

# Water Innovation Technologies

Access to Finance

Agriculture Market Assessment



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# Water Innovation Technologies

## Access to Finance

## Agriculture Market Assessment

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### **DISCLAIMER**

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## Acronyms

<b>ACC</b>	Agricultural Credit Corporation
<b>MoPIC</b>	Ministry of Planning and International Cooperation
<b>DoS</b>	Department of Statistics
<b>IFAD</b>	International Fund for Agricultural
<b>FGD</b>	Focus Group Discussion
<b>GDP</b>	Gross Domestic Product
<b>GLP</b>	Gross Loan Portfolio
<b>JOD</b>	Jordanian Dinar
<b>JLGC</b>	Jordan Loan Guarantee Corporation
<b>JLGF</b>	Jordan Loan Guarantee Facility
<b>JREEEF</b>	Jordan Renewable Energy & Energy Efficiency Fund
<b>MCM</b>	Million Cubic Meters
<b>MC</b>	Mercy Corps
<b>MFI</b>	Microfinance Institutions
<b>M</b>	Million
<b>MOA</b>	Ministry of Agriculture
<b>MWI</b>	Ministry of Water and Irrigation
<b>MoSD</b>	Ministry of
<b>NCARE</b>	National Center for Agricultural Research and Extension
<b>WIT</b>	Water Innovation Technologies
<b>WMI</b>	Water Management Irrigation
<b>CBJ</b>	Central Bank of Jordan
<b>MoSD</b>	Ministry of Social Development

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## Executive Summary

The current use of water in Jordan exceeds its renewable supply. The traditional agriculture production requires abundant water: water in agriculture is responsible for consuming more than 50% of all irrigation water used in the region. As a result, water resources are increasingly getting scarce and expensive. The water tariffs have increased during the past couple of years, especially for household consumption and industrial use. This is based on MWI's action plan of October, 2016 for the purpose of reducing water losses. In return, and for the sake of supporting the financially weak part of the population, no tariff increase was applied on the lowest block of the water tariff, i.e. the consumption between 0 – 18 cbm per quarter.

There became a need to develop alternative agricultural production systems that require less water consumption and increase water productivity.

In the last decades, researchers have studied and developed a number of water-saving irrigation technologies. Although these technologies have been demonstrated to save water and increase water productivity, farmers' adoption to these technologies is low due to the following reasons:

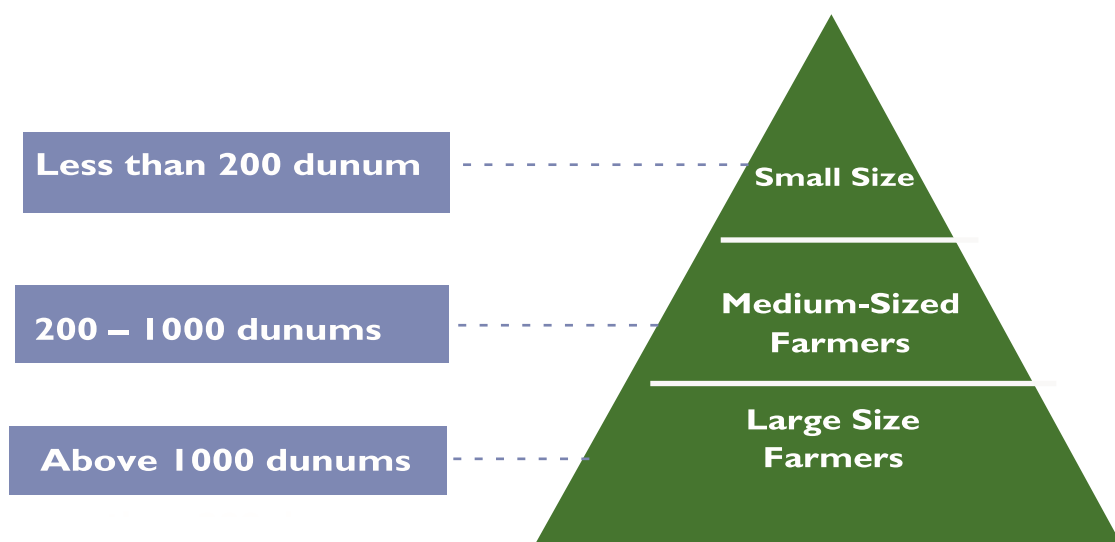
- Traditional farming behavior and lack of farmer's awareness of the latest technological development in agriculture and best practices. However, the on-going access to information by farmers on best farming practices and proven success stories would help in shifting this sort of behavior.
- Adopting a new technology in agriculture is perceived costly and would require a source of financing.
- Limited sources of financing offering providing flexibility in repayment.
- The unavailability of a customized financial product in the market catering for this new technology.
- Lack of promotion outreach by formal financial sector in targeting the agriculture sector for financing.

In order to understand and analyze the agri value chain and financing needs amongst market actors, the evaluation team looked at what is the current demand for ag financing and what is the current state of supply:

**I. Demand side:** Identified to cover farmers at the targeted areas of Azraq & Mafraq. The assessment has covered three types of farmers depending on their land ownership:

- a. Small Farmers : Size of cultivated land is small ( $< 200$  dunums)
- b. Medium Farmers: Size of cultivated land is medium sized (200- 1000 dunums).
- c. Large Farmers: Size of cultivated land is large ( $> 1000$  dunums).

The above classification criterion of farmer's land ownership size is based on WIT ag team's direction.



Though our targeted segment of farmers in this project are medium farmers (with a land ownership of 200 to 1000 dunums), yet the researchers have interviewed eight (8) different segments of farmers while eighteen (18) farmers have attended the FGD meetings held in both areas.

2. **Supply side:** identified to cover the following three types of the existing financing mechanisms in agriculture sector:

- a) **Formal Sector.** Identified as a sector of the economy made up of entities that provide financial products and services to different commercial and individual customers. This sector includes financial institutions (Commercial and Islamic Banks), microfinance institutions, and various specialized financial institutions that are properly registered, licensed, and supervised by the monetary authority (CBJ). Target market clients of this sector are a combination of medium to large corporate farmers.
- b) **Semi-formal sector.** Referred to legally registered entities; community- based corporations and Non-Governmental Organizations (NGO's) that are prescribing financial solutions to clients that is not subject to Central Bank of Jordan's laws and regulations. Such entities are formally registered and supervised and regulated by the Ministry of Social Development. Target market clients of this sector are households and small to medium farmers.
- c) **Informal Sector.** Referred to intermediaries either individuals or companies that are not licensed to extend credit nor regulated by the monetary authorities or any other public authority, and operate with a low degree of formalization on their transactions. e.g. Commissioners, Suppliers, and money lenders. Such entities are governed only by the Ministry of Trade and Industry. The target market clients of this sector are all types of farmers; micro, small, medium, and large farmers, especially those living in rural areas.

The presence of the informal sector is impacting the effectiveness of monetary policies. Their on-going success in reaching agricultural operators has led monetary authorities and banks to re-consider their approach to rural areas.

Sixteen (16) different entities from the supply side were interviewed.

The analysis of the quantitative data collection shows a combination of financial and non-financial gaps between the supply and demand due to several factors highlighted in this document.

## **Part One: Background and Methodology**

### **1.1 Introduction**

The Water Innovation Technologies (WIT) project is a 5-year with \$35 million USAID-funded program designed to increase water conservation in Jordan. The WIT project will contribute to the overall objective of conserving water in Jordan, through the adoption and proven water saving technologies and techniques aiming to achieve the following integrated outcomes:

- 1) Water conserving technologies and behavior changes are adopted at the agricultural, community and household levels.
- 2) Access to financing for adoption of water conservation technology is improved.
- 3) Institutions strengthened to support water saving technologies.

The main objective of the assessment is to assess and map the current access, usage, gaps, and potential opportunities to increase adoption of water savings technologies through appropriate financing mechanisms.

### **1.2 Objectives**

The objective of this work is to assess farmers' potential to access WIT through studying the following objectives:

- Access farmers' ability to pay to improve the irrigation systems through adopting WIT.
- Farmers' tendency to access financial loans to adopt WIT
- Analyzing the internal financial institutions (governmental, private and NGOs to introduce packages and plans to support farmers access finance.
- Analyzing the financial sector support for agricultural sector and farmers.
- Introducing conclusions and recommendations to facilitate finding solutions to improve farmers' access to finance.
- Introducing scenarios that strength the cooperation of financial sector to improve farmers' access to financial loans.

### **1.3 Data collection**

Two sources of data collection were used. The first one represented in the secondary data provided by financial institution and data producers in Jordan, while the second one was dependent on interviews.

**Secondary data collection:** These sources depend on the reports and annual reports issued by different organizations including DoS, CBJ, Mol, etc.

**First data source:** This source of data was collected through interviews. The interviews were arranged with microfinance institutions, Banks, ACC,

commissioners, suppliers and farmers. Different structured interviews were prepared targeting each group. The structured interviews are presented in Annexes 6 to 10. The source of data was collected through farmers' focus groups (Annex 5).

## 1.4 Targeted area

The areas covered in this assessment are the highlands of northern Jordan, specifically Azraq and Mafraq governorates.

## 1.5 Interviewed Sample Structure

Table 1.1 shows the list of financial institutions included in the interviews.

**Table 1.1: List of interviewed financing institutions:**

No.	Name	Status
1.	Jordan Loan Guarantee Facility (JLGF)	Formal
2.	Jordan Loan Guarantee Corporation (JLGC)	Formal
3.	Agriculture Credit Corporation	Formal
4.	Jordan Kuwait bank	Formal
5.	Bank al Etihad	Formal
6.	Cairo Amman Bank	Formal
7.	Islamic International Arab Bank	Formal
8.	**VITAS Jordan– MFI	Formal
9.	**FINCA Jordan – MFI	Formal
10.	**Ahli Microfinance - MFI	Formal
11.	**Jordan Micro Credit Company “Tamweelcom”	Formal
12.	Al Muheet for Vegetables and Fruits Trading	Informal
13.	Mohammad Mahmoud Abu Jaber	Informal
14.	Mais Irrigation	Informal
15.	Fai & Mai	Informal
16.	National Drip Irrigation Company	Informal

\*\* The CBJ has finalized the licensing process for the existing MFIs' and currently nine licensed institutions out of ten are under the CBJ supervisory umbrella. The process of licensing the MFI's has started from Dec, 2017 and was finalized in May, 2018. All Licensed MFI's (9 MFI's) are currently considered as a formal financial sector. Source of information is the CBJ

## Farmers' interview

Table 2.0 below provides description on the classification of the interviewed farmers based on land size ownership:

**Table 1.2: Details of the interviewed farmers:**

No	Governorat	Type	No. of farmers
1	Azraq	Small	1 ( less than 200 dunums)
		Medium	2 (200- 1000 dunum)
2	Mafrq	Small	3 ( less than 200 dunum)
		Medium	2 (200 – 1000 dunum)

## Farmers FGDs Meetings

Two (2) FGD meetings were held in Mafrq and Azraq. A total of eighteen (18) farmers have attended the FGDs held in both areas.

The below Table 3.0 represents the number of farmers attended the FGDs meetings in both areas:

**Table 1.3: Number of farmers attended the focus group meetings:**

Azraq	Mafrq
Number of Farmers	Number of Farmers
7	11
Small : 1	Small : 1
Medium : 4	Medium: 8
Large : 1	Large : -

## **Part 2: Agricultural and Water Use of Zarqa and Mafraq**

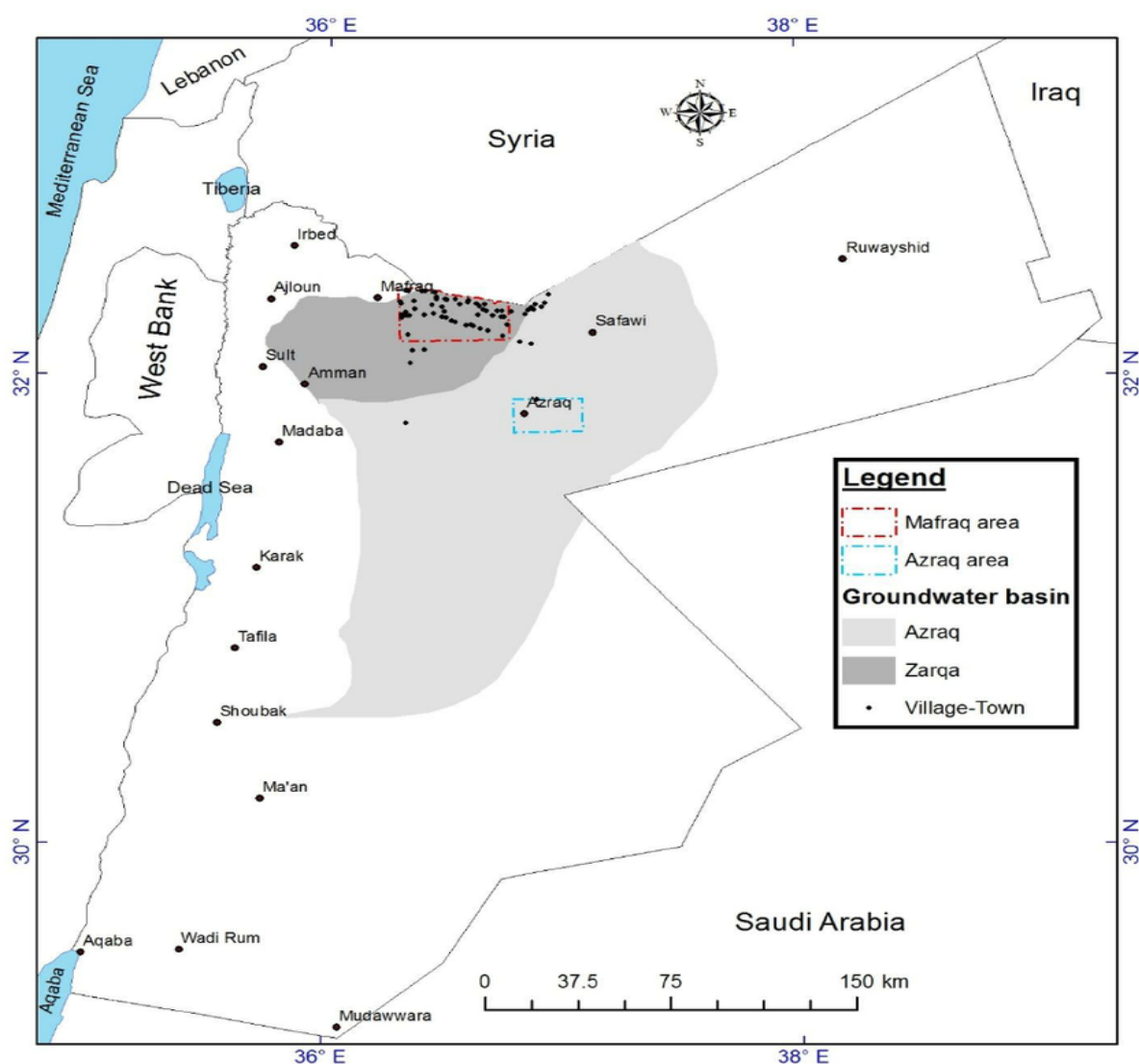
### **2.1 Introduction**

This part introduces information about the geographic characteristics of Zarqa and Mafraq, as well as the agricultural characteristics of the area, water demand and use in Jordan and the governorates included in this study.

### **2.2 Agricultural area and patterns of Zarqa and Mafraq**

Azraq is located 120 km northeast of Amman and is part of the Zarqa governorate. Agriculture first started in Azraq around the oasis of Azraq basin, based on the springs' water and shallow dug wells, and then expanded to Ain el Baida, eastern Azraq and Mafraq. The agricultural expansion continues in Azraq and Mafraq, reaching about 274,000 dunums in Zarqa (of which Azraq is part of) and 557,000 dunums in Mafraq in 2017 according to Department of Statistics (DoS). While Mafraq stands for capital-intensive fruit-tree cultivation on legal land/wells.

Azraq's agriculture is largely based on olive cultivation and wells that are either illegal or granted permits with higher block tariffs, and has a return that is only one tenth of Mafraq's.



**Figure 2.1: Location map of Mafrq & Azraq showing the groundwater basin**

**Table 2.1: Agricultural area by Land Use in Zarqa and Mafrq (in dunums), 2017**

Governorate	Fruit Trees	Field Crops	Vegetables
Zarqa	69,581	38,097	8,650
Mafrq	137,579	105,006	32,441

**Source: Department of Statistics, 2017**



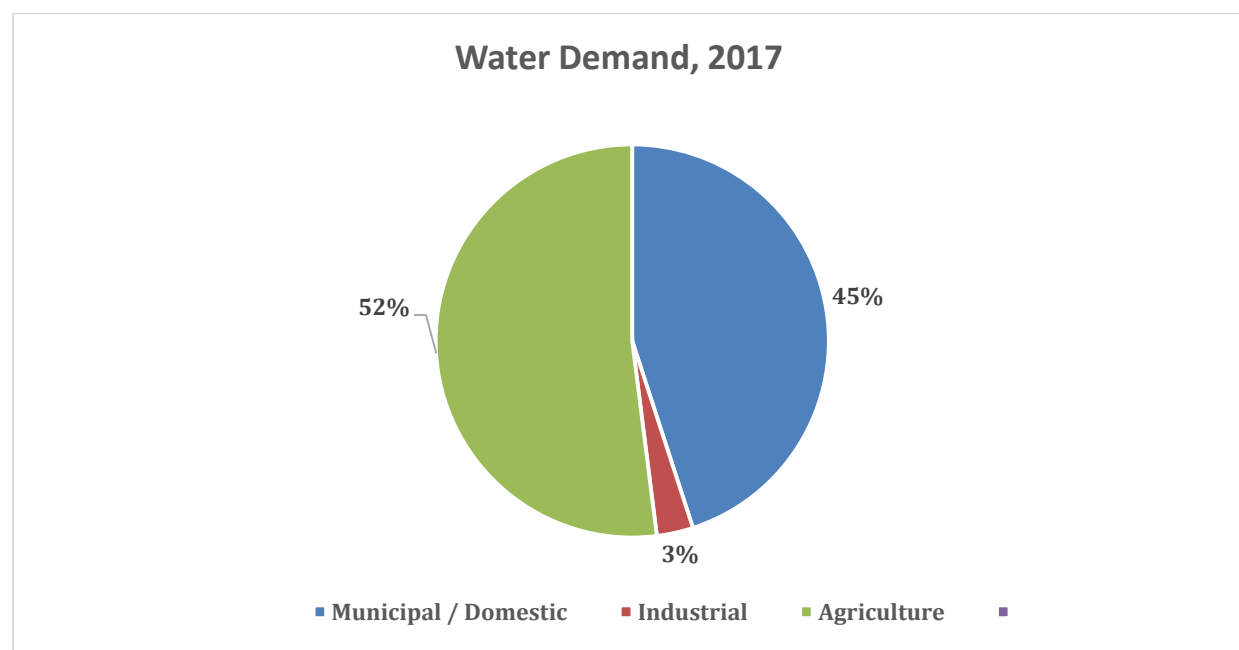
## 2.3 Water availability and use in Jordan

Table 2.2 and Figure 2.2 show water sources and uses in Jordan. The highest amount of water is used for domestic purposes and the higher source used to provide this amount is the groundwater. The total demand on water for agricultural purposes is 551.8 MCM. The largest part of irrigation water is supplied by groundwater followed by surface water and the last source is from treated wastewater.

**Table 2.2: Water sources and uses in Jordan in 2017 (MCM)**

Uses/Resources MCM	Surface Water	Groundwater	Treated Wastewater	Total
Domestic	131.3	338.4	0	469.7
Agriculture	154.4	253.2	144.2	551.8
Industry	2.4	27.2	2.5	32.1
<b>Total</b>	<b>288.1</b>	<b>618.8</b>	<b>146.7</b>	<b>1053.6</b>

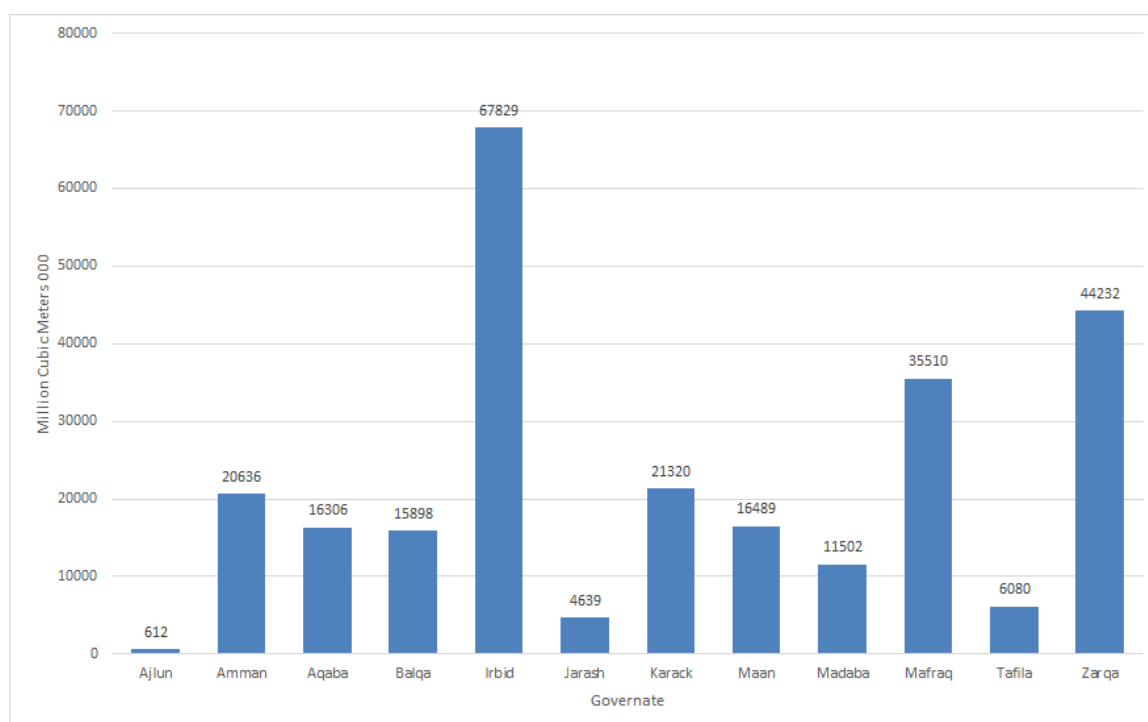
Source: Jordan Water Sector Facts & Figures - MOI, 2017



**Figure 2.2: Water demand in Jordan in 2017**

## 2.4 Water use in Mafraq & Zarqa:

The water consumption in Mafraq and Zarqa is mainly from artesian wells, and the consumption reaches 35,510 and 44,232 MCM respectively in 2017 according to the MWI. This is considered one of the highest consumption rates in the Kingdom mainly due to the excessive usage of water for irrigation in these two areas.



**Figure 2.3: Water Consumption from Artesian Wells by Governorates in 2017 (MCM).**

**Source: Ministry of Water and Irrigation, 2017**

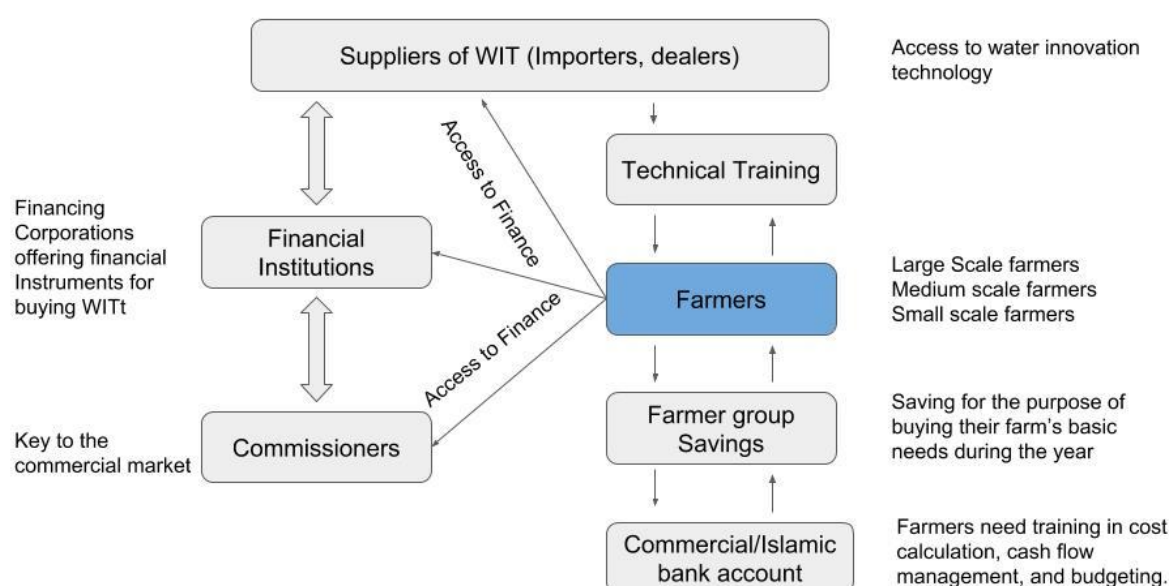
## Part 3: Market Assessment and Analysis

### 3.1 Introduction

This part indicates the Jordanian financial sector. The information introduced provides information about the financial sector in general and that goes deeply to explain the characteristics of the financial sector related to agricultural finance activities with the concentration on the institutions included in this study including CBJ, ACC, commercial banks and Islamic banks included in the interviews.

