United Nations Economic and Social Commission for Western Asia


# End of Project Evaluation for the Project "Enhancing Resilience and Sustainability of Agriculture in the Arab Region"

**Evaluation Report**

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## Abbreviations

ACSAD : Arab Center for the Study of Arid Zones and Drylands

AOAD : Arab Organization for Agricultural Development

DAC : Development Assistance Committee

ESCWA : United Nations Economic and Social Commission for Western Asia

FAO : Food and Agriculture Organization of the United Nations

GCC : Gulf Corporation Council

GDP : Gross Domestic Product

GIZ : Deutsche Gesellschaft für Internationale Zusammenarbeit

IWRM : Integrated Water Resources Management

INDC : Intended Nationally Determined Contribution

KII : Key Informant Interview

LARI : Lebanese Agricultural Research Institute

LAS : League of Arab States

M&E : Monitoring and Evaluation

MENA : Middle East and North Africa

NGO : Non-Governmental Organisation

NWMP : The National Water Master Plan

OECD : Organisation for Economic Co-operation and Development

OLT : Organisational Learning team

PNAES : Palestine National Agricultural Extension Strategy

PWA : Palestine Water Authority

RICCAR : Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region

SDGs : Sustainable Development Goals

UNEG : United Nations Evaluation Group

UNIDO : United Nations Industrial Development Organization

USD : United States Dollar

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# Executive Summary

This evaluation report presents the evaluation findings of the project "Enhancing Resilience and Sustainability of Agriculture in the Arab Region"

This report responds to key evaluation questions included in the terms of reference and covers the relevance, effectiveness, efficiency, sustainability, and impact of the project activities.

The evaluation adopted a mixed methods approach encompassing both quantitative and qualitative data gathering and analysis. The evaluation is based on key stakeholders' interviews, and documentation review.

The evaluation also utilized the data collected through a survey that was implemented to collect data from the beneficiaries of the project's activities. All the beneficiaries' population (162 beneficiaries) in five countries (Jordan, Lebanon, Egypt, Algeria and Sudan) were approached; however, 84 beneficiaries completed the survey representing a response rate of 52% (confidence level is 95 %).

The evaluation reached the following conclusions:

- The project was relevant in addressing the challenges faced by the three Arab countries related to the agriculture sector and water resource management. The project was aligned with the national priorities, strategies and efforts in assessing the climate change impacts on water resources and other socio-economic sectors, enhancing food and water security, and developing the capacities for climate change adaptation.
- The project was implemented effectively and efficiently, where almost all the activities stated in the logical framework were achieved and the targets were met. Although the project achieved some results at the outcome level, such as making some institutional changes in the work of the governmental institutions such as adopting the Aquacrop model in the process of planning water uses for irrigation purposes and its reflection on improving the efficiency of irrigation. However, the logical framework of the project did not include such indicators.
- Engaging local stakeholders at the ministries of agriculture since the design of the project through the different phases of implementation was very important in ensuring the sustainability and scaling up of the project outcomes and impact. This resulted in enhancing their sense of ownership of the project on the one hand, and enhancing their keenness on the success of the project's activities on the other hand. Most importantly, the project succeeded in integrating these ministries into the global Climate Change Agenda.
- The project enhanced gender equality and the participation of women in its activities.

However, the dimensions of integrating human rights and the inclusion of persons with disabilities were not explicitly focused on. This is because the project document, including the theory of change, the logical framework and the results framework, did not include nor addressed these dimensions.

- The project highlighted the importance of sufficient, in-depth and practical training to realize the targeted benefits. Practical assignments and case studies were important to deepen the knowledge gained through theoretical topics. This twining of theoretical and practical training were the drivers beyond the achievements seen in the AquaCrop training. The 2-day training on Green Technologies was not sufficient to build the capacities of extension engineers on this important topic and provide them with robust skills to be used and applied. Associating this type of training with practical and field applications would have provided extension engineers with more skills
- Although the project was implemented in challenging times including the Covid-19 Pandemic and the Lebanon crises, the implementation modalities and flexibility in programming reduced the negative impact of these challenges and limited it to some delays.

Based on the above conclusions, the evaluation recommended the following:

- To use a mixed approach combining theoretical information with real life examples in the future capacity building interventions, as well as allocating sufficient time practical applications to ensure the beneficiaries' deepening of understanding, and their acquisition of the necessary skills and the dissemination of knowledge.

- To integrate the dimensions of Gender Equality, Human Rights, and Disability into the project document, logical framework and the results matrix for future interventions.

- To incorporate results and targets with clear indicators within the logical frameworks at the outcome level for future interventions.

- To adopt working directly with the end beneficiaries as an implementation modality, although the political and economic conditions, especially in Lebanon, negatively affected the maximization of the benefit from this approach, yet, direct working with the end beneficiaries would reduce the stages of knowledge transfer and obtain direct results.

# I. Introduction

The project "Enhancing resilience and sustainability of agriculture in the Arab region" is implemented by the ESCWA in cooperation with other regional partners which benefits from a total budget of USD 449,400. The project aims to enhance national capacities in addressing resilience and sustainability of the agricultural sector, considering the major challenges facing the Arab region including water scarcity, prevailing conflicts and climate change. There are many direct and indirect factors that contribute to the resilience and sustainability of agriculture, some of which are related to other sectors. The project will examine the role and impacts of; access to water for supplementary irrigation; access to data, research outputs and climate-smart agricultural innovations and technologies; access to finance at the small-scale farm level; and access to markets, on enhancing resilience and sustainability of agriculture.

The project is implemented in three target countries including Jordan, Palestine and Lebanon during the period January 2018 and January 2021. Some other regional activities were conducted covering participants from other countries including Sudan, Algeria and Egypt. The project's goal is pursued through two key outputs, respectively:

**Output 1**: Enhanced national capacities of targeted Arab countries to optimize the use of available conventional and non-conventional water resources for supplementary irrigation, thus contributing to increased resilience and sustainability of agriculture.

**Output 2**: Enhanced national capacities of targeted Arab countries to utilize the SDGs Means of Implementation (technology, research outputs, access to finance and markets) for increasing resilience and sustainability of agriculture.

# II. Purpose and Objectives of the Assignment

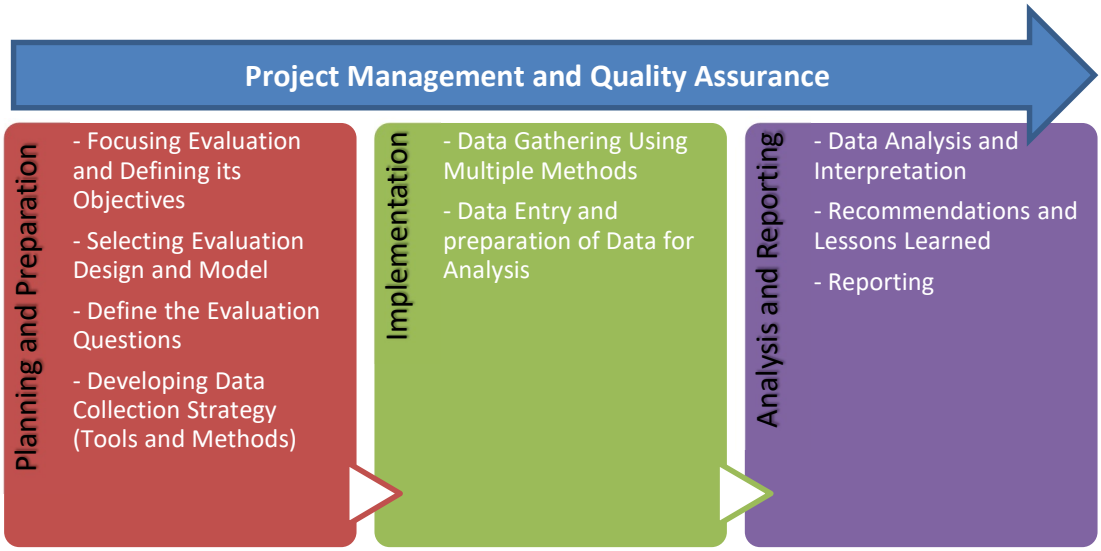
The objective of this assignment is to undertake a final overall evaluation of the project to identify any lessons learnt that could inform future projects. The evaluation will involve an assessment, in a systematic and impartial manner, of the project's activities and results. It will gather evidence on the relevance, efficiency, effectiveness and sustainability of the project as well as provide information to disseminate lessons learnt, as illustrated per the Terms of Reference attached in Annex (I).

The evaluation will assess the extent to which the project has attained its objectives by following an outcome harvesting approach that retrospectively identifies results and changes that have taken place, capturing positive, negative, intended or unintended results. The evaluation will also look at any lessons learned from the activities implemented, and the relations with the partners involved in the project, including the different stakeholders and project beneficiaries.

## III. Evaluation Methodology

The evaluation adopted a qualitative and quantitative approach to assess the progress and results of the project. The OECD-DAC criteria were used by taking into consideration impact and sustainability criteria as applicable to the project. The consultant utilized multiple methods of inquiry to identify weaknesses and data gaps as well as bring complementarity to the evaluation, with the added advantage of triangulation of data sources.

To achieve the evaluation objectives a three-phase approach was used including planning and preparation, implementation activities, and the analysis and reporting to be achieved within the due course of the project. A description of each phase of these phases is as follows:



The consultant used a multi-method approach for data collection including the following as per the project indicators:

**Desk Review:**

The expert received the package of project documents from the program management and reviewed project related documents. The review of the project documentation has served as the basis for preparing the evaluation questions based on the OECD-DAC criteria, the data collection strategy and related data collection tools. The evaluation criteria were designed in order to assess the project performance from different angles and thus provide a holistic unbiased picture about how the project was running. Additionally, the logical framework of the project and its related indicators were used as another reference for the evaluation. The project logical framework shows outcome and output indicators and their targets. To trace the change in the results chain, the project indicators will be traced to assess the achievement of the desired outputs by the Cash for Work Component.

**Semi-structured interviews with key stakeholders**

The expert conducted interviews with key stakeholders using a semi-structured interview questionnaire. The key stakeholders in the evaluation include the ESCWA Project team, the implementing partners and the government related stakeholders. A questionnaire was developed and is attached in Annex (I). They include the following groups listed below:

*Table (1): The Project Key Stakeholders*

| Group | Key Informant |
|---|---|
| **ESCWA team**: | – Reem Nejdawi<br>– Rami Sabella<br>– Lara Geadah |
| **ESCWA consultants** | – Carole El Hachem<br>– Haidar Osman<br>– Mohammedamin Shahbari<br>– Nawal Mdallaly<br>– Sara Daniel<br>– Theib Oweis<br>– Wael Abu Rmaileh<br>– Youssef Akiki |
| **Implementing Partners** | – Mr. Raed Hattar/ Arab Organization for Agricultural Development (AOAD) |
| | – Mr. Ihab Jnad/ Arab Center for the Study of Arid Zones |

| Group | | Key Informant | |
|---|---|---|---|
| | | and Drylands (ACSAD) | |
| **Government Focal Points** | **Component** | **AquaCrop** | **Green Technologies** |
| | **Jordan** | – Mr. Ahmad Alquabe'h | – Ms. Nada Fraihat |
| | **Palestine** | – Mr. Emad Khaleef | – Mr. Hasan Ashqar |
| | **Lebanon** | – Ms. Maya Mhanna | N/A |
| **Cooperatives Beneficiaries** | | – Al Jam'iyya Al Taawouniya Al Hirafiyya,<br>– Sultan Yaacoub Cooperative for food processing<br>– Majmouaat Mawasem<br>– Majmouaat Yanta 503<br>– Jam'iyyat Al Likaa' Al Bi'I Li Tarbiyat Al Nahel<br>– Sawa Rbina Association – Moubadara<br>– Al Jam'iya Al Taawouniya Al Intajiyya "Bikaaouna"<br>– Taaouniyyat Ain El Loz – Al Intajiyya Fi Ain Ata<br>– Taawouniyyat Mounat Ayyam Zaman for food processing | |

**Beneficiaries Survey**

A survey was implemented to collect data from the beneficiaries of the project activities. All the beneficiaries' population 162 beneficiaries were approached, 78 of which were females; however, 84 beneficiaries completed the survey representing a response rate of 52% (confidence level is 95%). The survey helped in collecting quantitative data at the output, outcome and impact level from the direct beneficiaries of the project. A questionnaire was developed and is attached in Annex (II).

