



International
Labour
Organization



▶ **Value chain
analysis of Jordan's
floriculture sector**

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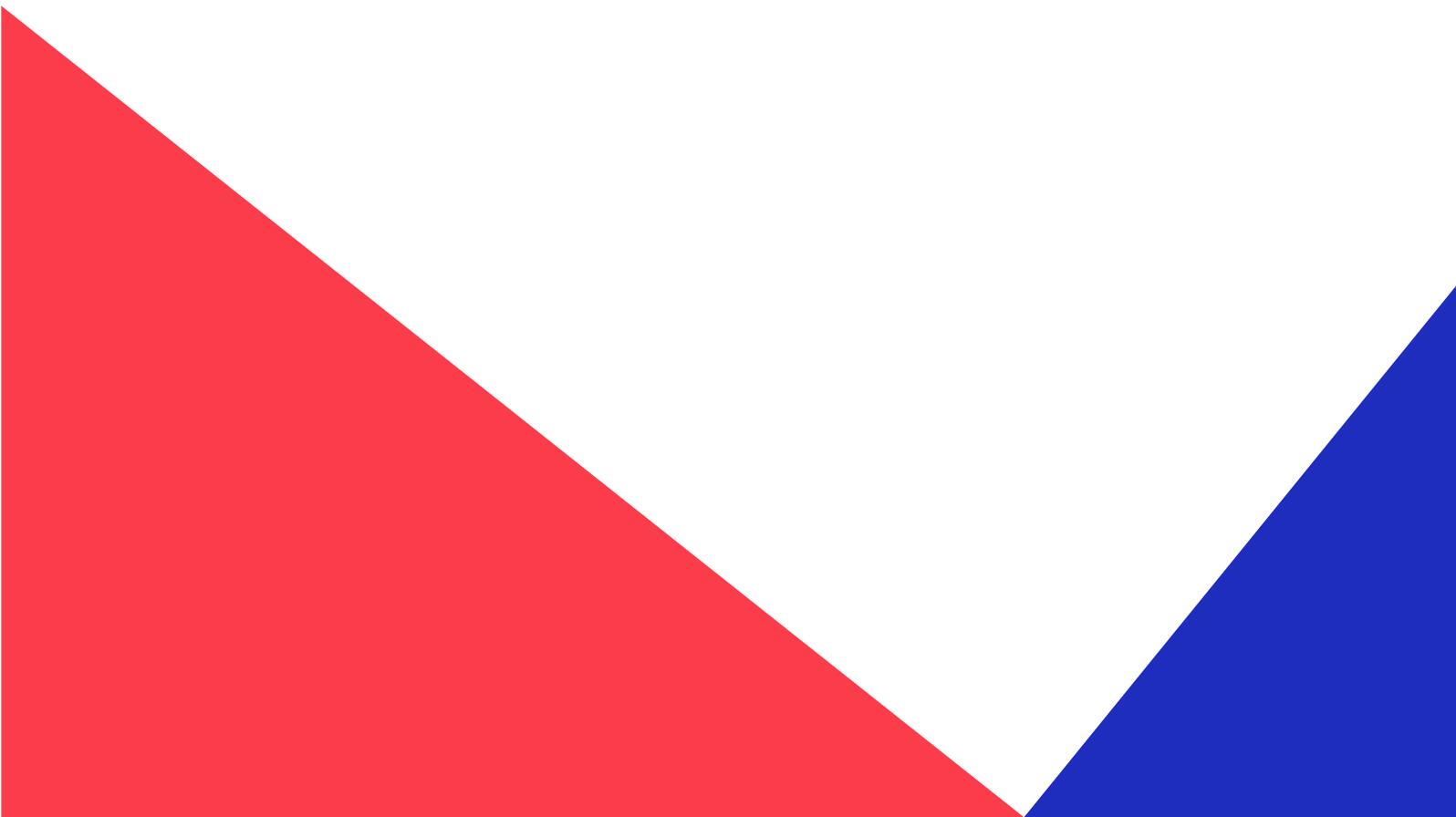


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Dr Fadel ElZubi and Eyas Shuaibi



Acronyms and abbreviations

ALC	Agricultural Loans Corporation
DFAT	Department of Foreign Affairs and Trade of the Government of Australia
EU	European Union
ILO	International Labour Organization
JCFA	Jordanian Association for Cut Flowers and Ornamental Plants
JFSO	Jordanian Association for Flower Shop Owners
JOD	Jordanian dinar
M&E	Monitoring and evaluation
MoA	Ministry of Agriculture
MoL	Ministry of Labour
NARC	National Agricultural Research Center
OSH	Occupational safety and health
TQM	Total quality management system
WASH	Water, sanitation and hygiene

Key terms

Competitiveness	An organization's ability to produce and sell products/services that meet market quality requirements at the same (or lower) prices as its competitors, and maximize returns on the resources consumed in producing these products/services.
Decent work	Opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives, and equality of opportunity and treatment for all women and men.
Floriculture	A branch of horticulture concerned with the cultivation of flowering and ornamental plants for gardens and floristry.
Floriculture value chain	A set of activities that farms and enterprises operating in the floriculture sector perform in order to deliver valuable products to the market.
Irrigation system	A system of supplying land with water by means of artificial canals, ditches, etc., to promote the growth of crops.
Production costs	The costs incurred by a business in manufacturing a product or providing a service. Production costs can include a variety of expenses, such as labour, raw materials, consumable manufacturing supplies and general overhead.
Social dialogue	All types of formal or informal negotiation, consultation or simply the exchange of information between, or among, representatives of governments, employers and workers, on issues of common interest relating to economic and social policy. Its main goal is to promote consensus-building and democratic involvement among the main stakeholders in the world of work. Social dialogue can be a tripartite process (with the government as an official party) or a bipartite process between workers and management (or trade unions and employers' organizations), with or without indirect government involvement.
Technical training	Training that imparts the skills needed to design, develop, implement, maintain, support or operate a particular technology or related application, product or service through a learning process.
Value chain analysis	A set of activities that an enterprise operating in a specific sector performs in order to deliver a valuable product for the market.



Executive summary

This value chain analysis:

1. maps the core value chain functioning of Jordan's floriculture sector, including observations related to decent work and gender equality across the value chain; and
2. seeks to understand constraints and identify opportunities to build upon across the floriculture sector, with a view to unlocking its potential as a driver of decent work, job creation and sustainable economic growth.

It aims to inform the Decent Work in Jordan's Floriculture Sector project – implemented by the International Labour Organization (ILO) and funded by the Government of Australia's Department of Foreign Affairs and Trade (DFAT) – with its focus on improving working conditions, skills and the employability in the sector, while linking producers with market opportunities.

The analysis' methodology is largely based on ILO's value chain development cycle¹ and Michael E. Porter's value chain framework, which recognizes that the ultimate purpose of any organization or sector is to create value. The creation of value should support the creation of decent work opportunities, sustainable and inclusive growth, and poverty reduction. The analysis is informed by interviews and discussions with a range of stakeholders,² including farm owners/producers based on a detailed questionnaire.

Key findings

- Floriculture in Jordan is a close-knit sector. Most producers have family ties or past working experience in the sector, and few are new market entrants.
- There is a clear gender imbalance in Jordan's floriculture sector, with almost no women among farm owners, very few women farm workers and women representing only 20 per cent of retailers (both flower shop owners and workers). Other gender deficits include the fact that most women farm workers are not formally employed, are paid less than men (ostensibly because they perform different, less valued tasks), are concentrated in 'lower level' jobs and lack basic facilities at workplaces, including water, sanitation and hygiene (WASH) facilities.
- Several other decent work deficits also exist in the sector, including in terms of rights at work and working conditions. Most farm workers are men and owners tend to prefer migrant workers, particularly those of Egyptian nationality. The reasons reported for this are partly these workers' knowledge of the work given their long-standing involvement in the sector in

¹ ILO, *Value Chain Development for Decent Work: How to Create Employment and Improve Working Conditions in Targeted Sectors*, 3rd ed., 2021.

² These stakeholders included representatives of the Ministries of Agriculture and Labour, the National Agricultural Research Center, Amman municipality and its central market, the Jordanian Association for Cut Flowers and Ornamental Plants, the Jordanian Association for Flower Shop Owners, input providers and farmers.

Jordan, and partly because they accept challenging working conditions – such as long work hours on the farms and taking less leave than Jordanian workers. Despite the Jordanian law requiring agricultural workers to be covered by social security, farm owners in the floriculture sector have pushed back against paying for workers' social security coverage. While social dialogue processes between farm owners and the government exist, little dialogue takes place between employers and workers. Occupational safety and health (OSH) measures are limited and non-permanent workers are not provided with protective equipment. As women are rarely formally contracted as permanent workers in the sector, they are particularly affected by the lack of OSH measures and equipment.

- There is little diversity in the flowers and plants produced. Planting, growing and care activities involve little advancement, with production methods relying on conventional techniques and with almost no new technologies or technical inputs. Production relies on the traditional knowledge of hired workers. This appears to indicate a relatively stagnant, conservative sector that would benefit from fresh perspectives.
- The agricultural techniques and technologies used in floriculture are basic, largely relying on drip irrigation and plastic greenhouses. Very few farms use more advanced methods, such as hydroponics (a method of growing plants without soil by using water-based mineral nutrient solutions in aqueous solvents).
- Overall, Jordan's floriculture sector operates at a basic level – it is predominantly a 'grow and cut' sector. There is little added value beyond cutting and shipping to markets. Producers rely on imported seeds, seedlings and bulbs, and there is no evidence of mature local tissue culture laboratories in the country.
- There is little evidence of properly maintained records or properly documented operations, such as recording the performance and productivity of farms – an essential step for a structured learning process and a path towards continuous improvement.
- A lack of technical, leadership and business skills is one of the primary root causes for current deficits. Another cause is a lack of awareness of the latest trends aimed at maximizing productivity, value and decent work conditions.
- The central market offers a strong centralized venue to connect producers and buyers, although it requires upgrading to maximize its potential. For instance, the market requires proper specialized displays, hygienic practices (such as sterilized water in buckets), cooling facilities and climate control.