### 3.2 Assessment Approach:

The approach for the market assessment is purely based on the interaction between the farmers, suppliers, commissioners and financial institutions when adopting water innovation technologies as indicated in the chart hereunder:



**Figure 3.1: Demand and supply interaction mechanism**

The assessment approach is based on both quantitative and qualitative data collection tools (both desk and field research). Qualitative data collection used is FGD\*\* meetings and personal interviews with farmers. The outcome has revealed that the Agriculture Credit Corporation (ACC) is the preferred formal financing institution other than the commercial and Islamic Banks. This is due to the following reasons:

1. ACC is more specialized along with the know-how in agriculture sector.
2. ACC offers commercial and Islamic types of financing.
3. Provide flexibility in repayments.

*\*\*FGD meeting: Is a structured discussion used to obtain in-depth information (qualitative data – insight) from a group of people about a particular topic. The purpose of the FGD is to collect information about people's opinion, beliefs, attitude, and perception.*

### 3.3 The Jordanian Banking Sector

There are Thirteen (13) local commercial banks in Jordan, Three (3) Islamic local banks, Eight (8) foreign conventional banks and One (1) Islamic foreign bank, in addition to Ten (10) MFIs in Jordan.

The total credit portfolio of the licensed banks reached JOD 24.7 billion in 2017 according to the CBJ report, however a small portion of these loans are granted to the agriculture sector representing only 1.4% of the total credit portfolio which amounted to JOD 337 M. The reasons for this low number are due to supply and demand constraints within the banking sector and the farmers. Banks are concerned from higher default rates of farmers as their income streams are seasonal which leads to inconsistencies in the repayments of loans throughout the year. Also, farmers are unsatisfied with the strict and possibly long procedures for obtaining the loans from banks, with higher interest rates, less flexibility in the repayment terms of loans, and strict measures in collaterals (such as mortgaging lands and other assets, obtaining cheques from the borrowers and co-singers which led to reducing the overall demand of loans from banks, however farmers are reaching out to informal market players such as commissioners and suppliers for financing.

According to CBJ annual report, agriculture sector in Jordan has witnessed a slight improvement in performance during year 2017 with a growth rate of almost 4.8% compared to 3.8% in year 2016. On the other hand, the sector's contribution to GDP in year 2017 was 4.1% the same percentage of contribution as in year 2016.

Based on our meeting with the CBJ, the researchers were informed that the agriculture sectors along with the other major sectors were not addressed in terms of detailed action plan in the CBJ financial inclusion strategy.

For banks, there is no customized lending product designed exclusively for the agriculture sector other than the current CBJ Medium Term loan advances to support this sector with soft lending interest rates.

Islamic International Arab Bank has signed an agreement with IFAD in June, 2018 under the following terms:

<b>Purpose of the fund</b>	Promoting the financing of the agriculture sector
<b>Amount of fund</b>	JOD 500,000
<b>Maximum loan ceiling per farmer</b>	JOD 50,000
<b>Areas covered</b>	Jerash, Ajloun, Mafraq, Madaba, & Balqa
<b>Interest rates</b>	Preferential Murabaha return of 2.5%

IFAD has provided the funding as a result of a financing agreement signed with the MoPIC. Fund is currently placed and managed by the CBJ, who in return has signed back in June 2018 three financing agreements with three Banks in Jordan to benefit from IFAD Funding:

1. Jordan Kuwait Bank
2. Jordan Commercial Bank
3. International Islamic Arab Bank

The below table 5.0: highlights the total extended credit by banks to agriculture sector during the period (2014-2017)

**Table 3.1: Total extended Credit by banks to agriculture sector (2014-2017)**

Year	Credit Facilities JOD M	No. of Registered Companies	Capital JOD M	Growth %
2014	243.4	751	30.4	7.6%
2015	217.1	720	12.5	5%
2016	304.5	810	15.5	3.8%
2017	337.4	816	120.8	4.8%

In year 2017, there was an increase of almost 11% in total credit facilities extended by banks to agriculture sector, compared to year 2016. (Increased from JOD304.5M in year 2016 to 337.4M in year 2017).

An additional of Six (6) agriculture companies were registered in year 2017, increasing the total number of registered companies to 816 with a total registered capital of JOD 120.8 M.

Also, the table below highlights the amounts of agriculture loans granted by local banks in Jordan for the year 2017.

**Table 3.2: Total agriculture credit portfolios of local banks for 2017**

JOD '000	Type	Total Credit Portfolio	Total Agriculture Portfolio	% of total credit portfolio
Arab Bank	Commercial	23,488,575	277,207	1.2
ABC Bank	Commercial	1,098,965	1,299	0.12
Bank of Jordan	Commercial	1,541,581	19,607	1.27

Cairo Amman Bank	Commercial	1,597,130	4,027	0.25
Capital Bank of Jordan	Commercial	1,060,616	11,300	1.07
Jordan Commercial Bank	Commercial	1,116,953	7,425	0.66
Jordan Kuwait Bank	Commercial	1,562,286	30,807	1.97
Jordan Ahli Bank	Commercial	1,602,502	41,867	2.6
Housing Bank for Trade and Finance	Commercial	7,610,440	11,010	0.14
Arab Jordan Investment Bank	Commercial	1,691,813	3,859	0.23
Investbank	Commercial	684,394	650	0.10
Societe Generale de Banque	Commercial	1,315,929	1,930	0.15
Islamic International Arab Bank	Islamic	1,967,005	32,317	1.64
Jordan Islamic Bank	Islamic	2,718,200	28,000	1.03

**Source: 2017 Annual Reports of Banks**

The researchers have noticed during our interviews with some Banks (Cairo Amman Bank, Bank El Etihad, Jordan Kuwait Bank) that they are reluctant towards lending farmers. They would rather prefer to extend credit facilities to water technology suppliers instead of farmers.

Also, from banks perspective, it is difficult to mitigate the risk in extending financial credit to farmers without a credit guarantee from JLGC.

JLGC, as per their company policy, is not willing to provide any sort of traditional agricultural loan guarantee, as they consider the agriculture sector of a high risk. This sort of feedback was given to the researchers during the meeting with JLGC. Yet, they confirmed that they are willing to provide an industrial loan guarantee to water technology suppliers if credit facilities to be extended by banks to Water Technology suppliers.

IFAD: (International Fund for Agricultural Development)

The International Fund for Agricultural Development has signed a financing agreement with the Government (a concessional loan and grants for the value of USD12.8M) with the Ministry of planning for the financing of small-ruminant investment projects and combating poverty.

The new financing includes a concessional loan of \$8.4 million and a \$ 0.5 million in grant from the fund, while the Refugee and Incentive Facility and Rural Stabilization (Farmers' Initiative) will also fund a project through a grant worth \$3.9 million.

The signing of the agreement comes as part of the development interventions in rural areas, aimed at mitigating poverty and enhancing food security in the Kingdom through improving Awassi sheep and making Jordan an exporter of it, which would lead to helping 11, 920 underprivileged families and increasing their sustainable productivity.

The project will be implemented by the Agriculture Ministry over six years in Mafraq, Irbid, Jerash, Ajloun, Madaba and Amman outskirts.

The financing to these beneficiaries will be implemented by the Central Bank of Jordan in cooperation with local banks, the statement said.

Between 1981 and 2016, IFAD funded eight projects in Jordan worth \$82.64 million including two grants that amounted to \$900, 000, to support agricultural development and mitigating poverty in rural areas, according to the statement.

The fund has also recently contributed to the financing of the Rural Economic Development and Employment Project by providing a loan and grant to finance the project with a value of 7,670 million special drawing units, equivalent to \$11,340 million. The loan amount is 7,330 million special drawing units \$10.84 million. The grant amounts to 340, 000 special drawing units, which is equivalent to \$500, 000.

**Table 3.3: SWOT analysis of the Financial Banking sector:**

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>Well-established financial institutions that are being monitored and supervised by the CBJ.</li> <li>Catering for all types of market segments, including; Individuals, SME's, and Corporate banking clients.</li> <li>Offering different types of financial propositions with strict calculation of provisions and non-performing loans, as mandated by the CBJ.</li> <li>Direct access to low cost funding using the CBJ Medium Term advances targeting agriculture sector, while offering preferential interest rates on lending to farmers with a flexible repayment period of up to 10 years.</li> <li>Solid capital for growth and</li> </ul>	<ul style="list-style-type: none"> <li>Main focus on financing Medium-Large scale of corporate registered agriculture companies that are willing to provide enough collateral.</li> <li>Does not provide technical support or training to its agriculture clients.</li> <li>Lack of exposure to agriculture sector</li> <li>The absence of JLGC in offering credit guarantees on lending to farming businesses.</li> <li>More efforts are needed to better understand the farmers' agribusiness and the new technology used in agriculture.</li> <li>Wrong understanding of farmer's needs, which would result in a</li> </ul>

<ul style="list-style-type: none"> <li>expansion.</li> <li>• Large and diversified database of all types of customer segments.</li> <li>• Experience in dealing with farmers throughout their branches network in rural areas. Proven in the increase of lending portfolio to the sector in year 2017.</li> <li>• Strong branches network with an advanced technology to remote customers to less costly alternative channels.</li> <li>• Dedicated RM's (Relationship Managers) for Customer portfolio management) of SME and corporate clients.. Yet, need to get a better understanding of famers' agribusiness and more info on the new technology used in agriculture.</li> <li>• Islamic banks are offering all types of Islamic financing instruments that have a great demand from our target market clients.</li> </ul>	<p>wrongful prescription of financial solutions.</p> <ul style="list-style-type: none"> <li>• Strict rules when rescheduling loan payments or restructuring credit facilities, as mandated by the CBJ.</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>• Banks does not have an exclusive product for encouraging the adoption of WIT, yet, with IFAD funding of the CBJ, they would have the possibility of introducing a product for this purpose. Currently, only three banks have access to IFAD fund; Jordan Commercial Bank, Jordan Kuwait Bank, and Islamic International Arab Bank.</li> <li>• Investing in capacity building in ACC through local and international advisory services creates a sustainable economic value.</li> <li>• To conduct training sessions and seminars to farmers to enhance their knowledge on WIT and other products.</li> <li>• Offering a financial product, through partner banks, that leads to reducing water consumption will be of high demand by farmers.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of finance would result in farmers not being able to upgrade and produce for commercial purposes.</li> <li>• The absence of Credit guarantee (JLGC) would lead banks to exposed market and credit risk of farmers, thus banks will be highly dependent on collaterals for mitigating this sort of risk.</li> <li>• Instability and devaluation in the market value price of farms.</li> </ul>



This makes it hard for banks to assess a farmer who is relying on his farm as collateral for getting a loan, because he/she may not be sure what he will get to pay back the loan, making it too risky on banks to digest.

### **3.4 MFIs**

Being lately considered as one of the formal financial sectors in the market, being supervised and regulated by the CBJ after being properly licensed (starting May, 2018).

As per the CBJ financial inclusion strategy, all Licensed MFI's need to adopt an action plan and strategy to deliver the mandatory requirements of CBJ, one of these requirements; is to develop products that meet different needs related to Agricultural Industries and design a program to provide technical support to microfinance companies in the field of agricultural lending and agricultural industries.

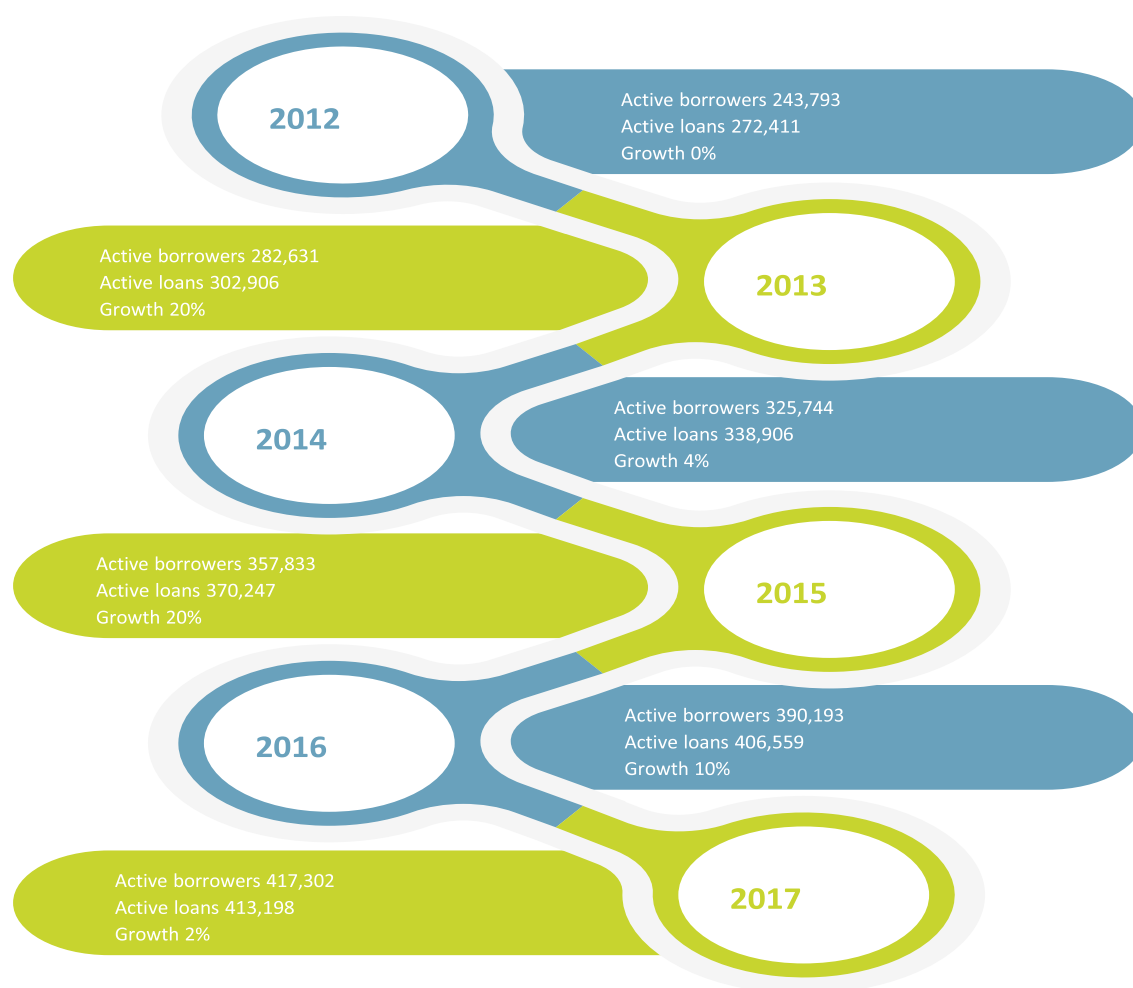
The Jordanian microfinance institutions are giving more priority towards serving the governorates located in rural areas and the poverty pockets inside and outside Amman. Their presence and focus outreach aims at supporting economic and social development in the Kingdom, through providing financial services to the targeted segments, including; productive and low-income people and micro and small enterprises (MSEs).

According to Tanmeyah's latest updated statistics from the Jordanian microfinance sector in 2017, 69% of the total industry's operations and infrastructure are set outside of Amman in terms of borrowers, branches, and 64% of the portfolio investments.

In terms of governorates' performance, Ma'an was in lead with 36% growth in the number of Active Borrowers, and a 13% increase in the GLP and a PAR < 30 of around 0.3% only, followed by Mafrq with 13% growth in Active Borrowers, 15% increase in the GLP and PAR < 30 of 3%.

Based on the interviews with MFI's, the researchers notice that MFI's are playing a vital role in conducting sessions to their existing and potential target segment for the purpose of spreading financial knowledge which is beneficial for clients when approaching financial institutions for credit, and receiving all the needed information about a particular financial service, and to better manage their cash flows and make proper budgeting decisions.

The number of active borrowers in the Jordanian microfinance sector increased by 7% in 2017 compared to 2016 to reach 417,302, while the Gross Loan Portfolio (GLP) for the sector increased by 10%, for the same period, to reach JD 227 million.



**Figure 3.2: Growth in Microfinance Sector in Jordan over the Past Five Years.**

Source: MFI's Network - annual report 2017

According to Tanmeyah's latest updated statistics from the Jordanian microfinance sector, in 2017 69% of the total industry's operations and infrastructure are set outside of Amman in terms of borrowers, branches, and 64% of the portfolio investments. In terms of governorates' performance, Ma'an was in lead with 36% growth in the number of Active Borrowers, and a 13% increase in the GLP and a PAR < 30 of around 0.3% only, followed by Mafrq with 13% growth in Active Borrowers, 15% increase in the GLP and PAR < 30 of 3%.

### **Tanmeyah - Jordan Microfinance Network**

Was established and formally registered as a non-profit institution at the Ministry of Industry and Trade in 2007, and was incepted to become the representative MFIs in Jordan, replacing the Microfinance Association of Jordan (MAJ). Tanmeyah works at supporting the development of the microfinance sector in Jordan, by spreading advocacy and awareness on behalf of its MFIs members, as well as disseminating the up-to-date practices and developments of the microfinance sector.

Tanmeyah's Stakeholders:

1. Ahli Microfinance Company
2. FINCA JORDAN
3. Ethmar for Islamic Finance
4. National Microfinance Bank "Al Watani"
5. Jordan Micro Credit Company "Tamweelcom"
6. VITAS Jordan
7. Microfund for Women
8. UNRWA Microfinance Department
9. AL- AMEEN

Towards the end of year 2018, CBJ has finalized the licensing process for the existing MFIs' and currently nine licensed institutions out of ten are under the CBJ supervisory umbrella, and these are:

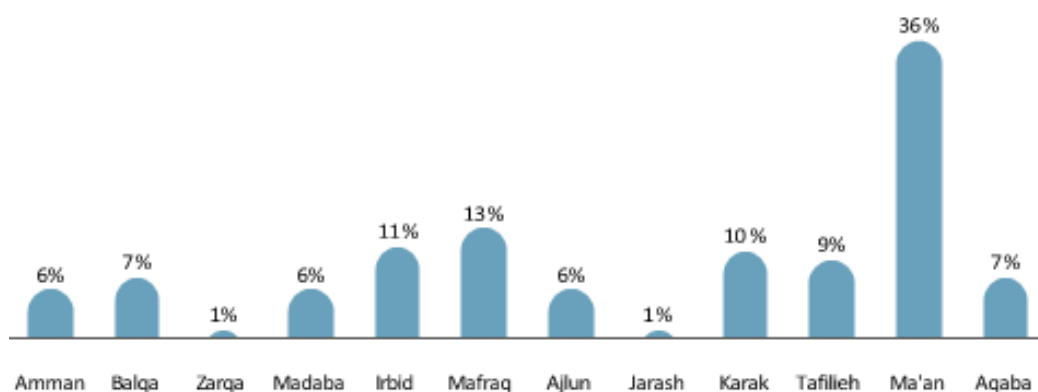
1. Ahli Microfinance Company
2. Partners company for Microfinance - VITAS
3. Jordan Microfinance Company
4. National microfinance bank
5. Alameen Microfinance Company
6. Microfund for Women
7. FINCA Microfinance Company
8. Ethmar for Islamic Microfinance
9. The Islamic Ideal for Microfinance – will join Tanmeyah network soon, as conformed by Tanmeyah.

### **3.2.1 MFI's Profile & Analysis**

The Jordanian microfinance institutions are giving more priority towards serving the governorates located in rural areas and the poverty pockets inside and outside Amman. This focused outreach aims at supporting economic and social development in the Kingdom, throughout providing financial services to the targeted segments, including; productive and low-income people and micro and small enterprises (MSEs).

69% of the MFIs operations and infrastructure are set outside Amman in terms of borrowers according to Tanmeyah 2017 statistical report. In terms of governorates' performance, Ma'an was in lead with 36% growth in the number of Active Borrowers, and a 13% increase in the GLP and a PAR < 30 of around 0.3% only, followed by Mafraq with 13% growth in Active Borrowers, 15% increase in the GLP and PAR < 30 of 3%.

**The cite reference of the above info. is Tanmeyah 2017 report, which was highlighted as a reference on page number 43, under references ;" Tanmeyah, JMN. 2017. Annual Report".**



**Figure 3.3: MFIs Lending Distribution by Governorate 2017**  
**Source: Tanmeyah JMN - annual report 2017**

### 3.5 Agricultural Credit Corporation

ACC is the main governmental body that develops and finances the agriculture sector in Jordan. Since ACC is not regulated by the CBJ, yet all its rules and regulations is governed by its board of directors.

The board of directors comprises of;

- Chairman of the board which is the “Minister of Agriculture”.
- Vice chairman of the board is the general manager of ACC.
- A board representative from the Ministry of Finance
- A board representative from the Ministry of Planning
- Five board representatives from non-government members.

ACC has 24 branches across the Kingdom including Marfaq and Zarqa. In 2017, ACC has granted a total loan amount of JD 51M to 10160 borrowers. The main focus is on supporting small scale farmers owning less than 30 dunum, which comprises to almost 93% of the loan portfolio, and 73% of the 'loans are less than JD 10,000, mainly with medium term tenors between 2-10 years at lower than market interest rates. The main purpose of these loans is to improve the standard of living in the badia and rural areas, create job opportunities, reduce unemployment rates, encourage women's participation in agriculture, and the adoption of solar energy technologies to produce electrical power.

There are no lending products available by the ACC for encouraging the adoption of water saving technologies.

#### 3.5.1 ACC Source of funding

According to ACC 2017 annual report, the ACC has its own source of funding with a paid in capital of JOD 75M and general reserve of JOD 23M, and external funding of local loans & credit facilities from CBJ at preferential interest rates which was lately reduced to 0.5% p.a. Amounting to JOD 55M, in addition to external loans of JOD 2.3M. During our interview, it was clearly confirmed that they have a flexible management approach for accepting external funding from third parties. Moreover, they expressed their flexibility and willingness to cooperate for supporting farmers in adopting the new technology.

### 3.5.2 Branches Network

There are 24 branches for the ACC across Jordan divided into three pillars in the organization structure:

- **Northern Region:** Irbid, Jerash, Mafraq, Ajloun, Ramtha, Bani Knafa, Northern Valley, Northern Badia, Al Koura
- **Central Region:** West Amman, Southern Amman, Madaba, Salt, Southern Shuna, Zarqa, Central Valley, Neban
- **Southern Region:** Karak, Tafila, Aqaba, Southern Valley, Al Qasr, Southern Mazar, Ma'an

### 3.5.3 Breakdown and distribution of loan portfolio:

- Total loans disbursed in year 2018, 2017, & 2016 amounted to JOD 46M, JOD 51M, & JOD 42% respectively.
- The loans granted to the pilot areas of this study are shown in the table below. The loans granted for the development of water resources and adoption of new technologies presented 8.8% & 2.4% in Mafraq & Zarqa respectively of total loans granted for the same purpose in Jordan.