## Implementation of the Data Collection

The data collection was implemented during the period from 22 January until 15 February 2022. During this period, the key stakeholders were interviewed, and the survey was completed by direct beneficiaries.

## Analysis and Reporting

All the data collected was analysed, interpreted, and a judgment made about the meaning of the findings in the context of the project. Quantitative and qualitative data analysis was utilized to analyse and present the findings. From the data collected in the survey, the variables were disaggregated by country. The frequency of outcome variables was determined. For the KIIs, the evaluation expert took notes, and the scripts have been analysed according to the DAC themes, and the findings of the interviews have been compared with

those derived from the beneficiaries' survey – triangulation has occurred by relating the fieldwork findings.

## IV. Evaluation Findings

The following is the findings of the evaluation described under each of the five OECD-DAC criteria elements including relevance, effectiveness, efficiency, impact and sustainability.

### *Relevance*

While the project intended to develop policy guidelines at the wider regional level, capacity building activities were planned at the national level in the three focus countries (Jordan, Lebanon and Palestine). The relevance was assessed based on the issues facing the three focus countries. The project was found to be ***highly relevant*** in addressing the challenges faced by the three Arab countries in which most of the project activities were implemented including Jordan, Lebanon and Palestine as detailed below:

**Jordan**

Jordan is considered to be the second poorest country in the world in terms of water resources per capita. In fact, it ranks far below the global threshold of severe water scarcity at less than 100m3/ capita compared to 500 m3/capita (National Water Strategy).[1] In the past few years, the conflict in the region, high population growth and development needs have increased the demand for water and depleted the available, limited natural resources. While the influx of Syrian refugees has placed an additional burden on the water supply services. Strategies have been developed in order to build a management structure for the water sector over the past years. The National Water Strategy 2016-2025 is based on the previous strategic documents and is aligned with the sustainable development goals adopted by the United Nations in 2015. It aims to prepare the sector to be better prepared for future challenges by ensuring the sustainability of water resources, strengthening integrated water resources management and planning.

Though not a significant contributor to climate change, Jordan is one of the countries most affected by it and has begun to suffer from its negative effects. This includes increasing temperatures, an increase in drought affected areas, erratic rainfall, heat waves, and declines in available water (underground and surface). According to the 2013–2020 Jordan Climate Change Policy, the country is expected to experience a 15–60 percent decrease in precipitation and a 1 to 4 centigrade increase in temperature between 2011 and 2099, which will have serious impacts on natural ecosystems, river basins, watershed and biodiversity.[2] Agriculture is the largest water user in Jordan, accounting for approximately 60 percent of withdrawals.

[1] USAID_Land_Tenure_Profile_Jordan.pdf (land-links.org)

[2] USAID_Land_Tenure_Profile_Jordan.pdf (land-links.org)

Irrigated agriculture is constrained by water shortages. Farmers respond to water shortages by irrigating less, cultivating less land or purchasing water, which negatively affects yields, revenue and profitability.

Extension services are not widespread and few farmers interviewed by a recent study[3] said that their input suppliers offered technical services. The study also confirmed that knowledge of the potential water savings of different water conservation technologies is limited. This limited knowledge on the actual water savings potential of technologies constrains the government, the private sector and NGOs from making rational water conservation technology and practice recommendations. And it limits farmers' ability to make sound technology adoption decisions for their farms.

These project activities implemented in Jordan were found to be ***highly relevant*** to the current issues identified both in the agriculture and water sectors in Jordan. Its implementation will contribute to the country's efforts to implement some of the priorities set forth in the national strategies, for example the third priority of the National Strategy for Agriculture Development 2020-2025[4] "Use of Agriculture Technology" and the fourth priority "the production, productivity and strategic produce (crop)". As one of the project objectives to improve water resources management, it is relevant to the current strategies implemented by Jordan including the National Water Strategy 2016–2030, which seeks to ensure that national goals and priorities are realigned to the country's changing needs and relate to the new Global Sustainable Development Goals (SDGs) by adopting an Integrated Water Resources Management (IWRM) approach for water development in Jordan as the overarching umbrella strategy. The National Water Master Plan (NWMP) proposes sector policies and strategies for water sector development to decrease the gap between the resources and demand; carry out water sector study and planning activities; manage water sector information; and regularly produce required information products to support decision makers through the digital planning tools. Developing `new water' through rain harvesting, recycling, innovation, adaptation, new technology and peoples' participation in water conservation.[5]

Additionally, the Jordanian beneficiaries who responded to the survey identified water scarcity, no suitable technologies for fresh crop storage and the planting of unsuitable crops as the three most pressing challenges to the agriculture sector in Jordan.

*Table (2): Most Pressing Challenges to the Agriculture Sector in Jordan*

| Challenge | Percentage |
|---|---|
| Water scarcity | 91.3% |
| No suitable technologies for fresh crop storage | 34.8% |
| The planting of unsuitable crops | 30.4% |
| No suitable technologies for crop preservation such as drying | 21.7% |
| Low Crop Production | 17.4% |
| Markets are far | 13.0% |

[3] WATER CONSUMPTION PATTERNS IN AGRICULTURE - MARKET SYSTEMS DEVELOPMENT ASSESSMENT FINAL REPORT (jordankmportal.com)

[4] 0-2025_2020_الاستراتيجية_الوطنية_للتنمية_الزراعية.pdf (moa.gov.jo)

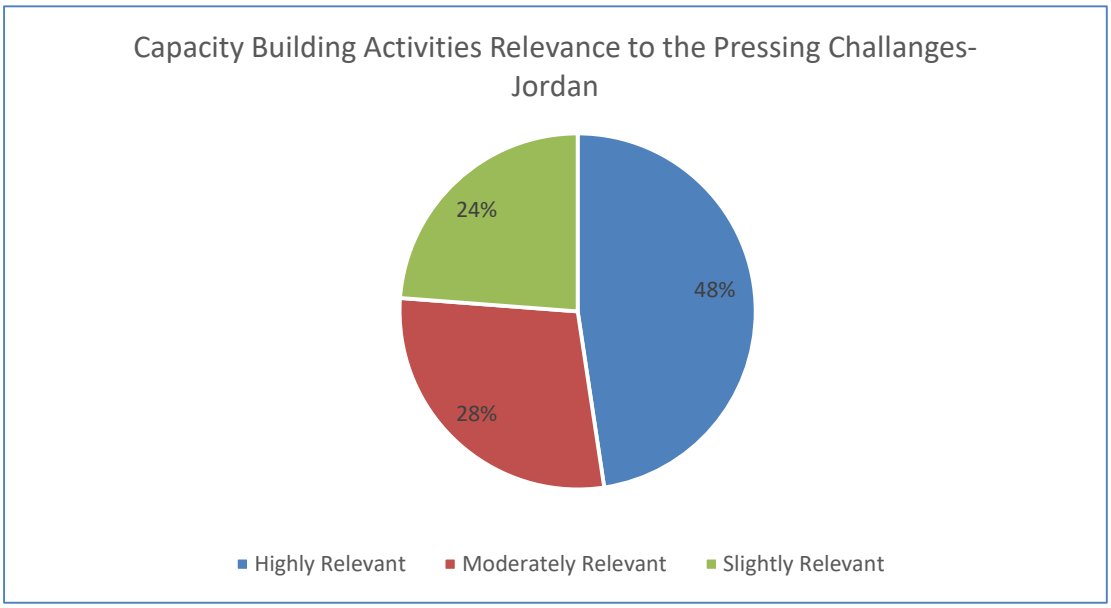
[5] USAID_Land_Tenure_Profile_Jordan.pdf (land-links.org)

| Challenge | Percentage |
|---|---|
| Post harvest operations | 4.3% |
| The high cost of agricultural operations, labor and agricultural inputs | 4.3% |

*Source: Beneficiaries Survey, February 2022*

Almost half the Jordanian beneficiaries from the capacity building activities (47.6%) believe that these activities are ***highly relevant*** to the most pressing agricultural sector challenges in Jordan, while none found it irrelevant.

***Figure (1): Relevance of capacity building activities to the pressing challenges - Jordan***




*Source: Beneficiaries Survey, February 2022*

**Lebanon**

Water scarcity and severe water stress are significant concerns in Lebanon. Water balance will reach its limits by 2020.[6] The agriculture sector is the main consumer of water (around 70% of the total needs).[7] While water scarcity may be a challenge at the national level, it may be a less pressing concern to individual farmers, who are able to access enough water from groundwater resources. This is supported by the fact that a relatively high share of agricultural land (65 percent) is irrigated.[8]

[6] Lebanon's Food Insecurity and the Path Toward Agricultural Reform - Carnegie Middle East Center - Carnegie Endowment for International Peace (carnegie-mec.org)

[7] Lebanon's Food Insecurity and the Path Toward Agricultural Reform - Carnegie Middle East Center - Carnegie Endowment for International Peace (carnegie-mec.org)

[8] Agricultural sector review in Lebanon (fao.org)

The irrigated area in Lebanon is now around 90,000 ha, of which 55,466 ha are still under traditional gravity systems and only 25,564 ha are under pressurized systems. Technological inadequacy prevails both in water irrigation systems at the farm level and in water conveyance and distribution systems.[9] Nevertheless, water is generally only available at a high cost and water control and conservation are necessary to ensure the long-term sustainability of agriculture.[10]

The agricultural sector is one of the pillars of the Lebanese economy, contributing USD 1.8 billion to total GDP and employing 4% of the Lebanese labor force in 2018. Moreover, the sector is the backbone of Lebanon's Agri-food industry, which contributes to the growth of the local industrial sector. In 2019, agricultural exports reached USD 193.1 million, growing at a CAGR of 2% during the 2010-2019 period. The country is endowed with the highest proportion of agricultural land in the Middle East with 64% of the total land area in 2017.[11]

The Lebanese agricultural sector is suffering from structural issues as well as new challenges arising from the economic and financial crisis, which started in 2019.[12] The agricultural sector in Lebanon is predicted to face an acceleration in challenges from climate change in the coming decades. Due to climate change, the deterioration of soil conditions and the loss of biodiversity and water scarcity are expected to accelerate. Rainfed crops, such as cereals, are particularly vulnerable, as are crops that rely on water for irrigation such as summer vegetables and fruit. Other crops, such as potatoes, tomatoes and cherries, might be affected by an increase in temperature. A growing number of pest outbreaks are likely to affect olives, apples, peaches, apricots, tomatoes and other fruit.[13]

The Lebanese Ministry of Agriculture published in September 2020 its strategy for 2020–2025. The strategy is organized around five pillars, including for the first-time food security. Other pillars focus on implementing technical improvements to enhance agricultural and agro-industrial productivity, increasing the competitiveness of agro-food value chains, ameliorating natural resource management, and improving institutional capacity.[14]

In order to support water saving, the Lebanese government is applying a long-term plan aimed at rehabilitating and modernizing the water sector. The policy adopted includes several strategies: institutional reforms, new legislation and administrative structure, application of an integrated water management plan, rehabilitation of existing schemes, water storage capacity improvement.[15]

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[9] 517612-MELIA-Modernization-of-irrigation-systems-measures-to-reduce-pressure-on-water-demand-in-Lebanon.pdf (csic.es)

[10] Agricultural sector review in Lebanon (fao.org)

[11] 200402102253989~IDAL Agriculture Sector in Lebanon Factbook 2020.pdf (investinlebanon.gov.lb)

[12] Agricultural sector review in Lebanon (fao.org)

[13] Agricultural sector review in Lebanon (fao.org)

[14] Lebanon's Food Insecurity and the Path Toward Agricultural Reform - Carnegie Middle East Center - Carnegie Endowment for International Peace (carnegie-mec.org)

[15] 517612-MELIA-Modernization-of-irrigation-systems-measures-to-reduce-pressure-on-water-demand-in-Lebanon.pdf (csic.es)

Much is still to be done to achieve a rational use of water resources in Lebanon including the need for Farmers' capacity building and extension services to gain knowledge and apply crop water modules at the farm level. Groundwater uptake should be monitored and, socioeconomic awareness campaigns should be conducted in order to make farmers assume a new attitude towards water use efficiency at the farm level.[16]

The current project is ***highly relevant*** to the identified challenges both in the agriculture sector as well as the water sector. It contributes to achieving the national priorities as set forth in the Lebanese agriculture strategy and the water policy.