Recommended interventions

The findings of the floriculture value chain analysis yielded a number of recommendations, with priority given to high-impact interventions that can be implemented relatively easily:

1. Improve **decent work conditions, inclusivity and gender balance** across the value chain by raising awareness among producers and workers on social security, social dialogue, working hours and conditions, etc., strengthening the inspection and enforcement of labour laws, enhancing the attractiveness of the sector for women through better working conditions, and improving occupational health and safety practices.
2. Create a **local tissue laboratory** in Jordan for certain species that are currently imported, as well as the creation of new varieties, including from indigenous species, to improve cost-effectiveness, capacitate local production and encourage the diversification of plants.
3. Improve **business, marketing and technical skills** to improve the management of farms.
4. Leverage more **advanced technologies** on farms to upgrade current production systems.
5. Explore possibilities for an **online floriculture marketplace** through further study and investigation.
6. Encourage the use of **cooled storage and transportation**, perhaps by supporting the Jordanian Association for Cut Flowers and Ornamental Plants (JCFA) to procure shared trucks.
7. Improve conditions at the **central auction market**.

These interventions can be developed with potentially available resources and through key stakeholders, such as JCFA, the Jordanian Association for Flower Shop Owners (JFSO), farmers/producers the Government of Jordan, donors and international organizations.

Way forward

Despite current challenges, Jordan's floriculture sector has tremendous potential to flourish, particularly due to its relatively small scale, close-knit relationships between producers, marketing companies, suppliers, JCFA, and collegial relations with workers. The sector is extremely attractive to national producers, largely due to the high revenues associated with it, and has been hailed as one of the most promising agricultural sectors in Jordan.³ The production and retail of floriculture products already provides over 1,000 jobs. With a greater focus on skills development, diversification and cost reduction – all with the aim of championing decent work for all – it has the potential to create far more jobs and contribute to inclusive, sustainable growth. Implementing the interventions recommended to strengthen floriculture will not only have a positive effect on the sector, but they will also inspire advancements and better work in the horticulture sector as a whole.



▶ 1

Chapter 1

Introduction

▶ 1.1. Context

The Decent Work in Jordan's Floriculture Sector project, implemented by the International Labour Organization (ILO) and funded by the Department of Foreign Affairs and Trade (DFAT) of the Government of Australia, aims to improve working conditions, enhance skills and boost the employability of vulnerable Jordanians and Syrian refugees working in Jordan's floriculture sector, while linking farm producers with new international and regional market opportunities.⁴

The project is being implemented at targeted farms in the governorates of Balqaa, Irbid and Madaba between 2019 and 2022.

▶ 1.2. Scope and objectives of this study

This value chain analysis aims to inform the Decent Work in Jordan's Floriculture Sector project by :

1. mapping the core value chain functioning of Jordan's floriculture sector, including observations related to decent work and gender equality across the value chain; and
2. seeking to understand constraints and identify opportunities to build upon across the floriculture sector, with a view to unlocking its potential as a driver of decent work, job creation and sustainable economic growth.

▶ 1.3. Methodology

Value chain concept

This analysis uses the ILO's value chain development cycle's definition of a value chain:

"A value chain describes the full range of activities that are required to bring a product or service from

conception, through the intermediary phases of production and delivery to final consumers, and final disposal after use.”⁵

This includes activities such as design, production (involving a combination of physical transformation and the input of various producer services), marketing, distribution and support services up to the level of final consumers.

The methodology of this value chain analysis draws on the work of Michael E. Porter (1985) regarding competitive advantage. Porter uses the framework of value chains to assess how an enterprise or sector can position itself in the market, as well as in relation to suppliers, buyers and competitors. The competitive advantage of an enterprise or sector depends on either:

- A strategy of cost reduction, that is, how can an enterprise provide customers with a product or service of equivalent value compared with competitors, but at a lower cost?; or
- A strategy of diversification, that is, how can an enterprise produce a product or service that customers are willing to pay a higher price for?

In Porter's framework,⁶ the value chain provides a tool that enterprises can use to determine their (current or potential) source of competitive advantage. In particular, Porter argues that the source of competitive advantage cannot be detected by looking at the enterprise as a whole. Rather, the enterprise must be separated into a series of activities, so that its competitive advantage can be identified in one (or more) of these activities. Porter distinguishes between primary activities, which directly contribute to the added value of the production of a product or service, and support activities, which have an indirect effect on the final value of a product.

In Porter's framework, the concept of a value chain does not coincide with the concept of physical transformation. He argues that an enterprise's competitiveness is not exclusively related to the production process. Instead, competitiveness can be analysed by looking at the value chain, which includes product design, input procurement, logistics, outbound logistics, marketing, sales, after-sales and support services (such as strategic planning, human resource management and research).

Ultimately, Porter's framework recognizes that the ultimate purpose of any enterprise or sector is to create value. In line with the ILO's Decent Work Agenda, the creation of value should support growth, job creation and poverty reduction based on the concept of decent work. Decent work *“involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.”⁷* The performance of enterprises, and therefore their ability to create decent work for women and men, is *“inextricably linked to the performance of the value chain they operate in.”⁸*

⁵ Raphael Kaplinsky and Mike Morris, *A Handbook for Value Chain Research* (IDRC, 2012).

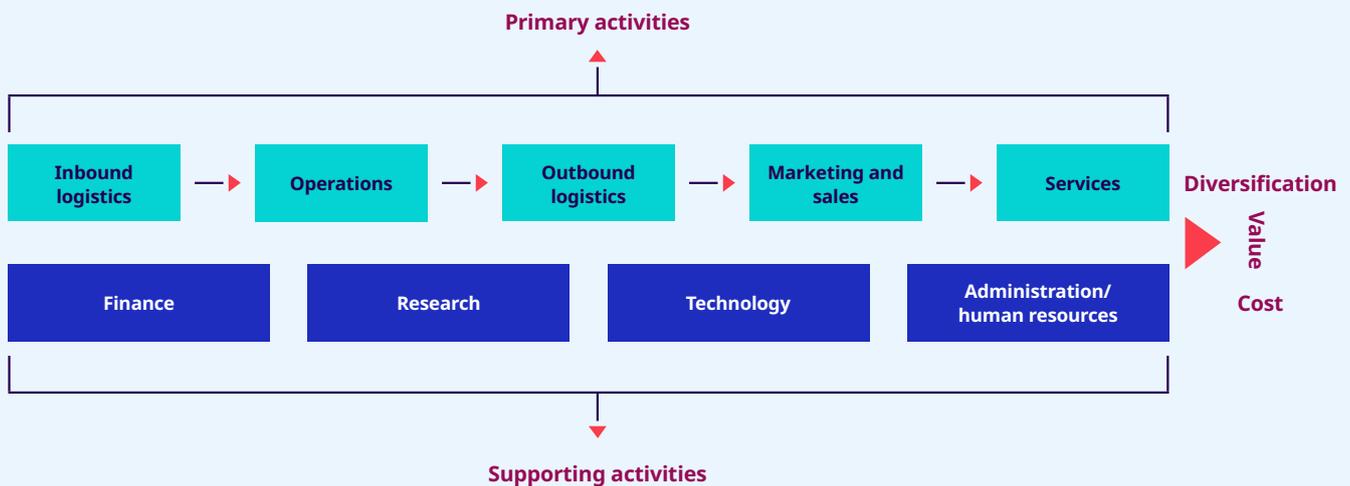
⁶ Michael E. Porter, *The Competitive Advantage: Creating and Sustaining Superior Performance* (New York, NY: Free Press, 1985).

⁷ ILO, *“Decent work”*.

⁸ ILO, *Value Chain Development for Decent Work: How to Create Employment and Improve Working Conditions in Targeted Sectors*, 3rd ed., 2021.

FIGURE 1.

Value chain schematic



ILO value chain development approach

Value chain development is an approach that takes a product, service or commodity as the basis for analysis.⁹ Understanding value chains “helps development practitioners identify those chains which are able to generate growth, job creation and poverty reduction. It also aims to identify constraints to and opportunities for increasing value chain performance, so that interventions can be designed and implemented to address constraints and improve outcomes.”¹⁰ Value chain analysis is particularly useful for new producers, including developing countries and impoverished producers, who seek to enter global markets with a view to boosting sustainable growth. Alongside the primary use of value chain analysis – as an analytic tool for understanding the ways in which enterprises, sectors and countries participate in the global economy – value chain analysis is also useful as an analytical tool for understanding the policy environment for the allocation of resources within the domestic economy. Value chain development has been used to improve outcomes across all pillars of the Decent Work Agenda, including gender equality, productivity, skills and employability, youth employment, working conditions, and occupational safety and health.

This floriculture value chain analysis is based on the value chain development cycle, outlined by the ILO.¹¹ The cycle consists of five steps, proceeding from the selection of a sector and value chain, to market system research and analysis, pilot interventions, implementation, and monitoring and evaluation (M&E). With the floriculture sector already selected, this study focuses on steps 2 (market system research and analysis) and Step 3 (pilot interventions) of the ILO’s value chain development cycle for decent work, as outlined in the figure below.