**Table 3.4: Loans granted by the ACC in Mafraq and Zarqa in 2017**

Area	Loans granted for the development of water sources and adoption of new technologies		Total Loans		
	Amount JOD	% of total loans for adopting technologies in Jordan	Amount JOD	#	% of total loan in Jordan
Zarqa	285,600	2.4%	1,418,230	283	2.9%
Mafraq	439,000	8.8%	3,308,197	754	6.5%
<b>Jordan</b>	<b>11,911,193</b>	<b>100%</b>	<b>50,946,759</b>	<b>2,853,501</b>	<b>100%</b>

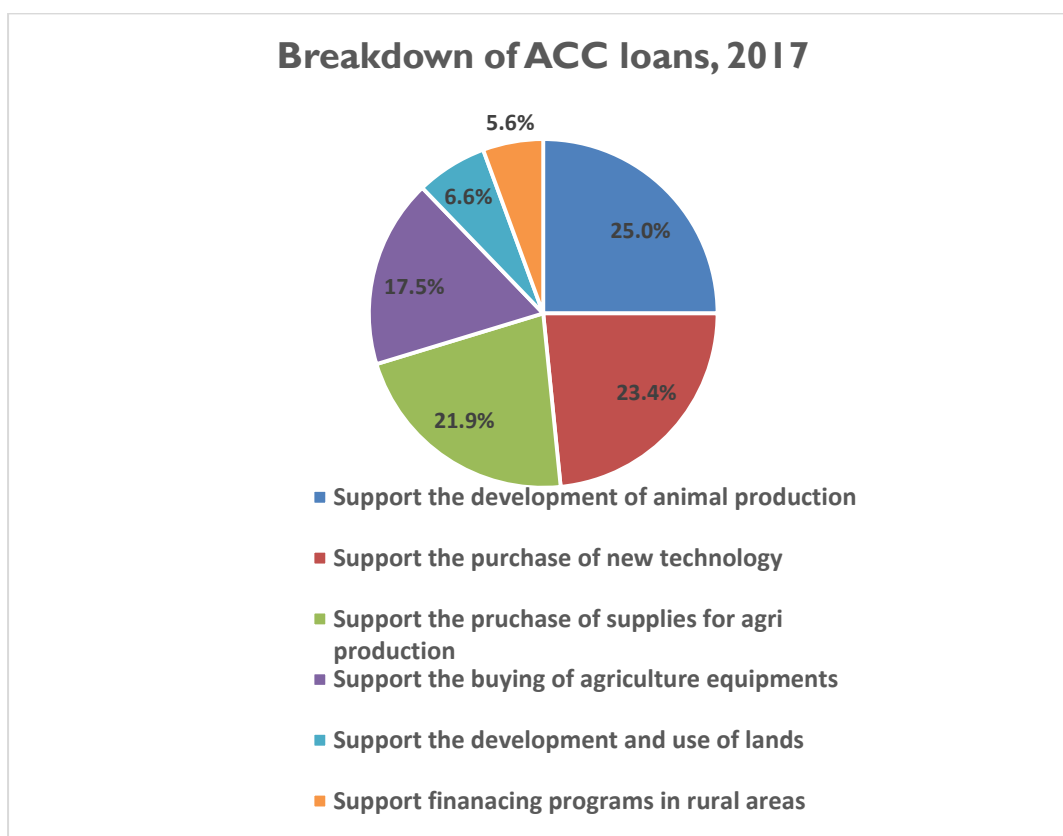
**Source: ACC Annual Report 2017**

- The total current outstanding loans portfolio of December 20th, 2018 amounted to JOD 148 M of which JOD 35 M were booked under the Islamic Murabaha return (Almost 24% of the current credit portfolio). An alarming percentage of 45% is classified as past dues. The tenor of the past dues is not available and is only divided per amounts. The past due ratio was calculated from their 2018 loan portfolio sheets. When discussed with ACC CFO, he said that their branches collection efforts should be revised and given the utmost priority by branches.

- To mitigate this risk, if decided to partnership with ACC, the researchers suggest that the refunded interest by WIT will be made exclusively to active and committed debtors.

**Table 3.5: Breakdown of outstanding loans by amount (JOD) as of December 20, 2018**

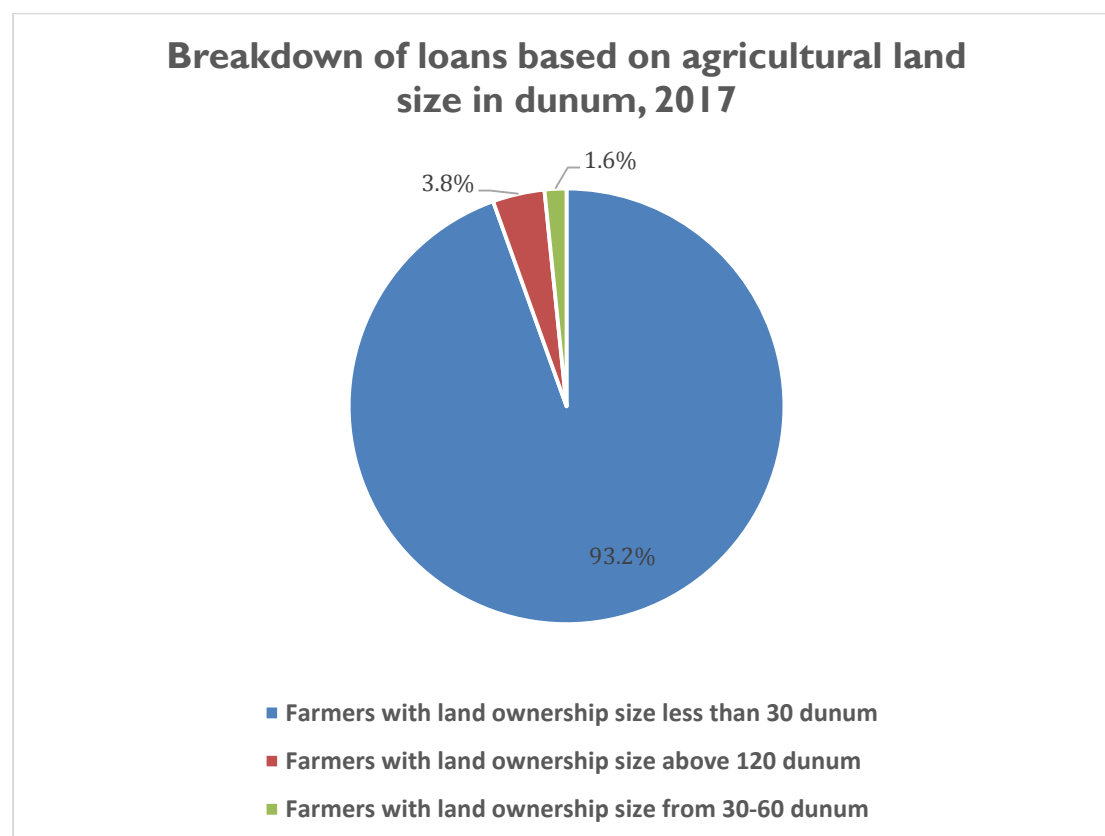
Areas	Less than 5,000	5,001-10,000	10,001-20,000	Above 20,000	Total	% from Total
Total branches (inc. Mafrq & Zarqa)	74.0 MN	31.0 MN	20 MN	23 MN	148 MN	100%
Past dues of total branches						
Mafrq	4.24 MN	1.68 MN	1.1 MN	1.52 MN	8.54 MN	5.8%
Zarqa	2.4 MN	541,000	421,000	790,000	4.152 MN	2.8%
Total Balances of Mafrq & Zarqa	6.64 MN	2.22 MN	1.52 MN	2.31 MN	12.7 MN	8.6%



**Figure 3.4: Chart 2.0 Breakdowns of Loans of the Agricultural Credit Corporation in the Kingdom 2017.**

### Chart Summary: (ACC Loans based on purpose, year 2017):

- 25% of the loan portfolio is extended to support the development of animal production
- 23.4% of the loan portfolio is extended to support the purchase of new technology
- 21.9% of ACC loan portfolio is extended to support the purchase of supplies for agri production.
- 17.5% of the loan portfolio is extended to support the buying of agriculture equipment.
- 6.6% of the loan portfolio is extended to support the development and use of lands.
- 5.6% of the loan portfolio is extended to support financing programs in rural areas

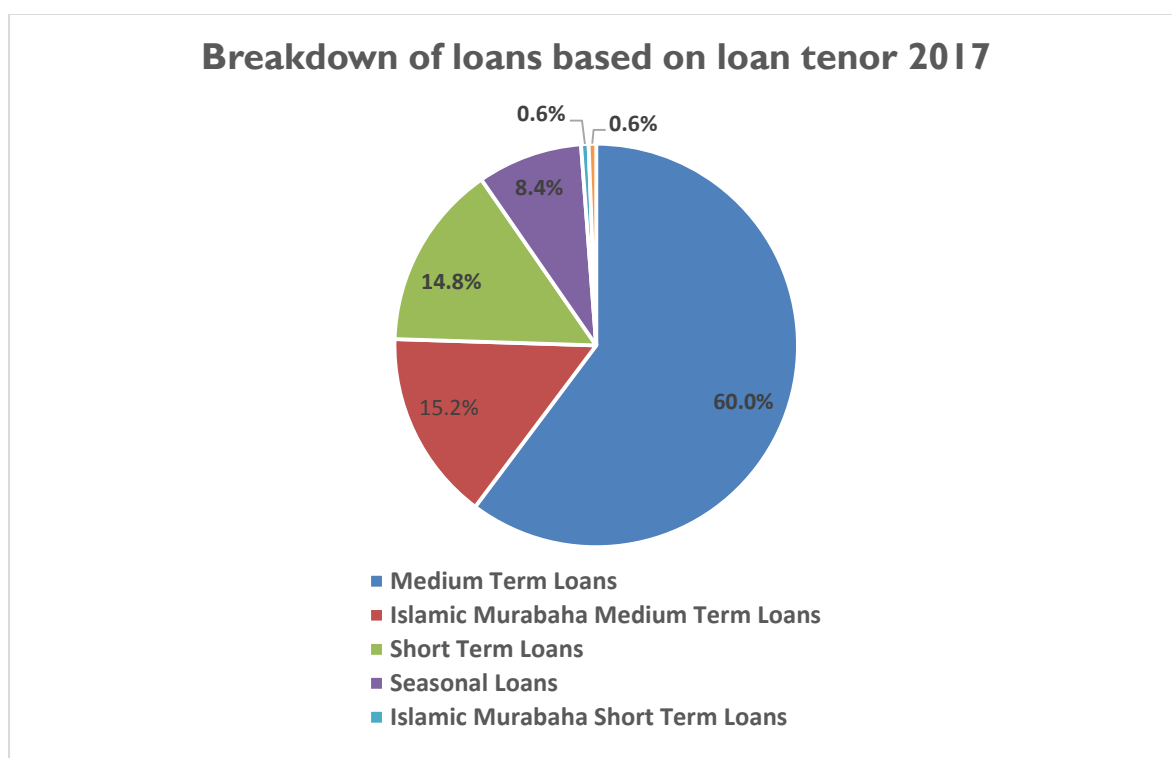


**Figure 3.5: Breakdowns of Loans of the Agricultural Credit Corporation by size in Jordan, 2017**

### Chart Summary: (ACC Loans based on Land Size, year 2017):

- 93.2% of loans disbursed related to farmers with land ownership size less than 30 dunum

- 3.8% of loans disbursed related to farmers with land ownership size above 120 dunum
- 1.6% of loans disbursed related to farmers with land ownership size from 30-60 dunum.



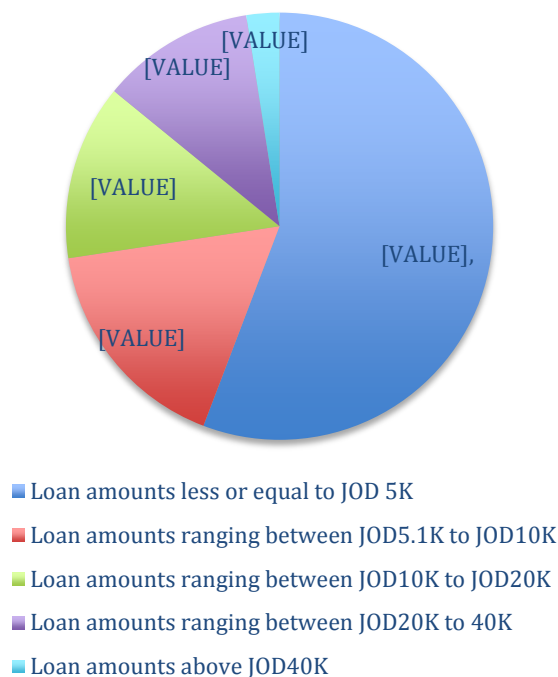
**Figure 3.6: Breakdowns of Loans of the Agricultural Credit Corporation by loan tenor in Jordan, 2017**

**Chart Summary: (ACC Loans based on Tenor, year 2017):**

- 60.4% of the loan portfolio are Medium term loans (3-8 years)
- 15.2% of the loan portfolio are Murabaha Medium term loans
- 14.8% of the loan portfolio are Short Term loans
- 8.4% of the loan portfolio are Seasonal loans
- 0.6% of the loan portfolio are Murabaha Short Term loans
- 0.6% of the loan portfolio are Long Term loans



### Breakdown of ACC loans based on amounts in JOD, 2017



**Figure 3.7: Breakdowns of Loans of the Agricultural Credit Corporation by amount in Jordan, 2017**

#### Chart Summary: (ACC Loans based on amount, year 2017):

- 55.8% of the loan portfolio is for loan amounts less or equal to JOD 5K
- 16.8% of the loan portfolio is for loan amount ranging between JOD5.1K to JOD10K.
- 13.3% of the loan portfolio is for loan amounts ranging from JOD10K to 20K.
- 11.6% of the loan portfolio is for loan amounts ranging between JOD20K to 40K
- 2.5% of the loan portfolio is for loan amounts above JOD40K.

### 3.3.4 ACC's lending products

According to the 2017 annual report, ACC has a number of lending products to promote some targeted projects and sectors. There is no specific product tailored for improving water innovation technologies. The available lending products according to the 2017 annual report include the following:

- Financing small loans in the badia and rural areas to reduce poverty and improve employment, the maximum amount of the loan is JOD 5000, and maximum tenor is 5 years, at an annual interest rate of 4% decreasing interest.
- Rural financing project for improving employment and the livelihood of the rural areas, and increasing women's participation in the workforce, the maximum ceiling is JOD 10,000 for individuals or institutions, maximum tenor is 5 years at an annual interest rate of 4% decreasing interest.
- Promoting healthy villages' project for improving the primary health care in rural areas with a maximum ceiling of JOD 1500 for individuals and JOD 3000 for group loans, the repayment of these loans is over a period of 42 months, no interest rate is applied on these loans.
- Financing Hashemite Commission for Disabled Soldiers focuses on providing agricultural loans for soldiers to improve their income, with a maximum amount of JOD 5000, and a preferential interest rate that is 1.0% less than the Murabaha standard rate at ACC. i.e. the offered interest rate under this program is 4% decreasing interest.
- Financing Agricultural Engineers in collaboration with Jordan Engineers Association for financing agricultural projects of unemployed engineers (mainly fresh graduates) with a maximum ceiling of JOD 10,000 at preferential interest rates of 5% decreasing interest.
- Financing the survivors of mines and the remnants of war the purpose of the loans is to finance the survivors for ranching, cultivation of herbs and medical plants and other agriculture related businesses, the maximum ceiling for the loan is JOD 3,000 for a tenor of 60 months.
- Financing solar energy technologies for producing electrical powers, the maximum ceiling of projects for pumping water from artesian wells is JOD 75,000, and JOD 50,000 for other projects at lower annual interest rates (or murabaha) at 2.0% with a maximum tenor of 8 years. In 2017 only one borrower obtained a loan under this project for JOD 65,000 though the project was anticipated in year 2016 with an interest rate of 6% decreasing interest.
- Palms Cultivation Project which offers financing at a low annual interest rate of 2.0% Flat rate, which is almost 3.7% decreasing interest.

Needless to mention that the cost of fund at ACC is too low. Their main source of financing is the CBJ. Loans taken from the CBJ at an interest rate of 0.5%, while their operational expenses stands at 2.6%. Total operational expenses, including cost of lending = 3.1%.

Most of the existing loans by ACC are medium-term loans for financing of land reclamation, purchasing farm machinery, planting fruit trees, drilling deep wells, erecting greenhouses and purchasing drip irrigation systems.

The loans they are offering are categorized into two main categories:

1. Operational Loans; with a pay-back period ranges from 12-24 months.
2. Development Loans; with a duration period that could reach up to 10 or 12 years.

ACC provides the following types of loans:

1. According to the type of interest rate:

- Islamic Murabaha Option: It is a Sharia compliant mode of Islamic financing. It represents a kind of sale where the transaction is done on a Cost-Plus-Profit basis. i.e. The seller discloses the cost to the buyer and adds up a certain profit to it to arrive at a final selling price. Payment of Murabaha price has three options:
  1. At spot
  2. In installments
  3. In lump sum after a certain agreed date.
- Decreasing Interest Loans (Normal commercial lending type of financing).

Both types of financing are with the same effective interest rates. The normal debit interest rate with ACC is almost 5% decreasing. For instance, when applying the Murabaha Islamic financing calculations, it would still lead to the same normal interest rates applied on commercial loans with decreasing interest.

2. According to the time frame:

- Long Term - Ranging between 8 to 12 years
- Mid Term - Ranging between 3 to 8 years
- Seasonal Term - Ranging between 1 to 2 years. This option of financing is provided to farmers depending on their cash flow cycle. The principle amount of the loan to be settled on the due payment date (within one or Two years), while the total interest on the loan to be deducted upfront.
- Short Term - Up to 3 years

**Table 3.6: Development of ACC Loans by Count & Amount for the period from (2015 - 2017).**

Year	Development Loans		Operational Loans		Total Count	Total Amount
	Count	Amount	Count	Amount		
2015	5800	32.3 MN	774	4.7MN	6574	37.2 MN
2016	6343	36.4 MN	942	5.7 MN	7285	42 MN
2017	5926	38.9 MN	3697	12.1 MN	9623	51 MN

**Source: ACC annual report, 2017**

As shown in table 10 above, ACC development loans has a great demand since it has a longer repayment period up to 10 or 12 years. As a result, the monthly loan installment is convenient to farmers.

Interest rates charged by ACC on all types of Loans:

**I. Islamic Murabaha Mechanism**

The amount of Murabaha return depends on the amount and repayment period that ranges from 2 to 10 years, as shown below:

**Table 3.7: Schedule of approved Murabaha return calculated per ONE THOUSAND: Source (ACC Financial Control).**

No. of years	Ranges of Lending Amount in JOD's	Amount of Murabaha Return per 1000 of	
		Yearly Murabaha in	Monthly Murabaha in
2 years	1000 – 5000	86	0
	5001 – 10000	96	0
	10001 – 15000	104	0
	15001 - 20000	114	0
	Above 20001	120	0
3 years	1000 – 10000	135	101
	10001 – 15000	140	107
	15001 – 20000	158	127
	20001 – 30000	173	136
	Above 30001	185	146
4 years	1000 – 10000	163	136

	10001 – 15000	172	144
	15001 – 20000	193	154
	20001 – 30000	206	169
	Above 30001	229	188
5 years	1000 – 10000	199	171
	10001 – 15000	205	177
	15001 – 20000	210	186
	20001 – 30000	215	197
	Above 30001	244	212
6 years	1000 – 10000	231	203
	10001 – 15000	239	213
	15001 – 20000	252	224
	20001 – 30000	275	236
	Above 30001	286	244
7 years	1000 – 10000	259	229
	10001 – 15000	274	244
	15001 – 20000	295	256
	20001 – 30000	314	278
	Above 30001	335	288
8 years	1000 – 10000	288	261
	10001 – 15000	307	278
	15001 – 20000	331	294
	20001 – 30000	353	317
	Above 30001	374	327
9 years	1000 – 10000	333	293
	10001 – 15000	343	312
	15001 – 20000	374	332
	20001 – 30000	398	356
	Above 30001	421	367
10 years	1000 – 10000	352	325
	10001 – 15000	382	348

	15001 – 20000	412	368
	20001 – 30000	446	395
	Above 30001	458	408

## 2. Normal declining? Interest Rate Option

**Table 3.8: Structure of Interest Rates for Medium and Long Term Loans**

Amount in JOD's	Interest rate
1000 – 10000	6%
10001 – 15000	6.5%
15001 – 20000	7%
20001 – 30000	7.5%
Above 30001	8%

When assessing the credit risk of ACC, lack of insurance and third party guarantees increase the risk, as mentioned during the interviews that the government intervenes in paying off the non-performing loans to improve the financials but it is not officially disclosed in the annual reports.

The reason is that ACC has 9 different lending programs, of which 8 product programs with a maximum loan ceiling amount of JOD10,000, except for one program which is related to financing solar energy technologies for producing electrical powers.

The maximum ceiling of projects for pumping water from artesian wells is JOD 75,000, and JOD 50,000 for other projects with a maximum repayment period of 8 years. As stated earlier in the study, during 2017 only one borrower has obtained a loan under this project for JOD 65,000.

One of the projects that was initiated by the Government in year 2017 is a project of JOD 20M offered as interest free loans to farmers to support irrigated and protected agriculture and the production of fodder for cattle farmers where farmers received 0% loans.

The project fund was distributed in two parts:

Part One: JOD11 Millions for supporting irrigated and protected agriculture

**Table 3.9: SWOT Analysis of ACC:**

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>● Well established business infrastructure that caters the agriculture sector, it is the only specialized government institutional source of formal agriculture credit in Jordan.</li> <li>● Sufficient capital for growth in agriculture financing. - JOD 75 Million</li> <li>● Local market understanding and a large database of existing farmers.</li> <li>● An open and flexible approach for private and third party partnerships.</li> <li>● Strong branch network covering prime agricultural areas including the pilot areas in this study; Zarqa and Mafraq.</li> <li>● The loan officers at branches are well trained agricultural engineers. Yet, need to get more exposed to the new technology used in agriculture.</li> <li>● They offer Islamic Murabaha type of loans which is desirable by farmers.</li> <li>● Flexibility of rescheduling loan payments and restructuring loans without restriction.</li> </ul>	<ul style="list-style-type: none"> <li>● Weak channels of employee communication and outreach efforts for promoting their new products such as the recent one with JREEEF.</li> <li>● There is a gap on farmers' knowledge on ACC's terms of lending thus they don't approach them an example that ACC lends only to land owners only which is not correct.</li> <li>● They focus mainly on financing small farmers owning less than 30 dunums which is not the target group of WIT program.</li> <li>● Does not provide technical support or training to its clients.</li> <li>● Lack of innovation and exposure to new technologies in Agriculture</li> <li>● Weak product marketing efforts that leads to drop in product revenue and pricing.</li> <li>● Limited focus on training loan officers.</li> <li>● Does not take the debt burden ratio (DBR) of debtor into consideration when calculating the loan payment.</li> <li>● The past dues are not divided as the number of days outstanding.</li> <li>● Loans past due were too high (almost 45% of the current loan portfolio in year 2018).</li> <li>● Weak collection efforts due to high loans past due ratio (45% for current year).</li> </ul>
OPPORTUNITIES	THREATS

<ul style="list-style-type: none"> <li>• ACC does not have a product tailored for encouraging the adoption of WIT and they are open for partnership.</li> <li>• Investing in capacity building in ACC through local and international advisory services creates a sustainable economic value.</li> <li>• Conducting training sessions and seminars to farmers at ACC centers can enhance the knowledge of farmers on WIT and other products.</li> <li>• Offering a financial product that leads to reducing energy consumption through reducing water consumption will be high in demand by farmers.</li> <li>• High demand of agriculture sector in Jordan</li> <li>• Widespread of water irrigation technologies to improve water consumption and crop quality.</li> </ul>	<ul style="list-style-type: none"> <li>• ACC is not regulated by the CBJ leading to limited transparency in their financials especially the calculation of provisions and non-performing loans.</li> <li>• No insurance is available on the agriculture sector in Jordan leading to exposed market and credit risk of farmers thus ACC is highly dependent on collaterals for mitigating the risk.</li> <li>• JLGC does not work with ACC thus their loan portfolio does not have a third party guarantee.</li> <li>• Restricting ACC Credit portfolio to agriculture would increase the volume of risks due to the lack of diversity of investment trend.</li> </ul>
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### 3.6 JREEEF:

Jordan Renewable Energy and Energy Efficiency Fund has signed an agreement with ACC last year for funding JOD 2 M of 0% interest rate loans to farmers.

The purpose of the program is to encourage the adoption of energy solar systems in the agriculture sector to reduce energy costs on farmers, JREEEF also offers technical assistance to farmers and investors, the funding covers all sorts of agriculture projects including vegetables, fruit trees, fisheries, animal farming, distribution of water from ground pools, to packing and packaging laboratories and agriculture marketing, however it excludes projects related to underground water pumping including artesian wells, mainly to reduce water consumption. The program is expected to benefit 200 farmers, if the farmer requires a loan amount larger than JOD 15,000, they can request for an add-up from ACC at their applicable interest rates ranging from 5.0 - 8.0%pa.

The ceiling of each loan amounts to JOD 15,000. JREEEF pays 3.50% pa of interest to the ACC into four installments as follows:

- 1st installment for JOD 100,000 advance payment after signing the agreement.
- 2nd installment of JOD 100,000 against claims from ACC falling within the approved scope.



- 3rd installment of JOD 100,000 against claims from ACC falling within the approved scope.
- 4th installment of JOD 50,000 against claims from ACC falling within the approved scope.

