio
C1.1.1	<b>Madaba</b>			
	HH rooftops 100 m <sup>2</sup> (60 %)	28.6 %	4,542	4.3
	HH rooftops 200 m <sup>2</sup> (40 %)	18.3 %	4,631	3.0
	Public buildings	11.4 %	5,212	2.0
	<b>Karak</b>			
	HH rooftops 100 m <sup>2</sup> (60 %)	84.9 %	12,717	4.4
	HH rooftops 200 m <sup>2</sup> (40 %)	11.3 %	543	3.1
	Public buildings	6.8 %	2,912	1.4
	<b>Tafilah</b>			
	HH rooftops 100 m <sup>2</sup> (60 %)	34.2 %	3,905	5.1
	HH rooftops 200 m <sup>2</sup> (40 %)	19.4 %	4,156	3.2
	Public buildings	6.8 %	2,168	1.4
	<b>Ma'an</b>			
HH rooftops 100 m <sup>2</sup> (60 %)	78.5 %	3,625	8.5	
HH rooftops 200 m <sup>2</sup> (40 %)	34.0 %	3,776	4.9	
Public buildings	15.5 %	4,207	2.6	
<b>Model</b>		<b>EIRR</b>	<b>NPV (JOD)</b>	<b>B/C Ratio</b>
C1.1.2	Tafilah WWTP	6.1%	91,166	1.1
	Karak WWTP	14.6%	725,541	1.9

<sup>13</sup> Feasibility study, page 59.

	Madaba WWTP	20.5%	1,408,560	1.4
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54. For the adaptive agriculture component, the analysis was done considering the following project benefits: (1) 1,425 farmers benefiting with a 30 per cent increase in income due to the implementation of climate-adaptive techniques; (2) 525 women generating at least USD 130 per year through the use of wicking beds in homestead gardens to produce herbs and vegetables; (3) 1,260 farmers being trained to apply improved water management and climate-adaptive techniques on 2,520 hectares of fruits trees with between 22 per cent to 63 per cent additional profit per hectare; and (4) 1,950 farmers trained to apply improved water management and climate-adaptive techniques on 6,713 hectares of fruits trees that report between 7 to 16 per cent additional profit per hectare. This analysis has the following results for each new or optimized cultivar, in Jordanian Dinars:

**Table 2 – Economic Analysis of Adaptive Agriculture**

Item	Unit	Models											
		Rainfed barley	Rainfed wheat	Olive trees irrigated	Olive trees non-irrigated	Grapes irrigated	Tomatoes	Wicking beds	Growbag GH Tomatoes conv	Growbag GH Tomatoes new	Growbag GH Cucumber conv	Growbag GH Cucumber new	Alfalfa
<b>Without project</b>													
Costs	JOD												
Sales	JOD	282	419	3,563	2,614	7,929	7,850		4,917		7,085		282
<b>Margins</b>	JOD	351	600	3,850	2,944	10,000	10,651		5,700		7,600		345
<b>With project</b>													
Costs	JOD	<b>69</b>	<b>182</b>	<b>287</b>	<b>330</b>	<b>2,071</b>	<b>2,801</b>	<b>-</b>	<b>783</b>	<b>-</b>	<b>515</b>	<b>-</b>	<b>63</b>
Sales	JOD	274	390	3,573	2,621	8,127	7,850	6	8,449	7,589	9,896	7,664	1,595
<b>Margins</b>	JOD	393	600	3,985	3,025	11,500	12,249	97	11,400	11,400	11,400	11,400	2,700
		<b>119</b>	<b>210</b>	<b>411</b>	<b>404</b>	<b>3,373</b>	<b>4,399</b>	<b>92</b>	<b>2,952</b>	<b>3,812</b>	<b>1,504</b>	<b>3,736</b>	<b>1,105</b>
FIRR	%	17.5 %	18.7 %	n/a	n/a	n/a	n/a	21.9 %	48 %	30 %	64 %	36 %	n/a
NPV	JOD	72	16	43	22	63	57	n/a	277	n/a	192	n/a	1,655
Increase in return on family labour	N°	205	212	4,594	3,139	10,346	12,945	179	11,666	6,807	14,668	7,558	4,004

55. The reason why the analysis does not account for the costs of the implementation of climate-adaptive techniques (with project costs) is not clear.

#### 1.6.4. Best practices

56. Best practices in RWH and climate-resilient agriculture would be drawn from past and ongoing Jordanian projects, as described in section 7 of the feasibility study.

## II. Overall remarks from the independent Technical Advisory Panel

57. The independent TAP recommends that the Board approve the Funding Proposal with the following conditions for disbursement of GCF Proceeds:
- (a) Prior to first disbursement of the GCF Proceeds under the Project, the Accredited Entity shall deliver to the GCF Secretariat, in form and substance satisfactory to the GCF, a program for hygiene training of farmers on the use of reclaimed water under Activity 1.1.2.3.
  - (b) Prior to second disbursement of the GCF Proceeds under the Project, the Accredited Entity shall deliver to the Fund, in form and substance satisfactory to the GCF, a complete study describing:
    - (i) technical specifications of water reservoirs and/or alternative treatment processes to be constructed and installed under Activity 1.1.2.1 and their treatment processes together with the related calculations;
    - (ii) management and maintenance arrangements to be implemented with respect to such water reservoirs and/or alternative treatment processes.

Covenant

- (c) The Accredited Entity shall ensure that the technical specifications of the water reservoirs and/or alternative treatment processes and their construction under Activity 1.1.2.1 comply at all times with (i) the Jordanian and World Health Organization standards on elimination of the presence of nematodes, and (ii) the Jordanian regulations on reuse of reclaimed water; and
- (d) The Accredited Entity shall ensure that Activity 1.1.2.1 shall be implemented in accordance with the study delivered by the Accredited Entity to the GCF Secretariat pursuant to paragraph b(i) above.

## Response from the accredited entity to the independent Technical Advisory Panel's assessment (FP155)

Proposal name:	Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCCJ)
Accredited entity:	Food and Agricultural Organization of the United Nations (FAO)
Country/(ies):	Hashemite Kingdom of Jordan
Project/programme size:	Small

### Impact potential

*Max 100 words*

FAO takes note of the assessment.

### Paradigm shift potential

*Max 100 words*

The project's innovation lies on combining different aspects of water management to ensure a paradigm shift in the country at different levels. While individual technologies have been implemented in Jordan, their combination has not. For example, at the household level behaviour changes arising from rational water use and rainwater harvest will change the water availability and resilience of households to climate change induced water scarcity.

### Sustainable development potential

*Max 100 words*

FAO takes note of the assessment

### Needs of the recipient

*Max 100 words*

FAO takes note of the assessment.

**Country ownership**

*Max 100 words*

FAO takes note of the assessment.

**Efficiency and effectiveness**

*Max 100 words*

FAO takes note of the assessment. FAO would like to point out that all financial and economic models include costs of the implementation of climate-adaptive techniques in the Economic and Financial Analysis. Table 2 presented in paragraph 48 was corrected in Annex 19 table 26 page 27, and is now aligned with Annex 3 tables (Summary II excel tab), including costs of the implementation of climate-adaptive techniques (all changes reflected in the version shared with GCF Secretariat on 15 January 2021).

***Overall remarks from the independent Technical Advisory Panel:***

*Max 250 words*

FAO thanks the iTAP for its review. As reported by iTAP, this project represents the first GCF project in Jordan. It has the potential to significantly transform water use in the country. In addition, the model proposed by this project can be scaled up and replicated in other areas of the region and of extreme water scarcity through a programmatic approach and in a coordinated manner.

FAO agrees to the proposed conditions prior to first and second disbursement.

- (i) Prior to second disbursement of the GCF Proceeds under the Project, the Accredited Entity shall deliver to the Fund, in form and substance satisfactory to the GCF, a complete study describing:
  - a. technical specifications of water reservoirs and/or alternative treatment processes to be constructed and installed under Activity 1.1.2.1 and their treatment processes [together with the related calculations];
  - b. management and maintenance arrangements to be implemented with respect to such water reservoirs and/or alternative treatment processes; and
- (ii) Prior to first disbursement of the GCF Proceeds under the Project, the Accredited Entity shall deliver to the GCF Secretariat, in form and substance satisfactory to the GCF, a program for hygiene training of farmers on the use of reclaimed water under Activity 1.1.2.3.

As well as the proposed covenants.

# **Gender documentation for FP155**

## **Annex 8: Gender Assessment and Project Level Action Plan**

**Building resilience to cope with climate change in Jordan through improving water use efficiency in the agriculture sector (BRCCJ)**

**July 6, 2020**

## LIST OF ABBREVIATIONS

AWO	Arab Women's Organisation
CBOs	Community-Based Organisations
CCGAP	Climate Change Gender Action Plan
CEDAW	Convention on the Elimination of all Forms of Discrimination Against Women
FAO	Food and Agriculture Organisation of the United Nations
GBV	Gender-Based Violence
GDI	Gender Development Index
GII	Gender Inequality Index
HDI	Human Development Index
HERD	Healthy Ecosystems for Rangeland Development
IUCN	International Union for Conservation of Nature
JOHUD	The Jordanian Hashemite Fund for Human Development
KEIs	Key Expert Interviews
MoA	Ministry of Agriculture
MoE	Ministry of Environment
NGOs	Non-Governmental Organisations
NSW	National Strategy for Women in Jordan
REGEP	Rural Economic Growth and Employment Project
RGEI	Regional Gender Equality Index
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Populations Fund
UNHCR	United Nations High Commission for Refugees

## Introduction

1. The objective of the gender assessment is to facilitate and inform gender mainstreaming in the Full Funding Proposal to the Green Climate Fund (GCF) for the project titled “Building Resilience to Climate Change in Jordan”. The assessment aims to provide an overview of the gender situation and dynamics in Jordan, with particular focus on the impact of climate change on women and their role in adapting to it. It seeks to identify key gender issues in climate change adaptation and strategies for increasing women’s agency in development interventions for climate resilience through a review of relevant national policies, plans, research studies, donor initiatives and stakeholder consultations. The findings of the assessment have been used to make the project gender sensitive as well as identify specific opportunities to enhance women’s agency to deal with climate risks. Part 1 of the report provides an overview of the gender situation in Jordan and Part II provides a Gender Action Plan and the gender strategy for the project.
2. A number of key interviews were conducted with experts (KEIs) to understand how climate change was impacting the agriculture sector and its gender assessment aspects. The meetings were conducted with experts from the following agencies: Ministry of Agriculture (MoA), National Agriculture Research Center (NARC), Gender Unit in Ministry of Water and Irrigation, NAJMA Coalition from Jordan Hashemite Fund (JOHUD), Department of Statistics (DoS), Partners for Good, International Union for Conservation of Nature (IUCN), UN Women, Jordan River Foundation (JRF). The team also had extensive meetings with the JRF team which has been working with women in the villages including both Syrian Refugee and host communities to understand how these agencies had engaged women in the target Governorates. The key findings from these interviews include the following: women are disproportionately affected by climate change with unequal access to resources and assets, barriers to decision-making and limited mobility; women have a critical role to play as agents of change in climate resilience and their full capacity and agency needs to be unlocked through promoting better awareness and clear vision of women’s role among women and men, building women’s knowledge of climate change and adaptation practices, and by the provision of networking and leadership opportunities; affirmative action, including setting quotas is necessary to create a level playing field for women’s increased access and control over resources; interventions have to be customized to women’s specific needs, priorities and circumstances in a given context for them to be able to access and benefit from them; and women in leadership / decision-making positions have a powerful impact both for opening pathways for other women as well as increasing women’s access to resources.