The Lebanese respondents to the survey from the beneficiaries identified a myriad of challenges to the Lebanese agriculture sector with the two main challenges being low crop production and planting of unsuitable crops as shown in table (3) below:

***Table (3): Most Pressing Challenges to the Agriculture Sector in Lebanon***

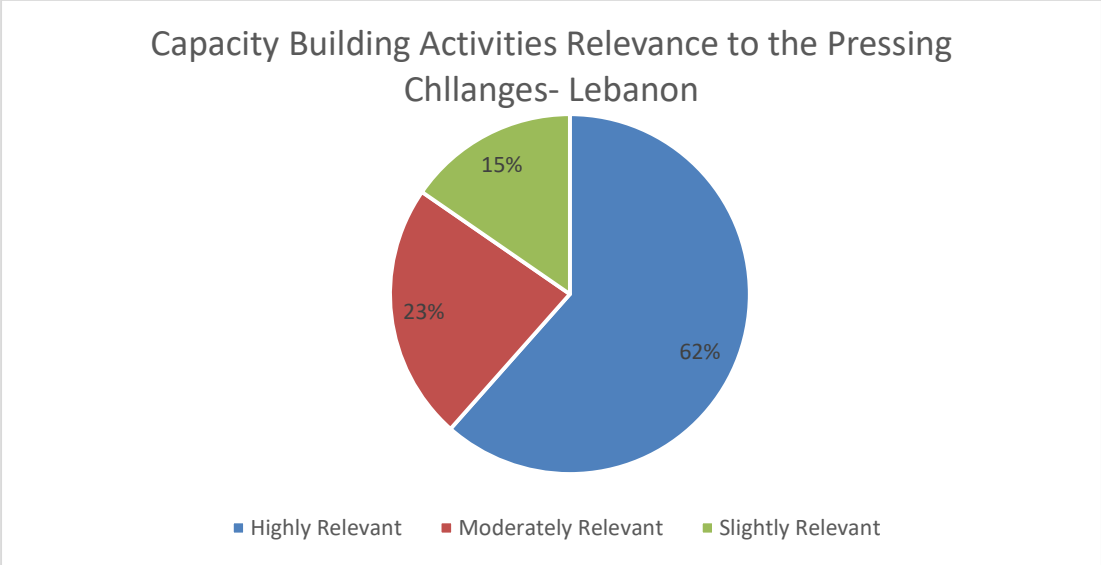
| Challenge | Percentage |
|---|---|
| Low Crop Production | 57.1% |
| The planting of unsuitable crops | 50.0% |
| Water scarcity | 42.9% |
| No suitable technologies for fresh crop storage | 42.9% |
| Road's network is not suitable for the crop transportation | 42.9% |
| No suitable technologies for crop preservation such as drying | 28.6% |
| Markets are far | 28.6% |
| The high cost of agriculture inputs | 28.6% |
| Lack of Medium- and Long-Term Agricultural Strategies | 7.1% |
| Not introducing climate-tolerant seeds in Lebanon/Lebanon's non-joining of UPOV Convention, which prevents the purchase of some new protected plant varieties | 7.1% |
| Increasing exports to bring more needed foreign currency to the country | 7.1% |
| Water preservation technologies are lacking | 7.1% |

*Source: Beneficiaries Survey, February 2022*

Almost two thirds of the respondents (62%) found the project implemented activities in Lebanon as ***highly relevant*** to the most pressing challenges facing the agriculture sector in Lebanon while none found it irrelevant.

[16] 517612-MELIA-Modernization-of-irrigation-systems-measures-to-reduce-pressure-on-water-demand-in-Lebanon.pdf (csic.es)

*Figure (2): Relevance of capacity building activities to the pressing challenges - Lebanon*




*Source: Beneficiaries Survey, February 2022*

**Palestine**

According to data from the Palestinian Ministry of Agriculture, agricultural lands cover a total surface area of about 1.2 million dunums, representing 20% of the total area of the West Bank and Gaza Strip. 90% of all agricultural lands are found in the West Bank and 10% in the Gaza Strip[17]. 81% of total agricultural land is rain-fed, while 19% is irrigated. It is worth noting that 62.9% of all agricultural lands are found in Area C, therefore under full Israeli control; 18.8% are in Area B; and 18.3% are in Area A.[18]

Access to water resources is becoming increasingly difficult, with the Separation Wall and other barriers in place, as well as continued settlement expansion. Obtaining extra water from wells is another key problem facing farmers, as most wells are old and need rehabilitation and development. Most farmers are constrained by the high price and limited availability of water. Farmers are not allowed to dig new wells, and groundwater-wells cannot exceed 100 m in depth.

Without proper water allocation, farmers are relying on traditional rain-fed agriculture. However, with climatic changes resulting in fluctuations in the rain, temperatures, and shifting seasons, rain-fed farming communities are becoming increasingly vulnerable and are on the brink of losing their livelihoods.[19]

[17] Marzin Uwaidat Sourisseau 2019 Study on SSA in Palestine with FAO WBGS final.pdf (cirad.fr)

[18] Marzin Uwaidat Sourisseau 2019 Study on SSA in Palestine with FAO WBGS final.pdf (cirad.fr)

[19] Agriculture in Palestine | Heinrich-Böll-Stiftung | Palestine and Jordan (boell.org)

Therefore, water issues in Palestine extend beyond being a scarce resource. Other factors contribute to the water crisis. Those factors include, but are not limited to: climate change impacts; exponential population growth; and that the major freshwater resources are mostly transboundary with political complexity.[20]

Palestine has the PWA Strategic Water Resource and Transmission Plan and the Water Sector Reform Plan 2016–2018 that tackle filling the water gap mainly through reallocation. There is an absence of discussion about enhancing efficient use practices, facilities rehabilitation and demand management, however, multiple scholars have suggested the latter two approaches as viable options to address water shortage in the region.[21]

Palestine has a national agriculture strategy "National Agriculture Sector Strategy (2017-2022), Resilience and Sustainable Development, 2016".[22] The strategy has five strategic objectives including: female and male farmers' resilience and steadfastness on their lands enhanced, Natural and agricultural resources sustainably managed and better adapted to climate change, increased agricultural production, productivity, and competitiveness in the local and international market.

The project activities respond to the identified challenges of the agriculture sector in Palestine and it contributes to achieving some of the objectives of the country's strategies.

The participants in the project activities identified the three most pressing challenges to the agriculture sector in Palestine as water scarcity, low crop production and the absence of suitable technologies for fresh crop storage.

*Table (4): Most Pressing Challenges to the Agriculture Sector in Palestine*

| Challenge | Percentage |
|---|---|
| Water scarcity | 85.2% |
| Low Crop Production | 37.0% |
| No suitable technologies for fresh crop storage | 37.0% |
| No suitable technologies for crop preservation such as drying | 22.2% |
| The planting of unsuitable crops | 18.5% |
| Road's network is not suitable for the crop transportation | 14.8% |
| Markets are far | 11.1% |

*Source: Beneficiaries Survey, February 2022*

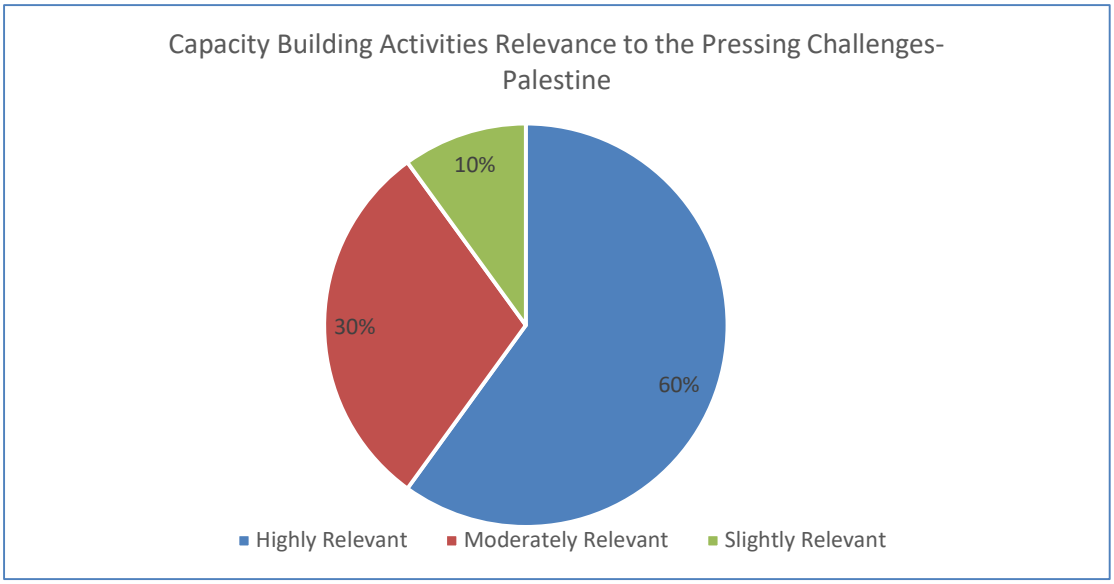
60% of the respondents believe that the implemented project activities are highly relevant to the most pressing challenges facing the agriculture sector in Palestine while none found it irrelevant.

[20] sustainability-12-03634-v2.pdf

[21] sustainability-12-03634-v2.pdf

[22] English Strategy 2017-2022.pdf (unccd.int)

*Figure (3): Relevance of capacity building activities to the pressing challenges - Palestine*




*Source: Beneficiaries Survey, February 2022*

As well, in Palestine other projects are currently being implemented by the Ministry of Agriculture related to water harvesting and their outputs are linked and interrelated with this project.

**Needs Assessment has been used to ensure the relevance of the activities to the needs of the beneficiaries:**

The training on green technologies was based on the needs assessment of the 3 countries Jordan, Lebanon and Palestine. According to the needs assessment five fact sheets on green technologies covering rainwater harvesting, green fertilizers, solar dryers, small scale food processing, and food bio-conservation and two training manuals on rainwater harvesting and use of solar dryers were developed. Further the training that was conducted for women cooperatives in the Al Bekaa region in Lebanon was based on training needs assessment of the women participants as well as the fact that the region is characterized by an excess in crop production which marked the need for ways to maximize the benefits of the crop and utilize ways for crop production and preservation to improve the marketability of the products.

The project use of needs assessment methodologies before the development of the target capacity building needs is proven an excellent strategy to adapt the intervention to the needs of the target beneficiaries.

## *Effectiveness*

This section assesses to what extent the "Enhancing Resilience and Sustainability of Agriculture in the Arab Region" Project reached its targets in terms of outputs and outcomes, over its implementation period April 2018 to December 2021. Findings have been obtained from the project progress and final reports prepared by ESCWA. As well as from interviews conducted during the evaluation period. The beneficiaries' survey results also gave complementary insights.