Monitoring and evaluation of the program by JREEEF:

As advised by Dr. Rasmi Hamzeh, GM of JREEEF, the approach for monitoring and evaluating this program is as follows:

- ✓ ACC provide JREEEF with a monthly performance report containing a list of booked loans by ACC during the previous month.
- ✓ A spot check is conducted by JREEEF technical team on a random sample of booked loans.
- ✓ Field visits by JREEEF technical team to a chosen sample of farmers so as to make sure that approved suppliers have properly installed the required energy solar system.
- ✓ JREEEF will not subsidize interest rate of defaulted loans.
- ✓ No Installation is allowed by JREEEF nor ACC for the purpose of pumping water from Artesian Well.

Based on verbal information obtained from ACC, Eng. Nasser Abu Ruman, the number of loans booked under JREEEF program as of March, 6<sup>th</sup>, 2019 is 170 Loans for a total amount of JOD 800K.

### **3.7 Jordan Loan Guarantee Corporation (JLGC):**

JLGC is a public shareholding company that provide credit guarantee to formal financial Sector in Jordan. The major shareholder of JLGC is the CBJ owning 49%, Arab Bank and Housing Bank for Trade and Finance own 5.05% and 5.96% respectively, as per JLGC annual report, 2017 annual report.

There are no specialized companies in Jordan providing loan guarantees or export credit guarantee, the Jordan Loan Guarantee facility which is run by (CHF) in favor of (OPIC) is expected to exit the market in May 2019 and the outstanding loans will mature by 2023. Some other regional institutions in the Arab countries are providing export credit guarantee including Jordanian exports.

JLGC does not guarantee agriculture loans as guided by the CBJ, and they do not guarantee loans granted by the ACC, their partner banks and MFIs are mentioned in the table below.

JLGC guarantees three loan types; productive loans, real estate and personal loans, and industrial finance loans.

During our meeting with JLGC, they informed us that they can consider providing guarantees to reputable agriculture suppliers and would classify them under the productive loans. The banks do not consider the guarantee of JLGC as sufficient collateral as the claim can take up to years until it is reimbursed to the bank. The

bank has to prove that it has exhausted all its legal and internal procedures to collect the payment from the borrower.

JLGC receives monthly reports from the banks on the status of guaranteed loans and uses the following classification in case of default:

- Early warning                      60 - 90 days
- Below Average                    91-180 days
- Doubtful                            181 - 359 days
- Bad                                    Over 360

When the default tenor exceeds 180 days, JLGC places a deposit with the partner bank for the outstanding principal and interest amounts subject to the bank completing all legal actions taken against the borrower. Generally, the loans granted by banks and guaranteed by JLGC are exempted from general provisions required by the Central Bank of Jordan. Default loans are also exempted from the special provisions for the first year but have to be provisioned against starting the second year. The weighted average capital adequacy is adjusted by the amount of loans guaranteed by JLGC, with those loans have reduced risk weight similar to those extended against cash collateral; these are the main reasons why banks benefit from the JLGC guarantees.

**Table 3.10: The distribution of number and size of loans by financial institution**

Financial Institution	Number of Loans	Total loans in JD 000'
Jordan Kuwait Bank	15	591
Jordan Ahli Bank	30	1,394
Jordan Commercial Bank	40	1,193
Islamic International Arab Bank	467	21,987
Arab Bank plc	184	6,275
Ahli Microfinance Company	22	124
Bank al Etihad	55	3,745
Bank of Jordan	4	164
Housing Bank for Trade and Finance	261	5,668
Cairo Amman Bank	282	6,034
Capital Bank	83	6,652
ABC Banking Corporation	10	1,085
Societe General Bank	2	259
Sanadcom for Business Finance	211	4,346
Jordan Islamic Bank	9	548
Safwa Islamic Bank	88	3,137
Bindar Trading & Investment	16	342

BLOM Bank	55	1,100
Ethmaar for Islamic Finance	30	145
Al Rajhi Bank	15	2,821
Islamic Finance House	7	138
Tamkeen Leasing	1	16

It is worth mentioning that in 2017 JLGC has signed agreements with 9 banks to guarantee the financing of renewable energy projects (Bank al Etihad, Jordan Islamic Bank, Capital Bank, Jordan Ahli Bank, Societe Generale Bank, Bank of Jordan, Housing Bank for Trade and Finance, International Islamic Arab Bank, Arab Bank plc. The maximum ceiling for retails loans is JD 3000, and for SMEs and Corporates is JD 350,000 with 70% coverage of total facility amount.

### **3.8 Informal lenders**

#### **3.8.1 Commissioners**

Commissioners operate in the Vegetables and Fruits Central Wholesale Market, and are regulated by the Greater Amman Municipality Council. According to their website, [www.awm.gov.jo](http://www.awm.gov.jo), there are currently 85 commissioners running the businesses in the market. It is conditional for the commissioner to be Jordanian and holder of a professional license. The commissioner charges farmers up to a maximum of 6% of the net amount of sales whether the product is local or imported.

Commissioners must provide the seller or farmer with a schedule of the quantities of the product sold in the market, indicating therein the selling hours and date, as well as the product's weight, the unit sale price, and the total amount generated from the sale, and the withholdings (deductions) made thereto. Typically the farmers' deals with one commissioner in the market specified at the security entrance. The Greater Amman Municipality levies the following fees on the products from the commissioner when the product enters the market and shall be 50/50 incurred by the buyers (typically dealers and exporters) and sellers (farmers):

- 1- 10 JDs for each ton of vegetables
- 2- 15 JDs for each ton of fruits
- 3- (4%) of the net amount of the selling price medical, aromatic, and decoration plants and flowers.

The prices of products are auctioned and decided upon supply and demand are characterized by high volatility. During the personal interviews with two commissioners they confirmed that they finance farmers at zero interest rates subject that the farmer sells the harvest exclusively to them. Commissioners lend the farmers based on their historical relationship, the quality of their goods, technical expertise and mostly they depend on trust. They obtain collaterals such as postdated cheques and mortgage of vehicles; they do not mortgage lands as they are usually not the owners. The commissioners acknowledged the high risk of their business and

even describe it as gambling, the default rates of farmers in repaying their loans ranged from 25% to 90%.

Commissioners are considered rich in cash and do not require financing from financial institutions, they are the main lending source for many farmers that do not own lands and do not have proper financial documentation.

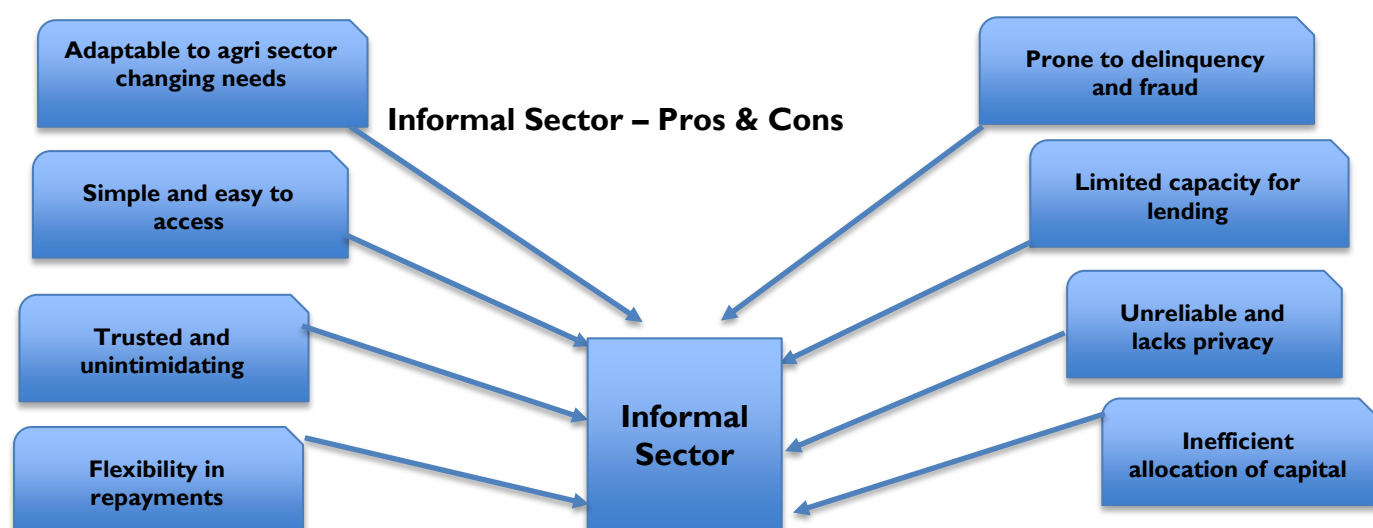
### 3.8.2 Suppliers

Suppliers carry out an important role in the agriculture value chain not only as suppliers of irrigation technologies and agriculture products but as financiers for farmers as well.

During the personal interviews with three suppliers, two of them confirmed that they sell agriculture products on credit to reputable farmers and through commissioners in the case of unknown farmers; they obtain postdated cheques as security against the credit. Similar to commissioners, they acknowledged the high risk involved in granting credit and the delays in the collection.

One of the interviewed suppliers has mentioned that they are in the process of obtaining a credit facility from their bank. Accordingly, they have decided to limit their lending to farmers, as this process has affected the company cash flow. They usually import water irrigation spare parts from abroad and settle the price of goods and customs in cash, while they sell farmers against postdated cheques that are due within a period ranging from 3-12 months.

### 3.8.3 SWOT Analysis



**Table 3.11: Formal & Informal Financial Sector comparison**

No.	Informal Financial Sector	Formal Financial Sector
1.	Provide credit facilities to small farmers in rural areas, lower-income households, and small-scale enterprises in urban areas.	Usually ignore small farmers, lower income households, and small scale enterprises. They are in favor of a larger-scale, well-off, and literate clientele which can satisfy their loan conditions.
2.	The procedures are usually simple and straight forward. These procedures are easily understood by the farmers.	Complex administrative procedures that are beyond the understanding of farmers at rural areas.
3.	Access to credit is simple, non- bureaucratic, and little based on written documents. Literacy is not a requisite.	Loan application procedures and origination is complex and require reading and writing skills, so that a file on the borrower will be established.
4.	Simple and direct processing of loan requests allows for their prompt approval and a minimum delay in disbursement. Rejections are low; but the level of risk is reflected in the charged interest rate.	Processing of loan requests is complex, resulting in long delays before final approval or rejection. Even when approval is obtained, loan disbursement and delivery are a bit slow.
5.	Collateral requirements on loans are to local conditions and borrowers capacity. The conditions may be based on precise knowledge of farm size and/or crops harvested so as to determine the borrower's capacity to repay a loan.	Collateral requirements correspond to the situation of relatively well-off urban-dwellers: deposits or savings accounts in a commercial bank, property which can be mortgaged.
6.	Transaction costs are low	Transaction costs are relatively high
7.	Repayment rates are high	Repayment rates are low.
8.	Informal sector are aware of the problems that farmers may be confronted with, therefore, they can deal with repayment difficulties in a pragmatic manner. Debt rescheduling is always possible.	Formal sector institutions do not have close contact with the environment in which they operate. Sometimes they prosecute defaulters, which can have negative social repercussions, while at other times they do not sue for reimbursement, leading borrowers to believe that formal loans are free.
9.	The informal sector has a dense and effective information network at the grassroots level for close supervision and monitoring of borrower activity - particularly their cash flow - whether they are members of an informal association or not. This contributes to the efficient	Unfamiliar with the grass-roots environment, formal institutions are ill-served by a mediocre supervisory and monitoring network, and are unable to gain insight into the activities of their clientele.

	mobilization of savings and ensures high loan repayment rates.	
10.	The informal sector charges competitive lending rates; though they are sometimes high, this reflects the scarcity of loanable funds.	Formal financial institutions charge very low – sometimes they get the source of funding through their regulatory body. Commercial banks apply moderate lending rates.
11.	The informal sector usually does not keep a written record on the borrowing of its clientele. And when it does, the procedures are relatively simple.	The formal sector keeps written records on the activities of clients for future reference and source of data.
12.	The volume and availability of loanable funds are subject to seasonal fluctuations.	The formal sector regularly has loanable funds available.
13.	The informal sector does not receive grants or other forms of support from donor agencies.	Formal sector institutions may receive grants, source of funding, and other support from donor agencies through their regulatory (CBJ).
14.	Credit mechanisms in the informal sector are not geared towards accumulating funds before either peak season when loan requests are highest.	A regular supply of funds allows the formal sector to lend at any time of the year. Some Governmental lending institutions, which are deprived of sufficient funds because of high default rates on their loans.
15.	Informal sector are often aware of new farming methods.	Formal sector institutions could reach a widely dispersed rural clientele by collaborating with government lending institutions.

It is worth mentioning that as per the CBJ Financial Stability Report 2017, there are 43 Non-banking financial institutions that provide financing in Jordan, and these companies are divided into four categories:

1. MFI's / Total 14, of which 9 institutions under Tanmeyah Jordan Microfinance Network. (The Central Bank of Jordan has finalized the licensing process of existing MFIs' and currently only 9 (Nine) licensed institutions under the CBJ supervisory umbrella and are being considered as part of the formal financial sector.
2. Leasing companies / Total 15
3. Mixed financing companies / Total 12
4. SME's financing companies / Total 2

The non-banking financial institutions play a fundamental role in providing credit to segments facing difficulties to access finance. They are not under the CBJ supervision, as they are being monitored and supervised by the Ministry of Industry and Trade.

## 3.9 Business Support

### 3.9.1 Central Bank of Jordan (CBJ)

CBJ regulates twenty five licensed banks and nine MFIs in Jordan.

The total credit portfolio of the licensed banks in Jordan amounted to JOD 24.7 billion in 2017 according the CBJ, of which JOD 337 is granted to the agriculture sector comprising a small portion of 1.4% of the total credit portfolio. CBJ has offered the banking sector financing loans programs (Advances) with an amount reaching to JOD 1.2 billion directed to support the following sectors:

1. Industrial
2. Tourism
3. Renewable energy
4. Agriculture
5. ICT
6. Engineering consultancy – added during 1<sup>st</sup> quarter, 2018
7. Health sector – added during 4<sup>th</sup> quarter, 2018
8. Transportation companies in transportation sector – added 4<sup>th</sup> quarter, 2018
9. Educational sector (Vocational & Technical Training) – added 4<sup>th</sup> quarter, 2018

The Four targeted sectors (6+7+8+9) above were added during the year 2018. These sectors were not included as targeted sectors in the CBJ financial stability report for year 2017. It will be included in the CBJ financial stability report 2018 which is not finalized nor published yet by the CBJ.

Source of info; CBJ studies and research department. Dr. Tallal Al Hammouri

CBJ financing programs are financing lines injected into SMEs sectors through bank loans with soft interest rates of 1.0% p.a. for businesses operating outside Amman, and 1.5%p.a. for the businesses operating in Amman.

Interest rates charged by banks under this program ranges from 4.5% to 5% declining.

As per CBJ report of March 3rd, 2019, almost 933 businesses have benefited from this program creating 9,600 jobs with a total amount of lending reaching to almost **JOD 647M** disbursed as follows:

- Industrial sector = JOD 320M
- Renewable Energy = JOD 201M
- Tourism sector = JOD 54M
- Agriculture sector = JOD 44M vs JOD 32.3M in year 2017
- ICT sector = JOD 13M
- Engineering consultancy = JOD 2M
- Transportation sector (Transportation Companies) = JOD 7.2M
- Educational sector = JOD 1.5M
- Health sector = JOD 3.9M

For more details about the current available funds held with CBJ, please refer to Annex 2 + Annex 3.

## The establishment of Credit Bureau – CRIF

In year 2015, CBJ has approved the licensing of a private credit bureau CRIF Jordan for the purpose of providing information about SMEs to banks, microfinance agencies and others to enable them to extend loans to SMEs, as the lack of information about these enterprises hampers extending credit to this sector.

In year 2016, it is agreed that licensed banks to provide CRIF Jordan with all credit information related to their customers without the prior consent of customers. Banks are also requested to provide the company with this information for the previous three years.

In May, 2018 CRIF Jordan Company have signed agreements with 46 institutions including 25 banks and 21 financial institutions including MFI's giving the right for every customer to access his credit report free of charge once a year.

### **3.9.2 IFAD (International Fund for Agricultural Development)**

IFAD is an international financial institution and specialized United Nations agency based in Rome, the UN's food and agriculture hub.

In Jordan, and since 1981, IFAD has financed seven agricultural development programs and projects with a total investment amount of USD 71.4 MN.

IFAD is considered one of the leading partners in participatory development in Jordan, where it has worked with poor rural people to design programs and projects in collaboration with the government and other partners. Their activities have focused mainly on rain-fed agriculture and livestock, small farm credit, income diversification and natural resources management.

On December 2017, a financing agreement was signed between Jordan and IFAD to benefit 12000 families in rural areas.

The agreement includes a concessional loan of \$8.4 million, as well as two grants. The first is a \$0.5 million grant, while the second is a \$3.9 million grant from IFAD's Facility for Refugees, Migrants, Forced Displacement and Rural Stability (FARMS) to increase support for rural communities affected by forced displacement and migration.

SIGHT financing will be implemented over a six-year period. It will assist in achieving the Government's strategic objectives of increased food security, poverty alleviation and improvement in the trade imbalance. SIGHT will be focusing on addressing several key problems in the small ruminant sector, such as the gradual deterioration of livestock breeds, extension and animal health services, water scarcity, feed shortages and degraded rangelands. Although the project will be implemented in the northern and central governorates of Mafraq, Irbid, Jerash, Ajloun, Madaba and the outskirts of Amman, its institutional and technical support will reach all of Jordan's governorates through its many implementing partners led by the Jordanian Ministry of Agriculture.



### **3.9.3 Rural Economic Growth and Employment Project (REGEP):**

The Rural Economic Growth and Employment Project is a six year project with a total financing amount of USD 15M, of which USD 10.84M is financed by an IFAD loan and USD 0.5M is financed in the form of IFAD grant. The remaining finance is provided by the Government, beneficiaries and domestic microfinance banks.

The project aims at supporting the strengthening of the horticulture value chains, focusing on high value crops, while also boosting access to rural financial services and promoting entrepreneurship in the project area.

### **3.10 Agriculture Financing Barriers:**

The researchers list here below a summary of the main financing barriers. This is concluded from the demand and supply interviews we have conducted at both areas:

1. The inability of farmers to prepare good quality business plans. A majority of agriculture projects are seen by Jordan's banks as lacking the skills necessary to submit a sufficiently good business plan or loan application to warrant the required facilities. These specific skills may be inadequately developed, and the fact that most agriculture businesses are SMEs and lack the requisite financial and auditing skills is considered generic to the SME sector.

2. Lack of lenders familiarity with agri technologies and best practices. Jordanian banks tend not to be familiar with the technologies and practices necessary for the development of agriculture sector, nor are they familiar with the market trends and dynamics.

As a result of this lack in information, banks are less able to carry out due diligence and assess the level of risk than would be desired, and exhibit a high level of uncertainty when it comes to appraising loan applications in agriculture.

Latest technologies and practices differ according to whether the said agriculture project is related to renewable energy, energy efficiency, and water efficiency, which would require specific expertise within the financial institutions.

3. The mismatch between the farmer's requirements and the banks' lending rules. Many agriculture projects require financing terms that are inconsistent with bank lending practices. This means that even if the agri loan application was credible and of a high quality and banks found it easy to appraise, it would not meet their lending rules e.g. on loan tenor, amount of collateral and so on.

Almost 40% of the Focus groups members mentioned the mismatch between the tenor expectation of the farmers and that which the bank was willing to provide. Usually banks tend to approve agri loans with a short repayment periods for the purpose of mitigating any sort of risks. At the same time, higher interest rates are being charged on facilities on the basis of risk adjusted pricing.

4. Climatic risks have made banks reluctant to enter the agriculture finance business because they are beyond control, complicated, unpredictable and costly.

Access to sufficient and adequate finance has been a challenge for agriculture. Due to perceptions of its low profitability, low margins for financiers, and high perceived risks (among other issues) financiers limit their exposure, raise interest rates (risk adjusted pricing approach), tighten lending criteria, shorten terms, impose onerous lending terms, and often shy away from lending to agriculture at all, seeking more stable returns from other sectors of the economy. This finance shortfall is a major problem for farmers and SME agribusinesses.

5. The absence of Agriculture loan guarantees facility. The Jordanian banking sector is almost exclusively based on collateralized lending; in other words there is little or no unsecured lending, especially for SMEs, because it is very difficult for banks to evaluate the underlying creditworthiness of agricultural projects or businesses. This can represent a significant challenge for many SMEs who often lack collateral. A specific loan guarantee facility for agriculture investments could help to overcome this.

6. Farmer's previous credit history. A good number of farmers have previously defaulted with time in repaying back their debts, some others were listed on the CBJ blacklist due to returned cheques. When applying for credit facilities, their loan applications will be automatically rejected by financial institutions due to previous lending history or being listed on the CBJ blacklist.

**Source of information; interviewed financial institutions**

### **3.11 Agriculture Insurance:**

Agricultural insurance is not currently available in Jordan. Despite repeated Government's attempts from 1990 to introduce this kind of insurance, no effective steps were taken at the time. Private insurance companies were refusing to embark on agricultural insurance under the pretext that it would entail high costs and cause losses.

In 2007, the Government issued a law to establish an **"Agricultural Risk Management Fund"**, which aims at tackling the effects of the calamities of nature. The basic principles for the Fund's operation were prepared and a Fund's manager was appointed, reporting direct to the Minister of Agriculture. However, the Fund has not begun to operate due to lack of the necessary finance.

The Fund's work method is summarized as follows:

1. Premiums would be determined on the basis of the productivity of one unit of area for the last three years for insured crops. The same applies to insured livestock;
2. The farmer must contribute no less than 30% of the premium.
3. It is preferable that, in the beginning, insurance be made for specific crops against specific risks, giving priority to drought and un-irrigated crops, and projects financed by loans from the Agricultural Credit Corporation.

Compensation must not be more than 75% of the insurance value, and no compensation would be paid if the losses are less than 25 percent of the insurance value.

Among the often-occurring risks that afflict the farmers are frost and floods, which often occur in the “Jordan Valley”.

The Government usually compensates the farmers whose farms are stricken by these calamities, on the basis of estimates of losses made by specialized committees. The almost yearly droughts have forced the Jordanian Government to step in to compensate the farmers and livestock producers who depend on pasturing. Compensation was provided in a number of ways, the most important ones being:

- **Exempting borrowers** from interest on loans, and rescheduling of the loans;
- **Supplying the livestock** raiser with fodder at subsidized prices;
- **Giving financial** compensations.

During the 1985–2005 period, compensation caused by the above-mentioned calamities totaled JOD 35M, given in the form of exemption from the interest on agricultural loans. Also, the Government paid cash compensation totaling JOD 2.5M during the 1990–2005 period. Such payments can be considered a kind of quasi-insurance.

Crop insurance may reduce risks of natural calamity and crop loss; insurance on the borrower’s life and on his property, buildings, machines and livestock against various calamities is a primary factor of risk reduction. Therefore, banks in countries where agricultural insurance is available are in a better position to cope with risks than banks in countries where insurance is unavailable.

The MOA is currently in the process of establishing its own cooperative “Takaful insurance company” in collaboration with the private sector in Jordan.

The MOA will be subsidizing 70% of the premium insurance amount, while farmers will be settling the remaining 30% of the premium.

The insurance policy will protect farmers in cases of natural disasters; like frost, floods, heatwaves and snow, or against loss of revenue if prices of their crops decline.

**Source of info; MOA, Head of Agriculture Risk Management Fund, Dr. Mohammad Awaideh.**

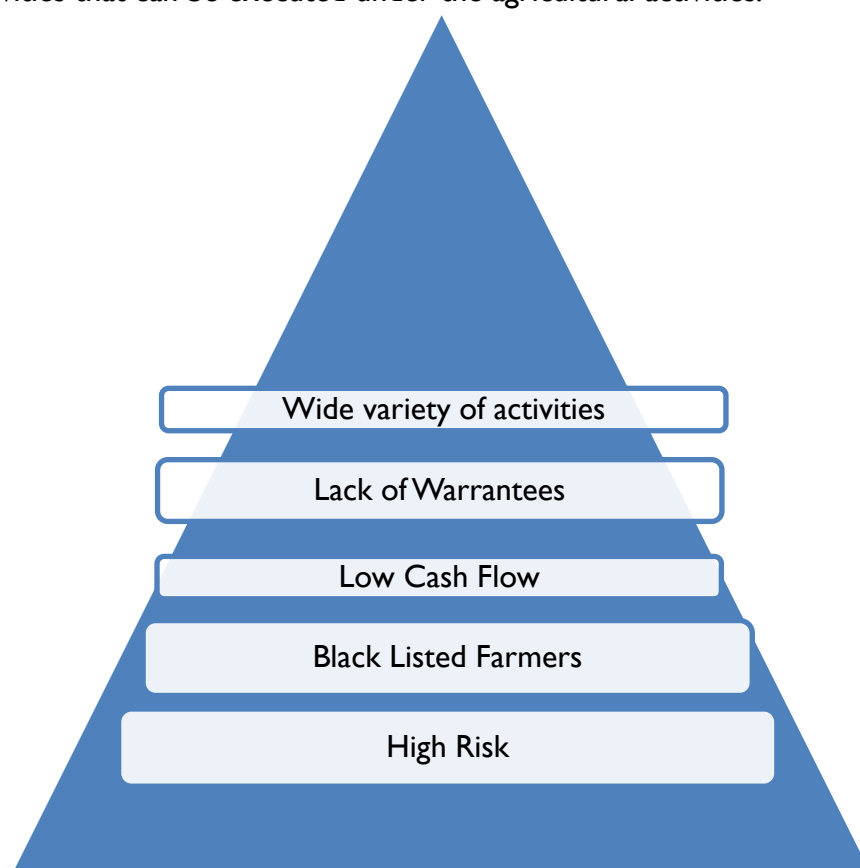
## Part 4: Interviews analysis and interpretation

### 4.1 Introduction

This part indicates the major findings of interviews and focus groups executed. The findings are presented and discussed according to the interviewed group, introducing the conclusions after each sector analysis and the recommendations.