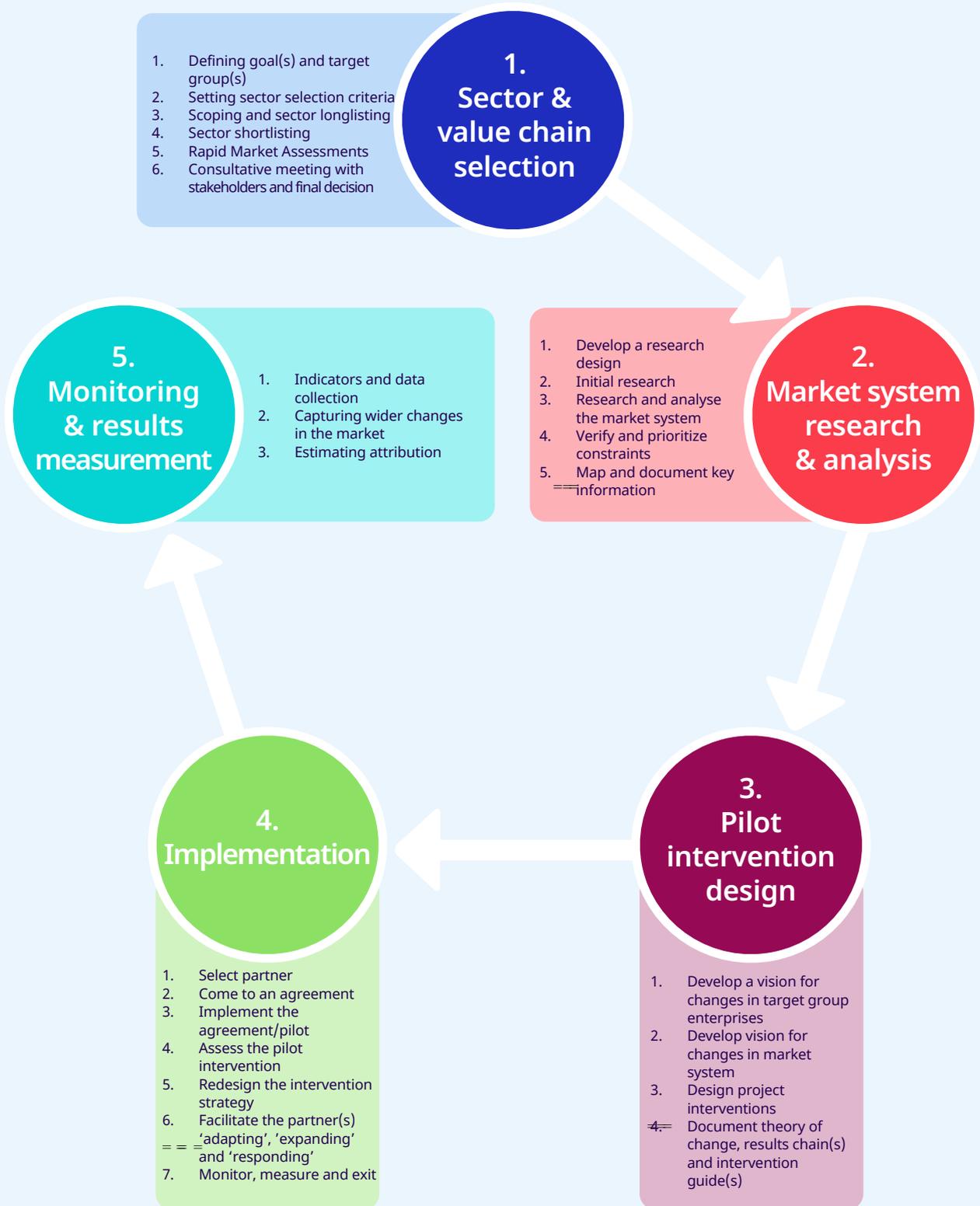
⁹ DCED, “Value Chain Development”.

¹⁰ ILO, *Value Chain Development for Decent Work: How to Create Employment and Improve Working Conditions in Targeted Sectors*, 3rd ed., 2021.

¹¹ ILO, *Value Chain Development for Decent Work: How to Create Employment and Improve Working Conditions in Targeted Sectors*, 2nd ed., 2015.

FIGURE 2.

Value chain development cycle



Source: ILO, *Value chain development for decent work: how to create employment and improve working conditions in targeted sectors*, 2nd ed., 2015.

Steps in the mapping process

'Mapping' the floriculture value chain was a key step in this value chain analysis. Once a value chain has been mapped, it can be analysed based on a solid foundation. The **objectives** of this mapping exercise were:

- ▶ 1. To gain a basic overview of the floriculture value chain to guide the complete value chain analysis.
- ▶ 2. To identify constraints and possible solutions at different levels of the value chain.
- ▶ 3. To visualize networks to gain a better understanding of connections between actors.
- ▶ 4. To demonstrate the interdependence between actors and processes in the value chain.

The questions which guided the selection of dimensions to map included:

- ▶ 1. What are the core processes in the value chain?
- ▶ 2. Who are the actors involved in these processes and what do they actually do?
- ▶ 3. What are the flows of products, information and knowledge in the value chain?
- ▶ 4. Where does the product (or service) originate from and where does it go?
- ▶ 5. How does the value change along the chain?
- ▶ 6. What types of relationships and linkages exist?
- ▶ 7. What types of services feed into the chain?
- ▶ 8. What key constraints exist at various levels in the chain and what are some potential solutions to these constraints?

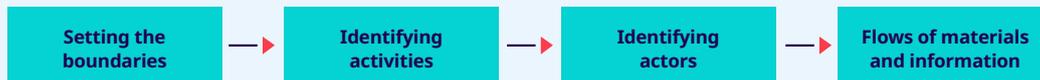
To answer these questions, the mapping process involved the following steps:

- ▶ Setting the boundaries.
- ▶ Identifying activities.
- ▶ Identifying actors.
- ▶ Quantifying physical and knowledge flows.

These steps shed light on important challenges and issues to consider in the value chain analysis. Figure 3 illustrates these steps, which are discussed below.

FIGURE 3.

Value chain mapping approach



Setting the boundaries

The boundaries of a value chain indicate where its activities start and where they end. For Jordan's floriculture value chain, the boundaries lie between inputs to the value chain, and products reaching retail stores. The end users after retail are not considered here.

Identifying the activities

This core step involves identifying which activities lead to the value chain's final product – in this case, flowers and plants in the market. The level of detail in terms of analysing these activities is dictated by the objectives of the value chain analysis, and the nature of the flow of activities within the sector studied. This step should improve understandings of where gaps or overlapping activities exist, whether there is potential for upgrading, or simply improve understandings of the situation on the ground.

Identifying the actors

This step involves identifying who causes activities in the value chain to take place, or who influences them. Farmers, for instance, are key actors in the floriculture value chain as they are responsible for growing flowers and plants. Water companies are also key actors, as they supply water, and set charges for its supply, which farmers use to grow flowers and plants. The level of detail in terms of identifying actors was defined by the scope and objectives of the analysis. Actors who are not strongly connected to the value chain were not considered in this study. For example, entities such as the Ministry of Transportation, the entity responsible for maintaining Jordan's road network, was not considered in this analysis.

Flows of materials and information

This step requires taking a deeper look at the flow of physical materials (such as seeds) and information materials (such as market prices), and linking these to the activities identified in a quantitative manner, to the extent possible.

Primary data collection

Based on the value chain analysis framework described above, a list of stakeholders were identified and interviewed (see table 1), who are considered to have a high value and impact on the floriculture value chain.

Table 1. List of stakeholders interviewed

Stakeholder	Importance	Value
Producers (farmers)	Highest	Provided information and views based on their experiences on the ground
Ministry of Agriculture (MoA)	High	Responsible for regulating the agricultural market and performing routine inspections
Ministry of Labour (MoL)	High	Responsible for issuing and managing work permits within the framework of relevant laws and regulations
Jordanian Association for Cut Flowers and Ornamental Plants (JCFA)	High	Membership association of farms in the floriculture sector which provided an organizational overview of their members
Retailers (florists)	High	Provided an end-user view of the final product
Amman municipality	Moderate	Provided information on the perspectives of the auction market
National Agricultural Research Center (NARC)	Moderate	Provided its point of the view as a government research centre, including on its and relationship with the sector

The interviews relied on an in-depth questionnaire and used to interview farm owners/producers, as well as a questionnaire for retailers (florists).

Interviews

The interviews conducted to inform this value chain analysis were organized in a phased manner. The first phase involved interviews at selected farms, followed by interviews with JCFA to share and validate findings.

The second phase involved interviews with another round of farms, interviews with government representatives – including representatives of the National Agricultural Research Centre, the Ministry of Agriculture, the Ministry of Labour and others – as well as interviews with selected retail florists for validation.

The third and final phase included interviews with another round of farms, and a final interview with JCFA for the purposes of validation. Figure 4 below presents the order in which the interviews were conducted.

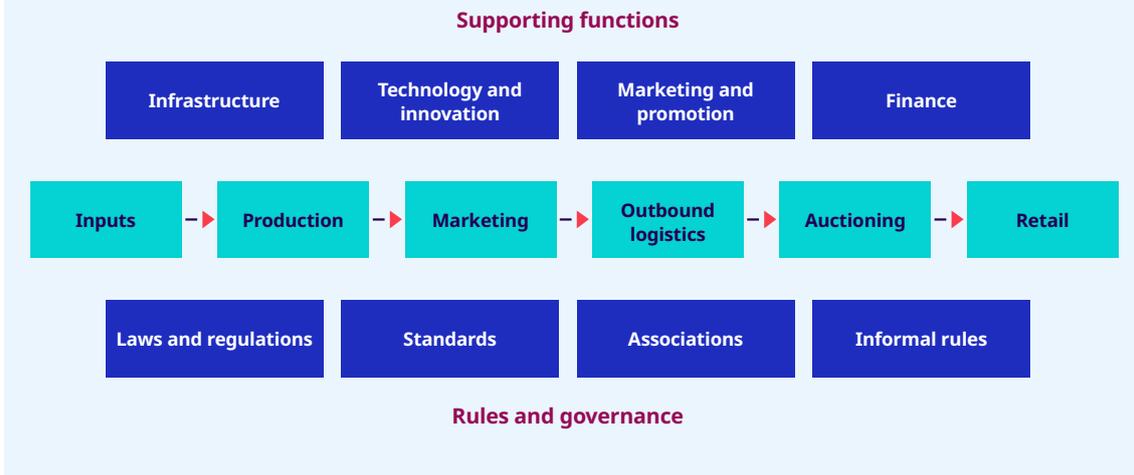
The reason for this cascading approach was to ensure the accurate, multi-dimensional and multi-faceted representation of the floriculture value chain. The arrangement enabled the triangulation of data and the incorporation of different points of views. For instance, if one producer shared a certain point of view about the JCFA, this was checked directly with the association and validated by the views of other producers.

FIGURE 4.

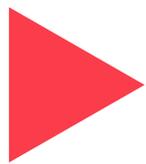
Order of interviews

An elaborate questionnaire based on the value chain framework was used to interview stakeholders. This was framed around 11 main themes.¹² The questionnaires used for this value chain analysis are presented in Annex 1.