### *Community Consultations*

3. Two consultations were held in the target governorates of Madaba and Karak, reaching 131 women and 7 men with the support of NIJME Coalition – JOHUD. Women and men mostly commented on how the difference in temperatures had affected their crops and livelihoods, the water shortage and its effect on agriculture and water for domestic purposes. Water shortage had increased problems with soil,

leaving it saltier in Madaba and drier in Karak. Most participants had heard of rooftop harvesting, water storage techniques and water saving techniques and expressed an interest in these. In addition, men and women were interested in the following: knowledge of climate change and adaptive practices; water harvesting and water-saving; marketing of food products; entrepreneurship training; financial support for agriculture and micro-enterprises.

4. The design team visited all four project Governorates in February 2020 and had detailed discussions with women extension agents in the Directorate of Agriculture in the project area and met with the technical staff of NARC research centres as well as the technical staff in NARC to discuss the potential opportunities to engage women. The Director General of the Extension Department also helped organize meetings with her staff in the project Governorates to understand how women could be involved in the project. The team also met with the staff conducting the Farmer Field Schools for both men and women to learn from their experience of implementing the IFAD financed REGEP project. The design team reviewed NARC's extensive experience with the Association of Agriculture Engineers to identify and train women agricultural engineers in the North of the country in the REGEP project, thus building a cadre of women extension agents skilled in the FFS approach. NARC has trained women FFS facilitators and developed curricula for the identified target crops in cooperation with FAO in October 2016 which it is currently implementing. Some of the new technologies the project will be promoting have already been tried and tested by NARC.

## **Part 1: Overview of Jordan's Gender Profile**

5. Women constitute about 47.1 percent of the total population of Jordan.<sup>1</sup> Although Jordan's Human Development Index places it in the high human development category, its score on the Gender Development Index (GDI), 147<sup>th</sup> out of 168, is low and points to significant gender differences between women and men in health, knowledge and living standards. The 2020 Global Gender Gap report ranks Jordan 138 out of 153 countries<sup>2</sup> based on indicators of economic participation and opportunity, educational attainment, health, survival, and political empowerment. The Women in Politics 2019 map ranked Jordan 132 out of 193 countries, mapping women's political participation in parliaments worldwide. This rank was achieved through the gender quota system adopted in 2003, where later revisions to the system increased the allocated seats for women from 6 to 15 parliamentary candidates.
6. The Gender Inequality Index (GII) which measures gender inequalities across reproductive health, empowerment and labour market participation, and is a measure of the human development cost stemming from gender inequality, has decreased between the year 1995 and 2016, from (0.672) to (0.461), suggesting some progress towards closing the gender gap<sup>3</sup>. Jordan ratified the revised Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) in 2007. The CEDAW requires all signatories to eliminate discrimination against women in all areas of economic and social life. In addition, it requires that "States Parties shall take all appropriate measures to eliminate discrimination against women in rural areas in order to ensure, on a basis of equality of men and women, that they participate in and

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<sup>1</sup> Government of Jordan, Jordan in Figures, Department of Statistics, 2018

<sup>2</sup> World Economic Forum, Global Gender Gap, 2020

<sup>3</sup> Department of Statistics data, Gender Indicator Tables, Population, Kingdom, 2010 - 2017

benefit from rural development”. The rights specified include the following: to participate in the elaboration and implementation of development planning at all levels; to obtain all types of training and education, formal and non-formal, including that relating to functional literacy, as well as, inter alia, the benefit of all community and extension services, in order to increase their technical proficiency; to organize self-help groups and co-operatives in order to obtain equal access to economic opportunities through employment or self-employment; to have access to agricultural credit and loans, marketing facilities, appropriate technology and equal treatment in land and agrarian reform as well as in land resettlement schemes; and to enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communication.

7. **Health:** The World Health Organization (WHO) categorizes Jordan, as a country in early nutrition transition, whereby widespread micronutrient deficiencies and moderate levels of under-nutrition in specific populations and age groups exist along with moderate overweight and obesity.<sup>4</sup> Chronic malnutrition among Jordanian children is relatively low. Eight percent of children are stunted or chronically malnourished, with 2 percent severely stunted, 3 percent underweight, and 4 percent overweight. Infant and under-5 mortality rates in the past five years are 17 and 19 deaths per 1,000 live births, respectively. Under-5 mortality declined by 46 percent over the last 23 years from 39 deaths per 1,000 live births in 1990 to 19 deaths per 1,000 live births in 2017. The neonatal mortality rate is 13 deaths per 1,000 live births, which is two and a half times the post-neonatal rate<sup>5</sup>. The perinatal mortality rate is 13 per 1,000 pregnancies. Eighty-six percent of Jordanian children age 12-23 months are fully immunized. Breastfeeding is common in Jordan with 92 percent of children ever breastfed, and half of children breastfed for about 12 months or longer. Overall, only one-third of children age 6-23 months are fed appropriately based on recommended infant and young child feeding practices. Thirty-two percent of children aged 6-59 months are anaemic, 21 per cent are mildly anaemic, 10.5 percent are moderately anemic, and less than 1 percent are severely anaemic.<sup>6</sup>
8. An alarming 54 percent of women are overweight or obese. Forty-three percent of women aged 15-49 are anemic, 36 percent are mildly anemic, 6.3 percent are moderately anemic, and less than 1 percent are severely anemic. Almost all women (98 percent) received antenatal care from medically trained personnel; the majority of women (95 percent) received care during pregnancy from a doctor. Seventy-nine percent of women make seven or more antenatal care visits during their entire pregnancy. Twenty-eight percent of mothers with a birth in the five years preceding the survey were protected against neonatal tetanus. An overwhelming majority of births (98 percent) in the five years preceding the survey were delivered in a medical facility. Three in four births (89.1 percent) were delivered by a doctor. Eighty-three percent of mothers received postnatal care from a doctor, nurse, or midwife within the critical first two days after a delivery. Between 2012 and 2017-18, the total fertility rate fell from 3.5 to 2.7 children. This decline is especially notable because the TFR had remained relatively stable, at 3.5 to 3.8 children per woman, during the decade between the 2002 and 2012 surveys<sup>7</sup>

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<sup>4</sup> WHO MENA Regional Nutrition Strategy 2010-2019 and Plan of Action

<sup>5</sup> Jordan Population and Family Health Survey (2017-18), Department of Statistics, Hashemite Kingdom of Jordan

<sup>6</sup> Jordan Population and Family Health Survey (2017-18), Department of Statistics, Hashemite Kingdom of Jordan

<sup>7</sup> Ibid

9. **Gender-Based Violence (GBV):** According to the UNFPA scorecard for GBV for Jordan, it is recorded that 79 percent of women between 18-64 years old have experienced domestic violence in their life, with 14 percent of ever-partnered women aged 15-49 years having experienced sexual violence and/or rape by their partner within the 12 months of the survey, and 24 percent in their lifetime<sup>8</sup>. In the target governorates the percentage of ever-married women who have experienced emotional, physical, or sexual violence committed by their spouse is as follows: Madaba 24 percent, Karrak 10 percent, Tefila 15 percent Maan 29 percent. Furthermore, between 15 and 20 women are victims of honour killings every year, on average, and it reached as high as 30 in 2016<sup>9</sup>.
10. **Education:** In 2018 adult female illiteracy rate was 7.2 percent, whereas it was only 3.1 percent for adult men.<sup>10</sup> There is a positive correlation between education and economic participation with 56 percent of employed women holding a graduate or higher degree. Twenty-two per cent of unemployed women are educated and hold an intermediate college or higher diploma<sup>11</sup>.
11. **Unemployment:** Unemployment rates in Jordan have remained between 12 and 14 percent, approximately 11 percent for males and 20 percent for women, for over a decade. Unemployment rate for the fourth quarter of 2019 have reached 19 percent, an increase by 0.3 percentage points since 2018. Two groups that are particularly affected are women and youth.<sup>12</sup> There is not a strong bivariate link between labour force status and poverty, but this is related to the pervasiveness of female non-participation and the size of the public sector.<sup>13</sup>
12. **Women's economic participation:** Jordan has the lowest female labour force participation in the world of a country not at war. Women face particular obstacles and disincentives to economic participation. Within the MENA region, Jordan's female labour force participation rates lies in the bottom half, below the regional average of 25 percent. In 2017, the female labour force participation rate in Jordan was about a fifth of that of males (17.7 percent versus 59.4 percent). A World Bank study shows a 12.3 percent gap in average wages between men and women in Jordan, rising to 17percent in the private sector. The average monthly wage for men is JD 403 [USD\$ 568], compared to JD 359 [US\$ 506] for women.<sup>14</sup> It is worth noting that for decision making professions; this discrepancy was much higher, for example female legislators, senior

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<sup>8</sup> UNFPA, Jordan Scorecard on Gender Based Violence

<sup>9</sup> Ibid.

<sup>10</sup> Gender Statistics, Department of Statistics, Hashemite Kingdom of Jordan

<sup>11</sup> World Bank, *Hashemite Kingdom of Jordan – Understanding How Gender Norms in MNA Impact Female Employment Outcomes (English)*. Washington, D.C. : World Bank Group, 2018.