### 4.2 Microfinance institutions

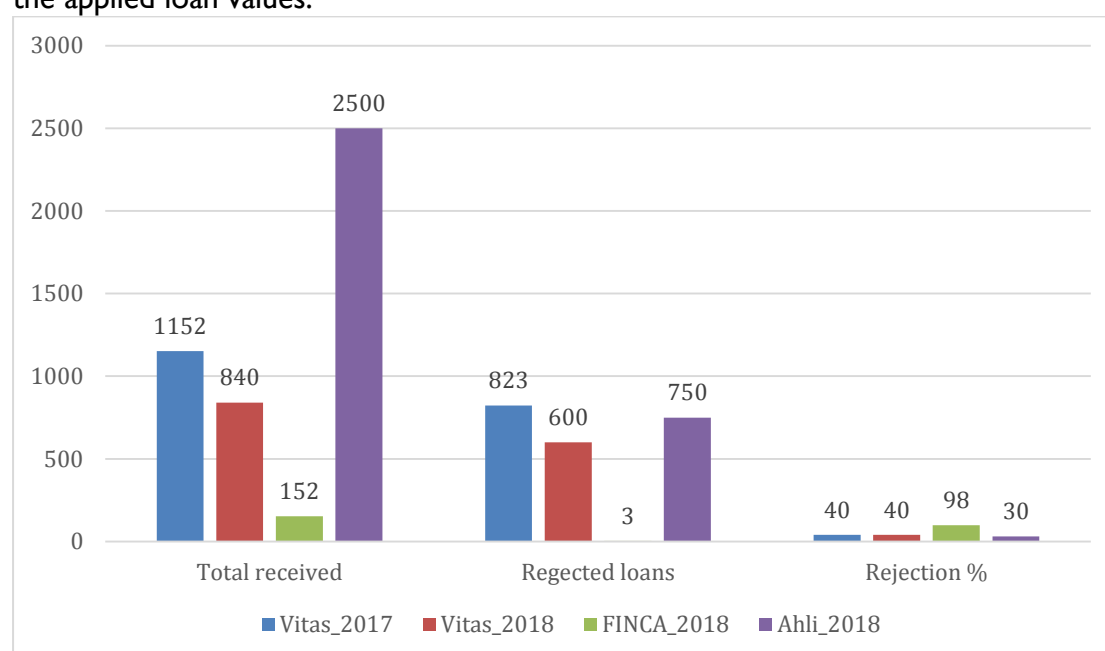
The interviewed MFI's were divided into two groups concerning introducing agricultural loans. These institutions introduced a common major issues that facing agricultural loans. Figure 4.1 summarizes the major obstacles that are facing agriculture loans. The most common obstacle is the high risk of the agricultural business. This obstacle is the first concern of all financial institutions. The other obstacles are related to farmers themselves. They are related to lack of warrantees introduced by farmers, low cash flow, black listed farmers and the wide variety of activities that can be executed under the agricultural activities.



**Figure 4.1: The obstacles of agricultural sector loans**

Concerning the total amount of applications received by microfinance institutions per month, Figure 4.2 shows that these numbers varied from one institution to another. However the number of received applications, the percentage of rejected ones varied from 30% for Ahli Microfinance to 98% for FINCA. The high rejected

applications are justified for the lack of guarantees introduced which does not match the applied loan values.

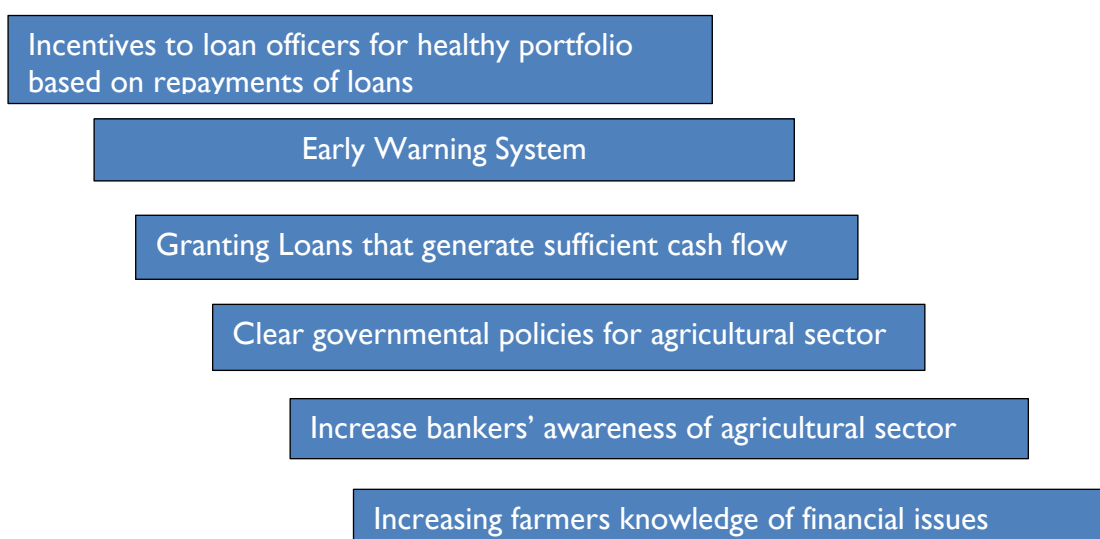


**Figure 4.2: The distribution of agricultural loans applications 2017&2018**

MFI's introduced different suggestions to improve agricultural funding. Figure 4.3 shows some of these suggestions. The first suggestion is to improve farmers' knowledge on financial issues. This point was raised because farmers do not know what the needed requirements to get the required loans. On the other hand, bankers' low awareness about agricultural sector does not encourage them to increase the number of loans for the investors of this sector.

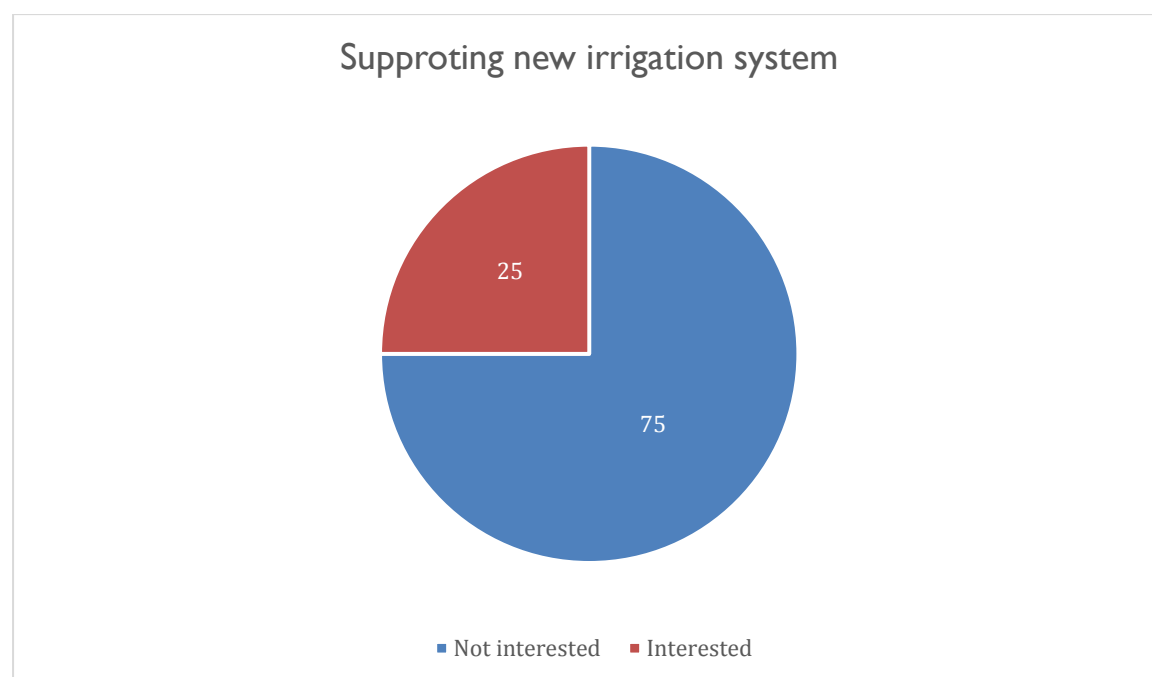
Moreover, IMF's complained of the unclear governmental policies for agricultural sector. This instability affects farmers' stability from time to time and affects deeply the cash flow and profit of farmers.

In general, alleviating obstacles and finding radical solutions help the MFI institutions to increase the number of loans given for farmers and support them financially.



### Figure 4.3: Factors to improve agriculture funding

About 25% of the interviewed sample agreed to support new irrigation systems, while 75% did show any interest in this direction (Figure 4.4). Same results are concluded for the tendency of MFIs to develop irrigation manufacturing lines. These results are justified through the previously shown obstacles that face farmers to deal with MFIs.



**Figure 4.4: The tendency to support banking loans directed to the adoption of new irrigation systems**

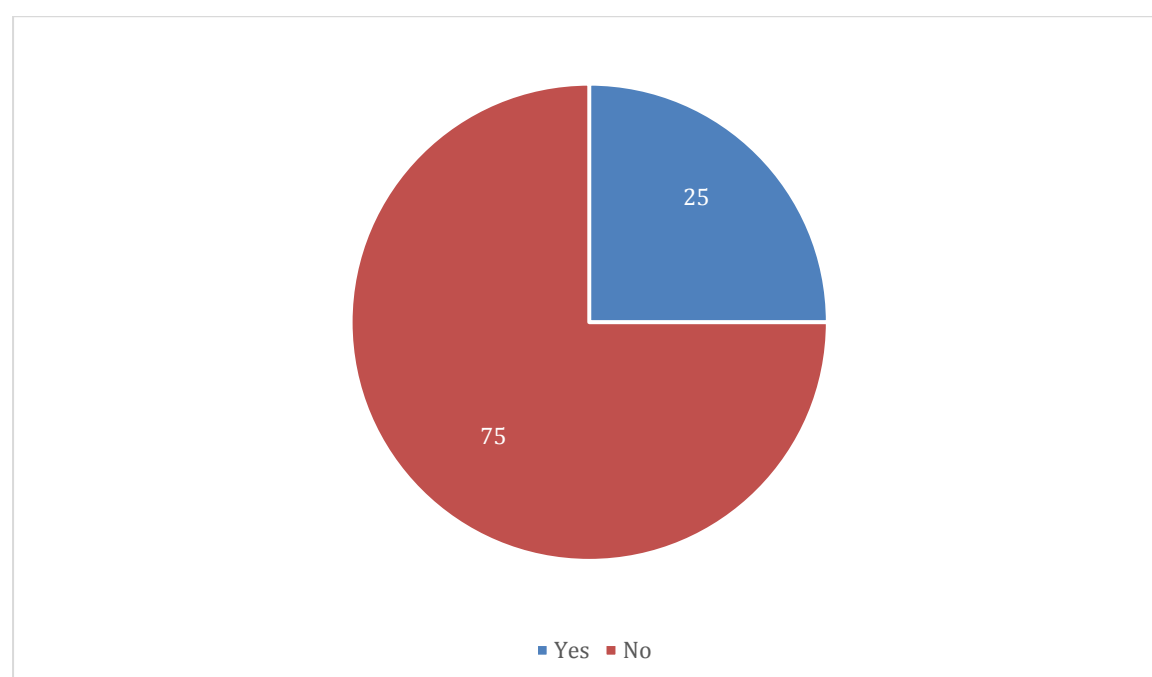
### Conclusions:

1. There are no specific tailored products targeting agriculture sector. Each loan application is being reviewed on case by case basis.
2. MFIs are mainly targeting small farmers. Normally their average ticket size per loan is too small compared to other financial market actors.
3. As per the latest directive of the CBJ regarding financial inclusion, all registered and properly licensed MFI's are required to adopt a strategic objectives and activities within their plans for financial inclusion for years 2018-2020 for the purpose of:
  - a) Increase the level of financial Inclusion from 33.1% in 2017 in terms of account ownership in financial institutions by the adults to 41.5% by 2020
  - b) Reduce the gender gap from 53% to 35%
  - c) Developing and diversifying targeted microfinance products and services for rural areas and agriculture sector throughout year 2020. This objective to be accomplished by:

Objectives	Start Date	End Date
1. Microfinance companies to develop products that meet different needs related to Agricultural Industries	First Quarter 2019	Fourth Quarter 2020
2. Designing a program to provide technical support to microfinance companies in the field of agricultural lending and Agricultural Industries.	Fourth Quarter 2018	Fourth Quarter 2019

### 4.3 Banking Sector Tendency to Support Farmers' Loans

The approach of banking sector to support farmers' loans does not vary from MFIs as they apply similar rules for dealing with loans. Only 25% of banks have agricultural products, while 75% of bank interviewed do not have such products



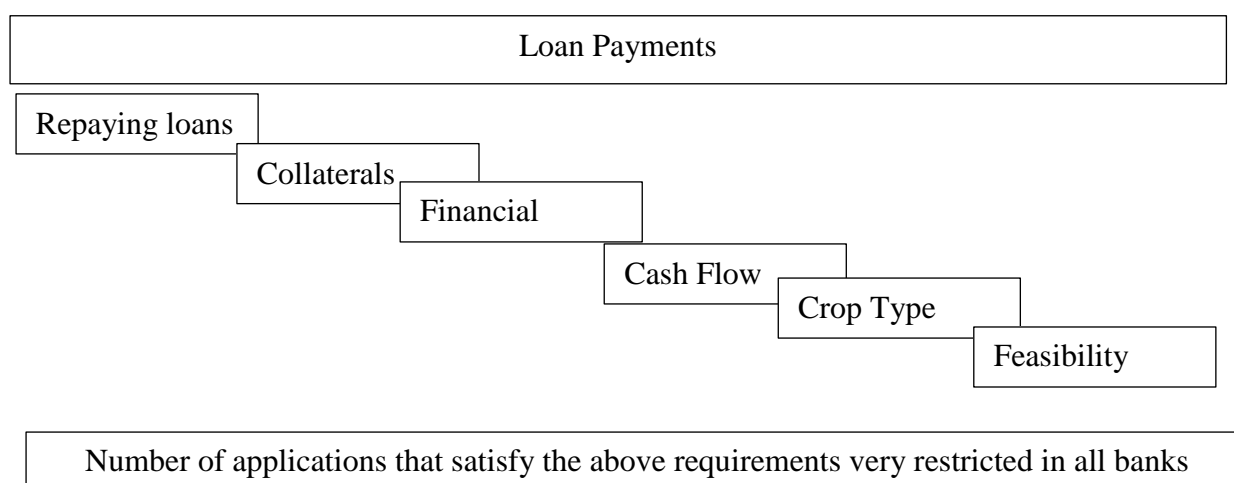
**Figure 4.5: The percentage of banks having agricultural product**

Figure 4.6 shows constraints and requirements that should be available for agricultural loans. The first concern of the bank is to make sure that the loan will be repaid to minimize the loan risk as much as possible. The other factor that is considered crucial for the bank is related to collaterals. Enough collaterals should be introduced for each case. Also, the financial position of the individual is very important for the bank.

Cash flow of the applicant is considered very important for the bank to be considered. Also, crop type (agricultural activity) is very important to determine the

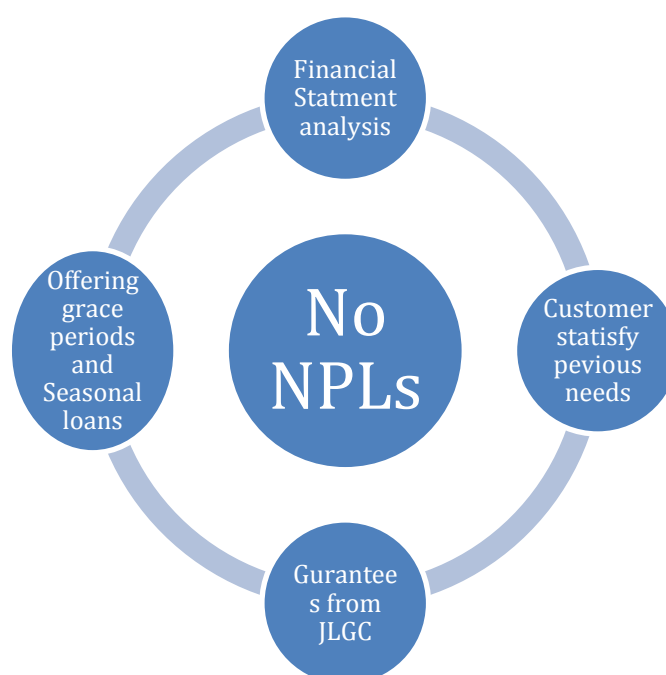
risk exposure and finally the banks required feasibility study to introduce any financial facilities for customers.

According to the previous interpretation, the loans payment expectations are very high under the availability of the previous elements, and on the other hand, the number of applications that provide all these requirements is very low.



**Figure 4.6: The Factors required to ensure loan payments**

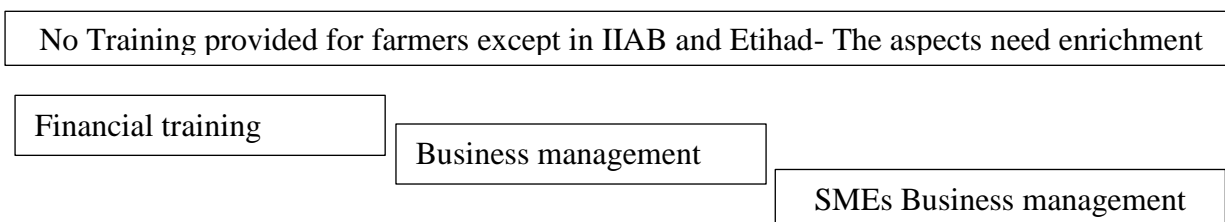
To improve NPLs in banks, different requirements should be provided including deep financial statement analysis, receiving guarantees from third party, provide the previous mentioned requirements and offering grace periods or seasonal loans (Figure 4.7).



**Figure 4.7: The justification of zero NPLs in Banks**



The interviewed bankers complained of farmers' lack of knowledge in financial issues, including business management and small business management. All the banks indicated that they do not provide any sort of knowledge, but they recommend increasing farmers' awareness in these issues to facilitate financial lending process.



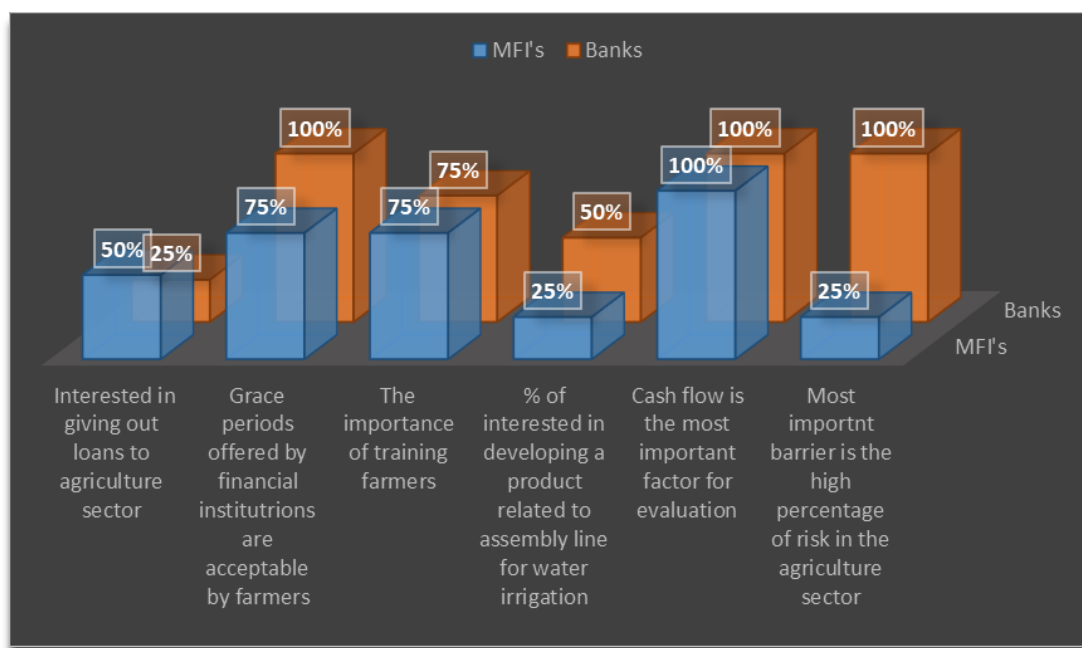
**Figure 4.8: Farmers' training requirement**

### Conclusions from interviewed Banks & MFI's:

#### Summary of key indicators:

**Table 4.1: Key indicators percentage sheet**

No.	Key Indicators	MFI's	Banks
1.	Percentage of entities that showed interest in giving out loans to agriculture sector	50%	25%
2.	Offered grace periods by Banks and MFI's are acceptable by farmers	75%	100%
3.	The importance of training farmers	75%	75%
4.	Percentage of entities interested in developing a product related to an assembly line manufacturing for water irrigation.	25%	50%
5.	Cash flow is the most important factor for evaluating an agri loan application.	100%	100%
6.	The most important barrier is the high percentage of risk in the agriculture sector	25%	100%



**Figure 4.9: Findings summary for Banks' and MFIs' interviews**

#### **Recommendations from Banks and MFI's interviews:**

From our interviews with Banks & MFI's, we were able to conclude the following:

1. - The disparity between Banks and MFI's on the concept of providing credit to agricultural sector. At a time when 50% of interviewed MFIs see the possibility of giving out agricultural loans, only 25% of interviewed banks, and mainly those Islamic banks approved the concept of giving out agricultural loans under Islamic financing instruments. Also, it was noticed that one of the banks preference is to finance livestock breeders rather than to crop farmers of higher percentage of risk.
2. It was clearly noted that 75% of the interviewed group see the need for farmers to receive training programs in the areas of farm management.
3. - The vast majority of these entities can provide grace periods ranging from one to six months, and in some cases more than one year.
4. - The results show clearly the tendency of banks to develop a banking product that supports the adoption of a new irrigation technology, while 25% of MFI's have also agreed with this approach.
5. The result of interviews has revealed that there's an average acceptance of Banks & MFI's on the desire to develop an assembly line for irrigation production.
6. The expected cash flow from farming business is the most important guarantee for the interviewed entities from the formal sector.
7. - All interviewed consider the high risk ratio of the agricultural sector as the most important obstacle in providing agricultural lending.

#### 4.4 Agricultural Credit Corporation Interview

Agricultural Credit Corporation is concerned with introducing financial loans for farmers without introducing any technical support. ACC does not offer any training for farmers and they do not have specific loan ceilings. The loan amounts range from very small loans up to JD150,000 and can be approved by the board of directors. The corporation has shown high flexibility to offer or create new products targeting farmers in different area of Jordan.

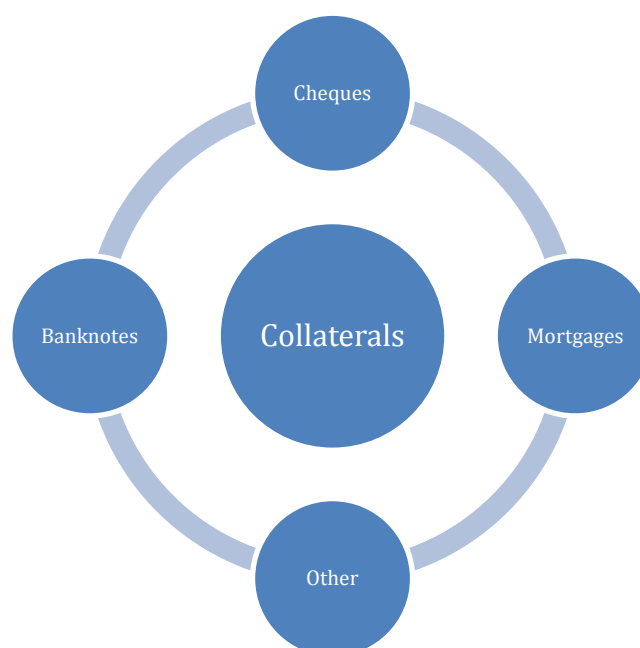
In general, ACC is an independent governmental corporation. It has its own laws and regulations which control their work. The margin of loans given by ACC meets the regulations and laws working in it. The changes or shifting to another activities or the creation of new products requires agreements of board of directors.