¹² These themes are general information about the producer/farm/retailer, the driver(s) for the respondent being in the floriculture business, the profile of their produce, markets, inputs, operations and production, logistics, sales, finance, administration and human resources, and policies and regulations.

FIGURE 5.**High-level view of the value chain****Preliminary high-level view of the value chain**

Interviews with diverse stakeholders helped to shape a high-level view of Jordan's floriculture value chain, as presented in figure 5. This depicts the key activities and actors involved in the final product (flowers and plants) reaching the market (retail shops).



2

Chapter 2

Brief overview of the floriculture sector

Floriculture is a branch of horticulture concerned with growing, processing and marketing flowers and ornamental plants, in addition to their use in flower arrangement and design. It involves landscaping small or large areas, as well as the maintenance of gardens for aesthetic purposes. As flowers and potted plants are largely produced in plant-growing structures in temperate climates, floriculture is often thought of as a greenhouse industry. However, many flowers are cultivated outdoors, in nurseries or in crop fields. Both the production of bedding plants and the production of cuttings to be grown in greenhouses or for indoor use as houseplants are usually considered part of floriculture. Floriculture includes annual (seasonal), biennial and perennial ornamentals, such as cacti and other succulents, bromeliads, trees, shrubs, climbers, bulbous plants, lawn and ornamental grasses, bamboos, orchids, palms, cycads, foliage, bedding, pot and house plants, cut and loose flowers, fillers and ferns. It also includes seed and bulb production of ornamentals, dried flowers or plant parts, and other value-added products, such as the extraction of essential oils, edible pigments and their marketing by creating and maintaining gardens.

In Jordan, floriculture involves the production and trade of flowers, nursery plants and potted plants. The sector has experienced promising growth since 2008. In 2018, approximately 70 farms were producing 70 million cut flowers and employing roughly 3,000 workers annually.¹³ In 2021, this analysis found only 43 farmers registered with JCFA and operating in three governorates – Balqaa, Irbid and Madaba. The growth of floriculture was hit hard by the onset of the COVID-19 pandemic in 2020. Following a 30% decline in activity compared to pre-pandemic levels (reflected in the decline of the number of functional greenhouses), signs of recovery are emerging.

According to the Jordan Investment Commission, cut flowers and ornamental plants are one of the most promising agricultural sectors in Jordan.¹⁴ Among the reasons for this are the country's suitable climate, market needs and the entrepreneurial spirit of the farmers involved. The floriculture sector presents an attractive opportunity for investors due to the high revenues associated with this type of production. In 2019, Jordan's exports of cut flowers were valued at US\$2.5 million. The International Trade Centre's (ITC) Export Potential Map indicates that Jordan has an untapped potential of US\$1.1 million in this sector that has yet to be realized.¹⁵

¹³ According to Amman's flower stock market. Cited in: Celine Alkhaldi, "Cut flower sector: From bloom to bust", in *Venture Levant Business Intelligence*, 17 May 2018.

¹⁴ Jordan Investment Commission, 2018.

¹⁵ ITC, "Export Potential Map", 2020.

Despite myriad opportunities available in international and regional markets, Jordan's floriculture sector faces considerable challenges, similar to those in other agricultural sectors. These include water scarcity, the high cost of initial investments, a lack of skilled specialists,¹⁶ and high input costs – running the gamut from water to electricity, plastics and fertilizer. Cut flowers have a short shelf-life and require careful planting, harvesting techniques and post-harvest handling. A lack of business and technical skills create productivity constraints, compounded by a reliance on imported inputs. High operational costs negatively affect trade, as does intense competition from other countries where inputs are cheaper.

¹⁶ Jordan Investment Commission, 2018.



3

Chapter 3

Value chain analysis of the floriculture sector

This chapter presents the key findings of the value chain analysis, based on the questionnaires used to interview key stakeholders, which reflect the steps and activities involved in the value chain. These initial findings enabled the identification of challenges and potential recommended interventions.



Summary of key findings

- ▶ Floriculture farms are concentrated in the area of Baqa'a. Most are small and registered as sole proprietorships (with a single owner).
- ▶ All farm owners surveyed were men. There are almost no women farm owners, reflecting a severe gender imbalance in ownership.
- ▶ Most producers share family or business ties within the floriculture sector.
- ▶ Most farm workers are men and owners tend to prefer migrant workers, particularly those of Egyptian nationality. The reasons reported for this are partly these workers' knowledge of the work, given their long-standing involvement in the sector in Jordan, and because they accept challenging working conditions – such as long work hours on the farms and taking less leave than Jordanian workers. This raises questions about decent work arrangements and decent working hours.
- ▶ The production profile of floriculture farms is not highly diversified. Instead, most are centred around a few species.
- ▶ Although COVID-19 has hit the floriculture sector hard, it is recovering. Overall, the market outlook is positive.

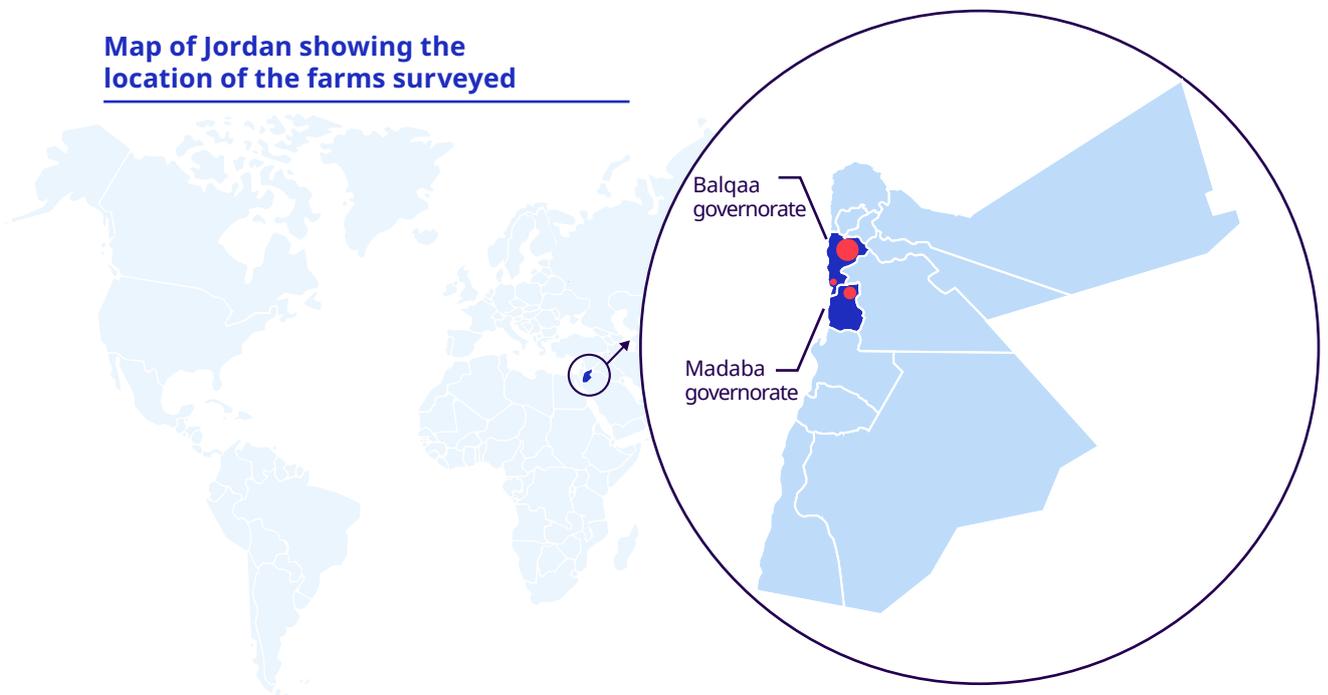
► 3.1. Overview

Location and maturity of farms

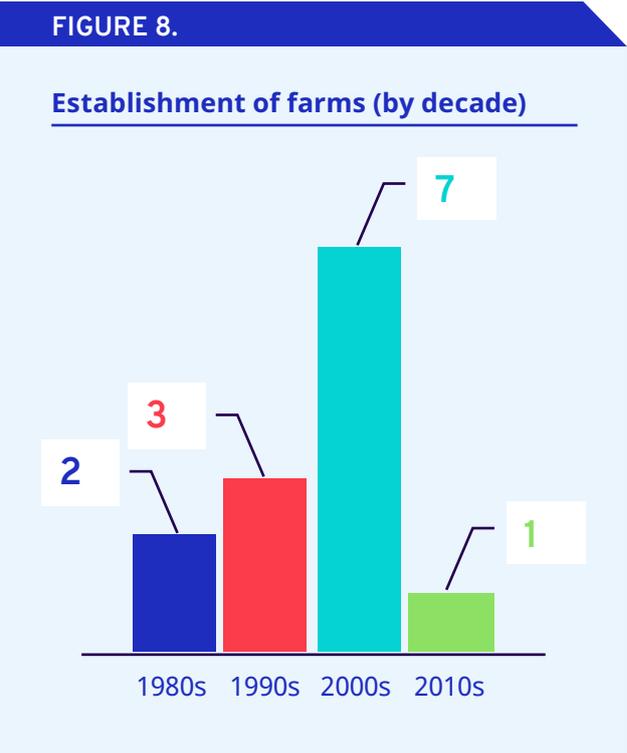
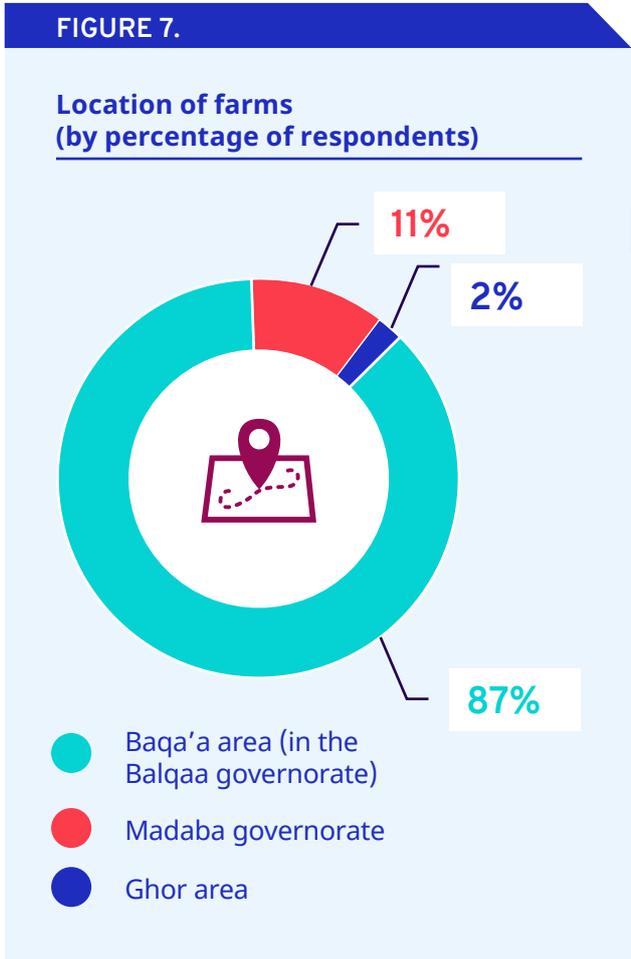
Most of the farms surveyed are concentrated in the area of Baqa'a (87 per cent), within the governorate of Balqaa. Some are in Madaba (11 per cent), and very few are located in the Ghor area (2 per cent) of the Jordan Valley.