<sup>12</sup> Department of Statistics, Hashemite Kingdom of Jordan, (2019)

<sup>13</sup> Systematic Country Diagnostic February 2016 Middle East and North Africa Region, The World Bank Group

<sup>14</sup> Department of Statistics, Hashemite Kingdom of Jordan, 2013

officials and managers are paid about 32 percent less than men.<sup>15</sup>

**Table 1**  
**Economic Activity and Unemployment by Educational level, 2015**

Educational level	Economic activity rate		Unemployment rate	
	Female	Male	Female	Male
Illiterate	1.1	16.4	0	8.3
Less than secondary	3.2	60.4	8.9	11.2
Secondary	4.6	42.1	12.3	7.7
Intermediate diploma	28.0	75.1	19.6	8.7
Bachelor & Above	55.8	80.7	27.2	12.8
<b>Total</b>	<b>13.3</b>	<b>60.0</b>	<b>22.5</b>	<b>11.0</b>

*Source: Department of Statistics, 2016 (Employment & Unemployment)*

13. Despite many efforts directed toward enhancing women's role in the society and in the economy, there has been little progress in women's economic participation. Employer preferences based on gender stereotypes and the heavy burden that labour legislation places on businesses to protect female employees, as well as social constraints on what kind of work is acceptable for women, have repercussions in the hiring process. Taboos are focused on women in the workplace (particularly in construction, outdoor sales, transport services, manufacturing and machinery, and hospitality), the type of work (agricultural tasks and manual labour), and the work conditions (late shifts). The highest gender gap is evident in the agricultural sector where women make up 65 percent of farm labourers.<sup>16</sup> However, the percentage of agricultural holdings headed by women amounted to only 7 percent in Jordan in 2017.<sup>17</sup> Only 44 per cent of households headed by women own agricultural land and 30 per cent own livestock. Instead, 68 per cent of households headed by men own land and 36 percent of them own livestock.<sup>18</sup>
14. **Gender Norms Impacting Women's Economic Participation:** A World Bank study<sup>19</sup> indicates that the large majority of Jordanians are in favor of women working outside the home and almost two-thirds of non-working women would like to work. Women's preferences and personal beliefs are not a major obstacle to participation, therefore they would likely respond favorably to policies that address some of their binding constraints. Intra-household expectations (i.e. expectations of respondents about their counterpart's beliefs) matter in female labour force participation decisions. Both men and women agreed that men are the ultimate decision makers in the household; including deciding for women on whether to accept a job offer or not.
15. The World Bank Study concluded that beliefs and expectations about women working in mixed-sex environments pose certain barriers for women. This may be partially attributed to fears about harassment, as 44 percent of participants in the study believe that working women are exposing themselves to harassment. These beliefs may not

<sup>15</sup> World Bank, Hashemite Kingdom of Jordan, Understanding How Gender Norms in MNA, Impact Female Employment Outcomes, June 1, 2018

<sup>16</sup> [www.acted.org/en/jordan-women-rural-communities-trained-leaders-agriculture-and-advocates-action-climate-change](http://www.acted.org/en/jordan-women-rural-communities-trained-leaders-agriculture-and-advocates-action-climate-change)

<sup>17</sup> Department of Statistics/ Agricultural Census, Hashemite Kingdom of Jordan, 2017

<sup>18</sup> <https://www.ifad.org/documents/10180/e62f2d11-7f5c-4fd5-a491-5427992d7eb7>

<sup>19</sup> World Bank, Hashemite Kingdom of Jordan, Understanding How Gender Norms in MNA, Impact Female Employment Outcomes, June 1, 2018

only restrict the types of jobs women can take up (i.e. jobs in mixed-sex workplaces), but also give rise to additional concerns about personal safety and reputation when deciding whether to work. Many working women (58 percent) believe that it is okay for women to work in environments where most other employees are men.

16. Irrespective of whether women are employed outside the house, societal expectations are that women should take care of all the household chores (cooking, cleaning, caring for children, taking them to school, etc. Men's contribution to household chores is negligible, regardless of women's work status, (except when it comes to feeding children). For women, getting married is one of the key reasons for exiting the labour market. Nevertheless, the main reason for women not working or disengaging from the work force is having children. The long working hours made it difficult for to juggle work, taking care of a newborn, and household responsibilities.
17. In summary, some of the most important binding constraints for women's economic participation are lack of childcare, lack of flexibility in working conditions, unavailability of part-time work, hiring and wage discrimination, limited job growth, lack of adequate public transportation, particularly in rural areas, scarcity of attractive job opportunities, and lack of jobs in the public sector. A key driver for women's employment in Jordan is financial need. When asked about the circumstances that would make women consider working or joining the workforce, the majority of participants answered that the high cost of living would force them to find a job.
18. **Women's Legal Status:** Equality before the law for all is guaranteed by Article 6 of the Jordanian Constitution, which however does not include an article addressing gender inequalities or criminalising discrimination on the basis of sex<sup>20</sup>. Women have reduced legal rights in comparison with their male counterparts, especially due to the absence of a provision in the constitution to safeguard women's equal status, restricted residency and citizenship rights for their children. Most importantly, the treatment of women as legal minors under the Personal Status law leaves women and girls under male legal guardianship on matters of marriage, divorce, alimony and financial guardianship of their children. Although Jordan raised the legal age of marriage to 18 for both men and women in 1999, it allowed girls and boys younger than 18 to marry in exceptional circumstances. Exceptional circumstances were never defined, so the practice of early marriage continued, affecting mostly girls. Finally, while women are entitled to inheritance, daughters receive half the share compared to sons.
19. There are some specific articles of the Penal Code that affect violence against women, such as Article 292 no 16 of 1960 which criminalises rape, stating that rape outside of marriage is punishable by 15 years in prison. Article 305 and 306 under the Penal Code make sexual harassment punishable by law as the offence of unwanted sexual contact. In 2017 Article 98 of the Penal Code was amended, preventing reduction of penalties for 'honour crime'. However, Article 340 is still included, allowing for reduced sentencing for the murder of a spouse if they are caught in the act of adultery<sup>21</sup>. The Law on Protection from Domestic Violence, No. 15 of 2017 protects women against domestic violence, however it does not include a definition of what constitutes domestic violence.
20. Jordanian laws addressed several issues related to women such as maternity leave, breast feeding hour, providing a suitable place for children less than four years,

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<sup>20</sup> UNDP, Jordan Gender Justice and the Law, 2018

<sup>21</sup> [http://www.kinghussein.gov.jo/const\\_ch1-3.html](http://www.kinghussein.gov.jo/const_ch1-3.html)

prohibiting the termination of jobs for women who are 6 months pregnant and above or during maternity leave, prohibiting assigning tasks that are dangerous or threatening to women's health and equal treatment of men and women, with no discrimination. However, these provisions have not been sufficient for improving the participation of women in the economy. In reality, there are violations against these rights and there are no explicit statements in Labor Law that require equal pay for men and women.

21. **Women's political participation and representation:** Women were granted the right for voting and candidacy for the Lower House and Parliament and municipal and village councils in 1974 and 1982 respectively (CEDAW, 1997). To ensure the political participation of women, the Government took an affirmative action and amended the Electoral Law in 2003 to include a quota for women.<sup>22</sup>

### **National Strategies and Policies for Gender Equality**

22. The Kingdom of Jordan has introduced policies and strategies to mainstream gender. The most recently approved and adopted, 2020-2025 National Strategy for Women in Jordan, aims to end "all forms of gender-based violence and discrimination" and is devoted to ensuring that all women and girls will reach their full human rights potential with equal opportunities, to ensure sustainable development for the Kingdom. Furthermore, the King Hussein Foundation Information supported the Jordanian National Commission for Women and Research Centre to develop guidelines for mainstreaming gender and highlighting gender priorities related to the Jordan 2025 Vision. The National Poverty Reduction Strategy (2013-2020) emphasises equal rights for women; promotion of positive cultural practices, traditions, and mindsets that promote respect for human rights values and advancement for women; amending or enacting new laws that deliver justice to the poor, women and vulnerable groups against any discrimination in any form and ensuring that women and vulnerable citizens are protected from any violence, abuse and exploitation and are supported to enjoy all their rights as Jordanian citizens.<sup>23</sup>
23. Jordan has a host of national strategies to address the impacts of climate change, as well as to work towards minimising emissions. In the following policies, the importance of women's participation and active role in the adaptation to climate change are highlighted: National Strategy and Action Plan to Combat Desertification 2015-2020, the National Biodiversity Strategy and Action Plan 2015-2020, and the National Water Strategy 2016-2025. The Plan to Combat Desertification states that the revised plan will include gender sensitive investments to alleviate the disproportionate effects of decreasing food security in particular and increasing poverty on women, as a result of deforestation<sup>24</sup>. The National Water Strategy studies the crosscutting challenges in relation to gender equity in the water sector and emphasises the importance of gender mainstreaming in the water sector. It recognises the crucial role women play as providers and users of water, as well as key actors in the protection of the environment. An objective of the plan is to include women in the decision-making processes and in-service delivery implementation as a measure to enhance women's

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<sup>22</sup> (UNDP) in collaboration with the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women), the United Nations Population Fund (UNFPA) and the United Nations Economic and Social Commission for West Asia (ESCWA), Jordan Gender Justice and the Law, 2018.

<sup>23</sup> <https://www.undp.org/content/dam/jordan/docs/Poverty/Jordanpovertyreductionstrategy.pdf>

<sup>24</sup> <http://extwprlegs1.fao.org/docs/pdf/jor165358.pdf>

participation and increase access to their knowledge and understanding of socio-economic, environment, and cultural issues relevant to the water sector<sup>25</sup>.

24. Furthermore, in the National Strategy for Women in Jordan (NSW 2020-2025), the conservation of the environment constitutes a sub-section with specific objectives and activities. This a sub-section states that women’s role in the conservation of environment and its development must be enhanced. Mitigating for volatile changes to the climate has a set of proposed measures, including integration of existing knowledge and expertise of rural women in sustainable management of natural resources; supporting existing initiatives of recycling; facilitating access of women working in agriculture to increase their skills, knowledge and sustainability of technologies as well as to train them to be agents of climate sustainable agriculture themselves; working towards enhancing women’s sense of responsibility for mitigating the risks of climate change.

### Gender and Climate Change

25. Climate change presents one of the biggest threats to development, and its widespread impacts affect the most vulnerable groups specially in developing countries. In Jordan, climate change is expected to have varied impacts on its climate, natural resources and local communities. The National Adaptation Plan assesses that climate change influence on women and vulnerable groups is linked largely to its socio-economic impacts. The poor in rural areas in Jordan are expected to face the most severe consequences of climate change through disruption of livelihood options that depend on natural resource management. The expected impacts of climate change, particularly reduced agricultural productivity and water availability threaten livelihoods and keep vulnerable people insecure. Poor families and households are the most vulnerable group to the impacts of climate change and have to be prioritized when designing appropriate adaptive measures.<sup>26</sup> Climate change is expected to exacerbate current gender inequalities.

**Table 2: Potential Socioeconomic Factors resulting in higher climate vulnerability<sup>27</sup>**

Household or Individual Vulnerability	Communal Vulnerability (National, regional or community level)
<ul style="list-style-type: none"> <li>▪ Increase cost of living, decreasing Purchasing Power Parity (PPP)-Per capita Income</li> <li>▪ Child malnutrition, disorder, disability, morbidity</li> <li>▪ Poverty and household expenses)</li> <li>▪ Social Welfare, (home apparatus , air conditions etc)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Food insecurity (Food Availability, Local Production, Distribution, Affordability)</li> <li>▪ Uneven Income Distribution,</li> <li>▪ Food Price Instability</li> <li>▪ Malnutrition</li> <li>▪ Poverty</li> <li>▪ Unemployment</li> <li>▪ Gender inequality</li> <li>▪ Rural Migration (urbanization)</li> <li>▪ Past losses and damages due to Natural Disaster</li> </ul>

<sup>25</sup> <http://extwprlegs1.fao.org/docs/pdf/jor156264E.pdf>

<sup>26</sup> Ministry of Environment. National Adaptation Plan. February 2020.