#### 4.5 Commissioners Interviews

The commissioners showed that the quality of the product is a first priority when buying farmers' crops and the payment for farmers is in cash. The results showed that the two commissioners deal with known number of farmers. The first one is dealing with 50-60 farmers, while the second one is dealing with 100 farmers. The range of loans given by the first one ranges from JD5000 to JD30000, while the range of loans given by the second one was wider ranging from JD50000 to JD200000 (Table). Figure 4.10 shows the types of collaterals introduced by farmers. Both commissioners do accept cheques, banknotes or any mortgages as collaterals for the given loans.

**Table 4.2: Number of farmers commissioners deal with and the financial facilities provided**

Criteria	Commissioner 1	Commissioner 2
Number of farmers dealing with	50-60	100
Loan range	JD5000-JD30000	JD5000-JD200000
Interest rate	0	0



**Figure 4.10: Collaterals provided by farmers to commissioners**

The commissioners showed high knowledge about the updated irrigation technology. They are posted with the latest technology through the media and web sources. They have tendency to support farmers to improve their irrigation system. They can offer farmers with any new technology for irrigation but they expressed their dissatisfaction about delayed payments by farmers due to different risky conditions surrounding them.

## 4.6 Farmers attitudes to adopt WIT

**Key findings from interviewed farmers:**

**Table 4.3: Representing key findings of farmers interview**

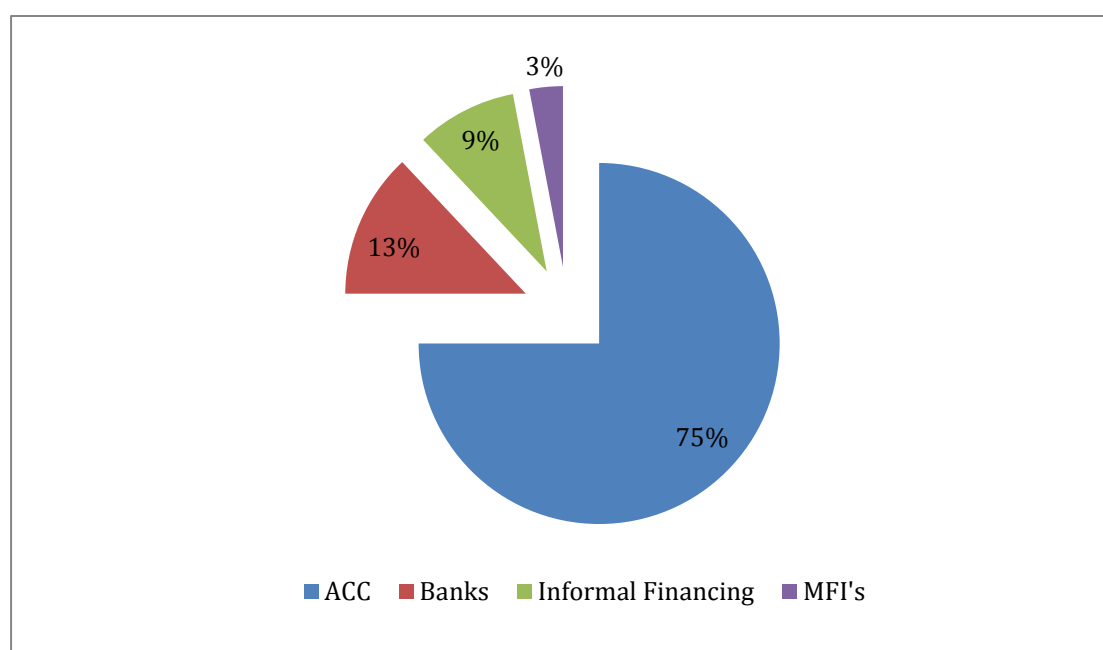
No.	Description	% of interviewed farmers
1.	Percentage of interviewed farmers that consider obtaining loans is a main source of funding for their agribusiness	100%
2.	Percentage of interviewed farmers that currently have loans from Banks and MFI's	0%
3.	Percentage of interviewed farmers that consider the post dated cheques is the only guarantee they could provide for their loans	57%
4.	Percentage of interviewed farmers that their own business Cash Flow is at utmost during the 2 <sup>nd</sup> half of the year.	100%
5.	Percentage of interviewed farmers that use water irrigation systems for reducing water consumption, yet, they frequently apply maintenance to these systems.	100%
6.	Percentage of interviewed farmers that are really aware of the new technology adopted for irrigation.	85%
7.	Percentage of farmers that are interested in getting a	100%

	<b>financial product for WIT</b>	
8.	<b>Percentage of farmers acceptance in dealing with banks that offer a financial product for WIT</b>	<b>85%</b>
9.	<b>Percentage of interviewed farmers that attended training sessions</b>	<b>71%</b>
10.	<b>Percentage of farmers that consider their own previous experience was the major source of their expertise in managing their own farms</b>	<b>100%</b>

#### 4.6.1 Farmers Financing Preference:

Interviewed farmers were asked the following question about their own preference when obtaining agri financing:

- 1- Commercial Banks,
- 2- Islamic Banks,
- 3- ACC,
- 4- MFIs,
- 5- Informal lenders (Commissioners, Suppliers, etc.)



**Figure 4.1 I: Interviewed farmers financing preference**

About 75% of interviewed farmers responded that they would obtain financing through ACC, 13% responded that they will go for Banks, 9% they would go for informal financing from commissioners and suppliers, and 3% they will obtain financing from MFI's, though they are not much aware of MFI's criteria.

The common feedback from interviewed farmers are as follows:

- Some common important opportunities to be availed to farmers for the purpose of enhancing & developing own farming businesses:

1. Solar energy systems to reduce the power cost.
  2. Importing new types of crops such as figs from Mexico and other fruits from Malaysia and Brazil. Also, buying advanced agriculture equipment.
  3. Planting olives, grapes, and peach trees as their losses are lower than other crops.
  4. Reducing labor expenses in farming by using computerized and advanced technologies.
  5. Advanced agriculture systems
- If there is any financial products available, would you like to apply for it:
    1. Common feedback is to get financial products without interest rates similar to ACC or Islamic type of financing.
  - If banks are willing to provide farmers with financial products, what are the facilitations you would like to see in order to use this financial product?
    1. Dealing with conventional banks is against religion and any entity that charges interest is included, more lenient for Islamic finance.
    2. Offering flexibility in repayment and less documentation.
    3. Obtain financing for installing a new irrigation system to reduce water and power consumption.
    4. Facilitating the buying of new irrigation systems under Murabaha Islamic financing.

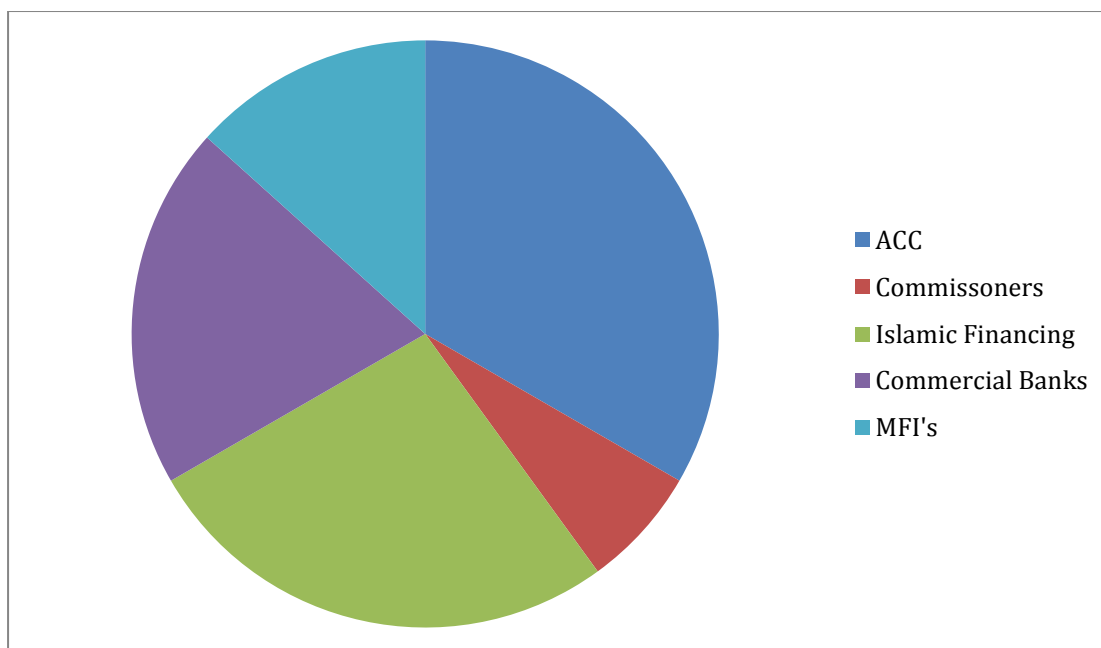
#### **4.6.2 Feedback of Azraq FGD – (Total 7 Farmers):**

“They agreed that the ACC is the top preference, one participant mentioned that it is mainly because they subsidize their loan products at zero interest rate to support the agribusiness, they postpone loan installments dues if incase proven by farmers the inability to repay . This is for sure subject to the government discretion.

Islamic banks came second (they are better because they do not have compound interest), then conventional banks. They are not aware of MFIs terms and conditions, since MFI’s don’t target agriculture sector. Informal sector (commissioners) are like supermarkets and they least prefer it “.

#### **4.6.3 Feedback of Mafraq FGD – (Total of 11 Farmers):**

“ACC is their top preference. The agriculture sector is considered an area of expertise to ACC. ; It has a better understanding of the sector’s need, in addition to its proven initiatives in supporting farmers across the country. In many occasions, ACC has subsidized the interest rates on loan products.



**Figure 4.12: Farmers FGD financial preferences**

Islamic Financing came in the second place, Commercial banks came in the third place due to their requirements, especially first mortgage of property, and MFIs comes on the forth place since they give small amount of loans and are also not in good favor of lending farmers, commissioners came in the last place. The majority of farmers are blacklisted due to bad history in repaying back or due to returned cheques. ACC would still lend farmers and ask for postdated cheques and perform a comprehensive mortgage on the farmer's property, noticed during the meeting that none of the farmers are aware of the CBJ advances to banks to support agriculture. Banks doesn't really promote agriculture lending due to its high risk. They only disclose, through their own websites, a brief summary of the standard CBJ advances targeting all major sectors including agricultural, as mandated by the CBJ.

Both groups had a unified preference of "ACC" when seeking financing

## Conclusion:

1. All interviewed farmers consider lending as a main source of providing funding to their farms.
2. None of the interviewed farmers seek Banks or MFI's for supporting their financial needs.
3. All interviewed farmers are interested in obtaining a financial product for WIT through banks and MFI's, yet the majority of farmers have expressed their interest in dealing with Islamic banks or Islamic type of financing.
4. The majority of farmers have specified the 2<sup>nd</sup> half of each year as a preferred timing for settling their loan installments, yet, a few have requested a longer grace periods for loans repayment .
5. All interviewed farmers are aware of the new technology used in irrigation, while all of them are using irrigation systems that reduce water consumption. Also, all

farmers agreed on the basic financial need to apply a high cost maintenance and upgrade of the system frequently.

6. The majority of interviewed farmers consider post dates cheques as a sole guarantee for obtaining their current financing. Accordingly, and once the source of lending is availed for this product at Banks and MFI's, they prefer to apply the same current flexibility when dealing both entities.



## **Part 5: Obstacles and Solution Scenarios**

### **5.1 Partnering/collaborating with ACC to reach a widely dispersed rural clientele.**

Based on the SWOT analysis of ACC, the researchers believe there is an opportunity to collaborate with ACC for the purpose of reaching a widely dispersed clientele for the purpose of encouraging the adoption of WIT.

ACC would still be able to extend credit facilities to their clients under the WIT program at their normal interest rates, including the Islamic Murabaha type of financing which proved to be of demand by farmers.

ACC has a well-established corporate governance and business infrastructure and is considered the only governmental financial institution in Jordan specialized in serving the agriculture sector; it has a strong distribution arm well presented in their branches network at strategic locations. Also, ACC loan officers are agriculture engineers, who have the ability to properly assess the value of land and quality of crops when reviewing a credit loan application.

The scope of the partnership/collaboration we are recommending will include:

- I. Partnership with ACC on a special product bundling approach consist of both financial & non-financial services. ACC will be using their range of product mix (Commercial and Islamic type) to disburse loans to clients interested in buying the new water innovation technology. In return, WIT will be offering, with each loan grant, a free technical support and training to farmers in the form of non-financial services on the top of ACC's normal product mix.

#### **WIT Non-financial Services would include:**

- a) Capacity building and technical support. Building farmers' capacity on the latest irrigation technologies, awareness, and best practices on farming business.
- b) Conducting training sessions to farmers on how to prepare their financials, budgeting, and cash flow statement of their own business. This would help farmers to become more bankable when applying for a credit facility from the formal financial sector in due time.
- c) Leverage the capabilities of ACC frontline staff in branches to provide technical support and guidance to farmers. Also, develop ACC staff sales and marketing skills to expand WIT product outreach.
- d) Creating successful linkages between; ACC, FI's, MFIs and Farmers through conferences and other special agricultural events.
- e) Increase financial awareness and business understanding of farmers through numerous events and training workshops. Such training workshops should cover; how and when farmers earn, spend, save, do financial forecasts and borrow; what risk management and risk-coping strategies and technologies used by farmers; the variety of farming and non-farming activities.

- f) Providing farmers with assistance in formalizing their financial statements, and loan application preparation before submission.

Both Financial and Non-financial services must be aligned together and should be given the same level of priority under the scope of this proposed partnership.

The rationale behind our recommendations is based on the following:

- ✓ By introducing the Non-Financial services, this would be enforcing the access to information which accordingly would guarantee a cultural change in farmers' behavior, own perception, and financial literacy.
- ✓ Building the bridges of trust and mutual understanding gradually between the farmers and the formal financial system.



## 5.2. Partnering with financial institutions

The financial institutions have better access to funds, well-trained staff, extensive infrastructure and systems, and better opportunities for managing risks through portfolio diversification.

All banks have an access to the available sources of funding held with the CBJ to support agriculture; IFAD Funding and CBJ medium term loans, yet, lack of expertise of the financial institutions in managing agricultural loan portfolios is considered a major constrained for the growth of agricultural finance in Jordan. Accordingly, financial institutions require support in specific training, product development, and risk management specific to agriculture. Given the unique risks and characteristics of agricultural production and supply chains, bankers serving the segment require the development of specialized credit skills and policies, and portfolio monitoring practices.

### CBJ Medium Loans advances

The researchers were informed by the CBJ that during the year 2018, the total amount of loans disbursed by banks to agriculture sector under the CBJ medium loans advances was almost JOD11.7M. As a result, the total amount of allocated funding from advances to agriculture sector has increased during 2018 from JOD32.3M in year 2017 to JOD44M.

The JOD11.7M of extended loans have benefited almost 70 different agricultural projects during the year 2018.

Cairo Amman Bank had the biggest share in giving out loans to agriculture last year. The bank has financed almost 25 projects out of the above 70 projects as advised by the CBJ.

Some other banks like; Bank El Etihad, Capital Bank, and Jordan Kuwait Bank had also a very good contribution in disbursing loans to agriculture under CBJ advances during 2018. This piece of information is not published yet and it was verbally conveyed to us during our latest meeting with the CBJ. No further details were provided.

Based on the above, we would recommend partnering with the following banks, in addition to the existing partner banks (Bank Al Etihad and Jordan Kuwait Bank:

1. Cairo Amman Bank
2. Jordan Commercial Banks
3. Capital Bank of Jordan
4. One Islamic Bank who is interest in extending credit facilities to agriculture sector under Islamic financing instruments.

The form of partnership we are recommending is similar to ACC

### **5.3. Partnering with MFI's.**

Based on MFI's latest strategic imperatives to support agriculture sector, as mandated by the CBJ action plan, and in light of the availability of funding through CBJ, the researchers recommend exploring the possibility of partnering with those MFI's specialized in commercial and Islamic financing to support water innovation technology in agriculture, bearing in mind with this approach we might upscale our target segment of farmers to include small farmers segment which is targeted by MFI's.

FINCA Jordan is a good option since they have already taken a loan of JOD250K from Jordan Kuwait Bank to benefit from IFAD funding. They have seasonal loans available with 5-6 months grace period. The minimum amount of loans they provide is JOD 300 and can reach up to JOD 40,000.

Also, the researchers recommend partnering with an MFI that is specialized in providing Islamic financing instruments. Ethmar is one of the preferred options.

Needless to mention that the CBJ is in the process of allocating USD500K from IFAD total funding (of USD3.1M) for MFI's to help them achieve their strategic action plan to develop products that meet different needs related to agricultural industries.

### **5.4. Capacity Building**

WIT has to build human capacity of partner banks & MFI's on the latest irrigation technologies and product outreach. In addition to supporting partner lenders in training farmers which will create a sustainability and awareness in the market.

Capacity building will also enhance the financial literacy and management skills of farmers to make them better financial clients.

It is important for partner lenders to be equipped with accurate information on the agricultural crop cycle; the pattern of risks; how farmers earn, spend, save and borrow money; what risk management and risk-coping strategies and technologies used by those farmers; the variety of farm and non-farm activities.

### **5.5. Agriculture Insurance Program**

Introducing the agricultural insurance program may produce many positive results as highlighted hereunder:

- Alleviation of the effects of the losses incurred by farmers during bad seasons. This would help stabilize the farmers' income, which would reflect positively on the agricultural sector and the national economy.
- A provision to access credit institutions, because it would be a good substitute for conventional collateral, which they may not possess and are required for granting loans.
- Strengthening of the repayment capacity of farmers whose farms and properties are insured
- Enhancement of farmers' confidence, as they would use new technological methods that help increase and improve production.

This program can be supported by WIT in coordination with MOA for providing farmers with agricultural insurance when applying for loans with financial institutions for the purpose of adopting WIT, thus offering security to both farmers and lenders.

The researchers have been informed during our meeting with the MOA, that MOA is currently in the process of establishing its own cooperative Takaful insurance company in collaboration with the private sector in Jordan.

The MOA will be subsidizing 70% of the premium insurance amount, while farmers will be settling the remaining 30% of the premium.

The insurance policy will protect farmers in cases of natural disasters; like frost, floods, heatwaves and snow, or against loss of revenue if prices of their crops decline.

**Source of info; MOA, Head of Agriculture Risk Management Fund, Dr. Mohammad Awaideh.**

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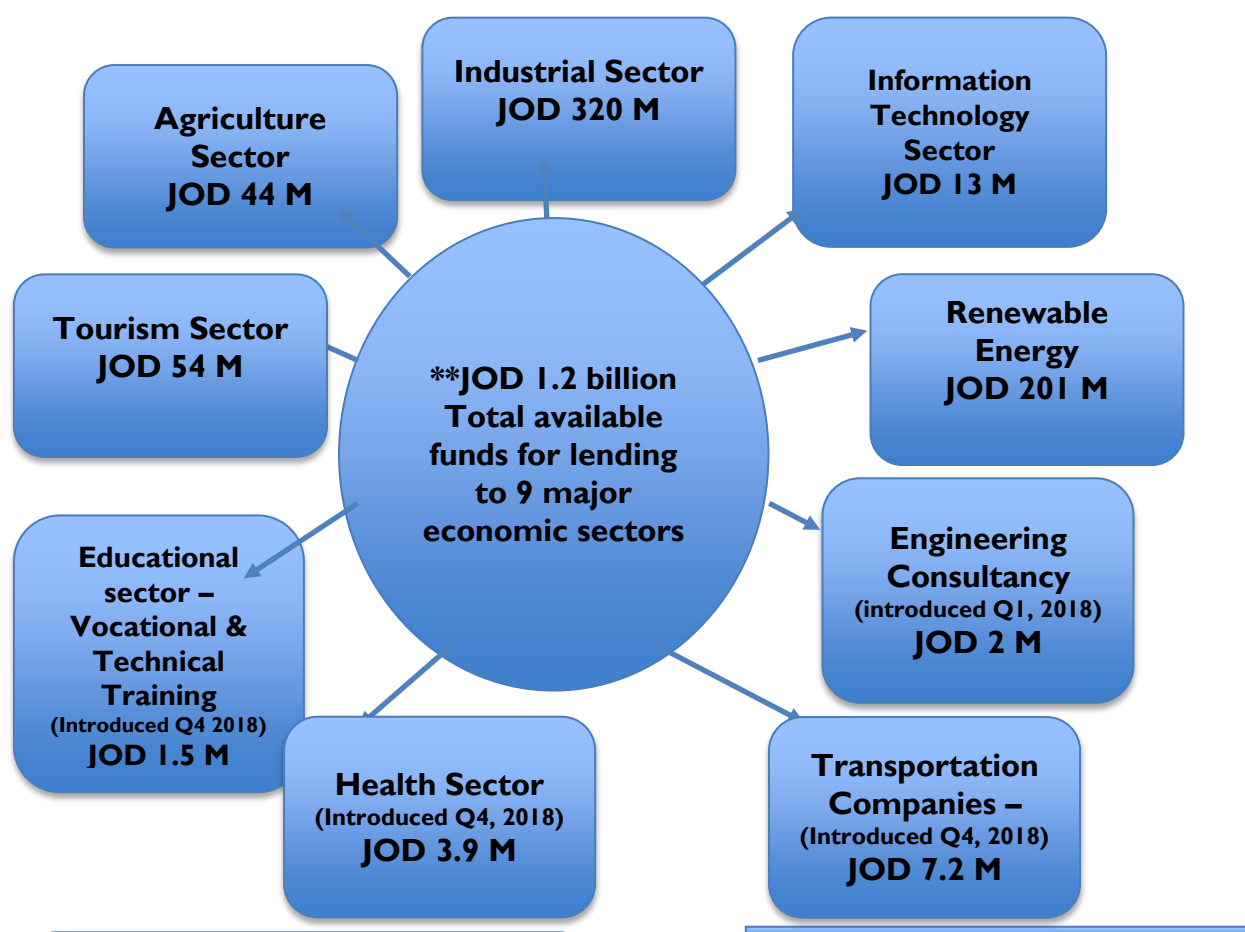
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## Annex I. Water Tariffs

Type	Segment (sqm)	Salinity PPM (parts per million)	Price fils/sqm
Industrial wells	First sqm		500
Government wells/ potable water	First sqm		100
Government wells/ agriculture	First sqm		25
Agr. wells/ selling potable water	First sqm		250
Agi. wells/ selling imputable water	First sqm		100
Agri wells / privately owned excluding the wells with an allowed amount of less than 15,000 sqm as per the license conditions	150,000		Free
	150,001 - 200,000		5
	Above 200,000		60
Wells with specific sanity for agri purposes	150,000		Free
	Over 150,000	1350 1500	15
		1500 2000	10
		Above 2000	5
Agri wells / privately owned and granted deepening or digging wells instead of another well (original allowed amount 15,000 sqm) becomes as follows as of 01/01/2016	75,000		Free
	75,001 - 200,000		10
	Above 200,000		100
Breached wells	First sqm		250
	10,000		150
	10,001 - 30,000		250
	Above 30,000		500
All agri wells privately owned and granted extraction license / except Azraq Basin	Allowed amount		Free
	Above allowed amount		60
Agri wells granted extraction license within Azraq Basin (various allowed amounts)	Above allowed amount 100,000 <sup>1</sup>		20
	Above 100,000		60

<sup>1</sup>

## Annex 2. Medium Term Advances programs offered by the CBJ



### Inside Amman

Offered interest rate = 1.75%

Refinance interest rate by banks  
Ranges from 4-5%

Repayment Period = 10 years for Renewable  
Repayment Period = 5 years other segments

Available funds = JOD 1.2 billion which represents 5% of all direct facilities extended by banks.

\*\*About 933 projects has benefited from these programs creating 9,600 Jobs in total amount of about JOD 647 M.