FIGURE 6.

Map of Jordan showing the location of the farms surveyed



In terms of the maturity of the farms surveyed, most are relatively new. Only a few producers began operations in the 1980s and 1990s, while the majority were set up in the 2000s. As the pace of farm creation slowed after the 2000s, it appears that a group of 'early starters' in the 1980s and 1990s caused a wave of producers to venture into floriculture in the 2000s. This wave appears to have slowed in the 2010s, possibly due to the natural limitations of the market. This point is explored below, in the context of other findings.



Drivers for being in the business

When asked why they are in the floriculture business, most producers pointed to their previous experience of working directly on a farm, or of working indirectly in the sector. Examples of indirect work include being involved in the floriculture sector in different capacities (such as consultants or suppliers), or being involved in agriculture by farming other crops. This first-hand experience prompted many respondents to start their own farms. Family ties were a factor for many other respondents, who ventured into the sector as the result of an inheritance or in a bid to branch out a family business.

Both factors suggest that the floriculture sector is not particularly well-known or well-exposed in Jordan. As a result, most producers enter the sector due to pre-existing proximity, forged either by family ties or by their own personal experience in the sector. This may also reflect the level of knowledge required to operate a farm, both in terms of technical knowledge and required relationships.

The drivers for producers being in the business may help to explain the finding about the relatively young age of the floriculture farms surveyed. It may be that the establishment of farms in the 1980s and 1990s spurred high levels of growth in the 2000s, before this stabilized in subsequent years due to other market forces.

Gender of workers and owners

The overwhelming majority of the seasonal workers on the farms surveyed are men (96 per cent). This is in line with the findings of the baseline assessments conducted by the Decent Work in Jordan's Floriculture Sector project. In addition, all farm owners surveyed are men, with no reports of women farm owners. This reflects a clear gender imbalance in the floriculture sector, with women significantly underrepresented among workers and virtually absent among owners. However, this imbalance also points to an opportunity. There is considerable potential to increase women workers' participation in floriculture, in line with the high proportion of women employed in other agricultural sectors in Jordan.

Production profile

Production at the farms surveyed is concentrated around a few species of flowers, mainly roses. There is little diversity or specialization in terms of the profile of the flowers grown.

This finding suggests a stable sector with a limited production profile and little innovation or diversity. One reason for this may be the background of producers.

FIGURE 9.

Key drivers for entering the floriculture sector (by percentage of respondents)

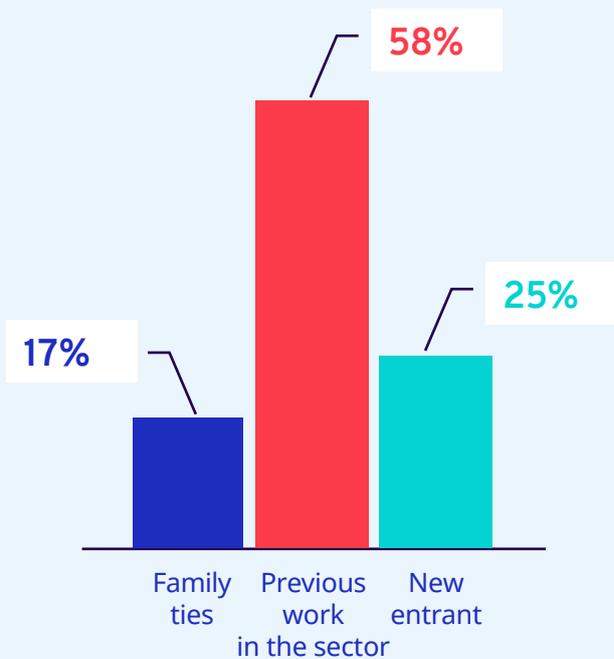


FIGURE 10.

Distribution of seasonal labour by gender

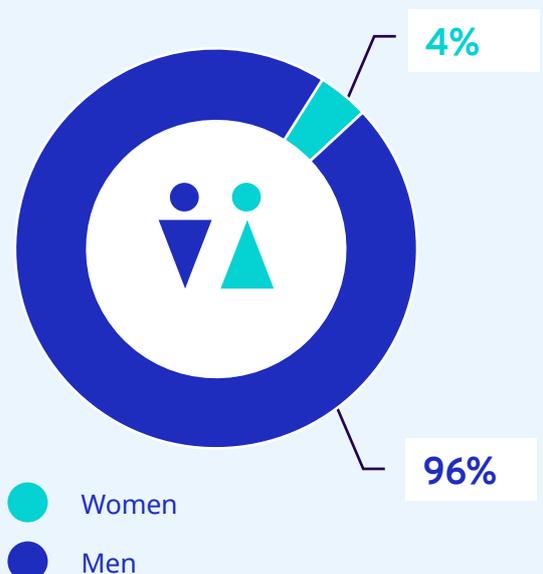
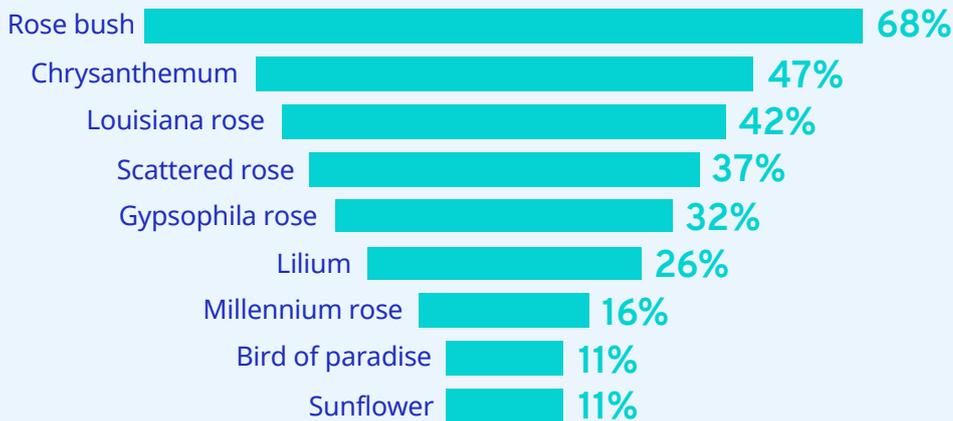


FIGURE 11.

Main types of cut flowers (by percentage of respondents)

As noted above, most producers appear to share similar backgrounds – the majority either have family ties or previous experience in the floriculture sector. As such, they may be inclined to maintain stable, guaranteed operations.