<sup>27</sup> Ministry of Environment. National Adaptation Plan. February 2020.

26. Jordan ranks amongst the top ten water-poor countries in the world, and this situation is likely to be exacerbated in the future, with dire consequences for agriculture, food security, and sustainable livelihoods<sup>28</sup>. The Initial National Communication to the UNFCCC has concluded that Jordan will experience decreasing rainfall and irregular water availability, increasing temperature with higher frequency of heat waves and dust storms. Due to the expected changes in climate and decreasing water availability, water supply to households will be insufficient, posing serious challenges of water equity across income classes disproportionately affecting already vulnerable people. The availability of water for agricultural activities will also be affected. Water scarcity has led to an increased utilisation of treated wastewater, both for food production and for farming, which has again led to an increase in diseases related to water-borne bacteria<sup>29</sup>. Furthermore, the decreasing rainfall will drive agricultural areas that are historically rain-fed into irrigated agriculture. The impact of climate change for Jordan is disproportionate to the Kingdom's emissions, as the ecosystem is heavily dependent on the current volume of rainfall and the hydrological cycle. Jordan recognized these risks and has been taking active measures to combat the effects of climate change.
27. The NAP recognizes that depletion of natural resources and decreasing agricultural productivity may place additional burdens on women's health and reduce time available to participate in decision making processes and income generating activities. Therefore, promoting gender equality and empowering women is considered an integral to the climate change adaptation plan.<sup>30</sup> Jordan developed a Climate Change Gender Action Plan (ccGAP) with the support of IUCN. The main objective of the ccGAP was "to ensure that national climate change efforts in Jordan mainstream gender considerations so that women and men can have access to, participate in, contribute to and hence optimally benefit from climate change initiatives, programs, policies and funds"<sup>31</sup>. The main priority sectors of ccGAP include water, energy, agriculture and food security, and waste reduction and management. It lists examples of various gender sensitive actions and interventions to increase the inclusion of women in the sector, as a fundamental part of mitigating climate change risks. It recognizes that women living in rural communities are heavily dependent on agriculture to secure their livelihoods and are thus more vulnerable to climate changes.
28. The Jordan Climate Change Gender Action Plan (ccGAP) report inspired the government to declare gender equality as a national priority in the country's response to climate change and to create a permanent seat for women's groups at its national climate change decision-making body. Some of the many innovative ideas on how to engage women include: encouraging families to increase energy efficiency through the enforcement of construction codes and reducing carbon footprints by supporting women's campaigns for reducing household emissions; promote women's participation in small-scale enterprises and food processing transformation industries; and conduct "training of trainers" sessions for community centre representatives, school teachers and Imams and priests
29. The National Climate Change Policy of the Hashemite Kingdom of Jordan (2013-2020) recognises that "women make crucial contributions in agriculture and rural enterprises in dry lands as farmers, livestock herders, workers and entrepreneurs, and that negative impacts of climate change will be the most felt by them". According to a study

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<sup>28</sup> IUCN, Jordan Climate Change Gender Action Report, 2010

<sup>29</sup> IUCN, Jordan Climate Change Gender Action Report, 2010

<sup>30</sup> Ministry of Environment. National Adaptation Plan. February 2020.

<sup>31</sup> IUCN, Jordan Climate Change Gender Action Report, 2010

by the UNHCR, women “play a significant role” in attending to the environmental impacts of climate change and increasing communities’ abilities to adapt to the increasing volatility caused by climate change<sup>32</sup>. Women have critical roles as educators, caretakers, practitioners, and agents of change in climate resilience. As the main custodians of the households, they play an important role in water management and household sanitation and waste management; their role is fundamental to all efforts of introducing low emission, clean energy into households: women are the principal caretakers of animals, home gardens, and decision-makers about household nutrition and make the majority of decisions on consumption for the household.

30. A study by UNWOMEN on Rural Women and Climate Change highlighted the following findings: rural women’s existing theoretical knowledge and understanding of climate change and adaptation remain limited, impeding their ability and willingness to act and find long term adaptive solutions; rural women rely on their existing field experience and coping mechanisms to deal with changing climate conditions, but they are not yet capacitated to build on their traditional knowledge to develop appropriate sustainable adaptation strategies; rural women consider the lack of awareness raising, networking opportunities and leadership capacities as the main obstacle to their participation in addressing climate change in their communities; rural women lack a clear vision regarding their role, real or prospective, in decision-making for climate change adaptation, limiting their ability to advance community resilience as potential actors of change.
31. This study came to the following conclusions (i) in rural communities, empowering women at multiple levels to build both personal and professional skills will support the evolution of a new generation of female champions and advocates of climate change knowledge and resilience; (ii) the increased participation and leadership of women in the labour force, in entrepreneurial activities and in civil society, will enable them to gain power and influence in gender and climate change policies and adaptation plans at the local and national level in Jordan; (iii) the launch of Jordan’s National Adaptation Plan is a new opportunity to bridge the gap by empowering women to involve in decision-making, developing gender-inclusive policies and strategies, and fostering the inclusive participation of civil society; (iv) enabling a conducive learning environment by building on rural women’s existing expertise and ability to communicate to develop a common understanding of key climate change aspects and processes; (v) promoting sustainable and well-designed gender action plans fostering rural women’s capacities to act and make significant achievements in adapting to climate change; (vi) Strengthening rural women’s voices and leadership capacities to advocate for gender-sensitive strategies and policies of adaptation to climate change.
32. **Women-Headed Households:** Estimates in 2019 report that 14% of the households in Jordan are women headed ([\(DoS, 2019\)](#)). In rural areas of Jordan, women are more vulnerable to the effects of climate change than men are, particularly because women constitute the majority of the poor and are dependent for their livelihoods on natural resources that are threatened by climate change. In the country, almost 9.1% of female-headed households are food insecure or vulnerable to food security, compared to 5.7% of male-headed families (DoS 2013). Furthermore, women face significant social, economic, and political barriers that negatively affect coping capacities. Women charged

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<sup>32</sup> UN Women, Rural women and climate change in Jordan, 2016

with the responsibility to secure water, food, and fuel for cooking and heating face the greatest challenges. When coupled with unequal access to resources, barriers to decision-making processes and limited mobility, women in rural areas are placed in a position wherein they are disproportionately affected by climate change. It is therefore of critical importance for gender-sensitive strategies to be identified and developed to respond to the environmental and humanitarian crises caused by climate change ([OCHA, 2018](#)).

33. Jordan has been recognized as the first country in the Middle East and North Africa (MENA) region to focus on mainstreaming gender and vulnerable groups into its climate change policy as the result of a long term and multi collaboration amongst ministries, national organizations and international delivery partners. The four main climate change policies give important basis for gender mainstreaming and the inclusion of vulnerable groups in adaptation efforts in the country. However, the NAP recognizes that challenges for an effective mainstreaming of gender and vulnerable groups' issues into climate change policies still remain. The National Climate Change Policy 2013-2020 provides general recommendations for gender mainstreaming, but states that it needs "further guidance is needed on practical solutions and specific criteria to integrate gender and vulnerable groups into policies, strategies and plans for climate change adaptation."<sup>33</sup>
34. However, in highly exposed rural and agricultural communities, Jordan is missing out on a strategic partnership with women, who have a significant role to play in addressing climate change, building capacities for adaptation and strengthening local community resilience. In rural areas of Jordan, women are more vulnerable to the effects of climate change than men are, particularly because women constitute the majority of the poor and are dependent for their livelihoods on natural resources that are threatened by climate change. When coupled with unequal access to resources, barriers to decision-making processes and limited mobility, women in rural areas are placed in a position wherein they are disproportionately affected by climate change.
35. It is therefore of critical importance for gender-sensitive strategies to be identified and developed to respond to the environmental and humanitarian crises caused by climate change.<sup>34</sup> NAP assesses that challenges for an effective mainstreaming of gender and vulnerable groups faces the following challenges.

#### **Box 1: Challenges for Mainstreaming Gender**

##### **Challenges for an effective mainstreaming of gender and vulnerable groups issue**

- Non-availability of practical guidance and specific criteria to integrate gender and vulnerable groups concerns into climate change policies and programmes.
- Very limited studies available on socio-economic impacts of climate change on women and vulnerable groups, regarding their respective vulnerability and adaptation capacity.

<sup>33</sup> Ministry of Environment. National Adaptation Plan. February 2020.

<sup>34</sup> UN Women, Rural Women and Climate Change in Jordan, 2016

- Lack of involvement of the most vulnerable groups, especially women's community-based organizations in (rural) local adaptation programs.
- Lack of sustainable funds to increase the adaptation and resilience capacity of women and vulnerable groups.

(Source: NAP. February 2020)

### Key Initiatives in Climate Change with a Gender Focus

36. **Water Wise Women:** The German Federal Ministry for Economic Cooperation and Development (BMZ) and GIZ supported the Ministry of Water and Irrigation in promoting employability and economic empowerment of women in the water sector. Although in Jordan, the educational system ensures equal access to girls and boys and women are highly educated, social norms and traditions restrict women. The Water Wise Women initiative focussed on increasing women's agency and breaking limiting social norms which dictated, for example, that only men can be plumbers and did not recognize women's key role in water management inside the house. The initiative recognized the significant role women play in water management at the household and community level and sought to develop an approach which would lead to sustainable, efficient water use by engaging women as change agents. It empowered local women with appropriate water management measures and water saving techniques.
37. The Wise Water Women are well educated, volunteer women that have been trained on a pool of knowledge in all relevant key aspects of sustainable water management, from issues of efficient water use and saving, health and hygiene, to communication with water providers. Up to 200 women of all ages and educational backgrounds were qualified to become "change agents" in water use and protection. They reach out to their communities and spread the message and appropriate tools. The initiative reached approximately 2000 households in seven communities. Women who were interested have the opportunity to take a plumbing course and receive a repair kit with the required tools.
38. **Results:** Women in the target areas are increasingly aware of water saving and management techniques such as grey water re-use, house-garden drip irrigation, and basic hygiene. Women plumbers were supported to acquire additional licenses from the Jordanian Centre of Accreditation and Quality Assurance "CAQA" to work as plumbers and establish Wise Women Plumber Cooperatives (WWPC). WWPC has had a transformational impact on women as most of them had never worked outside the house before or generated any money. The support generated from governmental institutions and public NGOs is reflected in the National Women Plumbing Campaign under the umbrella of the Ministry of Water and Irrigation or via the different NGOs and local cooperation willing to adapt the same concept to their societies.
39. **Lessons learnt:** The following are the key lessons learnt from this initiative:
  - (i) behavioural change is a process that requires time, constant reinforcement of the key message, and provision of needed information and tools
  - (ii) change agents within the community have to be trusted by the community and "practice what they preach"
  - (iii) change agents who themselves are affected are more effective than outsiders
  - (iv) Interventions for behaviour change need to match a person's willingness to change. The proposed solutions need to be affordable, practical and demonstrate visible results over a short time-span.