**Achievement of the Projects' anticipated outputs and outcomes:**

The final report of the project as well as the stakeholders' inputs show that the project achieved almost all the required activities. The project only fell short in achieving the targets for the green technologies training where only three training workshops were conducted out of 6 training workshops targeted. The following table shows the project achievements against the targets:

*Table (5): The level of achievement of project outputs and outcomes per indicator*

| Performance Indicator (PI) | Target | Activities | Level of Achievement | |
|---|---|---|---|---|
| **Objective: To enhance national capacities in addressing resilience and sustainability of the agricultural sector, considering the major challenges including water scarcity, prevailing conflicts and climate change, facing the Arab region** | | | Activity | Target Achievement |
| **EA1 Enhanced national capacities [23] of targeted Arab countries to optimize the use of available conventional and non-conventional water resources for supplementary irrigation, thus contributing to increased resilience and sustainability of agriculture.** | IA1.1 At least two of the target countries undertake measures or adopt policies, related to the guidelines to be developed through the project, to enhance resilience and sustainability in agriculture through enhanced access to irrigation water | A1.1) Develop a training manual on irrigation water management utilizing supplementary irrigation for enhanced agricultural productivity. The manual is to complement the training manual of the AquaCrop model, which was developed earlier under other ESCWA activities | A training manual was developed | Achieved |
| | | A1.2) Develop a training manual on the use of GIS tools to extract mid and long-term climate data projections that are available from the RICCAR project. | A training manual was developed | Achieved |
| | | (A1.3) Having developed the above related capacity building training manual, | 3 training workshops were implemented (1 in each target country) | Achieved |

[23] Enhanced capacities refer to increased knowledge and understanding of the issues, as well as the ability to identify measures and actions needed to achieve the stated objective.

| Performance Indicator (PI) | Target | Activities | Level of Achievement | |
|---|---|---|---|---|
| | | stakeholders in the three target countries will be trained. Three 5-day national Training of Trainers' workshops (one in each of the target countries) of relevant official national stakeholders in the three selected focus countries, on AquaCrop, with a focus on irrigation water management to adapt to climate change impacts on water availability. The training would also include the application of GIS tools to obtain and treat the RICCAR climate change projection data, which are to be incorporated in the AquaCrop training. | | |
| | | (A1.4) Organize a second round of three 5-day national Training of Trainers' workshops targeting the trainees of the first-round workshops in three selected focus countries. These workshops will focus on applying the theoretical knowledge and knowhow gained in the first-round training through actual case studies, where participants will be grouped into 3-member teams to work on a specific case study that include specific | 3 training workshops were implemented (1 in each target country) | Achieved |

| Performance Indicator (PI) | Target | Activities | Level of Achievement | |
|---|---|---|---|---|
| | | crops and geographical locations within the country. The selection of crops and location will reflect priorities of each country. | | |
| **EA2 Enhanced national capacities[4] of targeted Arab countries to utilize the SDGs Means of Implementation (technology, research outputs, access to finance and markets) for increasing resilience and sustainability of agriculture** | IA2.1 At least two targeted countries undertake measures related to increasing the resilience of the agriculture sector through utilizing the Means of Implementation (technology, research outputs, access to finance and markets). | (A2.1) Conduct a diagnostic needs assessment mission in each of the three targeted countries to meet with concerned government officials and stakeholders and identify priority course of action and assess the exact priority capacity-building needs of each target country. | Training Needs assessment was conducted in the three target countries using online consultations and e-survey. The findings were included in "Capacity Needs Assessment and Solutions Report" | Achieved |
| | | (A2.2) Develop in each of the target countries, a country specific training program (including training material) that address recommended policies and measures in utilizing SDGs Means of Implementation (technology, research outputs, access to finance and markets) for increasing resilience and sustainability of agriculture | Five fact sheets on green technologies covering rainwater harvesting, green fertilizers, solar dryers, small scale food processing, and food bio conservation were developed. Two training manuals on rainwater harvesting and the use of solar dryers were developed. | Achieved with modifications |
| | | (A2.3) Organize six 3-day training national workshops for relevant official national agriculture organizations, including national | - 2 training workshops were implemented in Palestine and Jordan targeted extension officers and experts | Achieved with modifications |

| Performance Indicator (PI) | Target | Activities | Level of Achievement | |
|---|---|---|---|---|
| | | agricultural cooperatives in the selected three focus countries on utilizing the Means of Implementation (technology, research outputs, access to finance, or markets) for increasing resilience and sustainability of agriculture. | from the Ministries of Agriculture in both countries aimed at raising awareness of participants on five green agricultural technologies that promote sustainable use of natural resources and improve agricultural production, and at empowering them to effectively transfer acquired knowledge to farmers. Technologies addressed by the workshop included small-scale food processing and associated green practices, food bio-conservation, solar dryers, green fertilizers, and rainwater harvesting<br>- 1 training for women cooperatives on green technologies were held in Lebanon | |
| | | (A2.4) Organize a 2-day regional workshop to present the project outcome, disseminate lessons | 5 national consultation sessions were implemented. | Achieved with modifications |

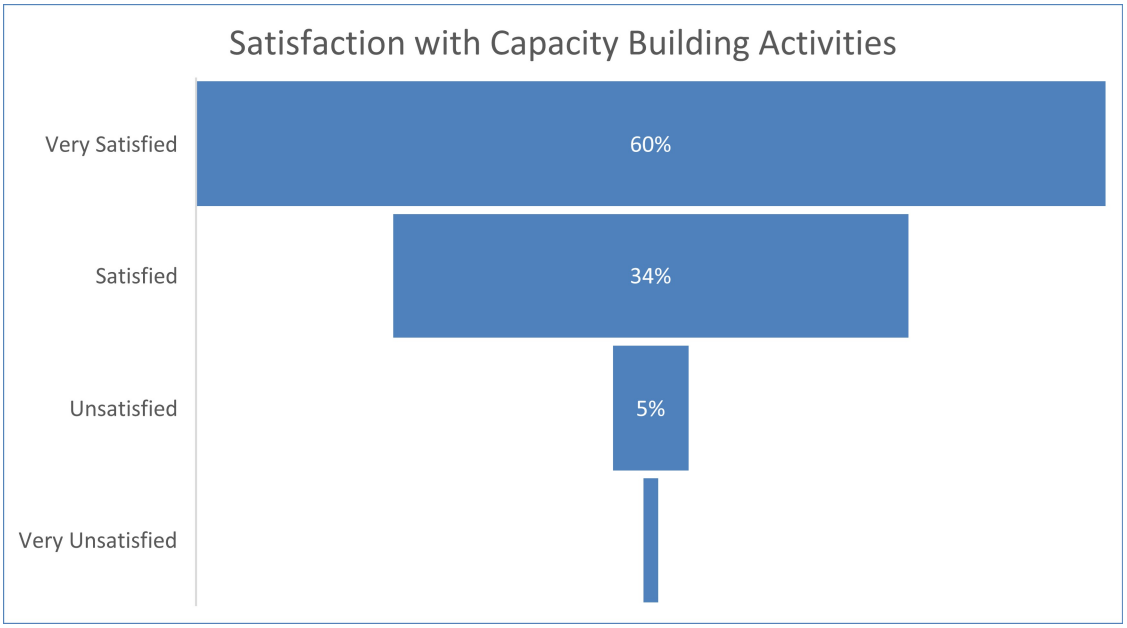
| Performance Indicator (PI) | Target | Activities | Level of Achievement | |
|---|---|---|---|---|
| | | learned to other Arab countries and identify areas for future follow up. | | |

Overall, the targets as presented in the project logical framework were achieved at a very good rate. Other findings of the evaluation are shown below:

**Attendance and satisfaction with the capacity building activities were high:**

The projects' beneficiaries survey results showed that the vast majority of participants of the capacity building workshops attended all the training days (97% of respondents). The vast majority of the beneficiaries (94%) were either very satisfied or satisfied with the project's capacity building activities.

*Figure (4): Satisfaction with the Capacity Building Activities*




*Source: Beneficiaries Survey, February 2022*

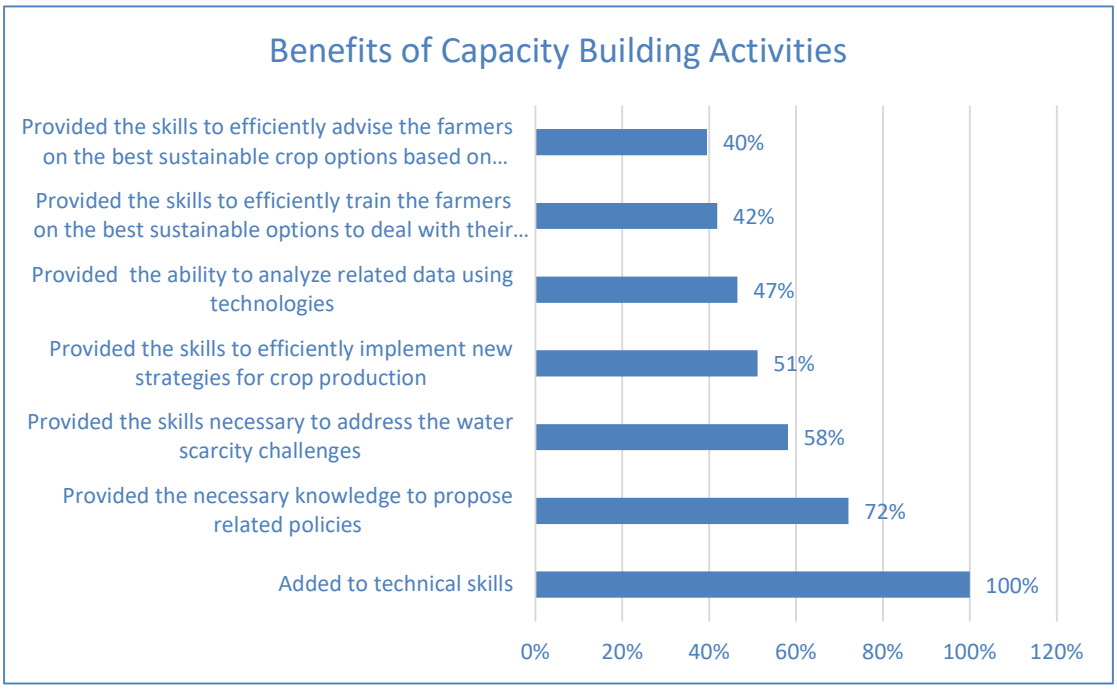
**The majority of the beneficiaries benefited from the capacity building activities. All of the beneficiaries benefiting from the capacity building activities witnessed an enhancement in their technical skills:**

The majority of respondents (84%) benefited from the capacity building activities in different ways. The main benefit that was universal among all the beneficiaries is the addition of technical skills, followed by the provision of necessary knowledge to propose related policies.

***Both these benefits mark an important achievement towards the realization of the project's first outcome of at least two of the target countries undertaking measures or adopting***

***policies***, related to the guidelines to be developed through the project, to enhance resilience and sustainability in agriculture through enhanced access to irrigation water.

*Figure (5): Benefits of capacity building activities*




*Source: Beneficiaries Survey, February 2022*

**Country-Specific Benefits were noticed:**

**In Jordan**, the key informants reinforced the findings regarding the capacity building benefits, they believe that the AquaCrop training was so beneficial and it was applied to estimate the water needs of crops in the management of irrigation water within the activities implemented by the Irrigation Department and were able to practice the methods used to prepare a case study for Jordan: "Assessment of the impact of changes in available water on the productivity of agricultural crops".

> "*We started using the AquCrop model to estimate the water needs of crops in the management of irrigation water within the work of the Irrigation Department.*"
>
> Head of Agricultural Land Use Department

As for the Green Technologies, the training was useful in understanding the modern technologies that are used to support the green economy and it is found to be very beneficial to the trainees. However, they believe that more practical and intensive training is needed to have sufficient knowledge to implement proper training for farmers.

The need for more knowledge prohibited the Ministry of Agriculture from submitting related proposals to implement programs/ initiatives based on the green agricultural technology topics covered by the project.

**In Palestine**, The Palestine Ministry of Agriculture started using the AquaCrop model as a direct result of the training. The beneficiaries in Palestine believe that this model is more practical compared with other models and programs. Other models and systems require accurate and detailed data and readings provided by meteorological stations, which Palestine lacks.

The model helped in estimating crops water needs for most of the field crops which were reflected on better water resources management. They benefited from the model in determining and rescheduling planting dates to deal with the late rainy seasons due to the climate change, and there has been a delay in planting dates and reliance on supplementary irrigation.

> "*We benefited in determining and rescheduling planting dates to deal with the late rainy seasons due to the climate change, and the planting dates has been rescheduled and reliance on supplementary irrigation.*"
>
> Director of the Department of Marginal Water Use

As for Green Technologies, the topics were very beneficial given the climate change issues. They benefited from the training sessions on Green Technologies in introducing new techniques and technologies such as solar drying. This training helped in contributing to developing the national capacities in rainwater harvesting, and improving the technical capacities and skills of the agricultural engineers and extension service providers who in turn will be able to transfer the knowledge to the farmers. This training contributed to covering several dimensions and aspects that are included within the Palestinian national agriculture strategy. However, they still didn't work with farmers.