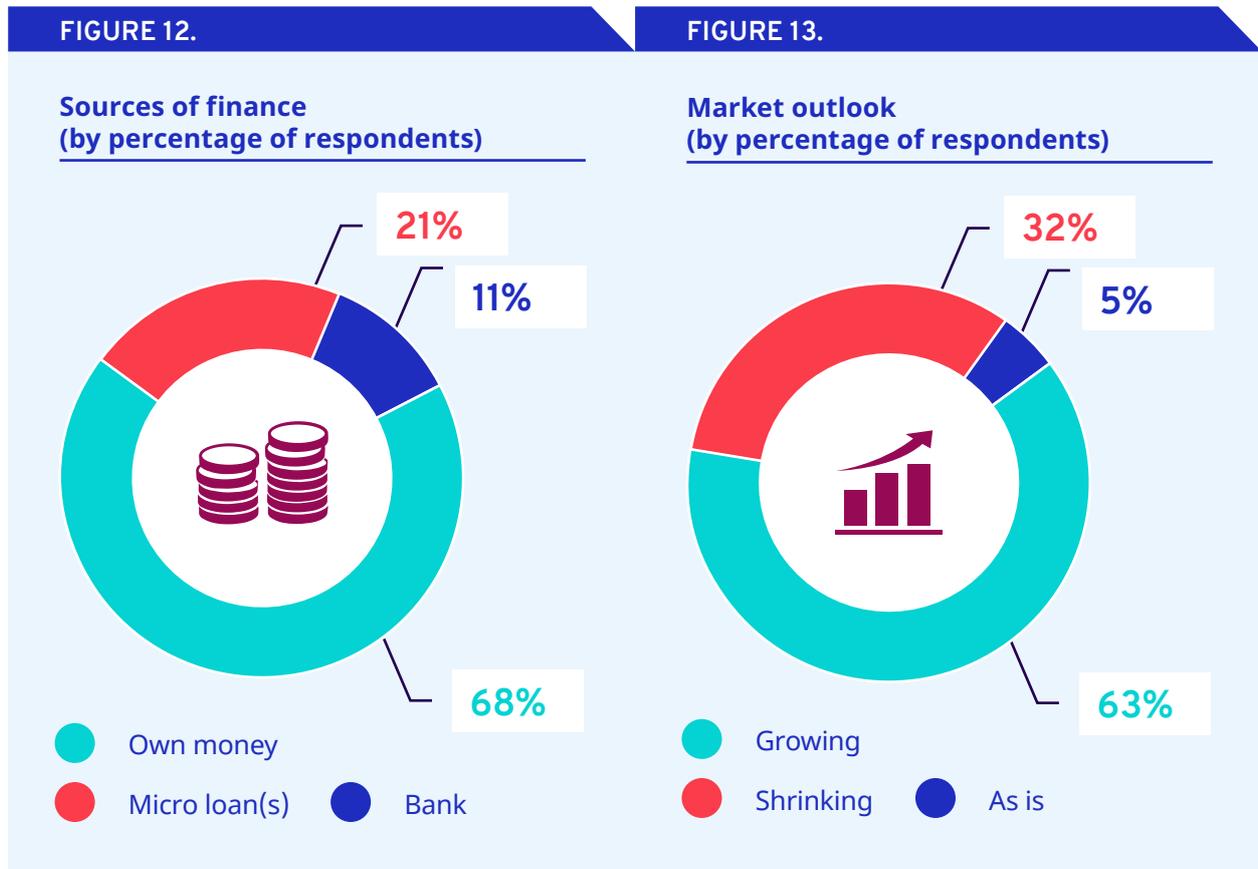
Finance

Floriculture producers have limited access to finance. Most of the business capital used by the producers interviewed for this analysis was derived from personal funds, or funds secured through personal guarantees. Very few obtained funding from banks or through micro-loans secured by personal guarantees.

Due to established relationships between producers and suppliers, lines of credit exist, based on suppliers' level of trust in producers. There is evidence of suppliers covering operational expenses through different arrangements:

- 'Pay as you reach a ceiling' – under this arrangement producers are given a ceiling of supplies, after which they must settle the account. This ceiling ranges between 1,000 and 10,000 Jordanian dinars (referred to hereafter as 'dinars' throughout this report) based on the producers' relationship with the supplier, as well as their credibility and size.
- 'Partial settlement' – under this arrangement, producers pay suppliers 50 per cent when they place an order, before settling the balance after the production and sale stages.

Most producers cannot access financing from the public Agricultural Loans Corporation (ALC), the public source for agricultural loans in Jordan, which requires land deeds as collateral. As most floriculture farms operate on leased land, very few producers have access to this mechanism.



Market outlook

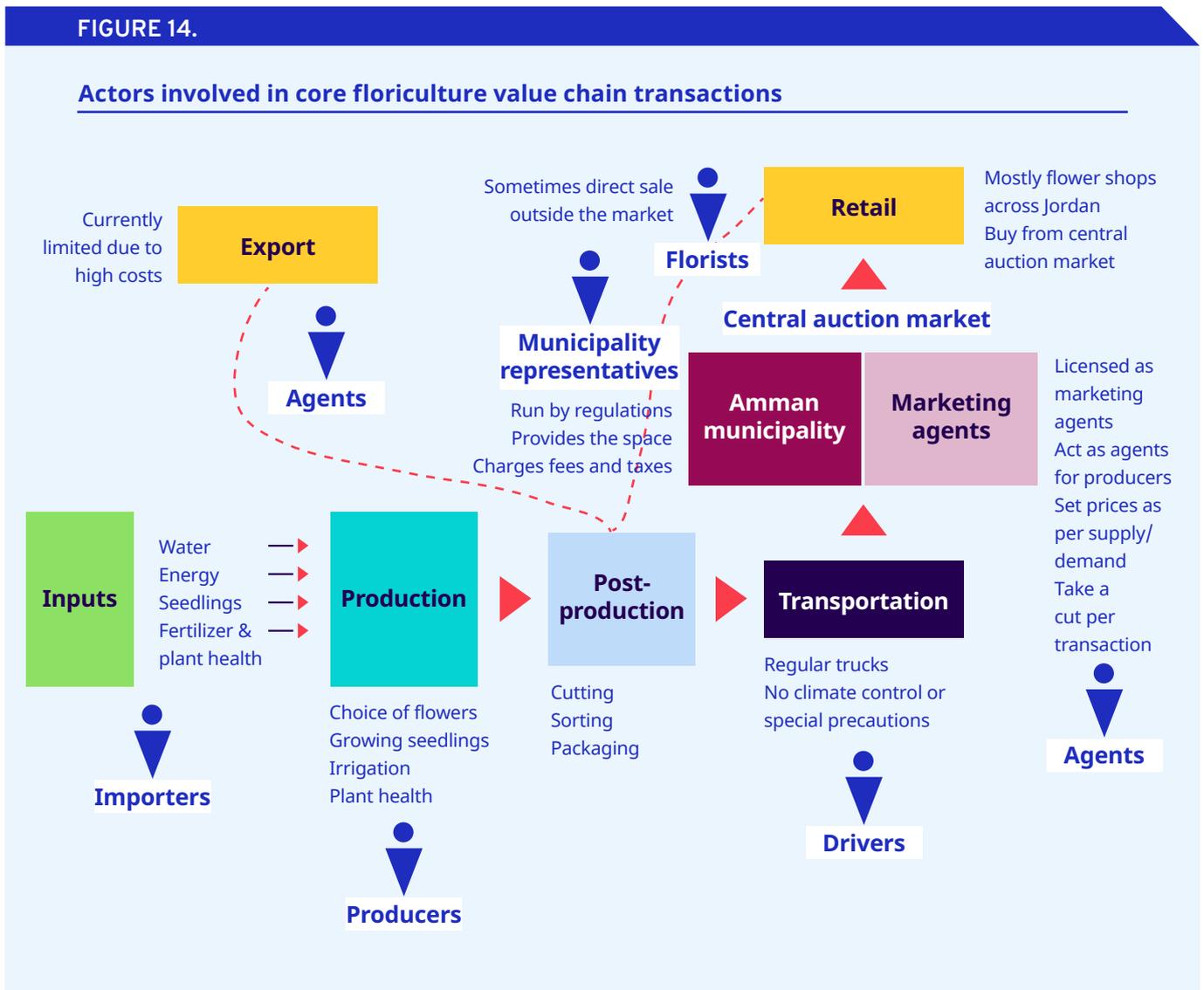
By and large, the producers surveyed have a positive market outlook. Over 60 per cent consider that the floriculture market is growing, while 30 per cent anticipate a shrinking market. Some of the producers’ market-related comments compared the current situation with the height of the COVID-19 pandemic, which severely impacted the market. As operations normalize, they perceive an upswing in the floriculture sector. This may be one of the reasons for their positive outlook. Similarly, more pessimistic outlooks may be due to the producers’ comparing the current market with pre-COVID market conditions.

3.2. Main actors in the value chain

A chain of actors are involved in bringing floriculture products to the market. Actors are entities with an influence on the parameters that govern the activities of the value chain. Getting a clear picture of the key actors involved in Jordan’s floriculture value chain, and the linkages between them, is vital to guide this value chain analysis. Key market actors include businesses involved in core value chain transactions, as well as organizations that provide support services and set the rules, including the Government, banks and associations.¹⁷

¹⁷ ILO, *Value Chain Development for Decent Work: How to Create Employment and Improve Working Conditions in Targeted Sectors*, 3rd ed., 2021.

The figure below highlights the main actors, transactions and processes in the core floriculture value chain who take the floriculture product from raw materials through to retail.



The table below highlights the actors who provide support services and, in most cases, set the rules for the value chain. While some already exert an influence over the sector, others have the potential to do so. Thus, the table presents these actors' current roles, as well as the recommended roles they can assume, and actions they can take, in the floriculture sector.

Table 2. Actors in the floriculture value chain

Actor	Current role	Recommended expanded roles/actions
Ministry of Agriculture	Regulates the agriculture sector and market Provides permits to farms and conduct inspections	Targeted programmes to provide technical assistance for floriculture producers Running training programmes to increase the skills of the Jordanian population on floriculture Creating an employment-rich sector and facilitating connections to regional/international export markets
National Agricultural Research Center	Performs research and capacity building	More focus on tissue culture and the use of new technologies in floriculture Closer cooperation with JCFA
Agricultural Credit Corporation	Provides loans for farmers on a commercial basis	Better terms for small producers Getting government guarantees for loans
Ministry of Labour	Governs the overall regulations for work permits	Facilitating permits by considering the real needs of floriculture farms and giving priority to skilled workers who demonstrate competency Supporting training programmes on floriculture, as well as training on decent work Strengthening the role of the labour inspectorate and its coverage of the floriculture sector to improve working conditions
Amman municipality	Responsible for farmers' markets, such as the central market	Improving conditions at the central market, including better hygiene and cooling facilities Ensuring greater gender balance among the municipality's representatives at the central market
Jordanian Association for Cut Flowers and Ornamental Plants (JCFA)	Serves the interests of its members (floriculture producers in Jordan) as an industry association	Launching outreach campaigns with government agencies in line with this analysis' recommendations Connecting with donors on specific requests regarding high-impact projects Providing capacity building for its members on business and technical skills, as well as on decent work
Jordanian Association for Flower Shop Owners (JFSO)	Serves the interests of its members (flower shop owners in Jordan) as an industry association	Launching outreach campaigns with government agencies in line with this analysis' recommendations Connecting with donors on specific requests regarding high-impact projects Providing capacity building for its members on business and technical skills, as well as on decent work

Actor	Current role	Recommended expanded roles/actions
International organizations and donors	Support the floriculture sector by providing technical assistance and funding selected projects	Continuing support for the floriculture sector through, for example, assistance for the expansion of skills and employability, support for modernizing technology, ensuring compliance with decent work standards and advancing inclusive employment
Agricultural Engineers Association	Serves the interests of its members (agricultural engineers) through knowledge building, networking and some financial programmes, such as pensions Currently has little impact on the floriculture sector	Building closer working relationships with JCFA
Academia	Performs research on a variety of topics that may have a bearing on the floriculture sector	Collaborating with the stakeholders mentioned above on 'next generation' research projects

Governance structures



Summary of key findings

- JCFA and JFSO are well-placed to advocate for and protect the interests of floriculture producers and retailers. Opportunities exist for both associations to communicate and join forces. Both require greater technical assistance and would benefit from capacity building.
- The Government requires a dedicated focus on the floriculture sector, replete with specific programmes to improve competitiveness and boost exports.