40. **Strengthening Women Leadership in Agricultural and National Advocacy in Jordan (2016- 2017):** UN Women prepared a policy brief in partnership with ACTED with funding from the Government of Japan on 'Rural Women and Climate Change in Jordan'. This brief is based on a field study on rural women's leadership and climate change, launched during the last quarter of 2016 in cooperation with Arab Women's Organization and the Center for Women Studies of the University of Jordan (CWS). The study targeted women leaders from Irbid, Mafraq, and Amman, with whom 30 semi-structured interviews were conducted. The brief also draws on the results of 10 focus group discussions held with women from prominent Jordanian institutions in Amman involved in climate change, including the Ministry of Agriculture, the Ministry of Environment, the Royal Scientific Society, the International Union for Conservation of Nature, and the National Center for Agricultural Research and Extension, amongst others (findings discussed under Climate Change and Gender section).
41. **USAID Takamol – Jordan Gender Program (2014-2019):** This is a five-year program funded by USAID and implemented by International Research & Exchanges Board (IREX), focusing on mainstreaming gender at the policy, national, and community levels. The objectives of the program are to expand social dialogue on gender equality and strengthen enforcement and advocacy for female empowerment. Project activities involved supporting gender equity efforts of the Government of Jordan, national dialogue on diverse gender equality topics, gender audit teams to improve conditions for women in the public sector, support networks of leaders and gender champions and provide Small grants to implement gender-related community initiatives throughout Jordan. The program organized the first ever Gender and Climate change conference in Jordan.
42. **Programme for Mainstreaming Gender in Climate Change Efforts in Jordan (2011-2016):** Climate change has a differentiated impact on women and men. Existing social conditions render women more vulnerable than their male counterparts, but they are not helpless victims. Due to their role in society, women have the potential to be powerful agents of change – capable of providing solutions to several climate change challenges. Recognizing the important role that women can play in this regard, the Government of Jordan requested the IUCN to assist in the drafting of a gender sensitive Programme for mainstreaming gender in climate change efforts in Jordan with the financial support of the Government of Finland. The main objective was to ensure that national climate change efforts in Jordan mainstream gender considerations so that women and men can have access to, participate in, contribute to and hence optimally benefit from climate change initiatives, programs, policies and funds. The Programme defined the role that the Ministry of Environment, as implementing agent, would play to initiate and facilitate efforts - both internally, as well as with strategic partners at the national, regional and international levels - to overcome constraints and take advantage of opportunities to promote gender equality within the climate change context. The Program furthermore outlined a framework for integrating a gender perspective in climate change efforts in Jordan over the period.

43. USAID is supporting a Gender Unit in the Ministry of Water and Irrigation. It has conducted a study on the status of women in the water sector. The study recommended developing a gender responsive planning and management system with the objective of enhancing training opportunities, better positions in leadership roles for women and raising gender awareness and emphasize the capability of women to be efficient in the workplace. USAID plans to support the development of a Gender Strategy for the water sector.
44. UN Women is currently working with the Ministry of Environment to mainstream gender in Climate Change. This involves reviewing the Climate Change Strategy from the gender perspective and establishing an infrastructure for gender mainstreaming within the Ministry. The centerpiece of this infrastructure will be an Internal Gender Monitoring Committee with representation from all the units in the Ministry. UN Women plans to organize training to build the capacity of the members of this committee and help it to develop guidelines for mainstreaming gender in all MoE's projects.
45. **Healthy Ecosystems for Rangeland Development (HERD) (2017-2021):** Sustainable Rangeland Management for Biodiversity Conservation and Climate Change Mitigation (Egypt Jordan) is a GCF project implemented by IUCN. Gender mainstreaming in the project will be done with a focus on gender responsive and equitable participation for development planning and implementation, as well as ensuring participation of women and other vulnerable groups in project implementation and community representation and decision-making. This includes training and awareness raising in (i) gender responsive participatory approach in identification of development needs with specific focus on social inclusion of women and other vulnerable groups in the community decision making process such as water user committees, village development committees, etc., (ii) gender responsive monitoring and evaluation of project implementation and progress, (iii) training in community mobilization, management and leadership skills, including training in micro-projects identification and formulation. Currently, IUCN is in the process of submitting a project to the GCF, 'Landscape in the Rift Valley' which will focus on climate change, drylands, water harvesting and mainstream gender. It is currently implementing the HERD project which involves women in livelihood activities and rehabilitation of rangelands.

### **Women in Agriculture**

46. A study conducted by UN Women found that women are engaged across all aspects of agricultural activities, from home-based micro farming, to crop and livestock production. Home-based agriculture was the most prevalent agricultural activity amongst women, with as many as 73 percent only taking part in this, along with other small and medium scale agricultural production initiatives. Only 26% percent of the women were engaged in paid agricultural labour, as opposed to home-based agriculture. Involvement in paid agricultural labour is usually more common among women from poorer economic backgrounds, who are employed informally on commercial farms undertaking medium to large-scale production.<sup>35</sup> Women engaged in agricultural activities were relatively young, married with children, and had low levels

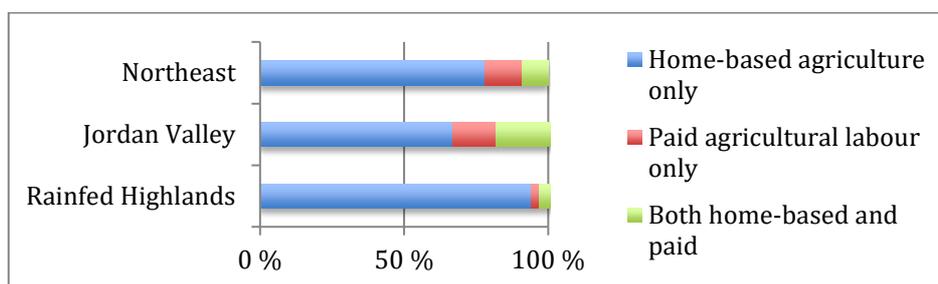
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<sup>35</sup> UN Women & Reach, Women's participation in the Agricultural Sector, Rural Institutions and Community life, 2018

of education<sup>36</sup>. Only 5 percent of the women respondents owned the land being used<sup>37</sup>.

47. The most significant factors motivating women to engage in agriculture were economic factors (income generation and /or the need to produce food for household consumption), personal familial circumstances (lack of alternatives, whole family working on farms as a hobby) and having background knowledge as well as experience in the sector. Economic factors were found to be especially important for women engaging in paid agricultural labour, who are driven primarily by motivating factors such as income generation and the need to meet household expenses as well as for women who lack alternatives or who are not trained to engage in other types of income generating activities.
48. In this study, agricultural areas within the target governorates of Irbid, Mafraq, Balqa and Karak were stratified into three agricultural zones based on prevalence and type of agricultural activity, similarities in climatic conditions and shared ecological/geographic features. : Al-Ghor (Jordan Valley), The Highlands, and the Badia and Desert Region, with varying types of agricultural activities depending on the climate, and availability of arable land. Although demographic characteristics of women engaged in agricultural activities do not differ between agricultural areas, the types of activities they engage in vary depending on the climatic region. Figure 1 depicts the different types of agricultural activity undertaken by women, as reported by the UN Women study.

Figure 1: Type of agricultural activity undertaken by women, by zone



Source: UN Women's Report on Women's Participation in Agriculture

49. The highest percentage of women taking part in both home-based and paid agricultural activity were those in the geographical area of the Jordan Valley<sup>38</sup>, the primary agricultural production area in the country, where agriculture is the main source of livelihood for most of its inhabitants. As most of the employment in the agricultural sector is informal, it is mostly women from vulnerable backgrounds with less economic security who participate, especially and increasingly Syrian refugee women. Women-headed households are often much more vulnerable.
50. The study concluded that women's engagement in agricultural activities has economic importance for their household. An overwhelming majority of women who engaged in agricultural labour and home-based agriculture perceived their involvement to be essential. or 'important' for their household. Respondents of this UN women study further affirmed that their capacity to contribute to their household's income through this engagement enhanced their ability to independently take decisions within the

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> UN Women & Reach, Women's participation in the Agricultural Sector, Rural Institutions and Community life, 2018

household. Home-based agriculture, therefore, appears to be an important source of livelihood for women, as reflected through the significant time committed by women to this activity on an average monthly (21 days per month across seasons) and daily basis (4 hours per day across seasons). This importance of home-based agriculture indicates that women’s role in the agricultural sector specifically, as well as in the rural economy as a whole, can be further enhanced if support is provided to help them expand home-based agricultural production so that they can accrue optimal benefit from these activities. The study also concluded that despite women’s active role in agricultural activities in Jordan, there was limited updated information about women’s involvement and decision-making in the sector, lowering their visibility as farmers.

### Gender Profile of the Target Governorates (Karak, Madaba, Tafilah and Maan)

51. The total population of the four provinces is estimated to be 840,900, with 152,891 households based on an average household size of 5.5. Karak has a population of 350,000, Madaba 209,200, Tafilah 106,500 and Maan of 175,200. It is estimated that women constitute around 49.4% of the total population in the country. The percentage of people living in rural areas is 34.78.<sup>39</sup> According to data from the 2016 Agriculture Census, there were 20,567 individual agriculture holders in the four Governorates with an average farm size of 2.8 hectares of which 14 percent relied mainly on agriculture as a source of income. The households in the area practise a mixed farming system and 36% rely on both crops and livestock

**Table 3: Agriculture Profile of Project Area**

Source:	Population	Individual Holders	Household members	Av. Size HH	Agriculture Main Source Income	Crop Area (ha)
Madaba	189,192	4,288	23,416	5.5	356	7,928
Ma'an	144,083	4,143	22,419	5.4	408	23,452
Tafilah	96,291	2,841	15,833	5.6	298	5,726
Karak	316,629	9,295	51,257	5.5	1,761	27,111
<i>Subtotal</i>	746,195	20,567	112,925	5.5	2,823	64,216
Country	9,523,000	101,708	552,177	5.4	16,477	281,860
%	8%	20%	20%		17%	23%

52. **Education:** Wide gender gaps are evident in education with women more likely to be illiterate than men. However, school attendance rates seem to indicate that an almost equal number of boys and girls were enrolled in basic and secondary education highlighting and possible improvement in literacy rates among the young generations. Data for vocational training in agriculture shows clearly that the sector is male dominated with 3 out of 4 governorates having no female students at all

**Table 4: Education by Gender in the Governorates**

<sup>39</sup> Hashemite Kingdom of Jordan, Department of Statistics, Population Census, 2019

	Kingdom		Madaba		Karak		Tafila		Maan	
	women	men	women	men	women	men	women	men	women	men
Illiteracy Rates	7.2	3.1	10.2	4.2	11	4	12	3.4	18	6.6
Students in Basic Education	49.1	50.9	48.5	51.5	48.8	51.2	49.3	50.7	49.5	50.5
Students in Secondary Education	55.1	44.9	54.8	45.2	59.1	40.9	62.1	37.9	61.1	38.9
Students in Vocational (Agricultural) Education	19.8	80.2	0.0	100	0.0	100	0.0	100	0.0	100
B.A	17.3		18.1		20.7		21.6		16.6	

Source: Ministry of Education, 2018

53. **Health:** There are variations in the indicators of women and children's health between the Governorates. Madaba has the best indicators for women's health and nutrition and Karak the best indicators for child health among the four governorates. Maan scores significantly lower than the other three Governorates as far as women's health and nutrition is concerned with the highest percentage of anaemic women and lowest percentage of women having ante-natal check-ups.