> "*Proposing new projects based on green technologies within the budget of the ministry of agriculture.*"
>
> Director of Planning and Policies

**As for Lebanon, the benefits were less tangible.** Lebanon suffers from the lack of data and information availability for the full utilization of the AquaCrop Model. The project highlighted this challenge. It helped in identifying the ability and capability of Lebanon in obtaining the needed information and data required for the AquaCrop model. Through coordination among all related stakeholders, Lebanon managed to identify the needed information and data.

This model helped in determining the water needs for each crop. The use of this model became part of the daily tasks of the Ministry staff (as stated by the government focal point) that will be used in managing water resources and identifying the real crops water needs. One of the limitations of using the model is that this model is related to field crops and does not cover fruit trees.

> "*The use of this model become part of our daily tasks that we use in managing water resources and identifying the real crops water needs.*"
>
> Head of Rural Engineering Service

The Ministry of Agriculture faces some challenges that affect the proper utilization of the system including the shortage in human and financial needed resources. However, the ministry started some form of coordination with other stakeholders including the Lebanese Agricultural Research Institute LARI to optimize the use of the system.

**Different outcomes for the Green Technologies in Lebanon were noticed through women cooperatives training:**

Almost 9 women cooperatives in Lebanon were trained on green technologies. In addition to UNIDO, the workshops were also organized in cooperation with the municipality of Qab Elias, the Agri-Food Technical Institute of Qab Elias, and a local NGO called "SAWA Association for Development" (a local NGO). The training on green technologies used was the same that was implemented targeting the Ministries staff in the three countries, however it differed in the application side of it, where applications that may interest the cooperatives, participants were identified and used during the training. As per the training needs analysis, the intervention with cooperatives covered the following:

- Green technologies
- Solar drying as identified by the cooperatives training needs analysis.
- Food safety
- Topics related to marketing which was delivered by UNIDO,
- Preparing seasonings which were delivered by one of the most famous chefs in Lebanon.

Additionally, on the last day, networking activities were implemented with the cooperatives eco-system. The networking activity included research institutions working in food safety and marketing, exporters, wholesalers, business incubators, donors to support micro enterprises and the Ministry of Labor to help cooperatives to register the products (logo) among others.

This approach focused on developing the value chain for women cooperatives in order to maximize the value of their produce with the assumption of providing them with the skill to process products to be marketed during the entire year and increase their income. This was partially fulfilled with skills gains, however the economic and political situation affected negatively the achievement of the desired outcomes and impact. However, the intervention resulted in many outputs including:

- The commitments of some buyers to buy specific products from the cooperatives. However, the economic and political situation in Lebanon negatively affected the fulfillment of these commitments.
- It was a great opportunity to meet with other cooperatives and learn from their experiences, and establish coordination and integration mechanisms.

- Solar drying technologies helped in improving the cooperatives' products.

> "*The training helped us in changing the old ways that we were adopting in food processing, some of these ways were in correct. It will be reflected positively in producing high quality products*".
>
> Cooperative member in Lebanon

- The training expanded the cooperatives' horizons in producing high quality products and changing some perceptions regarding food safety. However, the cooperatives key informants confirmed that the political and economic situations (price increase) of Lebanon affected negatively the expansion in production.
- The participation in the food exhibition increased their sales, and provided them with an opportunity to learn about other cooperatives' products.
- As a result of the training, the cooperatives received a certificate of participation and signed by ESCWA, this will help in marketing the cooperatives products.

**Regional Workshops were a great venue to share lessons learned and best practices:**

Arab Organization for Agricultural Development AOAD in cooperation with ESCWA implemented 5 consultation meetings in 5 countries: Algeria, Jordan, Egypt, Sudan and Lebanon. The workshops included presenting and discussing working papers, in addition to sharing some successful experiences in the field of enhancing the resilience and sustainability of the agricultural sector in the Arab region. Three working groups were formulated based on three dimensions: The economic and social dimension in enhancing the resilience and sustainability of the agricultural sector, The environmental dimension in enhancing the resilience and sustainability of the agricultural sector, Rural women and youth dimension in enhancing the resilience and sustainability of the agricultural sector.

These working groups discussed deeply the challenges facing the agriculture sector in the Arab regions and explored solutions and measures. As for the consultation meetings, the most important outcomes of the consultation meetings were:

- Raising the participants' awareness of the climate change definition and its impact on the agriculture sector.
- Raising participants' awareness of resilience and how to measure it.
- Highlighting the challenges facing the agriculture sector in the Arab region.
- Learning about the measures of Arab governments in facing these challenges.

These consultation meetings contributed to a better and deeper understanding of the challenges facing the agriculture sector and the implications of climate change on the agriculture sector. As well as, discussing thoroughly the solutions and measures to face these challenges. One of the greatest benefits of the consultation meetings was to have most of the related stakeholders in the agriculture sector in the 5 countries together discussing challenges facing agriculture and proposed solutions.

Although the consultation meetings were extended to cover three additional countries that were not initially covered by the project to further disseminate the project's results and gather information and exchange views from different countries on priorities for enhancing

agriculture resilience. However, both consultants and participants expressed the need for such consultation meetings to be paired with capacity building intervention to realize the target benefits.

**Uses of the capacity building skills to facilitate better management of environmental challenges affecting agriculture sector were recognized by the beneficiaries:**
The survey of beneficiaries revealed that the capacity building activities received throughout the project did make a significant difference to the beneficiaries' skills in managing the environmental challenges affecting agriculture sector. Almost 60.7% of the respondents to the beneficiaries' survey believe that significant improvements to the skills in managing the environmental challenges affecting the agriculture sector were noticed.

*Table (6): Capacity building activities contribute to improving your skills in managing the environmental challenges affecting the agriculture sector*

| Improving the skills in managing the environmental challenges affecting the agriculture sector | Percentage |
|---|---|
| Significantly | 60.7% |
| Moderately | 31.8% |
| Slightly | 4.5% |
| Did not contribute | 3.0% |
| **Total** | **100%** |

*Source: Beneficiaries Survey, February 2022*

**Overall Findings**

The results of the surveys and interviews reviewed in this section suggest that overall, participation in the project resulted in improvement of the skills of the beneficiaries in the project target set of skills. Direct beneficiaries' perception of their ability to implement the skill sets in their work-related activities improved, as did their perceived knowledge of their ability to inform policy.

Beneficiaries of green technologies training noted a need for more training especially practical to build the related capacity to advise farmers on the ground. As well, in Lebanon the lack of needed data, particularly in reference to the AquaCrop model, marked one of the continued challenges relative to this objective.

**Implementation Modalities**

There are different aspects of the implementation modality that has been reviewed during the evaluation including:

Implementation: ESCWA was the main implementer of the Green Technology component of the project. The implementation was mainly done through the ESCWA team who managed the different activities and engaged experts when needed to cover certain topics within the green technologies subject. The experts were selected based on their experience and ability to effectively implement the related tasks within the agreed upon timeframes. As well, ESCWA partnered with two regional organizations to implement two activities of the project as follows:

- Arab Center for the Study of Arid Zones and Drylands ACSAD: The organization had previous experience on AquaCrop and its applications through working on previous projects with FAO and GIZ. The ability to prepare the training materials on irrigation management in the Arabic language for maximizing the benefits of the trainees by eliminating any language barriers. Partnering with ACSAD enabled the project's beneficiaries to use real case studies and examples that are based on true data from Arab countries.

- Arab Organization for Agricultural Development AOAD: Is implementing several projects in the field of agricultures and is one of the specialized Arab organizations, functioning under the umbrella of the League of Arab States LAS has through its general assembly a major role in endorsing policy documents as regional tools to assist policy and decision makers in addressing challenges of the agricultural sector. It's responsibilities include: collecting and disseminating information and data relevant to the fields of food and agriculture, coordinating and supporting local and regional efforts in the agricultural sector, and in specific: Scientific and technological research, as well as socioeconomic studies in fields related to food, agriculture and rural communities, Supporting organizations and service providers in the fields of education, training, agricultural know-how, home-economics, credit and management, as well as development of rural communities, Natural resources preservation and updated know-how in food processing industries. AOAD prepares and publishes an annual report about the agriculture sector and food security status in the Arab Countries. The vast experience and the wide connections within the Arab countries enabled the efficient implementation of the activities required from AOAD.

Additionally, ESCWA cooperated with UNIDO on implementing one activity directed to women cooperatives, where UNIDO provided training on marketing to the cooperatives.

This implementation modality proved successful in engaging experienced implementers who were able to implement the required activities timely and with high quality. They were also flexible and able to accommodate the challenges imposed by the Covid-19 Pandemic and the project resulted delays.

Engaging Local Authorities as Project Partners: The Project was effective in engaging the local authorities (Ministries of Agriculture) in the three countries in different phases of the project from the design throughout the implementation, which resulted in enhancing their sense of ownership of the project on the one hand, and enhancing their keenness on the success of the project's activities on the other hand. Two focal points from the related staff within the Ministries were identified as the project focal points (one for the AquaCrop and another for the Green Technologies). This was found as a proper strategy to have one contact point for coordination and reporting.

> "*Involving us since the beginning of the project idea, and our involvement in the details of its implementation and the selection of its participants, made us feel a great responsibility towards the success of the project.*"
>
> AquaCrop Focal point

Selection of project's beneficiaries: According to the interviewed stakeholders and the survey results, the local country focal points, ESCWA as well as the implementing partners played a

role in the selection of the project beneficiaries. However, the vast majority of the beneficiaries were selected through the nomination of their organizations.

As for the consultation sessions, participants were selected jointly by AOAD and ESCWA taking into account the diversity representation of the agricultural sector and gender. Participants were selected based on an assessment for their backgrounds and specialties and the geographical distribution -ESCWA participated in this assessment.

Communication and visibility: Presentation of project results on different occasions and sharing of success stories including how challenges were tackled was a very effective tool to empower and increase motivation of beneficiaries or potential beneficiaries and ensure the project's visibility. Moreover, the five technical booklets on green technologies have been finalized and posted on the project's webpage https://www.unescwa.org/resilience-agriculture, and all participants have been informed accordingly.

Engaging directly with beneficiaries in Lebanon: The project applied a new implementation modality that was included in the original design of the project which is engaging directly with beneficiaries/ farmers rather than with extension engineers at the Ministries of Agriculture. The project was able to engage with beneficiaries from 9 different cooperatives in Lebanon including Sawa Association for Development, Al Jam'iyya Al Taawouniya Al Hirafiyya, Sultan Yaacoub Cooperative for food processing, Sawa Rbina Association – Moubadara, Al Jam'iya Al Taawouniya Al Intajiyya "Bikaaouna"and Taawouniyyat Mounat Ayyam Zaman for food processing. The stakeholders confirmed that this was an unintended result of the project by directly engaging with producers that may positively contribute to enhancing the livelihoods of the women engaged in the cooperatives. In addition to comparing the impact of direct engagement with public sector service provision.

Although positive results were noticed as reported by the sample of women participants interviewed, however, the situation in Lebanon negatively impacted the realization of the full potential of the implemented activities.

Changes in programming and response to Covid-19 situation: The project witnessed some changes in the programming during the project implementation to respond to the circumstances faced as a result of the Covid-19 Pandemic as well as trying new implementation modalities for future programming. The project was effective in changing to remote and online methodologies when needed such as implementing remote consultations and online surveys. As well, the project replaced the final dissemination workshop with 5 country workshops to disseminate lessons learned on food resilience.

This flexibility of the project to respond to changing circumstances on the ground represents an efficient management approach to achieve the project's overall targets.

Participation of women and people with disability, and integrating Human Rights: As part of its implementation modality, the project targeted working directly with 9 women cooperatives, in addition to the project focus to take into account gender dimension through women participation in the training activities held. The Project was able to engage around 43% women in its activities. In some countries, the engagement of women surpassed this percentage (In Sudan workshop the female participants reached 19 out of 34 participants). This percentage is considered acceptable taking into consideration that the project didn't

mandate the local counterparts with a specific number of females to participate in the project activities.

The evaluation came with the conclusion that the dimensions of integrating human rights, and the inclusion of persons with disabilities were not explicitly focused on. This is because the project document, including the theory of change, the logical framework and the results framework, did not include nor addressed these dimensions.

For future interventions, more emphasis and focus on integrating and mainstreaming the human rights and disability inclusion dimensions through addressing these dimensions in project document with clear quantitative indicators to be incorporated in the design.