Jordanian Association for Cut Flowers and Ornamental Plants

JCFA provides a strong platform for drawing together most of the producers in Jordan's floriculture sector, encompassing 43 farms. However, there has been limited cooperation with other associations and unions, including bodies representing agricultural engineers.

Current efforts are ongoing to work closely with the Ministry of Agriculture and with the support of international donors. However, more needs to be done to achieve a significant positive impact on the sector.

Jordanian Association for Flower Shop Owners

JFSO is the only body in Jordan that brings retail flower shop owners together. It lobbies for their interests, most recently advocating for government assistance for the retail sector after COVID-19 lockdown-related closures caused heavy losses.

The role of the Government

The producers interviewed report a lack of government support for the floriculture sector, particularly in terms of support to the sector to offset the high costs of water, fuel and electricity.

The central auction market, which is considered a quasi-government entity, is a highly useful channel for the sector, but it involves significant costs in terms of rent and fees. Most respondents point to the need for more government support to develop Jordan's floriculture sector, in line with good practices in other countries.

▶ 3.3. Decent work and gender dynamics observed

The project, Decent Work in Jordan's Floriculture Sector, centres on the four pillars of the Decent Work Agenda, with gender equality as a cross-cutting theme:

- ▶ Job creation: Generating opportunities for investment, entrepreneurship, skills development, job creation and sustainable livelihoods.
- ▶ Rights at work: Recognizing and respecting the rights of all workers, both women and men, particularly disadvantaged or poor workers who need representation and laws that work for their interests.
- ▶ Social protection: Promoting both inclusion and productivity by ensuring that women and men enjoy working conditions that are safe, allow adequate free time and rest, take into account family and social values, provide for adequate compensation in case of lost or reduced income, and permit access to adequate health care.
- ▶ Social dialogue: Supporting strong and independent workers' and employers' organizations, a central element for increasing productivity, avoiding disputes at work and building cohesive societies.

The project's approach to value chain improvement sought to ensure critical success factors, such as:

- ▶ creating more equal opportunities for productive work for women and men;
- ▶ increasing incomes for both business owners and workers alike;
- ▶ providing greater income security;
- ▶ enhancing social integration (e.g. through social dialogue and cooperatives);

- ▶ providing better prospects for professional development (e.g. learning new skills); and
- ▶ improving occupational safety and health (OSH).

In line with this approach, this floriculture value chain analysis examined issues of decent work and gender equality to understand the current situation and identify deficits which should be addressed. While these issues are discussed throughout this report, the tables below highlight decent work and gender equality deficits in Jordan's floriculture sector for the sake of clarity.

Table 3. Decent work deficits in Jordan's floriculture sector

Decent work-related issue	Observations
Skills and employability	<ul style="list-style-type: none"> ▶ Jordan's floriculture sector engages semi-skilled and unskilled workers. Most workers are not Jordanian nationals, and Egyptian migrant workers (almost all of whom are men) predominate among them. ▶ According to JCFA, seven agricultural engineers work in the floriculture sector, providing services across a number of farms. ▶ Modern technologies and advanced technical skills are rarely used in the sector, which relies on basic traditional techniques. Workers – both skilled and less skilled workers – usually learn techniques 'on the job'. ▶ Skills gaps are a major issue for both floriculture producers (owners or managers) as well as for workers. Owners lack business skills, while workers would benefit from formal, structured training on more advanced techniques and technologies. ▶ Women engaged in the floriculture are far more vulnerable than men as they tend to live in very poor communities. Most of these women lack basic skills and are illiterate, limiting the options available to them in the labour market.
Earnings and income	<ul style="list-style-type: none"> ▶ Floriculture workers' earnings appear in line with the wages for similar jobs in other agricultural sectors in Jordan. Average monthly income is estimated at US\$637 according to Numbeo, a database of user-contributed data on cities and countries worldwide. ▶ Salaries vary depending on skills levels and years of experience in the sector. Wages are normally not less than 350 dinars per month, or 25 dinars for daily workers.

Decent work-related issue	Observations
Earnings and income (continued)	<ul style="list-style-type: none"> ► This is higher than the current minimum wage in Jordan, which is 260 dinars for Jordanian workers, and 245 dinars for non-Jordanian workers.¹⁸ ► There is a wide pay gap among workers based on nationality, raising concerns about equity and decent work for all. This is the case across sectors in line with current regulations in Jordan, which is also evident in the floriculture sector. Different wage levels apply to Egyptian, Jordanian and Syrian floriculture workers. While Syrian men are paid 1 dinar (approximately US\$1.40) per hour, Jordanian and Egyptian male workers receive between 1 and 3 dinars (US\$1.40 to US\$4.20) per hour. ► On average, agricultural workers in Jordan work between six and eight hours per day, especially in the high season. Women daily workers work between three and five hours, while Egyptian workers perform between nine and 12 hours of work every day. This is a key reason why Egyptian men engaged in the floriculture sector usually receive the highest salaries – they work longer hours, remain on farms for extended periods, and perform ad hoc work as required. This raises questions of excessive working hours, with negative implications for decent work. Legal working time in Jordan is 48 hours per week, or no more than eight hours per day, with the exception of some hospitality workers who are limited to 54 hours per week.¹⁹ Working excessive hours may result in an unsafe working environment and negatively impact workers' health and well-being.²⁰ ► The producers interviewed expressed dissatisfaction with their earnings due to market price fluctuations and the high costs of operations. These limit opportunities for income generation and job creation in the floriculture sector.
Job security and stability	<ul style="list-style-type: none"> ► Most floriculture workers appear to be secure in their jobs, with employment in the floriculture sector characterized by low turnover. This is largely due to the sector's reliance on workers' expertise. ► Job arrangements are largely informal, except for work permits which must be officially issued. Marketing companies tend to have formal contracts with their administrative workers, such as accountants. Formally contracted employees enjoy greater protection and, therefore, potentially fewer decent work deficits. As noted above, there is less gender imbalance in the retail sector. Very few women work in floriculture marketing, and those who do are engaged in administrative and accounting roles.

¹⁸ Mays Ibrahim Mustafa, "Minimum wage increase deferred due to COVID crisis — Labour Ministry", in *The Jordan Times*, 25 January 2022.

¹⁹ ILO, "National Labour Law Profile: Jordan".

²⁰ ILO, *Decent Working Time: Balancing Workers' Needs with Business Requirements*, 2007; Business and Human Rights Asia, "Excessive overtime is required from employees".

Decent work-related issue	Observations
Job security and stability (continued)	<ul style="list-style-type: none"> ► Social security remains an issue for the floriculture sector. A recent government decision to extend social security coverage to the agricultural sector bodes well for decent work in the floriculture sector. However, the new law will have to be implemented effectively to reduce precarity. ► Most workers are interested in continued employment in the floriculture sector due to its flexibility. This is especially true for women; they can work with different employers without being tied to one. This balances the seasonal nature of the sector and allows workers to find jobs where available. However, the seasonal nature of floriculture work can also be detrimental as workers – particularly women workers – do not have year-round job and income security.
Health and well-being	<ul style="list-style-type: none"> ► Occupational safety and health (OSH) measures are limited and non-permanent workers are not provided with protective equipment. Few formal OSH procedures are in place, and OSH training is rarely delivered. As women are rarely formally contracted as permanent workers in the sector, they are particularly affected by the lack of OSH measures and equipment. ► Permanent male workers usually live on farms in poorly situated caravans, in line with the purported requirements of their work. ► No water, sanitation and hygiene (WASH) facilities – including restrooms – for women workers exist on floriculture farms. Women workers are obliged to use the same facilities as their male colleagues. This is not just uncomfortable; it also poses a real barrier to women in floriculture, potentially keeping them out of the sector entirely. With the exception of newly-installed water and sanitation facilities in a few farms through the ILO's Decent Work in the Floriculture Sector project, the lack of suitable WASH facilities in floriculture workplaces undermines women's access to decent work, affecting livelihoods and productivity.²¹
Rights, respect and cooperation	<ul style="list-style-type: none"> ► Few reports of workplace violations – such as child labour, discrimination, harassment, or similar issues – have been identified in Jordan's floriculture sector. ► Working relationships between business owners/producers and workers appear to be collegial, as the former rely on workers' expertise and knowledge.

²¹ Amref Health Africa in Canada et al., *Water, Sanitation and Hygiene: A Pathway to Realizing Gender Equality and the Empowerment of Women and Girls*, 2017; Rockaya Aidara, "Poor Access to WASH: a barrier for women in the workplace", in Social Protection and Human Rights, 16 November 2016.

Decent work-related issue	Observations
Rights, respect and cooperation (continued)	<ul style="list-style-type: none"> ▶ Despite Jordanian law requiring agricultural workers to be covered by social security, farm owners in the floriculture sector have pushed back against paying for workers' social security coverage. ▶ Social dialogue between farm owners and the government enables producers to voice their concerns and discuss their interests. . While social dialogue processes between farm owners and the government exist, little dialogue takes place between employers and workers.

Table 4. Gender deficits in Jordan's floriculture sector

Gender-related issue	Observations
Representation	<ul style="list-style-type: none"> ▶ Women's overall representation in the floriculture sector is extremely limited. They are especially underrepresented among skilled farm workers, administrators, retailers and farm owners. Even among retailers, where women's are better represented, they only account for 20 per cent of retailers overall. ▶ Most women workers are informally employed as daily workers.
Wages and income	<ul style="list-style-type: none"> ▶ Women workers earn 1.25 dinars per hour,²² a fixed rate across all farms surveyed. This reflects a gender pay gap because, as noted above, Jordanian and Egyptian male workers earn between 1 and 3 dinars per hour. ▶ The gender gap in wages implies a level of discrimination against women. However, employers assert that pay gaps exist due to the different type of tasks that men and women perform.
Vulnerability	<ul style="list-style-type: none"> ▶ Women workers have little sense of security as they are hired as daily workers, and not as permanent workers, even when they have worked for the same employer/farm for several years. ▶ Most employers do not invest in personal safety equipment for women workers, as they limit such equipment to permanent workers.
Leadership	<ul style="list-style-type: none"> ▶ Women are virtually absent in leadership positions in the floriculture sector. The 'highest ranking' woman identified by this analysis was a legally trained professional working in an administrative position for a marketing company involved in the central auction market.