**Table 5: Women and children's Health and Nutrition indicators**

Health Indicators	National	Madaba	Karak	Tafilah	Maan
<b>Maternal Health</b>					
% of Women with 7+ Antenatal Care visits	79	82.4	72.8	77.9	66.8
% of women giving birth in health care facilities	98.1	96.8	99.3	99.8	99.4
<b>Women's Nutrition</b>					
Overweight or obese	54.1	54.4	52.7	63.9	48.3
Anemic	42.6	35.4	40.8	39.6	49.3
<b>Child Health</b>					
Infant mortality rates	14	19	10	17	16
Neonatal mortality rates per	9	11	9	9	6
Post-neonatal mortality rates	5	7	1	7	10
Under-5 mortality/1000 live births	16	21	13	17	18

54. **Marital Status:** In Jordan, 56 percent of women and 40 percent of men age 15-49 are married. Three percent of women and less than 1% of men are divorced or separated, and 2 percent of women and less than 1 percent of men are widowed. Early marriage increases the risk of teenage pregnancy, which can have a profound effect on the health and lives of young women. In the four Governorates, the average age at which women get married is as follows: Madaba 23.7, Karak 23.9, Tafila 22.8, and Maan 23.3.
55. **Mobile phones:** Nine out of ten women (92%) and 89% of men own a mobile phone. Ninety-two percent of urban women and 88% of rural women own a mobile phone. Regional and governorate differences in mobile phone ownership are large. The number of women who own a mobile phone, in the four Governorates are as follows: Madaba 83.5%; Karak 91.7%; Tafila 93.9%, and Maan 86.5%.
56. **Economic participation:** The gender gap in economic activity (Table 6) is below the national average in the four target governorates with the exception of Maan which has a higher rate (44.8%) than the national average (41%).

**Table 6: Indicators of Economic activities of population (%) for the different age groups by gender in the four targeted governorates and at the country's level**

Indicator	Kingdom			Madaba			Karak			Tafileh			Ma'an			Average of 4 governorates		
	Gender Gap*	Sex		Gender Gap*	Sex		Gender Gap*	Sex		Gender Gap*	Sex		Gender Gap*	Sex		Gender Gap*	Sex	
		Male	Female		Male	Female												
Economic Activity Rate( population age15+)	41	56.4	15.4	35.3	52.7	17.3	36.2	59.8	23.6	35.9	63.2	27.3	44.8	67.3	22.5	38.1	60.8	22.7
Youth Economic Activity Rate(15-24)	27.6	37.5	9.9	31.3	41.9	10.6	27.7	36.7	9	29.5	46	16.5	42.2	54.6	12.4	32.7	44.8	12.1
Unemployment Rate (population age15+)	-10.3	16.5	26.8	-1.6	22.8	24.4	-3.6	14.4	18	-24.5	16.2	40.7	-6.5	18.9	25.4	-9.1	18.1	27.1
Youth Unemployment Rate (15-24)	-23.8	34.8	58.6	-20.2	44.8	65	-31	35.4	66.4	-35.5	37.4	72.9	-19.6	43.5	63.1	-26.6	40.3	66.9

Source: DOS, Employment and Unemployment Survey, 2018

57. A gender gap is evident in the economic participation of women and men in the Governorates as illustrated by their participation in three major sectors of the economy (Table 7). In industry, the gap is minimal between men and women in the four governorates, whereas it is in favour of women in Tafilah. In agriculture, a gender gap in favour of men exists in all the governorates. The participation of women in agriculture is recorded at nil in Maan and Madaba. This reflects the gender bias in collection of these statistics, both in terms of the definition of the activity and the definition of a farmer. Consultations with women and with key stakeholders clearly shows that women are engaged in agriculture, especially home-based agriculture and as agricultural wage labour in the target governorates. In the services industry, the gender gap is highly in favour of women with Maan recording the highest participation of women at 71 percent.

58. **Table 7: Indicators of Main Current Sectoral Economic Activity of Population (%) by Gender in the Four Target Governorates**

Main Current Economic Activity	Kingdom			Madaba			Karak			Tafileh			Ma'an			Average of 4 governorates		
	Gender Gap	Sex		Gender Gap	Sex		Gender Gap	Sex		Gender Gap	Sex		Gender Gap	Sex		Gender Gap*	Sex	
		Male	Female		Male	Female												
Industry	3.9	10.4	6.5	0.5	6.2	5.6	-0.2	3.4	3.6	-9.5	4.1	13.6	0.5	2.4	1.9	-2.2	4.0	6.2
Agriculture	1.1	2	0.9	2.9	2.9	0	3.5	5.4	1.8	0.5	1.2	0.7	1.4	1.4	0	2.1	2.7	0.6
Services (Education, Health, Banking, Communication...)	-28.6	40.8	69.4	-32.9	33.9	66.8	-26.6	37.6	64.2	-34	31.9	65.9	-38	33.3	71.3	-32.9	34.2	67.1

59. **Women's Empowerment:** A statistical tool known as the “**Regional Gender Equality Index**” (RGEI)<sup>40</sup> has been used to measure the extent of women empowerment at the governorate level. This tool is based on 17 indicators which include: education, health, economic activity, situation at work, participation in public life, population distribution by sex, and indicators of the average annual income. The results of the comparison between 2007 and 2013 show that there has been progress in the indicators of education and of the political and social participation of women in all governorates. The Regional Gender Equality index is calculated by assigning a value of 4 to an indicator in the top quartile among the governorates, the value 3 to the indicators in the second quartile, the value of 3 in the third quartile and the value 1 for an indicator the bottom quartile.
60. **Madaba** came first among the governorates of the Kingdom in 2013 in the empowerment of women according to the indicators adopted in the Index, with the value of 3.06. A rise in the proportion of women with a university degree, the increase in the average age of marriage for females, in addition to its proximity to the capital where many private and public universities are available, have helped to achieve this result. It is worth mentioning that the high proportion of educated women in Madaba (87.2%) led to raise women's awareness of the need to exercise of their rights in their communities, resulting in higher participation in the municipal councils with 31% women members.
61. **Tafilah**, recorded 2.67 as the value of the Regional Gender Equality Index. Tafilah gained the first place among the governorates in the proportion of women with a university degree. Tafilah also saw an increase in the rate of women joining the labor market, ranking first among the governorates in the proportion of economically active women (22.5%), higher than the national average (13.2%) by 9.3%. Tafila is in the top quartile of governorates in both the proportion of women members of governing bodies of charities to men members and the proportion of women members in municipal council to men member rate.
62. **Karak** recorded 2.61 as the value of the Regional Gender Equality Index, ranking fourth of all governates. Among the key indicators that explain the ranking was the increase in ratio of economically active women, 21.9 percent, for which Kararak was ranked second after Tafilah. Additionally, this Governorate ranked third after Tafilah and Amman in terms of the percentage of women with a university degree (16.9 percent). One of the Gender Equality Index Indicators is an indicator for distribution of population: the ratio of females to males in the 20-39 age group. The high value of this indicator in Karak,99.1%, had significant impact on the value of RGEI that measure the women empowerment in Karak. One of the Gender Equality Index Indicators is an indicator for distribution of population by sex: the ratio of females to males in the 20-39 age group. The high value of this indicator in Karak,99.1%, had significant impact on the value of RGEI for Karak.
63. **Ma'an** recorded a value of 2.50 on the Regional Gender Equality Index. One of the reasons leading to this result is the decline in the rate of education<sup>41</sup>, and the high rate of illiteracy among females at 24.7%. This Governorate had the lowest proportion of women business owners and women who are self-employed (1.3 percent). Among the reasons that contributed to this result are the comparatively higher barriers, compared ot other governorates, to women's access to economic resources including the provision of funds required to start these projects, in addition to changes in the nature

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<sup>40</sup> Higher Population Council and Department of Statistics, Map of Jordanian Women Empowerment, Jordan, 2014

<sup>41</sup> The indicator for education is composed of the following indicators : illiteracy among women, the rate of illiteracy among women to illiteracy among men, the proportion of women with a university education, and the percentage of women to men with a university education

of the activities in the labor market, the dominance of large institutions in this market, and women's preference to avoid self-employment due to their inability to reconcile it with their family responsibilities. Nonetheless, the data indicate that women in Ma'an have a significant involvement in public life and civil society institutions, with the Governorate coming in the third place in female membership in the governing bodies of charities. Thirty percent of the members of municipal councils are women.

## Part II: Gender Action Plan

64. The Gender Action Plan has been developed in alignment with the Kingdom of Jordan's policies and strategies to promote gender equality in general ( 2020-2025 National Strategy for Women in Jordan, The National Poverty Reduction Strategy (2013-2020)) and more specifically the national strategies to address the impacts of climate change (National Adaptation Plan, February 2020 National Strategy and Action Plan to Combat Desertification 2015-2020, the National Biodiversity Strategy and Action Plan 2015-2020, The National Climate Change Policy of the Hashemite Kingdom of Jordan (2013-2020) and the National Water Strategy 2016-2025). These policies recognize that promoting gender equality and empowering women is integral to climate change adaptation and that, whereas women have critical roles as educators, caretakers, practitioners, and agents of change in climate resilience, Jordan is missing out on a strategic partnership with women. They emphasize the disproportionate effects of climate change on women and acknowledge (i) **the need to enhance women's knowledge of climate change**, (ii) **increase women's participation in decision-making at all levels** (iii) **increase skills, knowledge and access to climate adaptive technologies for women working in agriculture**, (iv) **prepare a new generation of women champions and advocates of climate**, (v) **provide networking opportunities and strengthen rural women's voices and leadership capacities to advocate for gender-sensitive strategies and policies of adaptation to climate change** (vi) **develop gender-sensitive strategies and policies of adaptation to climate change**.
65. The GAP focusses on women's visibility and agency as farmers, primary managers of water at the household and more broadly climate change agents at the community, governorate and national level. It recognizes that as a result of differences in socially constructed gender roles and social status, women and men experience the impacts of climate change differently and differentiated strategies are needed. Consequently, it adopts a two-pronged approach to mainstreaming gender in the design and implementation arrangements. The first is to ensure that all the activities undertaken by the project are gender inclusive and the second is to explore how specific activities can be included to enhance women's agency in dealing with climate change risks by including activities targeted exclusively at women. Allocated budget for activities directly supporting women under the Gender Action Plan account for USD 7.64 millions or 23% of total budget and 31% of GCF funding (Annex Table 8.2: Gender Budget).
66. The project is designed to deal with the specific issues that women face with respect to their roles and responsibilities at the domestic level as the main users of the water resources for domestic use and at the farm level in their role on the homestead plots, backyard poultry, livestock feeding, kitchen gardening, etc. The project caters to both these roles by ensuring that women are a key participant in the decision regarding the roof-top water harvesting structures in homes and through their inclusion in the Farmer Field Schools. In addition, the project recognises that women-headed households are especially vulnerable to climate change risks and often do not have the resources to adapt to them. Thus women-headed households will be given a priority in terms of their inclusion and selection in project activities especially in providing them roof-top water structures, participation in FFS and selection as Climate wise women. Under Activity 1.1.1.4, the project will contract a service provider to select beneficiaries and identify women headed households. As per description of the activity, the service provider will design a specific methodology. This will require the approval of the PMU and therefore of the national

counterparts. Results of the identification process will be used as the baseline. Separate meetings will also be organized by the M&E unit with the women headed-households and acceptance or non-acceptance of the offer will be documented. If women headed households decide to not participate, the database can briefly record the reason for the non-participation. This will allow the project to examine if there are any barriers to participation that have not been addressed and adapt accordingly.