## *Efficiency*

The organisation and structure of the project appear to have been very successful. The established nature of the offices and staff of ESCWA has meant that the project has benefited from the existing systems of logistic supply and the management structures of ESCWA. To cover for the local presence in the project target countries, 5 project focal points (focussing on AquaCrop and Green Technologies) were identified for the project.

In using the already established ESCWA and implementing partners' offices and systems, the project procurement needs have been kept to a minimal level.

Generally, the efficiency of the project **from the management process perspective** can be judged as very good. The inputs provided from ESCWA were generally appropriate in quality, quantity and timing. Furthermore, the implementation of this project by the implementing partners was efficient, in the sense that within the chosen strategy, the costs are reasonable. The implementation arrangement has clear strengths in that it has enabled the project to draw on the different experience and expertise of the three implementing partners. It has enabled a multi-sector approach and a geographical focus as well as a wider connection into the Arab league countries.

The level of coordination and preparation of training workshops by ESCWA was very high, in terms of logistical arrangements, follow-up of participants, preparation of training materials, selection of trainers and lecturers, and preparation of training session reports, which had the greatest impact on the implementation of the project's activities with high efficiency.

> "*ESCWA Team showed high level of professionalism in organizing the sessions and follow up. ESCWA Team was responsive in providing feedback and comments in a timely manner*".
>
> Trainer

In relation to the project's M&E and reporting system, the evaluation expert found that there has been too much reliance on qualitative data. This was important to probe more deeply and tell the story however, the evaluation expert suggests more focus on quantitative data including beneficiaries' numbers. In the routine monitoring activities, it was important to use some baseline assessment tools such as pre and post training evaluation. If these tools were used, a better judgement on the achieved results could be highlighted.

The project's final progress report that was provided to the consultant showed that the project implementation rate was 99.8% where the fund was utilized efficiently to execute all tasks and activities even with the adjustments of some activities and panned missions and workshops due to the COVID-19 pandemic.

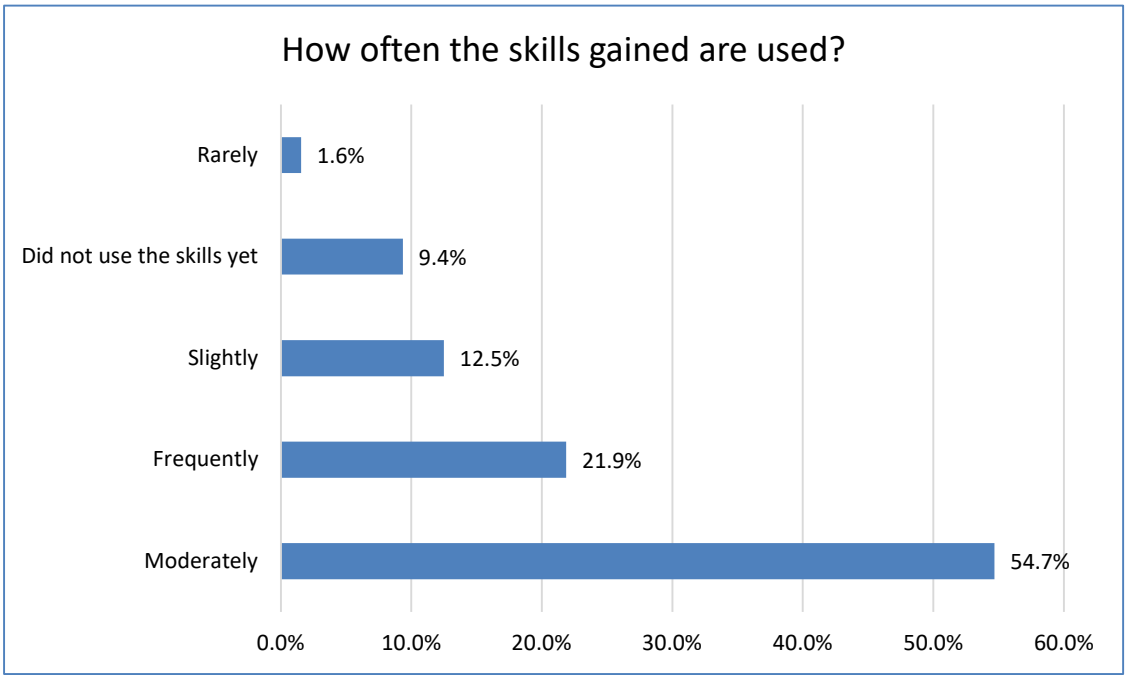
### *Impact and Sustainability*

Given the engagement with the relevant ministries, and especially, the Ministries of Agriculture in the three focus countries, government support for any possible extension or replication of the project is clear.

As to whether capacities have been built, in that this has been essentially a capacity-building project, the acquired knowledge of the various beneficiaries, whether in Aqua Crop, Green Technology, Resilience strategies will be retained. Also, the skills acquired by the cooperative trainees will not be lost.

In general, the beneficiaries used the skills gained through the project moderately (54.7%), while around 22% of the beneficiaries used it frequently, which emphasizes the sustainability of the gained knowledge.

*Figure (6): How often the skills gained through the project are used?*




*Source: Beneficiaries Survey, February 2022*

Due to the gained knowledge and skills, the trained engineers who received training on the AquaCrop model were nominated by the ministries of agriculture to engage in other similar project implemented by other development organizations. Recently, some of the engineers are engaged with FAO on the project "Contribution to Capacity Development in the Use of AquaCrop Model in MENA Region" which is currently implemented in Lebanon, Palestine and Jordan.

In Palestine and Jordan and to a lesser extent in Lebanon, the AquaCrop model is uploaded into the computers of the related staff and incorporated within the activities of related departments. In Jordan, the program was adopted to estimate the water needs of crops in the management of irrigation water within the work of the Irrigation Department. In Palestine, the AquaCrop model was used to reschedule the planting dates and initiated the reliance on supplementary irrigation. Lebanon, although started to be incorporated within the tasks of related staff, the proper implementation requires more time due to information scarcity. One of the limitations of using the model in Lebanon is that this model is related to field crops and does not cover fruit trees.

Skills enhancement on the project focus fields of the capacity building were witnessed beyond the project's direct beneficiaries. The Jordanian Ministry of Agriculture trained engineers prepared a training material on the AquaCrop model to be used in the training of 500 newly graduated agricultural engineers, which will be implemented by the Agricultural Engineers Syndicate. While in Palestine, the trainees (20 agriculture engineers) gained new knowledge and skills and they were able to transfer this knowledge and skills to their colleagues at the ministry of agriculture (98 agriculture engineers) on the use of the AquaCrop model.

At the policy level for Jordan, a proposal was submitted regarding the AquaCrop model within the Intended Nationally Determined Contribution (INDC).

The project contributed to the enhancement of Green Technologies skills and their linkage to extension services at the national level in Jordan and Palestine. In Palestine, the ministry of agriculture has proposed new projects based on Green Technologies and incorporated them within the budget of the ministry. However extra efforts are still needed to fulfil the project's ultimate goals of mitigating the impact of climate change through the support extended to farmers. While more practical training is needed, in Jordan, there are plans at the ministry of agriculture to introduce and integrate the green technology concepts within the extension plans of the ministry to institutionalize and sustain the benefits and extend it to farmers.

To contribute to the sustainability of Green Technologies outcomes. The five national panel discussions/ workshops implemented by the project resulted in drafting a resolution that encourages Arab countries to put green agricultural technologies among priorities of extension services, develop policies for dissemination of green technologies, and implement more related projects. This resolution was adopted by all Arab countries during the Organization's general assembly session scheduled for April 2022. This resolution will guarantee the adaptation and application of the skills acquired through the project in the focus countries as well as the broader Arab League countries.

The manual on Solar Dryers that was prepared will be used by the Agro-Food Technical Institute under the Ministry of Higher Education to train the institute's trainers in Lebanon.

As for the cooperatives training, one of the most important impacts of the project is that the cooperatives were able to introduce new products by either enhancing the quality or classification of their products.

The networking between producers and sellers, exporters and other parties provided opportunities for producers to sell their products and receive support. This networking is expected to last after the conclusion of the project activities.

The availability of the project outputs on the ESCWA Resources Portal, especially RICCAR will enable the sustainability of the projects' benefits and the spread of the benefits beyond the direct beneficiaries of the project.

## V. Conclusions and Recommendations:

The evidence and findings presented in the previous sections allowed the evaluation to reach the following conclusions and recommendations.

**Conclusions:**

1. The project was relevant in addressing the challenges faced by the three Arab countries related to the agriculture sector and water resource management. The project was aligned with the national priorities, strategies and efforts in assessing the climate change impacts on water resources and other socio-economic sectors, enhancing food and water security, and developing the capacities for climate change adaptation.
2. The project was implemented effectively and efficiently, where almost all the activities stated in the logical framework were achieved and the targets were met. Although the project achieved some results at the outcome level, such as making some institutional changes in the work of the governmental institutions such as adopting the Aquacrop model in the process of planning water uses for irrigation purposes and its reflection on improving the efficiency of irrigation. However, the logical framework of the project did not include such indicators
3. Engaging local stakeholders at the ministries of agriculture since the design of the project through the different phases of implementation was very important in ensuring the sustainability and scaling up of the project outcomes and impact. This resulted in enhancing their sense of ownership of the project on the one hand, and enhancing their keenness on the success of the project's activities on the other hand. Most importantly, the project succeeded in integrating these ministries into the global Climate Change Agenda.
4. The engagement of regional structures and entities as implementing partners facilitated the engagement of high-level officials that would support the sustainability of the project outcomes. Adapting the resolution on green technology by the Arab League showed a remarkable achievement for the project.
5. The project enhanced gender equality and the participation of women in its activities. However, the dimensions of integrating human rights and the inclusion of persons with disabilities were not explicitly focused on. This is because the project document,

including the theory of change, the logical framework and the results framework, did not include nor addressed these dimensions.

6. The project highlighted the importance of sufficient, in-depth and practical training to realize the targeted benefits. Practical assignments and case studies were important to deepen the knowledge gained through theoretical topics. This twining of theoretical and practical training were the drivers beyond the achievements seen in the AquaCrop training.
7. The 2-day training on Green Technologies was not sufficient to build the capacities of extension engineers on this important topic and provide them with robust skills to be used and applied. Associating this type of training with practical and field applications would have provided extension engineers with more skills.
8. There is still a lack of detailed data and information related to water harvesting in some countries such as Palestine i.e. soil map. The project contributed to the acknowledgement of these data gaps that the governments should work to fulfil.
9. Working with farmers and cooperatives was a great opportunity to deal directly with the final beneficiaries and test new implementation modalities that was based on developing the value chain concept starting from the production, through processing and ending with marketing.
10. Although the project was implemented in challenging times including the Covid-19 Pandemic and the Lebanon crises, the implementation modalities and flexibility in programming reduced the negative impact of these challenges and limited it to some delays.

**Recommendations:**

- To use a mixed approach combining theoretical information with real life examples in the future capacity building interventions, as well as allocating sufficient time practical applications to ensure the beneficiaries' deepening of understanding, and their acquisition of the necessary skills and the dissemination of knowledge.

- To integrate the dimensions of Human Rights and Disability into the project document, logical framework and the results matrix for future interventions.

- To incorporate results and targets with clear indicators within the logical frameworks at the outcome level for future interventions.

- To adopt working directly with the end beneficiaries as an implementation modality, although the political and economic conditions, especially in Lebanon, negatively affected the maximization of the benefit from this approach, yet, direct working with the end beneficiaries would reduce the stages of knowledge transfer and obtain direct results.

**Annex (I): Terms of Reference for the final evaluation of the UNDA project:**

# ENHANCING RESILIENCE AND SUSTAINABILITY OF AGRICULTURE IN THE ARAB REGION

PROJECT DURATION: JANUARY 2018 - JUNE 2021 (EXTENDED THROUGH DECEMBER 2021)

## 1. *BACKGROUND of Project*

**About the context:**

Many countries in the Arab region suffer from food insecurity due to factors including water variability and extreme weather events resulting from climate change, continued armed conflicts and political unrest, and weak access to food production inputs and financial services. According to the 2016 Global Food Security Index data, only the oil rich GCC countries rank among the first 35 food secure countries, while five Arab countries rank in the middle security range (53-66) and three Arab countries fall at the bottom of the list with a rank below 95. While the GCC countries rely on their strong purchasing capacity to secure food through trade, agriculture plays an important role in contributing to food security in many other Arab countries, directly through food production and indirectly by contributing to the enabling environment for social stability and employment.