### Rest of Governorates

Offered interest rate = 1%

Refinance interest rate by banks from 4-4%

Repayment period 10 years for all segments

### **Annex 3. Current available Funds with the CBJ**

- During the past five years, the CBJ has cooperated with the Ministry of Planning and International Cooperation (MoPIC), in addition to other regional and international financing institutions to raise funding for SMEs sector reaching USD 320M at a competitive interest rates and suitable maturities, of which, an amount of USD 190M was received, and around USD 134M were used to finance SMEs until December 31st, 2017, which were lent to over 15 thousand of micro, small and medium projects, 60% of them were located outside the capital. This funding generated around 4,500 new job opportunities. The remaining amount of USD 130M was disbursed by the CBJ during the years 2018 and 2019.
- A credit line was provided by the European Bank for Reconstruction and Development (EBRD) directly to the banks amounting to USD 120M for the purpose of supporting SME sector.
- A special fund for supporting emerging companies in the amount of JD 50M established by providing the guarantees necessary for companies to obtain financing through the JLGC.
- The CBJ also provided an amount of JD 100 M for the JLGC for the establishment of the Export Credit Guarantee Fund to provide the required guarantees for exporting sector facilities.
- A special fund was established, in the amount of USD 100 M , with the cooperation of MoPIC, World Bank (WB) and JLGC, to invest in pioneering start-ups capital
- As mentioned earlier in Section 5.1, the CBJ has a financing programs targeting Nine major sectors; Industrial, tourism, renewable energy, agriculture, information technology sectors, engineering consultancy, Transportation sector, Educational sector, and Health Sector (including SMEs) with an interest rate currently reaching 1% for financing projects located in governorates outside Amman, and 1.75% for financing projects located in the capital in the total amount of around JD 1.2 billion.

About 933 projects has benefited from these programs in the total amount of about JD 647 M (which has resulted in creating 9,600 jobs), distributed to; industrial, renewable energy, tourism, agriculture, information technology, engineering consultation, transportation sector, educational sector, and health sector which were added as additional target sectors during the fourth quarter of 2018 .

- IFAD fund of USD 3.1M held with the CBJ, which was introduced during the year 2018 to support Agriculture sector at rural areas. Three banks so far have signed an agreement with the CBJ to benefit from this fund;
- International Islamic Arab Bank, Jordan Commercial Bank, and Jordan Kuwait Bank (Extended a credit facility to FINCA under this fund for a total amount of JOD250K).



## Annex 4. FGD Meeting Guide – Farmers Groups

### Key Instructions:

- Two FGD meetings to be conducted in Mafraq and Azraq governorates.
- Before starting the meeting, we need to make sure of building questions and scenarios by:
  - a. Asking the proper questions to know how and why they feel that way, and what would it take to change their own perspective.
  - b. Using open-ended questions to encourage open discussions
- Using some "probes" or follow-ups" designed questions to get more information on a given question:
  - "Can you say more about that?"
  - "Can you give an example?"
  - "Does anyone else have some thoughts on that?"
- We need to keep the meeting intimate with about 6-8 people and keep the maximum duration of each meeting for about Two hours.
- A circle seating is preferred

Upon starting the meeting and after making people comfortable with each other, we need to explain the process of the meeting and agree a meeting time limit of maximum Two hours.

### Consultants opening the meeting .....example:

“Thank you for the opportunity to speak with you today. Allow us first to introduce ourselves, my name is George Farraj and my colleague’s name is Mrs. Mirna Salaita. We are a consultant team from BusinessEye Training & Consulting firm.

We are very much interested in learning more about agriculture and your long experience in this area.

We assure you that all the information that you provide to us will be used exclusively for our research and analysis. We will be recording this session, the most important thing is that you should feel comfortable and contribute as much as you can. You can express opinions and discuss issues freely”.

### Background information on participants

For each participant, we take down the following information in our notebook

1. Name
2. Age
3. How long been in farming business?
4. Type of current water irrigation system used at farm?
5. Ever used water Conservation Technology in farming [Y or N]

## Annex 5. Farmers Focus Groups Questions

### أسئلة مقابلة مجموعة من المزارعين

1.	أسماء المزارعين أعضاء المجموعة Names of Farmers Focus Groups Members
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
	Meeting date / تاريخ الاجتماع
Location / الموقع	

CORE QUESTIONS	PROCESS
<b>Warm-up Questions [10 minutes]</b>	
<p>1. ما هي التحديات الرئيسية التي واجهت القطاع الزراعي في الاردن خلال الاعوام القليلة المنصرمة؟ وهل من قصص نجاح تذكر تمكنا خلالها من التغلب على بعض هذه التحديات؟</p> <p>I. What are the main challenges facing the agriculture sector in Jordan over the last couple of years? Any mentioned incidents in specific where we were able to overcome some of these challenges and turn them into real success stories.</p>	

<p>2. لغايات تعظيم هامش الربح في العملية الانتاجية , فلا بد من العمل على تخفيض المصاريف التشغيلية. هل من إقتراحات لديكم عن بعض العوامل الهامة الواجب مراجعتها لغايات وضع آلية عمل معينة تضمن تخفيض المصاريف الخاصة بمزارعكم (إقتراحات : تكلفة مصاريف المياه, الكهرباء, الايدي العاملة (عدد العمال والاجور).</p> <p>2. For the purpose of increasing the profit margin in the production cycle, we need to reduce the business operational expenses. Do you have any suggestions on the important factors that we need to consider for the purpose of adopting a specified action plan that would guarantee reducing expenditures in your own farms? (Suggestions; Cost of water, Electricity, Manpower (Counts and wages),...etc.</p>	<p>Co-facilitator to prepare nametags for participants and facilitator + taking notes of valuable info. from discussions during the meeting</p>
<p>3. هل يتم عادة قيام أكثر من مزارع بالاشتراك ببئر إرتوازي واحد في عملية الري؟ في حال الاجابة بنعم, كم بالعادة معدل عدد المزارعين المشتركين بنقطة بئر مياه واحدة ؟ وهل السبب يعود لتخفيض تكلفة استهلاك المياه أم لشح مصادر الحصول على المياه ؟</p> <p>3. Does it happen usually to have a group of farmers sharing the same spot of artesian well? In case answer is yes, what's the average number of farmers using the same spot of artesian well? Is the rationale behind this is to reduce cost of water or as a result of limited sources of water supply?</p>	
<p>4. نتيجة للوضع السياسية والاقتصادية المهيمنة على البلدان المجاورة , وإنخفاض حجم الصادرات من الخضار, هل من إقتراحات لديكم لفتح أسواق جديدة قادرة على إستيعاب الفائض من الانتاج الزراعي ؟ ما هي الالية المتبعة حالياً من قبل المزارعين لتصريف الفائض من الانتاج الزراعي ؟ هل من توصيات سابقة تم ومن هي الجهة التي تم مخاطبتها رفعها سابقاً بخصوص الأسواق المقترحة بهذا الشأن تحديداً؟</p> <p>4. As a result of the current political and economic situation in the region, and the decrease in the volume of vegetable exports, are there any suggestions for exploring new markets to promote the current surplus of agriculture production? What is the current mechanism adopted by farmers to promote own farms surplus production? Is there any previous recommendation that was submitted in this regard? To whom it was addressed?</p>	

<p>5. هل الحصول على التمويل في الوقت المناسب هو أحد التحديات الأساسية التي تواجهكم ؟ في حال كانت الإجابة بنعم، يتم عرض السؤال التالي : وفي ضوء وجود عدة مصادر تمويلية عديدة كالبنوك التجارية والإسلامية، مؤسسة الاقراض الزراعي، الجمعيات التعاونية، الوسطاء والموردين فهل تعتبر هذه المصادر غير كافية بالنسبة لكم ؟ يرجى التوضيح ؟ هل من إقتراحات لمصادر تمويل أخرى ترونها مناسبة للحصول على التمويل لغايات توسيع نطاق العمل لديكم ؟ يرجى التحديد ؟</p> <p>5. Is getting access to finance by farmers in the right timing is one of the key challenges? in case the answer is yes, Having several sources of funding available via Commercial and Islamic Banks, Agriculture Credit Corporation, Commissioners, and suppliers, does it all considered insufficient sources of funding by farmers? Do you propose any other alternative source of funding for expanding your own farming business? please specify</p>	<p>Distribute notecards and pencils/pens to participants and ask them to write down the different sources and the amount.</p>
<p>6. هل لديكم أية معلومات عن برنامج السلف الخاص لدى البنك المركزي لغايات دعم القطاع الزراعي في الاردن من خلال تزويد البنوك بالتمويل اللازم لدعم قطاع الزراعة بأسعار فوائد مدينة منافسة جداً و محددة من قبل البنك المركزي الاردني؟ هل من آلية معينة يمكن إقتراحها من قبلكم لحث المزارعين على الاستفادة من هذا البرنامج في سبيل توسيع نطاق عملهم ؟</p> <p>6. Do you have any information about the CBJ advances to banks for the purpose of supporting Agriculture Sector in Jordan offering specified and competitive interest rates by the Central Bank? Any suggestions from your side on how farmers can benefit from this advances program of CBJ for the purpose of expanding their own business?</p>	

<p>7. هل تم سابقاً عقد ورشات تدريبية أو توعوية للمزارعين في منطقتكم ؟  في حال الاجابة بنعم يرجى ذكر اسم الجهة المنظمة لهذه الورشة /  الورشات ؟</p> <p>هل بالامكان تحديد ماهية الحاجات التدريبية للمزارعين في منطقتكم ؟ هل  عقد ورشات توعوية في جانب التسهيلات المالية وآلية عمل التدفقات  المالية للمزارعين هي أحد الورشات المقترحة؟</p> <p>7. Have you ever conducted any training or awareness sessions to farmers in your respective area? In case the answer is yes, please specify the name of the event organizer?</p> <p>Is it possible to clearly identify the training needs of farmers in your areas? Would it help much in conducting training or awareness sessions in financial lending, cash flow, and cash management, as some suggested training topics?</p>	
<p>8. هل لديكم أية معلومات عن مشكلة شح المياه في الاردن والتي تزداد  نتيجة التزايد في أعداد اللاجئين السوريين الاردن؟ كيف بالامكان المساهمة  من قبل المزارعين في إحتواء هذه المشكلة وتجنب تفاقمها ؟ هل نموذج  الري المستخدم حالياً في المزارع كفيل بعدم تفاقم المشكلة ؟ يرجى  التوضيح؟</p> <p>8. Do you have any information on the water scarcity issue we are encountering in Jordan, and the tremendous increase on water demand with time as a result of the increased number of refugees due to Syrian crisis? Do you imagine the impact if in case we are out of water supply? How can you help to minimize the impact of this problem? Is the current irrigation system we are using would limit the impact of water scarcity? Please explain further</p>	
<p>9. في حال حصول حدث معين في محيط منطقتكم ؟ كيف يتم معرفة هذا  الحدث ؟ هل من خلال التلفاز، الراديو، الاعلانات في الصحف اليومية، أو من  خلال الاصدقاء والمعارف</p> <p>9. If there's something going on in the community, how do you find out about it?  Where do you get your information? Probe for TV, radio, newspaper ads, or through friends and relatives.</p>	

<p>10. في حال تم إعطائكم فرصة تصميم منتج متخصص لتمويل شراء تكنولوجيا حديثة وفعالة في الري، يرجى توضيح ملامح ومواصفات هذا المنتج إضافة للشروط والاحكام المتعلقة بما يلي :</p> <p>سقف التمويل بحد أدنى وحد أعلى :</p> <p>سعر الفائدة المدينة :</p> <p>آلية السداد (بشكل شهري / ثلاثة أشهر / 6 أشهر / دفعة واحدة بنهاية العام :</p> <p>الضمانات المطلوبة لقاء سقف القرض الممنوح :</p> <p>الشروط الواجب توافرها بالمدين :</p> <p>الاوراق المطلوب توفيرها :</p> <p>10. If you were given the opportunity to design a lending program targeting water conservation technology at Agriculture Sector, what would it look like in terms of :</p> <ul style="list-style-type: none"> <li>• Minimum &amp; maximum loan amount</li> <li>• Interest rate to be charged</li> <li>• Preferred Payment frequency (Monthly payment, Quarterly, Semi-Annually, Annually )</li> <li>• Needed guarantees</li> <li>• Client's lending criteria</li> <li>• Needed documentations and supported documents.</li> </ul>	<p>Distribute notecards and pencils/pens to participants and ask them to write down their thoughts and then ask each to present to other participants</p>
<p style="text-align: center;"><b>Closing</b></p> <p>نشكر لكم حضوركم ونقدر لكم مشاركتكم وتفاعلكم مع النقاشات والاسئلة المطروحة والتي كانت مفيدة جداً بالنسبة لنا، كما نشكركم على تزويدنا بالمعلومات القيمة هل من أسئلة أو مقترحات أخرى ؟</p> <p>Thank you. Your answers and discussion have been very helpful and informative. We are very grateful for the information you have 0provided. Do you have any questions or suggestions for us?</p>	

## Annex 6. Agriculture Credit Corporation Interview Questions

### اسئلة مقابلة مؤسسة الإقراض الزراعي

	مؤسسة الإقراض الزراعي Agriculture Credit Corporation
	تاريخ المقابلة / Interview date
الموقع/Location	
<p>1. يرجى توضيح الآلية التي تعمل فيها مؤسسة الإقراض الزراعي في منح القروض للمزارعين، مع توضيح ما يلي :</p> <p>ا. الشروط والأحكام الخاصة بعملية المنح .</p> <p>ب. هل هنالك برامج تمويلية حالية لدى المؤسسة من منتجات وخدمات محددة وفقاً للشرائح المستهدفة من المزارعين. (صغيرة، كبيرة متوسطة).</p> <p>ج. أعلى سقف وأدنى سقف للمنح .</p> <p>د. الغايات الأساسية للمنح والوثائق والمستندات المطلوبة للدراسة الائتمانية.</p> <p>هـ. أسعار الفوائد الممنوحة (أدنى سعر وأعلى سعراً فائدة).</p> <p>و. الضمانات المطلوبة للتسهيلات الممنوحة (النسبة المحددة لقيمة الضمانات العينية أو النقدية من قيمة التسهيلات الممنوحة).</p> <p>1. Please explain your work mechanism in extending loans to Farmers? Moreover, appreciate explaining the following :</p> <p>2. Your specific terms and conditions in extending facilities.</p> <p>3. If you have existing financial products and services programs catering for each client segment (Small Scale Farmers, Medium Scale Farmers, and Large Scale Farmers.)</p> <p>4. Maximum and Lowest amount of the loan.</p> <p>5. The purpose of the extended credit facility by ACC and the supported documentation needed for the credit review process.</p> <p>6. Debit interest rate (lowest and highest charged interest rates).</p> <p>7. Types of guarantees needed for the said facility. (Permissible LTV – loan to value).</p>	

2. كم تبلغ حجم الطلبات التي تردكم خلال الشهر؟ كم تبلغ نسبة الطلبات التي يتم رفضها خلال الشهر؟ يرجى توضيح الأسباب الرئيسية للرفض؟

2. How many loan application requests do you receive usually on monthly basis? What is the percentage of approved /or declined loans per month?

3. يرجى بيان قيمة وحجم محفظة القروض الحالية الممنوحة للقطاع الزراعي في الاردن ؟ وتوزيعها إن أمكن على مستوى المحافظات؟ هل بالإمكان الحصول على معلومات عن نسبة الذكور والاناث المقترضين؟ كم تبلغ منها حجم القروض الممولة للمزارعين إما لغايات تحديث شبكات الري او لشراء تكنولوجيا جديدة كفيلة بتخفيض حجم إستهلاك المياه في المزارع؟ هل من معلومات عن حجم هذه التسهيلات الممنوحة في كل من محافظتي المفرق والأزرق تحديداً؟

3. Can you give some details about your current outstanding loan portfolio to Agriculture sector in Jordan? Do you have this info available by governorates and by Gender? Can you give more info on the current lending portfolio extended to farmers for the purpose of upgrading their own farm irrigation system, or buying a new water conservation technology? Any available data on the total loan size of this category of loans at both Mafraq and Azraq governorates. ?

4. ما هي مصادر التمويل الاساسية التي يتم الاعتماد عليها في عملية منح القروض؟ كم تبلغ نسبة التعثر الحالية لديكم في محفظة التسهيلات الممنوحة للقطاع الزراعي ؟ هل هذه المعلومات متوفرة لديكم على مستوى المحافظات؟ ما هي الأسباب الرئيسية وراء هذا التعثر ؟

4. From where do you get your source of funding when extending credit to farmers? What is your current NPL Ratio for loans extended to Agriculture Sector? What are the main and common reasons for the default in repaying back?

5. هل يتم عادة عقد ورشات عمل / أو ورشات توعوية أو ندوات مجانية هدفها الاساسي زيادة الوعي لدى المزارعين او لتمكينهم من إدارة أعمالهم بطريقة أمثل ؟ هل يتم حالياً عقد ورشات توعوية هدفها الاساسي تبني حلول كفيلة بترشيد استهلاك المياه تحديداً ؟ ما هو برأيكم نوع التدريب الذي يحتاجه المزارعين اليوم لادارة مزارعهم بطريقة أمثل و أكثر كفاءة ؟ هل يوجد لديكم دليل إرشادات يتم الاستفادة منه من قبل



المزارعين ؟ ما المعلومات المتوفرة فيه؟

5: Do you usually conduct any free business / or awareness sessions to support Farmers in better managing their own business more efficiently? Have you ever conducted any awareness sessions on water consumption or its technology? Have you agreed in these sessions on the required action plan that would guarantee reducing water consumption by farmers?

In your opinion, and based on your experience, what sort of training that farmers need in order to manage their own farm business more efficiently ? Do you have any printed or published quick reference guides to be shared and to benefit farmers? What sort of info. is available in this guide?

6. من المؤكد بأنه يوجد لديكم قصص نجاح لمزارعين قد تم تمويلهم من قبلكم بدأوا بمشاريع زراعية بسيطة ومع مرور الوقت حققوا نجاحات في إدارة مشاريعهم واصبحوا من أكبر المزارع الموجودة حالياً. هل بالامكان إعطائنا أمثلة على ذلك ؟ هل من أمثلة في كل من محافظات المفرق والازرق؟

6. We're sure you have so many success stories of farmers applied for loans to cater for their small scale of farms. With your extended support, those farmers have succeeded in turning their small farms into one of the largest and productive farms with time. Can you please give some real examples of success stories? Do you have any success stories at Mafraq and Azraq areas?

7. هل يوجد لديكم تقسيمات للقطاع الزراعي وفق السياسة الائتمانية المعمول فيها؟ يرجى بيان هذه التقسيمات وتوضيح إذا كانت هذه التقسيمات محددة لسقوف التسهيلات التي يتم منحها ؟ هل يتم تقديم حوافز وخصومات للمزارعين وأنواعها ؟

7. Do you have a proper segmentation/classification for Agriculture sector, as per your current credit policy? Would you please specify those segments, and clarify whether you have any assigned credit limit for each segment, as per your credit policy?

8. هل يوجد لديكم مهندسون متخصصون لغايات العمل الميداني، دراسات الجدوى، وتوفير الدعم الفني والتقني للمزارعين ؟

8. Do you have specialized Engineers on site for conducting/reviewing feasibility studies and providing farmers with proper technical support when needed?

9. تلعب المرأة الاردنية اليوم دور أساسي في دعم المجتمع المحلي. مشروع تمكين المرأة الريفية في الريف والبادية الاردنية (في محافظات العقبة،

معان، الطفيلة، وعجلون ) والذي تم إطلاقه حديثاً بموجب إتفاقية التعاون بين مؤسسة الإقراض الزراعي ومؤسسة الأميرة عالية والممول بمبلغ 100 ألف دينار لدعم فوائد المشاريع الزراعية التي تخص المناطق الريفية وتمكين المرأة. علماً بأنه قد تم تخصيص مبلغ 833 ألف دينار من قبل المؤسسة لمنح قروض في هذه المحافظات بسقف أعلى 4000 دينار.

ما أثر هذه الاتفاقية على دعم وتمكين المرأة الريفية اليوم للاستفادة من هذه المبادرة في الانتاج الزراعي ؟ ما هي الشروط والاحكام الخاصة في حال تقدم المرأة الريفية في هذه المحافظات للاستفادة من هذه المبادرة الرائعة؟

9. Women in Jordan play a major role in supporting the local community. The newly signed cooperation agreement between the Agriculture Credit Corporation and the Princess Aliia Foundation to support the project of empowering women in rural areas and the Jordanian Badia in the governorates of Aqaba, Ma'an, Tafleeh, and Ajloun. An allocated amount of JOD 100K will be assigned to support the interest rates charged on these loans. The foundation will allocate JOD 833K to grant these loans to women in these provinces with upper ceiling of JOD4000.—and will be offered to target groups of rural woman. What will be the impact of this agreement in supporting and empowering women in rural areas to benefit from this initiative in the agriculture production? What are the applied terms and conditions to benefit from this great initiative?

10 ما هو موقفكم من دعم و تطوير منتج بنكي هدفه تشجيع المزارعين على تبني تكنولوجيا حديثة في الري هدفها الاساسي هو توفير المياه؟ هل يوجد لديكم برامج تمويلية مشابهة ؟ هل من خطط مستقبلية لطرح قروض تمويلية هدفها تخفيض إستهلاك المياه ؟ هل سيكون هنالك تعاون مستقبلي مع بعض مؤسسات القطاع الخاص لدعم هذا التوجه ؟

10. What is your stand in developing a banking product that supports the adoption of a new water irrigation technology by farmers for the purpose of reducing water consumption? Do you have any similar product programs available to cater for this need in specific? Any future plans in introducing new loan programs to support buying a new water conservation technology? Will there be any cooperation with any private sector entities to support this approach?