67. The project also includes an innovative sub-component for training and deploying Climate Wise women as agents of change in the four project governorates. This initiative draws on the successful experience of a GIZ project titled Water Wise Women (outlined above) which focussed on increasing women's agency, breaking limiting social norms and recognizing the significant role women play in water management at the household and community level. The design of the Climate Wise Women initiative also incorporates key lessons from the project that behavioural change is a process that requires time, constant reinforcement and use of change agents located within the community. Balancing child care and other domestic and family responsibilities is always a challenge for women. However, the project will let women self-select themselves. It will facilitate women with young children and other responsibilities by flexibility in the training location, timing and duration as far as possible.

#### ***Climate Wise Women***

A cadre of 400 Women will be trained as Change Agents for Climate Adaptation for climate adaptive practices from the rural areas in the four target Governorates. These young women will be advocates and repositories of knowledge, technical guidance and support on climate change adaptation, anchored in rural communities. These young women will have the profile and visibility to be informed interlocutors in the national dialogue on climate change. The women will be trained and certified through a customized sixteen-week course delivered over the course of a year in state-of-the-art techniques for climate adaptive agriculture, agri-business planning and development and use of social media for climate change adaptation advocacy. Service providers will be hired to ensure equitable access across villages in Governorates as well as safe and convenient arrangements for transport and training.

68. The project responds to national gender equality objectives through a range of activities. It has several activities aimed at **enhancing women's knowledge of climate change and climate adaptive practices** such as training in water-saving, use of reclaimed water, community dialogues on climate-change and ensuring women's participation in workshops, seminar and training on climate adaptation and gender-responsive communication campaigns. It increases **women's participation in decision-making** through activities such as their involvement in the design of the rooftop rainwater harvesting structures, development and validation of Landscape Resilience plans, membership of WUAs, etc.
69. The project **increases skills, knowledge and access to climate adaptive technologies for women working in agriculture** through climate-smart FFS customized to women's needs, access to gender-responsive e-extension, on-going support for introduction to water-efficient and other climate adaptive strategies through

the cadre of community-based Climate Wise Women. The project's implementation arrangements ensure **women's safety and well-being** through measures such as providing them a briefing and instructions on safety protocols, provision of safe transport and logistic arrangements. Women will be informed that if they face GBV due to participation in any project activity, they should use the project's grievance mechanism. This will enable the project to take any action that may be necessary at the project level to address the issue, as well as, if necessary take any pre-emptive measures to ensure that such incidents do not happen in the future. The risks of sexual harassment in activities such as the FFS and training for the young Climate Wise Women will be minimized through using women trainers, safe locations and appropriate training timings and instructing them to move in twos or threes. This will also increase women's access to these activities as, in some of the more conservative areas, mixed groups may have led to reduced participation. Family members will be briefed about women's participation through a session for male relatives to keep them engaged and minimize the chances of domestic violence, where required. Measures to ensure continued safety of women will be put in place by properly briefing the women about safety precautions. During the project a help line will be provided for reporting cases of domestic violence by project participants. This responsibility will be assumed by a host of local CSOs and the Family Protection Department and linking the women with respected community leaders, providing them recourse to resources such as the Family Protection Departments and local CSOs. The project strengthens the element of sustainability in design by capacity building and investing in **preparing a new generation of women champions and advocates of climate-change adaptation through** establishing a cadre of Climate Wise Women. Empowerment and decision-making capabilities of women will be woven into the training and approach of the Climate Wise Women with the ultimate objective of facilitating changes in perceptions and practices around gender-based roles. The women agents will also be involved in understanding the project role in the investment in roof-top water harvesting, optimization of waste water for fodder crops, role that women can play in resilience planning at the local level, the practices and technologies that can enhance adaptation to climate risks and enable greater access for women, especially women-headed households and those from vulnerable households to accessing resources from CSOs, inputs and supplies through linkages with the private sector and donor initiatives, etc. The project is promoting a range of new technologies, some which consultations with NARC and communities show have already been initiated under other projects and are within the budget of vulnerable households.

70. Networking opportunities and strengthening rural women's voices and leadership capacities to advocate for gender-sensitive strategies and policies of adaptation to climate change is provided through Climate-Wise Women forums. These bring these young women together with key stakeholders for interactive dialogue and networking. These forums will increase the visibility of these young women as agents of change, allow sharing of experiences, lessons learnt, interaction with other keys stakeholders and an opportunity to influence the national climate change agenda. The project will facilitate **development of gender-sensitive policies and strategies** by ensuring that all the policies, strategies and curricula are reviewed with a gender lens.

**Annex Table 8.1: The BRCCJ Gender Action Plan**

<b>Component 1: Build climate resilient water systems for enhanced water security</b>			
<b>Outcome 1.1: Enhanced water availability to face climate change shocks</b>			
<b>Output 1.1.1 By year 7 at least 8250 buildings retrofitted with water harvesting structures</b>			
Activities	Indicator & Targets	Timelines	Responsible Institution
Gender-sensitive selection of public buildings retrofitted with water harvesting structures	Number and percentage of girls' schools selected for rooftop water harvesting infrastructures Target: 100 schools / 50% of all schools	By year 5	FAO-PMU UNDP Service Providers contracted under competitive bidding
Gender-sensitive awareness campaign on water conservation conducted	Number of campaigns that contain gender analysis and gender-sensitive messages, objectives and identification of target audiences and channels Target: 4	By year 5	
Selection of women-headed households as beneficiaries of rooftop water harvesting infrastructures	Number and percentage of women-headed households receiving rainwater rooftop harvesting <sup>42</sup> .  Target: 785 rainwater rooftop harvesting structures received by women-headed household/10% of all household structures	By year 7	
Women trained on the importance of harvesting and saving water and operating the system in the targeted households	Number of women and girls trained Target: 2155 / 49% of all participants trained in water conservation	By year 7	
Consultations held with women in target households for their input in the design of rainwater harvesting systems that are gender-sensitive and labor-saving	Number and percentage of rooftop rain-water harvesting infrastructures designed in consultation with women  Target: 100% of rooftop roof-top water harvesting infrastructures (7850) designed in consultation with women	By year 7	

<sup>42</sup> Under Activity 1.1.1.4, the project will contract a service provider to select beneficiaries and identify women headed households. As per description of the activity, the service provider will design a specific methodology. This will require the approval of the PMU and therefore of the national counterparts. Results of the identification process will be used as the baseline. Separate meetings will also be organized by the M&E unit with the women headed-households and acceptance or non-acceptance of the offer will be documented. If women headed households decide to not participate, the database can briefly record the reason for the non-participation. This will allow the project to examine if there are any barriers to participation that have not been addressed and adapt accordingly.

Gender-sensitive impact assessment of Component 1 activities conducted	Consultations, analysis and findings of impact assessment are sex-disaggregated  Target: Gender-sensitive impact assessment report	By year 7	
<b>Output 1.1.2. By year 7, reuse of reclaimed water from 3 Waste-Water Plants is optimized</b>			
Develop gender-sensitive communication campaign and materials for sensitizing women and men users of reclaimed water	Number of campaigns that contain gender analysis, gender-sensitive messages, objectives and identification of target audiences and channels  Target: 3	Every year up to year 6	FAO-PMU Service provider contracted under competitive bidding
Training of women farmers in safe reuse of reclaimed water in target areas of the 3 Waste-Water treatment plants	Percentage of women farmers trained  Target: 100 percent of women involved in reuse of reclaimed water in target area	By year 7	
Promotion of women's membership in WUA in areas irrigated by reclaimed water through introducing joint membership of men and women from the same households	Number of women farmers in WUAs  Target: At least 30 percent of WUA members <sup>43</sup>	By year 7	
<b>Output 1.1.3. By year 4, Landscape Resilience Investment Plans</b>			
Gender-sensitive criteria for selection of investments are established and used	Consultations held with women on selection of investments Target: Women's priorities included as one criterion in list of criteria for selection of interventions	By year 1	
Gender-sensitive economic and social feasibilities conducted for the development of the Landscape Resilience Investment Plans	Percentage of women beneficiaries (out of total) consulted Target: At least 30% of all beneficiaries consulted are women  Findings of the feasibilities are sex-disaggregated, and recommendations are gender-responsive Target: Economic and social feasibility assessments include sex-disaggregated data and recommendations that are gender-responsive	By year 3	

<sup>43</sup> In Jordan women own 5 percent of the land. (UN Women & Reach, Women's participation in the agricultural sector, rural institutions and community life, 2018), therefore their inclusion will require promoting joint-membership of men and women from the same WUA member household.