With a regional average of around 85 per cent, the agriculture sector is the largest user of water resources in the Arab region, yet, water use efficiency is characterized as being low with a regional average of 40% resulting from wasteful irrigation practices and low investment levels in irrigation infrastructure.

While political instability, social unrest and armed conflicts usually lead to devastating impacts on the overall economy, a strong agricultural sector can help reduce the rate of economic deterioration through provision of food and employment. According to 2015 Chatham House research, the Syrian crises has led to a contraction of the national economy by more than 50% since 2011. Although associated with sharp reduction in food production, agriculture has, in relative terms, assumed a larger role in economic outputs.

Farmer access to the domestic market is key for maintaining livelihood of the rural communities in many Arab countries. Weak infrastructure usually impacts farmers, as they face difficulties to reach markets due to lack of and poor conditions of roads, or struggle to maintain the shelf lifetime of agricultural produce due to unfavorable storage conditions. FAO data shows that many agricultural countries of the region like Egypt, Morocco, Iraq, Algeria and Yemen have low road density, in terms of road length (km) per unit area, if compared with the world average or that of other countries or regions of the world. Inadequate storage particularly contributes to the loss of fresh food produce. Post-harvest open-storage practices is common in many Arab countries, where in 2014, almost 30%, (equivalent to 86 million ton) of all available food was reported to have been lost throughout the supply chain.

While agriculture is a key sector for the social and economic development of many Arab countries, it remains susceptible to the impacts of natural events and political unrest. Agriculture is usually the first and largest sector to incur losses from weather variability and extreme events. A change in the rainfall pattern or the occurrence of droughts or floods is

always felt by farmers and can devastate the local farming communities. It was estimated that the 2008 floods in the Wadi Hadramout, Yemen, lead to a total accumulated real income loss for the 2008-2012 period of 150% of the pre-flood agricultural value added.
The Arab region is facing severe natural water scarcity, evident from the long-term annual average precipitation in eighteen countries falling below 350 mm. Simultaneously, demand for water is increasing with water withdrawals exceeding water availability from internal sources. While total water withdrawal at the global level averages around 9 per cent of the total internal water resources, the average for the Arab region is 225 per cent, an indicator of elevated demand in comparison to the limited availability of internal water resources.

**About the project:**
Ensuring sustainable food production and higher agricultural productivity through increasing resilience and sustainability of the agricultural sector can be viewed as a no regret policy option, that does not only lead to improved sector performance and efficiency, but also has positive cross sector spillovers.

The project aims to enhance national capacities in addressing resilience and sustainability of the agricultural sector, considering the major challenges facing the Arab region including water scarcity, prevailing conflicts and climate change. There are many direct and indirect factors that contribute to resilience and sustainability of agriculture, some of which are related to other sectors. The project will examine the role and impacts of; access to water for supplementary irrigation; access to data, research outputs and climate-smart agricultural innovations and technologies; access to finance at the small-scale farm level; and access to markets, on enhancing resilience and sustainability of agriculture.

While policy guidelines are to be developed at the wider regional level, capacity building activities are planned at the national level of three focus countries. The combination of regional guidelines development and national capacity building is envisaged to inform decision making for enhanced integrated policy development, monitoring and implementation, notably that resilience and sustainability of agriculture is embedded within the 2030 Agenda for sustainable development and SDG2.

## 2. *Project evaluation*

### 2.1. Purpose of the evaluation

This end-of-cycle evaluation will cover the entire duration of the project from January 2018 to its completion in December 2021. It aims to systematically and objectively assess the project's design, implementation, outputs, and outcomes. It will serve two main purposes of:

- Learning – By contributing to lessons learned on the implementation and results of the project, as well as developing the existing knowledge base; and
- Improving evidence for decision making – By providing credible and reliable evidence to ESCWA and project partners to facilitate decision-making to improve developmental outcomes.

The evaluation will be conducted in line with the UNEG Evaluation Guidelines, the Development Account Evaluation Guidelines, and the ESCWA's Evaluation Policy (2021). The

evaluation will strive to employ development best practices with regard to promoting **gender equality** and a **human rights-based approach,** including **the rights of persons with disabilities**.

The primary audiences for the evaluation are ESCWA, ESCWA member States, as well as the United Nations Food and Agriculture Organisation (FAO), the Arab Organization for Agricultural Development (AOAD), and the Arab Center for the Studies of Arid Lands and Dry Zones (ACSAD).
This evaluation will be facilitated and coordinated by the ESCWA's Organisational Learning team (OLT).

### 2.2. Scope of the evaluation

The evaluation will be **forward-looking** and will objectively and systematically assess the performance of the project in terms of its **relevance**, **effectiveness**, **efficiency**, and **sustainability**. Further, the evaluation will assess the extent to which gender, human rights, disability inclusion and other cross-cutting issues were incorporated or mainstreamed into the project. The evaluation will cover the project's entire duration from January 2018 to December 2021.

The evaluation will assess whether the project achieved its objective, 'raise awareness on the need to enhance resilient agriculture, enhance the technical capacity of member countries and assist decision makers to identify the links between the four factors (access to water, data, finance, market) and resilient agriculture, and assist countries to identify policy options that facilitate achieving more resilient and sustainable agriculture'.

In addition, the evaluation will measure the extent to which the project's Expected Accomplishments were achieved in accordance with the project's original Indicators of Achievement:

**EA1:** Enhanced national capacities of targeted Arab countries to optimize the use of available conventional and non-conventional water resources for supplementary irrigation, thus contributing to increased resilience and sustainability of agriculture.

> **IA 1.1** At least two of the target countries undertake measures or adopt policies, related to the guidelines to be developed through the project, to enhance resilience and sustainability in agriculture through enhanced access to irrigation water
> **EA2:** Enhanced national capacities of targeted Arab countries to utilize the SDGs Means of Implementation (technology, research outputs, access to finance and markets) for increasing resilience and sustainability of agriculture
>
> **IA 1.2** At least two targeted countries undertake measures related to increasing the resilience of the agriculture sector through utilizing the Means of Implementation (technology, research outputs, access to finance and markets).

The evaluator may also develop additional (proxy) indicators for impact in consultation with ESCWA's Organisational Learning Team.

## *3. Evaluation criteria*

The following key evaluation questions per criteria will guide the evaluation. The evaluator is expected to refine evaluation questions where necessary and to include the refinement in the Inception Report.

**Relevance**

- Were the objectives and expected accomplishments of the project clearly aligned with the strategic needs and priorities of member States, the sustainable development goals, and regional development agendas?
- Were the activities and outputs of the project clearly aligned with the strategic needs and priorities of member States?
- Did the design of the activities and outputs ensure that they contributed to achieving the expected accomplishments and objective of the project?
- Did the achievement of the planned results address the identified needs of member States? If the results were different than the ones planned, did they still contributed to addressing the identified needs?
- If the project had not been initiated, would member States have been able to achieve the results without it?
- Do the objectives and expected accomplishments of the project align with ESCWA's mandate?

**Effectiveness**

- Was the project implemented according to plan? If not, was timely corrective action taken where necessary? Was additional support identified or provided to overcome implementation challenges?
- Did the project substantially enhance the capacity of target countries to improve and optimise energy efficiency in the building sector and up-scale energy efficiency programs in the existing residential and non-residential building stock?
- What were the major factors that influenced the achievement of the project's objective, and what adjustments were made throughout the project's implementation to account for these factors?
- What adjustments, if any, were made to the project as a direct consequence of the COVID-19 situation, and to what extent did the adjustments allow the project to effectively respond to the new priorities of member States that emerged in relation to COVID-19?
- How did the adjustments, if any, affect the achievement of the project's expected results as stated in its original results framework?
- Has the project made use of innovative means of delivery? How did this influence the achievement of results?

**Efficiency**

- Did the implementation of the project make effective use of time and resources to achieve results? Were there other implementation approaches that were likely to have been more economical?
- To what extent and in what ways was the project successful in improving its operational efficiency, i.e. increased usage of integrated planning, monitoring and reporting tools, efficiency of program management systems and tools, etc?
- Were there synergies or complementary efforts within ESCWA and with partners and other relevant entities that created efficiencies? To what extent was the work of the project duplicative or supportive of the work of other entities?

- Was ESCWA the entity best positioned to conduct the project?

**Sustainability**

- Do project beneficiaries and/or member States and/or stakeholders have ownership, capacity and resources to maintain the activity results after external funding ceases?
- Did the project contribute to capacity building of local institutions and/or member States to continue to deliver quality services? What are other major factors that influenced the achievement or non-achievement of sustainability of the project?
- Were there mechanisms built into the project design to ensure it provides ongoing benefits? Were there additional actions that should have been taken to address this? Were any areas of the intervention clearly unable to maintained over the long-term, and what lessons could be learned from these?
- Are the beneficiary member States now able to build on the results achieved? Has the project led to the identification of future directions?

**Gender, Human Rights, and Disability Inclusion**

- To what extent were issues of gender, human rights and disability inclusion incorporated into the design, planning, implementation, and monitoring and evaluation practices of the project, as well as the results achieved?
- To what extent did the project respond to and affected the rights, needs and interests of different stakeholders, including women, men, youth, people with disabilities and other marginalized groups?

### *4. Evaluation Methodology*

The evaluator is expected to elaborate a suitable evaluation design and methodology for addressing the evaluation questions, to be included in the inception report. The evaluator is expected to ensure a mixed method (qualitative and quantitative), inclusive and participatory approach, with adequate triangulation across methods, to arrive at credible, reliable and unbiased findings.

The evaluator will also ensure that all aspects of the evaluation are gender and human rights sensitive (including a special focus on the rights with person with disabilities). In addition, the evaluator must ensure that they always comply with the UNEG Ethical Guidelines for Evaluation during the conduct of the evaluation.

The below methods should be considered, and their use further refined and elaborated in the Inception Report:

- Desk review and secondary data collection. The evaluation will include a comprehensive literature review of documentation related to the project, including documentation provided by ESCWA. The following documents are to be included (the evaluator may also choose to include additional data sources): Project Document and Concept Note, Progress Reports and supporting materials, Financial Report, Activities Report, Lists of participants to all workshops and of stakeholders, Formal agreements with partners, Materials related to project implementation, and Knowledge products produced.
- Primary data collection. The evaluator will be expected to undertake primary data collection, including determining appropriate sample sizes, developing data collection protocols, and defining data collection techniques. Techniques may include, but are not

limited to, interviews with selected line office experts, including staff from ESCWA, beneficiaries from selected member States; and representatives from partners and stakeholders, or structured survey questionnaires for stakeholders that are not interviewed.

The above methodology is indicative. The evaluator is expected to build upon it and present a robust evaluation methodology within the inception report, including addressing and refining the evaluation questions.

The evaluation is likely to take place during the COVID-19 pandemic where travel restrictions exist and stakeholders might be dealing with an increased burden due to the pandemic. Consequently, a good quality and credible evaluation must be ensured without risking the health of staff and the evaluator in the face of the pandemic. In this regard, alternative data collection means rather than field visits should be considered, with an emphasis on desk reviews, virtual stakeholder interviews, and online questionnaires.

**All evaluation methodologies are to be approved by ESCWA's Organisational Learning Team and will be piloted and revised as per best practice.**

### *5. Quality assurance mechanism*

The evaluator will employ a quality assurance mechanism of her/his preference (either an internal or an external system can be used), which will provide quality checks throughout the evaluation process. This quality assurance mechanism will be indicated in the Inception Report and in the Final Evaluation Report.

### *6. Deliverables and Timeframe*

**Inception Report:** The evaluator will submit a draft Inception Report totalling not more than 10 pages, in addition to associated annexes. The Inception Report will summarize the desk review and propose the evaluation methodology and sampling strategy/ies to be used in the evaluation, along with a detailed workplan, draft evaluation matrix, stakeholder matrix, and quality assurance mechanism. Any revisions to the Inception Report will be implemented no later than one week following receipt of comments. The Inception Report will be gender and human rights sensitive, and include a focus on the rights of persons with disabilities.