## Annex 7. Banks and Microfinance Institutions Interview Questions

### أسئلة مقابلة البنوك ومؤسسات التمويل

	اسم البنك او شركة التمويل / Bank's or MFIs name
	تاريخ المقابلة / Interview date
الموقع / Location	
<p>1. هل يوجد لديكم منتج متخصص في القروض الزراعية؟ في حال كانت الاجابة بنعم، ما هي الشروط الخاصة في منح هذا المنتج ؟ و ما هي الاستراتيجية التسويقية التي تم تبنيها في عملية تسويق هذا المنتج ؟ وما هي التحديات التي تواجهكم في هذا المنتج؟</p> <p>2. Do you offer an agriculture product? If yes what are the terms? How did you bank decide to market this product? What sort of strategy you are implementing to market this product? What are the challenges of this product?</p>	
<p>2. ما هو العامل الأكثر أهمية والذي تأخذونه بعين الاعتبار عند مراجعة طلب منح قرض زراعي؟</p> <p>2. What do you consider as the most important factor when deciding on agricultural loan application?</p>	
<p>3. كم عدد طلبات منح القروض الزراعية التي تردكم شهريا؟ كم عدد الطلبات منها التي يتم الموافقة عليها وتلك التي يتم رفضها ؟</p> <p>3. How many loan applications do you receive per month? Of which how many applications you approve and how many you decline during the month? What are the primary reasons for applications not being approved?</p>	
<p>4. ما هي برأيكم الوسائل الممكن استخدامها لتحسين نسب القروض المتعثرة للمزارعين؟</p>	

<p>4. How do you think you can improve the non-performing loans ratios (NPL's) of farmers?</p>
<p>5. هل تعتقدوا بأن المزارعين بحاجة إلى تدريب تقني ومالي في كيفية إدارة مزارعهم؟ اذا اجبت بنعم يرجى الشرح ؟ ما هي مواضيع التدريب الواجب تغطيتها ؟ من أين بإمكانهم الحصول على مصادر المعلومات للحصول على التدريب المناسب ؟</p> <p>5. Do you think farmers need technical and financial training for their farming business? If the answer is yes, can you explain further? What topics? Where do you think they could avail this training and information?</p>
<p>6. ما هي المعوقات التي تواجهكم في منح قروض للقطاع الزراعي؟</p> <p>6. What sort of obstacles are you facing when extending Loans to Agriculture sector?</p>
<p>7. هل يوجد لديكم أية قيود في منح قروض أو تسهيلات إئتمانية للقطاع الزراعي؟ لماذا ؟ ما هو المطلوب لغايات زيادة حصتكم السوقية في القطاع الزراعي في الأردن ؟</p> <p>7. Do you have restrictions for extending Loans or any credit facilities to agriculture sector? Why? What is needed in order to increase your market share in the agriculture sector in Jordan?</p>
<p>8. هل لديكم عملاء موردين للقطاع الزراعي؟ اذا كان الجواب بنعم، هل بالإمكان ذكر بعض اسمائهم وتاريخ التعامل معهم ؟ هل تمانعون من عقد شراكات إستراتيجية مع بعض الموردين لتزويد المزارعين بالتقنية الحديثة واللازمة لتخفيض استهلاك المياه مقابل سعر خصم معين بحيث يتم تزويد المزارعين بالتسهيلات المناسبة من خلالكم ؟</p> <p>8. Do you have customers who are suppliers for the agricultural sector? If yes, can you mention some names and for how long they are your existing clients? Would you mind cooperating with some suppliers to provide farmers with the proper water conservation technology at a discounted price, whereby in return you provide farmers with the required financing?</p>
<p>9. ما هي برأيكم الحاجات التمويلية الاساسية لكل من المنتجين، الموردين، والوسطاء . هل بإمكان مؤسستكم المالية التعامل وتزويد كل من المزارعين، الموردين، والوسطاء بالتسهيلات المالية المناسبة التي تقدم ما يلي :</p>

<p>فترة سماح ؟ بحد أقصى ؟  حد أعلى لفترة سداد القرض ؟  الضمانات المطلوبة ؟  وجود كفيل /أو كفلاء ؟</p> <p>9. What do you see as the greatest financing needs for producers? Suppliers? Commissioners?  Would your financial institution be able to extend credit to farmers? Suppliers? Commissioners? That offered:  a) Grace period? Of what length?  b) Max loan tenor?  c) Collateral requirements?  d) Guarantor?</p>
<p>10. ما هو موقفكم من دعم و تطوير منتج بنكي هدفه تشجيع المزارعين على تبني تكنولوجيا حديثة في الري هدفها الأساسي هو توفير المياه؟</p> <p>10. What is your stand in developing a banking product that supports the adoption of a new water irrigation technology by farmers for the purpose of reducing water consumption?</p>
<p>11. ما هي الشروط الخاصة لمؤسستكم في التعامل مع الافراد و الشركات؟</p> <p>11. What are the bank conditions to deal with individuals and companies?</p>
<p>12. هل هناك رغبة من قبل البنك لإدراج منتج بنكي خاص بخطوط الانتاج في شركات الري؟ توضيح دور البنك في دعم هذا المنتج ؟</p> <p>12. Is there a willingness from your bank to develop an irrigation manufacturing line? What is the bank role in such a product?</p>

## Annex 8. Commissioners Interview Questions

### اسئلة مقابلة الوسطاء

	إسم الوسيط : Commissioner Name
	تاريخ المقابلة / Interview date
الموقع / Location	
<p>1. ما هو العامل الأكثر أهمية والذي تأخذونه بعين الاعتبار عند شراء المحصول من المزارع ؟ وكيف تتم عملية الدفع ؟</p> <p>1. What important factors do you take into consideration when buying crops from a Farmer? How is the payment being processed?</p>	
<p>2. كم هو عدد المزارعين الذين يتم التعامل معهم وتمويلهم من قبلكم؟ وكيف تتم عملية التمويل من حيث قيمة المبالغ التي يتم إقراضها والغاية منها وفترة السداد وسعر الفائدة والضمانات التي تحصلون عليها لقاء المبالغ التي يتم إقراضها ؟</p> <p>2. How many farmers do you deal with / you usually lend against the Crops? How does the financing mechanism look in terms of extending amounts, purpose of finance, repayment period, interest rate you charge against the amounts you lend?</p> <p>- Have you ever provided financing based on future contract with farmers? How was this experience?</p> <p>- Have you ever operated on a warehouse receipt financing scheme with farmers where you provide financing that are secured by products deposited into your warehouse facilities?</p>	
<p>3. هل أنتم على إطلاع أو لديكم خلفية عن أساليب التقنية الحديثة المستخدمة في الري والتي من شأنها ان تقلل من إستهلاك المياه والكهرباء؟</p> <p>3. Do you have any previous knowledge about the new technology used in water irrigation and its impact on reducing Water and Electricity consumption?</p>	
<p>4. هل تعتقدوا بأن المزارعين بحاجة إلى تدريب لإدارة مزارعهم؟ اذا اجبت بنعم يرجى الشرح</p> <p>4. Do you think farmers need technical training for their business? If the answer is yes, can you explain further? On what topics and why? Who could extend these services? Would</p>	

<p>you be willing to extend these services? If yes, would you offer for free or at a cost? Why or why not?</p>
<p>5. ما هي المعوقات التي تواجهكم في منح قروض للمزارعين ؟ 5. What sort of challenges did you encounter when extending credit to Farmers?</p>
<p>6. كيف تصف علاقتك مع المزارعين و الموردين ؟ هل من شرط أو وصف محدد واجب توفره في المزارع لغايات منح تسهيلات له ؟ 6. How would you describe your relation with Farmers and Suppliers? What is the typical profile of a farmer that you might provide credit to?</p>
<p>7. عند إقراض المزارعين، هل تعتمدوا على تمويل البنوك / أو مؤسسات التمويل في عملية الإقراض؟ هل سعر الفائدة الذي يتم تحصيله من إقراض المزارعين كفيلاً بتغطية تكلفة الإقراض؟ ما أنواع الضمانات التي يتم تقديمها للبنوك / أو مؤسسات التمويل من قبلكم ؟ مع ذكر أسماء بعض البنوك / أو مؤسسات التمويل التي يتم التعامل معها من قبلكم ؟ 7. When extending credit to farmers, do you rely on funding from Banks / or other credit corporations (credit from wholesalers)? Is the interest rate you are charging, would it cover the interest rate you are paying? What sort of guarantees you provide to banks / other credit corporations? Would you please name some the banks / or credit corporations that you are dealing with?</p>
<p>8. ما هو رأيكم أو موقفكم من دعم تطوير منتج بنكي هدفه تشجيع المزارعين على تبني تكنولوجيا حديثة في الري من خلال بعض الموردين هدفها الاساسي هو توفير المياه ؟ 8. What is your stand in developing a banking product that supports the adoption of a new water irrigation technology through suppliers for the purpose of reducing water consumption?</p>
<p>9. ما هي برأيكم المشاكل الاساسية التي يعاني منها المزارعين ؟ هل بראيكم بأن خلق تكنولوجيا جديدة تساهم في خفض المصاريف التشغيلية سيكون لها أثر إيجابي على تسعير منتجاتهم وبالتالي تسويقها بطريقة أسرع وأكثر منافسة في السوق 9. In your opinion, what are the main challenges that Farmers are facing? Are these challenges related and not limited to; accessing to internal and external markets, access to finance, climate shocks? Would you think that creating a new technology solution would help them reduce their operational expenses, and accordingly will be able to re-price their products and promote it more efficiently in the market?</p>

١٠. في حال كان التوجه في منح تسهيلات ائتمانية مباشرة من قبل البنوك / أو مؤسسات الإقراض الأخرى إلى المزارعين بأسعار فوائد منافسة لتمويل شراء التكنولوجيا الحديثة في عملية الري من خلال الموردين أو الوسطاء، ما هي برأيكم الأمور الأساسية الواجب مراعاتها من قبل البنوك أو مؤسسات الإقراض لضمان تسديد الأقساط دون تأخير؟ وهل من الأفضل منح هذه التسهيلات لتسدد بواقع دفعات شهرية، نصف سنوية، أو أن تسدد مرة واحدة في آخر عمر القرض؟.

10. Let's suppose that the approach is to extend direct facilities to Farmers through Bank's/ other financing corporations for the purpose of buying this new water irrigation technology through suppliers or commissioners. In your opinion, what are the main factors that should be considered by Banks/other financing corporations to guarantee the repayment of loans on time? Is it more convenient to extend those facilities to be repaid on Monthly, Quarterly, Half Yearly, or just one balloon payment?

١١. الوسطاء لا يرغبون بالتعاون مع البنوك و أي منتج بنكي و لا يحبذون ذلك منطقيا، ما هو البديل المقترح من وجهة نظر الوسيط؟ (علما بأن الوسيط هو محل بيع الجملة في هذه الاسواق المركزية للخضار و الفواكة في عمان و اربد و الزرقاء)

11. Commissioners logically won't be willing to cooperate with banks or any financial entity, what is the alternative solution from the commissioner perspective?



## Annex 9. Farmers Interview Questions

### اسئلة مقابلة المزارعين

	اسم المزارع / Farmer's name
	تاريخ المقابلة / Interview date
الموقع / Location	
<p>1. هل تشرف أنت مباشرة على عملك أم لديك عمال يعملون لديك؟ وفي حال وجود عمال يعملون لديكم، كم عدد العمال وما نسبة الذكور والإناث من العدد الإجمالي؟ 1. Are you supervising your own farming business directly or do you have farmers working for you? If in case you have farmers working for you, what is their total number and percentages by Gender?</p>	
<p>2. كيف اكتسبت الخبرة في إدارة مزرعتك؟ 2. How did you gain experience in managing your farm?</p>	
<p>3. ما هي برأيك فرص التطوير والتحسين التي تحتاجها في عملك؟ 3. What sort of opportunities you deem important to avail so as to develop and enhance your own farming business?</p>	
<p>4. ما هي المعوقات والتحديات التي تواجهك في تطوير أعمالك؟ 4. What are the major challenges and obstacles you face in developing your farming business? Specifically resource challenges...human, financial etc.</p>	
<p>5. هل أسلوب الري المتبع لديكم متوفر باستمرار؟ وما هي تكلفته؟ 5. Is the irrigation system you are using available all the time? What are the maintenance costs (ongoing costs)? Utility bills? Do you have any challenges meeting these ongoing costs? Why or why not?</p>	
<p>6. كم كمية المياه وقيمة فاتورتك خلال الدورة؟ وكيف تقوم بتسديدها؟ 6. What is your current water consumption per cycle (three months)? And how often do you settle?</p>	

<p>7. هل تعتمد على التمويل الذاتي ام الاقتراض لتلبية متطلبات المزرعة؟</p> <p>7. Do you borrow (please identify if formal or informal mechanisms) or you self-finance your farm needs?</p>
<p>7.1 في حال الاقتراض، من هي الجهة / الجهات المقرضة؟</p> <p>7.1 In the case of borrowing, who is the lender? What are the terms (length, interest rate, grace period, frequency of repayment etc.)</p>
<p>7.2 ما هو مبلغ القرض و سبب الحصول عليه ؟</p> <p>7.2 What is the purpose and amount of the loan?</p>
<p>7.3 ما هي الضمانات التي قدمتها مقابل الحصول على القرض؟</p> <p>7.3 What sort of guarantee you have provided against this loan?</p>
<p>7.4 ما هي فترات التسديد (شهري , ثلاثة أشهر, سنوي .....الخ)؟</p> <p>7.4 What is the frequency for repaying the loan?</p>
<p>7.5 هل تفضل التمويل الإسلامي؟ الرجاء الشرح اذا كانت الاجابة بنعم. كيف تصف تجربتك في الحصول على التمويل المناسب ؟ هل كانت هذه التجربة إيجابية أم سلبية؟ يرجى بيان ما اعجبكم/أو لم يعجبكم من عملية الاقتراض؟ هل المنتج المطروح لم يناسب وحاجاتكم التمويلية؟ كم استغرقت مدة الحصول على التمويل من تاريخ تقديم الطلب لحين إدراج القرض من قبل المؤسسة التي تم التعامل معها؟</p> <p>7.5 Do you prefer Islamic Financial products? Please explain further if the answer is yes. ? How would you describe your experience in getting the proper financing? Was the experience positive or negative? Please explain what you liked most/or didn't like from this financing experience? Was the offered product suitable for your financing needs? How much time didn't take to disburse the loan by the institution you are dealing with?</p>
<p>8. كيف تصف علاقتك مع الموردين و الوسطاء؟ ما هي التحديات التي تواجهكم خلال التعامل مع كل منهم ؟ هل يتم حصولكم على قروض من خلالهم ؟ هل من تجربة سابقة مفضلة لديكم نتيجة المشاركة مع كل من الموردين والوسطاء ؟</p> <p>8. What is your relationship with suppliers? With commissioners? What are the challenges? Do you receive credit from them? Warehouse receipt? What would you</p>

like about partnering with suppliers? Commissioners?

9. خلال الاثني عشر شهراً خلال العام، متى تحتاج فعلياً إلى التمويل/السيولة و كيف يتم ترتيب امورك؟

9. At what points in the year do you need to save and to borrow?

١٠. ما هي فترات تدفق الإيرادات من بيع المحاصيل خلال العام؟

10. What is your income flow during the year from selling the crops?

١١. هل سبق و أن حضرت دورات تدريبية وثقيفية في مجال عملكم؟ (في حال الإجابة بنعم يرجى ذكر الجهة المدربة و في حال الإجابة بلا يرجى ذكر السبب في عدم حضور أية ورشات تدريبية ؟ ما هي المعلومات الواجب الحصول عليها من قبلكم لتعزيز وتطوير أعمالكم؟ لماذا ؟

11. Have you previously taken any training or educational courses in your field of work? (If yes please mention the name of the training source, if no please clarify the reason for not taking any trainings) What information do you think you would need to strengthen your business? Why?

١٢. هل ترغب في حضور ورشات توعوية و تثقيفية في مجال عملك؟ (في حال الإجابة بنعم يرجى ذكر الوسيلة المفضلة لتلقي الورشة)

12. How do you receive new information on ag practices and techniques? What is your preferred way of receiving new information? SMS? Computer based (youtube)? Face to face? Brochure? Combination of different mechanisms? Why?

١٣. هل أنتم على إطلاع أو لديكم خلفية عن أساليب التقنية الحديثة المستخدمة في الري والتي من شأنها ان تقلل من استهلاك المياه والكهرباء؟

13. Do you have any previous knowledge about the new applied technology in water irrigation and its impact on reducing Water and Electricity consumption?

١٤. في حال توفر منتج زراعي بنكي، ما هي النافذة المالية التي تعتقدون انها الاكفاً في توفيرها و يمكن أن تلقى استجابة: (١-5) علماً بأن 5 هي الأكثر استجابة و ١ هي الأقل استجابة

5	4	3	2	1	
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					البنوك التجارية
					المؤسسات التمويلية
					الوسطاء
					مؤسسة الاقراض الزراعي

14. In case there is a financial agricultural product, what is the financial entity you as a farmer would prefer to work with? Please range from (1-5) knowing that 5 is the best and 1 is the lowest rank

	1	2	3	4	5
Commercial Banks					
Microfinance institutes					
Commissioners					
ACC					

15. عند سماعك بعبارة نظم ري حديثة، ماذا يتبادر بذهنك من منتجات ترغب بتوافرها في مزرعتك؟  
15. What irrigation improvements would you like to implement in your farm?

16. في حال رغبة البنوك و المؤسسات التمويلية في توفير منتج بنكي لنظام الري، ما هي التسهيلات التي ترغب في الحصول عليها في هذا المنتج؟  
16. If banks are willing to provide farmers with financial products, what are the facilitations you would like to see in order to use this financial product?

17. اذا توفر منتج تمويلي، هل ترغب بالحصول عليه؟  
1. نعم 2. لا  
17. If there are any financial products, would you like to have it?  
1. Yes 2. No

## Annex 10. Suppliers Interview Questions

### اسئلة مقابلة الموردين

	إسم المورد : Supplier's Name
	تاريخ المقابلة / Interview date
الموقع / Location	
<p>1. هل سبق وأن تم من قبلكم تقديم تسهيلات للمزارعين لغايات شراء منتجات تتعلق بالري بالتنقيط ؟ ما هي الضمانات التي تطلبونها لقاء هذه التسهيلات ؟ هل آلية السداد عادة تكون بالعادة شهرية، ثلاثة أشهر، 6 أشهر أم قسط واحد يتم تسديده مرة واحدة خلال مدة محددة متفق عليها مسبقاً؟ وهل يتم الالتزام عادة بتسديد هذه الأقساط دون تأخير ؟</p> <p>- هل تم ملاحظة بعض التحديات الخاصة من حيث الالتزام بالسداد من قبل المزارعين؟ ما هي التحديات التي تم ملاحظتها من قبلكم بخصوص الالتزام بالسداد ؟</p> <p>1. Have you provided farmers with facilities for the purpose of buying equipment are related to water irrigation? What sort of guarantees you require? What are their repayment periods is it Monthly, Three months, 6 months, or only one installment (Balloon payment) within an agreed period of time? Are they usually committed to settle the installments without any delays?</p> <p>- Did you observe any challenges for repayment from farmers? What were the challenges you observed for repayment?</p>	
<p>2. هل يوجد لديكم عملاء مزارعين من محافظتي المفرق والازرق ؟ كم هو عدد المزارعين في كل منطقة ؟ هل طلبات هؤلاء العملاء عادة تكون لشراء عدد الغيار الخاصة بالري أم لتحديث شبكة الري ؟ كيف يمكن تصنيفهم حسب حجم المزارع التي يملكونها ؟</p> <p>2. Do you have existing Farm customers from Mafraq and Azraq areas? How many from each area? Are their needs is related to buying spare parts or for buying a new irrigation system? How do you classify those clients, is it based on the size of the farms they own?</p>	

<p>3. هل تعتقدوا بأن المزارعين بحاجة إلى تدريب لإدارة مزارعهم أو أعمالهم بطريقة أمثل ؟ اذا اجبت بنعم يرجى تزويدنا بالشروط المناسبة حول هذا الموضوع؟</p> <p>3. Do you think farmers need technical training for their business/farms? If the answer is yes, can you explain further</p>
<p>4. ما هي المعوقات التي تواجهكم في منح تسهيلات بالدفع للمزارعين ؟</p> <p>4. What sort of restrictions do you encounter when giving payment facilities to Farmers?</p>
<p>5. كيف تصف علاقتك مع المزارعين و الوسطاء ؟</p> <p>5. How do you describe your business relationship with farmers and commissioners?</p>
<p>6. هل يتم عادة عمل ورشات تدريبية أو توعوية من قبلكم للمزارعين لغايات شرح أساليب التقنية الحديثة في الري وأثرها المباشر على تخفيض استهلاك المياه ؟</p> <p>6. Do you usually conduct training sessions / awareness sessions to farmers for the purpose of explaining new technology systems in irrigation and its direct impact on reducing water consumption?</p>
<p>7. ما هو رأيكم أو موقفكم من دعم تطوير منتج بنكي يتم طرحه بالتعاون والتنسيق معكم وذلك لتشجيع المزارعين على تبني تكنولوجيا حديثة في الري هدفها الأساسي هو استخدام المياه بطريقة أكثر فاعلية ضمن توفير فاتورة المياه ؟</p> <p>7. What is your stand in developing a product in coordination with you, which will support the adoption of a new water irrigation technology through suppliers for the purpose ` of reducing water consumption?</p>
<p>8. ما هي المشاكل الأساسية التي يعاني منها المزارعين ؟ ما هي احتياجاتكم التمويلية لتلبية متطلبات المستهلكين، ماهية الشروط ؟ ما هي نقاط القوة لديكم والتي من شأنها أن تعزز من عجلة النمو والتطور في أعمالكم ؟ هل من تحديات تواجهكم في الحصول على التمويل المناسب ؟</p> <p>8. What are the main problems/ or obstacles that Farmers are facing? What are your financing needs to better meet your consumer demands, what sort of terms? Where do you see the most potential for expansion? What are your challenges in accessing financing?</p>

<p>9. هل يوجد لديكم كشركة متخصصة بالري أو كموردين تعامل حالي أو مسبق مع مؤسسات مالية؟ في حال كانت الإجابة نعم، يرجى ذكر أسماء هذه المؤسسات؟ في حال كانت الإجابة لا، يرجى ذكر الأسباب؟</p> <p>9. Do you as an irrigation company and a supplier cooperate or work with any financial entity? If yes, please mention them? If not, explain why?</p>
<p>10. ما هو الحافز لجعلك تتعاون مع البنوك</p> <p>10. What are the incentives as a supplier to work with banks?</p>
<p>11. شروط التعاون بين البنك و المورد بخصوص المنتج البنكي ليوحد حافز لادارجك بالقائمة التفضيلية؟</p> <p>11. What are the cooperation options between the banks and supplier regarding the financial product to include the supplier with the bank's preferred list of suppliers?</p>
<p>12. هل لديكم آراء لتقديم أو تحسين منتج بنكي يكون خاص بصناعتكم المرتبطة بقطاع الزراعة؟</p> <p>12. Is there any ideas or thoughts on how to introduce or to improve a financial which is related to your agriculture manufacturing? product</p>

## **Annex II. List of interviewed farmers at Azraq and Mafraq:**

<b>No.</b>	<b>Name</b>	<b>Location</b>	<b>Land Ownership</b>	<b>Date of Interview</b>
1.	Abdulla Awadan	Azraq	Medium (500 dunum)	15/11/2018
2.	Ali Al Zyoud	Azraq	Medium (222 dunum)	15/11/2018
3.	Ahmad Nayef Ahmad	Azraq	Small (100 dunum)	15/11/2018
4.	Khalil Abdul Jabbar Abu Saleh	Mafraq	Small (150 dunum)	20/11/2018
5.	Eng. Khaled Nuami	Mafraq	Medium (200 dunums)	29/11/2018
6.	Dr. Mohamad Al Sarhan	Mafraq	Small (150 dunums)	29/11/2018
7.	Yahya Al Mugurbi	Mafraq	Medium (800 dunums)	29/11/2018
8.	Mohammad Albriqi	Mafraq	Small (130 dunums)	29/11/2018



## Annex 12. List of FGDs of Azraq and Mafraq:

### List of Attendees – FGD Azraq

Location: Wild Jordan – Ayraq

Date : Nov 27<sup>th</sup>, 2018

No.	Name		Land Ownership
1.	Mr. Sattam Majali	Manager of Azraq Governorate	
2.	HE, Mr. Turkie Khreisheh		Large (1100 dunum)
3.	Dr. Osama Al Zyoud / On behalf of Mr. Ali Mohammad AL Zyoud		Medium (200 dunum).
4.	Sheikh Oqla Shabeeb		Medium (222 dunum)
5.	Mr. Sami Al Qadi		Small (150 dunum)
6.	Mr. Khader Fawaz Al Arabeed		Medium (520 dunum)
7.	Mr. Hussein Yaghi		Medium (288 dunum)

### List of Attendees – FGD Mafraq

Location: Regional Center for Agricultural Research & Extension – Mafraq

Date : Dec,4<sup>th</sup>, 2018

No.	Name		Land Ownership
1.	Dr. Hussein Al Zyoud -	Manager in Charge of Ministry of Agriculture - Mafraq	
2.	Mr. Owdeh Al Srour	Head of Farmers Union- Mafraq	Medium (200 dunums)
3.	Eng. Butros Kawaleet	Head of Regional Center for Agricultural Research & Extension	
4.	Mr. Taleb Al Farajat		Medium (200 dunum)
5.	Eng. Khaled Al Naimi		Medium (200 dunum)
6.	Mr. Tareq Al Louzi		Medium (525 dunum)
7.	Eng. Salem Namour		Medium (220 dunum)
8.	Eng. Mohammad Sarhan		Medium (500 dunum)
9.	Eng. Ayman Abu Kishek		Medium (465 dunum)
10.	Dr. Mohammad Al Naimi		Medium (327 dunum)
11.	Dr. Osama Al Zyoud		Small (55 dunum)

## Annex 13. Focus Group Discussion Voice Records and Photos

### **Azraq voice records:**

<https://www.dropbox.com/s/knq5ugwhnt6n6fh/AUD-20181205-WA0072%5B1%5D.m4a?dl=0>

<https://www.dropbox.com/s/qkzmbyv7t26olcm/AUD-20181205-WA0073%5B1%5D.m4a?dl=0>

<https://www.dropbox.com/s/f80gizmiqzdabpf/AUD-20181205-WA0074%5B1%5D.m4a?dl=0>

<https://www.dropbox.com/s/3jeipsxyjewwb7k/AUD-20181205-WA0075%5B1%5D.m4a?dl=0>

<https://www.dropbox.com/s/mn9bkpbxz8awkg5/AUD-20181205-WA0076%5B1%5D.m4a?dl=0>

<https://www.dropbox.com/s/kmojefcqp54avll/AUD-20181205-WA0077%5B1%5D.m4a?dl=0>

<https://www.dropbox.com/s/pbkrxtdrjxreth4/AUD-20181205-WA0078%5B1%5D.m4a?dl=0>

<https://www.dropbox.com/s/smit6x7imcmik5o/AUD-20181205-WA0079%5B1%5D.m4a?dl=0>

Mafraq voice record:

[https://www.dropbox.com/s/22aug3ln2saiztn/Voice\\_002%5B1%5D.m4a?dl=0](https://www.dropbox.com/s/22aug3ln2saiztn/Voice_002%5B1%5D.m4a?dl=0)

## Photos during FGDs

















## **Annex 14. Data coding, Scenario, Calculations**

<https://www.dropbox.com/s/bjbgaslhqx55shi/WIT%20-%20Business%20Going%20Forward.pptx?dl=0>

Scenario

<https://www.dropbox.com/s/t9ogefkam8sqo78/XLS%20WIT%20calculation.xlsx?dl=0>

Calculations

<https://www.dropbox.com/s/t9ogefkam8sqo78/XLS%20WIT%20calculation.xlsx?dl=0>