<p>Women's representation and voice strengthened as decision-makers through their inclusion in development and validation of Landscape Resilience Investment Plans</p>	<p>Investments prioritized by women included in Landscape Resilience Investment Plans  Target; At least 30% of the investments selected are those prioritized by women  Percentage of women participating in workshops in the 4 Governorates  Target: Women comprise a minimum of 30 percent of workshop participants</p> <p>Quality of women's participation in the validation workshop  Target: Most women felt comfortable and confident expressing their views</p>	<p>By year 4</p>	
<p><b>Component 2: Climate Change resilience for Enhanced Livelihoods and Food Security</b></p>			
<p><b>Outcome 2.1: Enhanced capacity of households to deal with climate change</b></p>			
<p><b>Output 2.1.1 By year 7, 6,000 Farmers trained in climate resilient production practices through FFS (4050) and field days (1950)</b></p>			
<p>Women Master Trainers trained to conduct FFS</p>	<p>Number and percentage of women master trainers  Number of women master trainers conducting FFS  Target: 20 / 50 percent minimum of 40 trainers</p>	<p>By year 1</p>	
<p>Climate smart-FFS for women customized to suit women's specific needs (homestead gardens, medicinal plants and herbs, small-scale water efficient technologies etc ) and preferences in terms of frequency, duration, timing, location conducted</p>	<p>Number of women-only Climate-Smart FFS  Number of women reporting increased knowledge and use of climate smart practices as a result of their participation in FFS  Target: 70</p>	<p>By Year 7</p>	
<p>Women trained through FFS (both FFS especially customized for women and other FFS organized by the project)</p>	<p>Number and percentage of women participants in FFS  Target 1200 / 30% of 4050 FFS participants  Number of women reporting increased knowledge and use of climate smart practices as a result of their participation in FFS  Target: 840/ 70% of 1200</p>	<p>By Year 7</p>	

Women trained in field days and workshops on climate adaptive technologies such as wiking beds, growbags, drought resistant crops, water-efficient practices	<p>Number and percentage of women included in field days and workshops Target 1800 / 30%</p> <p>Number of women reporting increased knowledge and use of adaptation technologies Target 540/ 70% of 1800</p>	By Year 7	
Gender-sensitive impact assessment conducted	<p>Percentage of women consulted for impact assessment</p> <p>Target: 50% of persons consulted for the impact assessment. Gender-sensitive impact assessment report with sex-disaggregated data</p>	By year 7	
<b>Output 2.1.2 By year 7, 30 000 Farmers reached through e-extension</b>			
Gender-responsive Climate smart solutions included in material disseminated through EE platform	<p>Percentage of women accessing the EE platform Target 10,000 / 33%</p> <p>Percentage of women using information about climate smart solutions Target: 7000 / 70% of 10,000</p>	By year 7	FAO-PMU Service Providers
<b>Output 2.1.3 By year 3, 400 Women trained as Change Agents for Climate Adaptation</b>			
Selected women agronomists receive scholarships to work with International Agronomist and University to design and deliver courses in Climate Adaptive agricultural and household practices to 400 young women	<p>Number of young women agronomists given scholarships Target: 8</p>	By year 2	
Young women trained and certified as Climate Wise Women on scholarships	<p>Number of young women certified as Climate Wise Women Target: 400 women</p>	By year 3	
<b>Output 2.1.4 By year 7, 15000 Persons sensitized for climate adaptive measures</b>			

<p>Community Dialogues on climate adaptive measures with groups of women, youth and men farmers conducted by Climate Wise Women</p>	<p>Number and percentage of women sensitized to climate adaptive measures Target: 10,500</p> <p>Number and percentage of youth sensitized to climate adaptive measures Target: 3000</p> <p>Percentage of women and men who perceive benefits would accrue to them from adoption of the climate adaptive measures Target: 70 percent of 13500.</p> <p>Percentage of women and men reporting an increased understanding of climate change. Target: 70 percent of 13500.</p>	<p>By year 7</p>	<p>FAO-PMU Service Providers Competitively Selected</p>
<p>Farm/Homestead visits conducted by Climate Wise Women to demonstrate climate adaptive techniques</p>	<p>Number and percentage of women visited to demonstrate climate adaptive techniques Target: 8000 / 80 %</p> <p>Women and men who consider themselves better off (in terms of livelihood, income, nutrition, wellbeing, social status or empowerment) due to the climate-adaptive techniques they were introduced to. Target: 70 % of 6500 women and 70 % of 1600 men.</p>	<p>By year 7</p>	
<p>Climate Wise Women Forums organized with representation on local, governorate and national governments, youth groups and farmers groups.</p>	<p>Number of Climate Wise Women Forums Target: 3</p> <p>Number and percentage of young women participating in Climate Wise Women's Forum Target 420/ 70%</p>	<p>By year 6</p>	
<p>Active participation and 'voice' of women and youth is promoted in Climate Wise Women Forums through use of interactive and participatory techniques like world café</p>	<p>Percentage of women and youth who feel they are able to express their views Target: 80% of women and youth participants</p> <p>Percentage of youth participants</p>	<p>By year 6</p>	

	<p>Target: 40 % of all participants</p> <p>Percentage of gender-sensitive and youth sensitive recommendations</p> <p>Target: 80 %</p>		
<b>Component 3: Scaling-up climate adaptation into policy and across actors (institutions, private sector, civil society)</b>			
<b>Outcome 3.1 By year 7 Gender sensitive resilience tools and practices to adapt to water scarcity are mainstreamed into the national policy/educational/administrative/social frameworks</b>			
<b>Output 3.1.1. By year 6, specific policy and regulatory bottlenecks are identified and reforms initiated</b>			
Activities	Indicator & Targets	Timelines	Responsible Institution
Policies and laws reviewed from the gender perspective and recommendations identified to mainstream gender	Percentage of policies reviewed from the gender perspective Target: 100 % of policies reviewed by the project	By year 6	FAO-PMU Service Providers Competitively Selected
Gender sensitive Communication campaigns designed and implemented.	Number of campaigns that contain sex-disaggregated context analysis, formulation of objectives, identification of target audiences, design of messages and selection of channels of communication Target: 100 % of all communication campaigns implemented.	By year 6	
<b>Output 3.1.2 By year 6 at least 6 national curricula of vocational schools (masonry, plumbing and agriculture) and of specialized universities (agriculture, architecture, water engineering) are updated to include climate smart agriculture, water efficiency and precision agriculture.</b>			
Curricula of vocational schools and specialized universities reviewed and updated from the gender perspective	Number and percentage of curricula mainstreaming gender Target: 6 /100% of curricula reviewed	By year 6	FAO-PMU Service Provider Competitively recruited
Expertise of women teachers and professors in climate smart agriculture enhanced	Number and percentage of women teachers trained in the teaching and practice of new curricula Target: 100 / 33 % of 300 teachers	By year 6	

<b>Output 3.1.3 By year 7 at least 6440 persons (4 governorates, 16 provinces, 324 municipalities) and private sector engaged in climate change adaptation practices</b>			
<b>Activities</b>	<b>Indicator &amp; Targets</b>	<b>Timelines</b>	
Promotion of women's active participation in trainings, workshops and conferences on climate adaptation	Number and percentage of women participating in trainings, workshops and conferences  Target: 3220 / 50 percent of 6440 persons	Every year till year 7	FAO-PMU Service Provider Competitively recruited
Strengthening capacity of women in CBOs for climate adaptative practices	Number of women CBO members trained in climate adaptation  Target: 500 women CBO members / 50% of 1000 persons.	By year 7	
Gender-inclusive consultations with institutions (local) and the private sector and civil society in project areas to develop a tailored technical assistance plan to enhance local administration's and private sector actors' capacities to comply with the national green construction and water saving policy frameworks	% of women consulted for the plan Target :35% of all persons consulted % of women technicians engaged in training Target: 25% of all technicians engaged	Every year till year 7	
Gender sensitive Communication / Awareness campaigns designed and implemented	Number of campaigns that contain gender analysis and gender-sensitive messages, objectives and identification of target audiences and channels Target: 100 percent of communication campaigns developed	Every year till year 7	
Women's agency and challenges in climate change adaptation highlighted in project publications	Percentage of publications highlighting women's role in climate adaptation Target: 100 percent	Every year till year 7	
<b>Project Management</b>			

Staff responsible and accountable for mainstreaming gender in project	ToR of CTA M&E Expert, Gender & Social Inclusion expert, Water Engineer, Safeguard Specialist specifies responsibility for mainstreaming gender in project KPIs of staff include mainstreaming gender  ToR of service providers specify responsibilities for mainstreaming gender	By year 1  Every year till year 7	FAO-PMU Service Provider Competitively recruited
Gender is mainstreamed in M&E system and in all independent impact assessments	Data collected on project indicators is sex-disaggregated  Performance of the project on gender indicators as specified in the Gender Action Plan is monitored.	Every year till year 7	
Project reports are gender sensitive.	Achievement of gender targets are reported against each project outcome, output, and activities. Key challenges in mainstreaming gender are identified and strategies to address them specified	Every year till year 7	

**Annex Table 8.2 Gender Action Plan Budget**

<b>Component</b>	<b>Output</b>	<b>Activity</b>	<b>Total Budget</b>	<b>Estimate based on % of Women participation</b>	<b>Allocated Budget in the GAP</b>
Component 1	Output 1.1.1 By year 7 at least 8250 buildings retrofitted with water harvesting structures	Activity 1.1.1.3 Construction of Rooftop rainwater harvesting system in public buildings	\$ 1,672,144	30%	\$ 501,643
		Activity 1.1.1.5 Construction of Rooftop rainwater harvesting system in households	\$ 8,272,000	50%	\$ 4,136,000
Component 2	Output 2.1.1 By year 7, 6,000 Farmers trained in climate resilient production practices through FFS (4050) and field days (1950)	Activity 2.1.1.1 Provide Technical assistance and oversight for climate change adaptation	\$ 175,000	Gender Specialist	\$ 175,000
		Activity 2.1.1.3 Training a team of Master Trainers/Facilitators	\$ 448,000	30%	\$ 134,400
		Activity 2.1.1.6 Conduct Climate Smart FFS	\$ 2,424,600	26%	\$ 630,396
		Activity 2.1.1.7 Field demonstration of tested climate-adaptive innovation and practices	\$ 300,000	30%	\$ 90,000
	Output 2.1.2 By year 7, 30 000 Farmers reached through e-extension	Activity 2.1.2.1 Developing climate-smart IT solutions for smart devices	\$ 250,000	30%	\$ 75,000
		Activity 2.1.2.2 Disseminating climate smart-solutions and weather forecast through smart devices	\$ 573,600	30%	\$ 172,080
	Output 2.1.3 By year 3, 400 Women trained as	Activity 2.1.3.1 Technical assistance in climate adaptive agriculture	\$ 67,050	100%	\$ 67,050

Change Agents for Climate Adaptation	Activity 2.1.3.2 Development of training manuals and certification requirements	\$ 30,000	100%	\$ 30,000
	Activity 2.1.3.3 Scholarship for young trainers	\$ 65,200	100%	\$ 65,200
	Activity 2.1.3.4 Competitive selection of candidates for climate wise-women	\$ 120,000	100%	\$ 120,000
	Activity 2.1.3.5 Trainings developed for climate wise-women	\$ 698,000	100%	\$ 698,000
	Activity 2.1.4.1 Conducting Community dialogues for gender sensitive climate adaptation measures	\$ 718,752	100%	\$ 718,752
	Activity 2.1.4.2 Organizing multi-stakeholder climate-wise women forums	\$ 30,000	100%	\$ 30,000
	<b>Total</b>			

Total Project	33,251,501
(%) of Total	<b>23%</b>
(%) of GCF	<b>31%</b>