**Final Evaluation Report:** Following the evaluation's data collection and analysis of findings, the evaluator will submit a draft Final Evaluation Report. The Evaluation Report will be user-friendly, well-structured and evidence-based, totalling not more than 20 pages, in addition to a 2-page Executive Summary and associated annexes. The Final Evaluation Report will summarize the agreed-upon methodology listed in the Inception Report, describe the evaluation's data collection and analytical approach, and present findings with clear action-oriented recommendations. The Final Evaluation Report will be reviewed by ESCWA's Organisational Learning team, discussed with the evaluator. A revised Final Evaluation Report is expected on 31 March 2022. The Evaluation Report will be gender and human rights sensitive, and include a focus on the rights of persons with disabilities.

Both deliverables should be submitted in English.

**Proposed timeline**

The evaluation will be held between 1 December 2021 and 18 March 2022

| | |
|---|---|
| 1 December– 30 December 2021 | Desk review and preparation of Inception Report |
| 30 December 2021 | Submit draft Inception Report to OLT |
| 1-8 January 2022 | Review of draft Inception Evaluation Report by OLT |
| 15 January 2022 | Submit revised Inception Report to OLT |
| 15 January – 7 February 2022 | Conduct virtual data collection |
| 7 February – 30 February 2022 | Analysis of findings and drafting of Final Evaluation Report |
| 1 March 2022 | Submit draft Final Evaluation Report to OLT |
| 1-14 March 2022 | Review of draft Final Evaluation Report by OLT and Project Team |
| 15 – 31 March 2022 | Revise and finalize the Final Evaluation Report based on comments received |

***Duration and Payment Terms***

The Evaluator is expected to work between December 2021 to March 2022. Payments will be made lump-sum, based on delivery of outputs.

A total of USD **15,000** is allocated to the evaluation exercise. This amount is intended to cover all evaluation fees: compensation of the evaluator, travel, translation, printing, editing as well as any other cost not listed here, whether direct or indirect, associated to completing the evaluation to the satisfaction of ESCWA. Therefore, it is understood that ESCWA holds no responsibility for any costs or fees incurred by the evaluator that would exceed the USD 15,000 allotted amount.

Payment will be made in two parts:

- (USD **5,000**) upon receipt and approval of finalized and satisfactory Inception Report, and
- (USD **10,000**) upon receipt and approval of finalized and satisfactory Final Evaluation Report.

The evaluator is responsible for her/his own health and insurance plans.

***Evaluator's Profile***

ESCWA is seeking an evaluator who has five years of experience in the region and possesses the following:

- Minimum of five years of experience in undertaking normative evaluations of development projects and/or evaluations working with Arab governmental bodies, including normative evaluation design, data collection, data analysis and forward-looking, user-friendly recommendations;
- A good understanding of economic development in the Arab region is required. Knowledge in agriculture, food security, etc. is desirable;

- Work experience in the UN environment is desirable;
- Previous experience in evaluation approaches;
- A high level of expertise in the distilling, communication and reporting of findings, recommendations, best practices and lessons learned; and
- Excellent oral and written communication skills and the ability to effectively convey complex information in a clear and concise manner to both governmental and UN audiences.
- English and French are the working languages of the UN Secretariat. Fluency in both English and Arabic is required for this consultancy. French is an asset.

***Evaluation Ethics***

The evaluation will be conducted in accordance with the principles outlined in the UNEG Ethical Guidelines for Evaluation; and all rights and confidentiality of information providers will be prioritized and safeguarded as per UNEG Ethical Guidelines for Evaluation.

## Annex (II): KII Semi-structured Interview Questionnaire

**Key Informant Name:**
**Institution:**
**Role in the Project:**

### *1. Section 1: Project Design, Implementation and coordination*

**1.1. Was the design of the project appropriate?**

*Probe:*

- *Was the context, problem, needs and priorities well analyzed while designing the project?*
- *Has there been consultation and agreement with the competent public authorities throughout the identification, formulation and implementation of the project?*
- *Were there clear needs assessment and analysis?*
- Was the design of the project appropriate to achieve the project goals? How?
- Did the project design take into consideration gender equality and human rights?

**1.2. Were the activities of the project appropriate?**

**1.3. Were the project management and implementation modalities appropriate?**

*Probe:*

- *What were the project management methods used?*
- *What implementation modalities were used?*
- *Did the project have linkages and integration with other programmes / projects? (The inter-linkages between the project and other local development programmes)?*
- *What went right and what went wrong during the implementation?*

### *2. Section 2: Relevance*

**2.1. How relevant is the project to the needs and priorities of the target countries/ beneficiaries?**

*Probe:*

- *How the project activities serve the beneficiary countries' priorities? In which aspects?*
- *Do the objectives of the project complement other policies and programs implemented by the countries? How?*
- *Did the objectives of the project address gender equality and the need of women?*
- *Did the objectives of the project address the human dights dimension?*

### *3. Section 3: Effectiveness*

**3.1. Was the project effective in implementing its activities to achieve its outputs, outcomes and intended impacts?**

*Probe:*

- *Are all planned activities being carried out, and are they all necessary and sufficient to achieve the results?*
- *Are the intended results being achieved? What factors, internal or external-influence the achievement of the results?*
- *How are beneficiaries selected? Why it was this country in specific and this specific group of beneficiaries?*
- *Did the project achieve its short-term and medium-term objectives?*
- *To what extent the outcomes and outputs achieved? Please refer to the project indicators*
- *What might have been done better or differently?*
- *Were there any lessons, failures/lost opportunities?*
- *Were there any unintended outcomes of the actions?*

## *4. Section 4: Efficiency*

### 4.1. Have funds been provided at the planned times? Have there been any changes with regard to the implementation schedules?

*Probe:*

- *Has the project met the expected deadlines in the implementation? What external factors and / or internal influenced any delays in implementation?*
- *Have there been a change in the original budget and disbursement amount and times? Why?*

## *5. Section 5: Impact*

### 5.1. What long-term expected impacts of the project have been achieved or are expected to be achieved?

*Probe:*

- *At the individual, community, institutional levels?*
- *What conditions may limit or facilitate the desired change?*
- *Did the beneficiaries (men and women) utilize the project output to create the intended change?*

### 5.2. What barriers exist which may limit the ability to put the capacities built through the project into action?

*Probe:*

- *What barriers exist which may limit the benefit you reap from those activities?*
  - *High or low demand on using the capacities? Budget limitations? Community cooperation? quality of training? Mode of implementation? Pre-existing challenges? Etc.*
- *What conditions exist that will impact the sustainability of these capacities and the future utilization of the developed capacities?*

## *6. Section 6: Viability and Sustainability*

**6.1. In your opinion how do you rate the level of involvement and ownership by the authorities, partners and beneficiaries?**

*Probe:*

- *At the design stage, at the project implementation stage, after the project completion?*

**6.2. *Are people and institutions aware of their responsibilities? Have they developed or have the skills to ensure the sustainability of benefits*?**

*Probe:*

- *The Government stakeholders?*
- *The community?*
- *The beneficiaries?*

***6.3. Is there a clear exit strategy designed at the outset of this project? Is it designed to sustain the impact of the project?***

**6.4. In your opinion, what are the potential /future opportunities for the project sustainability?**

**6.5. What went right and what went wrong with the project?**

*Probe:*

- *What would you say were the best aspects of the project? And why?*
- *What would you say are the least favorable aspects of the project? And why?*
    - *Quality of activities / services provided?*
    - *Reaching the right beneficiaries effectively?*
    - *Appropriateness of activities?*
    - *Scale of activities?*
    - *Implementation modalities*
    - *Etc.*

**6.6. Can you recall an outstanding story/ lesson learned which can describe the success or failure you have witnessed during the project implementation?**

*Probe:*

- *Who is involved in this story?*
- *Why did you choose this story?*
- *What do you think is the most significant change in this story?*

*What lesson can we learn from this story?*

## Annex (III): Beneficiaries Questionnaire

### A. Respondent General Information

1. **Country:** ……
2. **Institution:** ……
3. **Position:** ……

4. **Age Group:**

□ 18-24 □ 25-29 □ 30-34
□ 35-39 □ 40-44 □ 45-49
□ 50-54 □ 55-59 □ 60-65

5. **Gender**

□ Male □ Female

6. **Educational Attainment**

□ Masters □ PhD □ Bachelor
□ Diploma □ Secondary □ Other, specify….

### B. Capacity Building Workshops

7. **Did you attend any capacity Building workshops delivered by the ESCWA Project "Enhancing Resilience and Sustainability of Agriculture in the Arab Region"?**

□ Yes

□ No, Exit the Survey

8. **What type of training did you receive through the ESCWA Project?**

☐ Using AquaCrop Model to Evaluate the Impact of Climate Change on Crop Production
☐ Using Aqua Crop for Irrigation Water Management
☐ Using GIS for Climatic Data Analysis
☐ Green Technologies, Rain Water Harvesting
☐ Green Technologies, Solar Dryers
☐ Green Technologies, Food Production
☐ Green Technologies, Green Fertilizers
☐ Other, specify _____

9. **Did you attend all the training days?**

□ Yes

□ No, Specify the number of days…….

10. **How satisfied you were with the training course?**

□ Very Satisfied

□ Satisfied

□ Unsatisfied

□ Very Unsatisfied

**11. How did you know about the ESCWA Project?**

□ Through my job

□ From my Colleagues in the agriculture sector

□ Others, specify……

**12. How did you get the opportunity to participate in the ESCWA Capacity building activities?**

□ Nomination by my institution

□ Nomination by the implementing partner

□ Nomination through ESCWA

□ Other, please specify .....

**13. Did you participate in any other activity through the project?** □ Yes, Specify ……..□ No

**14. What are the most pressing challenges that are affecting the agriculture sector in your country?**

□ Water scarcity

□ Low Crop Production

□ The planting of unsuitable crops

□ No suitable technologies for fresh crop storage

□ No suitable technologies for crop preservation such as drying

□ Markets are far

□ Road's network is not suitable for the crop transportation

□ Other, please specify .....

**15. In your opinion, what would be the ideal way for ESCWA to address these challenges?**

**16. How did you assess the relevance of the capacity building activities to the most pressing agricultural sector challenges in your country?**

□ Very relevant

□ Moderately relevant

□ Slightly relevant

□ Not relevant at all

## C. Skills Gained and Utilization

**17. Did you benefit from the training course(s) received through the project?**

□ Yes, what was the benefit?

□ It added to my technical skills

□ It provided me with the necessary knowledge to propose related policies

□ It provided me with the ability to analyze related data using technologies

□ I provided me with the skills to efficiently implement new strategies for crop production

□ I provided me with the skills to efficiently advise the farmers on the best sustainable crop options based on scientific data analysis

□ I provided me with the skills to efficiently train the farmers on the best sustainable options to deal with their crop production

□ I provided me with the skills necessary to address the water scarcity challenges

□ Others, please specify…….

□ No, why ……

**18. In general, how do you see the capacity building activities contribute to improving your skills in managing the environmental challenges effecting agriculture sector?**

□ Significantly

□ Moderately

□ Slightly

□ Did not contribute

**19. Please select the main way in which the training you have received can facilitate better management of environmental challenges effecting agriculture sector?**

□ Efficient use of data for policy advises

□ Efficient use of technologies to address pressing environmental challenges

□ Build technical skills needed in using the aqua crop software

□ Build technical skills needed in using the GIS for climatic data analysis

□ Build the skills for the use of green technologies in food production

□ Build the skills for the use of green technologies in rain water harvesting

□ Build the skills for the use of green technologies in solar drying

□ Coordination with regional partners

□ Having access to the ESCWA compendium of resources

□ Having the necessary skills to train farmers in my country

□ Value Chain Analysis

□ Linking Sellers to buyers in the agriculture sector

□ Advanced knowledge on enhancing the sustainability and resilience of the agriculture sector in the Arab region

□ Develop indicators to measure the sustainability and resilience of the agriculture sector in my country

□ Other, specify _____

**20. To what extent are you using the skills gained through the project?**

□ Frequently

□ Moderately

□ Slightly

□ Rarely□ I did not use the skills yet