²² ILO, *Decent Work in Jordan's Floriculture Sector Inception Report*, February 2012, p. 29.

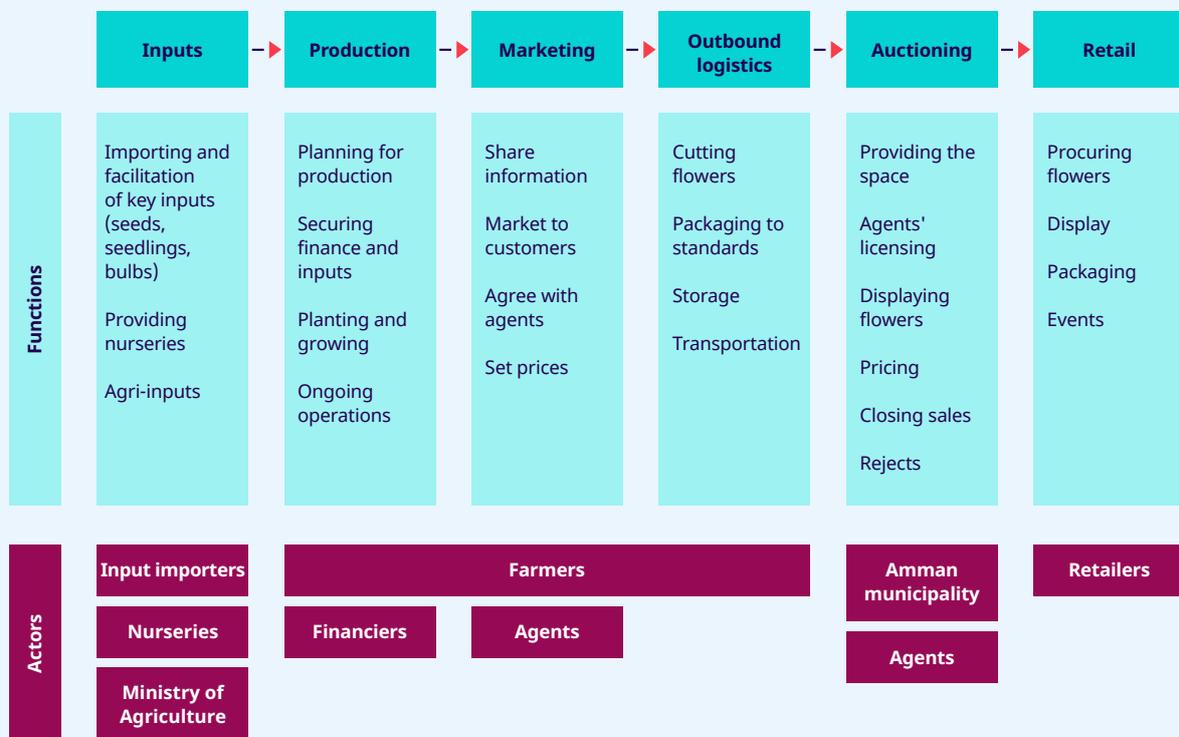
Gender-related issue	Observations
Discrimination	► Gendered pay gaps and the lack of women in prominent, skilled roles, are the most evident examples of discrimination in the floriculture sector. Women's lack of representation among producers/owners, leaders and decision-makers also reflects existing gender roles.

► 3.4. Mapping the value chain

Based on discussions with floriculture producers, members of JCFA, members of JFSO, marketing agents, input providers and government officials, a detailed value chain map of Jordan's floriculture sector was developed. This is presented in the figure below, highlighting functions and key players.

FIGURE 15.

Detailed floriculture value chain in Jordan



The key activities within this detailed value chain are:

- obtaining inputs;
- core production (pre-production, planning, and ongoing production operations);
- marketing;
- outbound logistics;
- auctioning; and
- retail.

The interactions between each step in the value chain are mapped in the figure below. This figure was used to identify challenges in each step of the value chain, based on which the analysis highlights areas for improvement and desired impacts.

FIGURE 16.

Interactions within Jordan's floriculture value chain



▶ 3.5. Key findings

(a) Inputs and labour composition



Summary of key findings

- ▶ Most of the floriculture farms surveyed have been established on leased land.
- ▶ Agri-inputs are expensive, especially water.
- ▶ Most producers rely almost entirely on imported seeds and seedlings.
- ▶ The farms depend on migrant labour (largely employing Egyptian men) and there appears to be little interest in hiring local labour.
- ▶ The tendency to employ foreign workers, given their readiness to remain on farms for extended periods, limits job opportunities for Jordanian workers, especially women whose involvement in the value chain is limited.
- ▶ Women are better represented in retail within the floriculture sector, as roughly 20 per cent of owners and workers are women, reflecting a less severe gender imbalance than exists in the production of floriculture products.

Key inputs for the floriculture value chain include land, water, electricity, agri-inputs (seeds, seedlings and fertilizer) and labour.

Land

Almost all of the farms surveyed exist on rented land. In only one case is the land owned by the producer. This poses an issue for the stability of operations. Land owners can choose not to renew contracts and subject producers to significant costs for moving greenhouses and installations. One respondent reported being evicted as the land owner decided to use the land for residential purposes.

Water

The horticulture and floriculture sectors typically require a high consumption of water. However, several issues related to the procurement of water create a challenging operational environment for farms. These include:

- ▶ The water scarcity crisis in Jordan in general.

- High costs of water incurred by floriculture producers. Since farmland is usually rented and lacks wells, producers must rely on commercial water providers (usually, pumped waters from wells owned by others). Costs are reported at 0.8 dinars per cubic metre (m³), which is the highest charge that can be incurred by commercial water providers. Spending on water is significant. The producers surveyed spend at least 5,000 dinars on water per year, with some farms spending as much as 50,000 dinars every year.

This analysis also observed a lack of advanced irrigation techniques, such as hydroponics. This is a method of growing plants without soil by using water-based mineral nutrient solutions in aqueous solvents. Only one of the farms surveyed reported using hydroponics.

Electricity

Like water, electricity is an important input for farming and is relatively expensive in Jordan. Electricity is used for two primary reasons in floriculture:

- water pumping; and
- cooling and/or heating greenhouses to keep temperatures at optimal levels for the flowers and plants grown.

The baseline assessment for the Decent Work in Jordan's Floriculture Sector project found that roughly one-quarter of the farms it surveyed paid high prices of over 400 dinars per month for electricity.

The farmers interviewed for this analysis reported paying between 300 (for small farms) and 1,200 dinars (for medium-sized farms) for electricity.

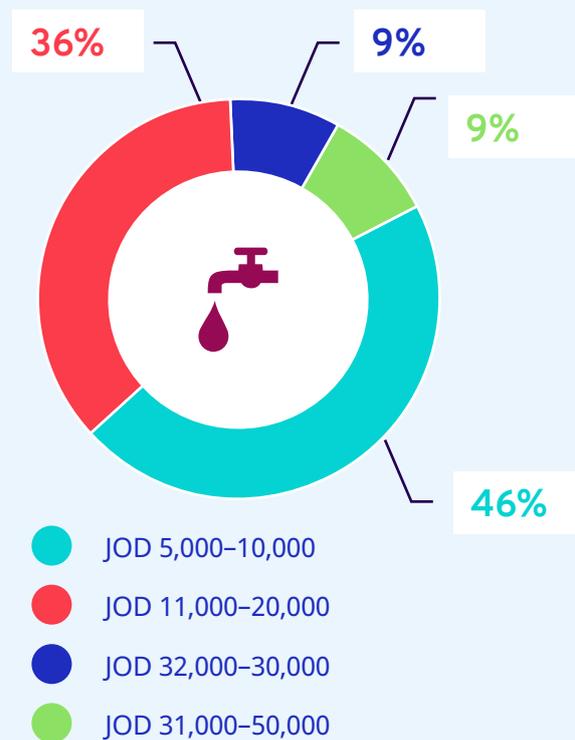
Agri-inputs

Three key agri-inputs are used for planting flowers and plants in the floriculture sector: seeds, seedlings and bulbs.

Seeds and seedlings are most commonly used in Jordan. Most are imported, with increasing quantities purchased from cheaper sources in India or Turkey. The use of bulbs appears to have come to a halt due to reports of diseases in the areas from which bulbs were traditionally imported.

FIGURE 17.

Spending on water by flower farmers



These areas are usually in the European Union (EU). By contrast, seeds are readily imported by specialized companies. These are usually pre-cleared, before being taken to nurseries. The growing cycle usually lasts between 40 and 60 days. After this period, the seedlings grown from seeds are planted in greenhouses.

Imported seedlings and bulbs are a more delicate matter. Imported seedlings must be examined by the Ministry of Agriculture, a process which can take up to 48 hours and may have a harmful impact on seedlings if they are not handled appropriately. Similarly, the examination can take up to seven days. An estimated 20 per cent of bulbs are lost as a result, largely due to storage requirements. Bulbs need to be properly stored, usually in refrigerated storage.

Labour

Labour is a key input in the floriculture value chain. This analysis finds that the sector relies on non-nationals migrant workers, the vast majority of whom are men. The findings of this study are in line with past research conducted by the ILO on Jordan's floriculture sector, which highlights the sector's reliance on Egyptian workers without formal contracts, a preference for men over women due to their willingness to remain on farms for extended periods (including overnight), and farms' overall lack of liquidity or capacity to employ large numbers of workers.²³

Many respondents interviewed for this value chain analysis complained about restrictions on the number of work permits issued to foreign workers, as well as the costs involved. Regulations allow one permit to be issued for the first six greenhouses at a farm, and then one permit for every five greenhouses. Interviewed producers consider this insufficient. As permits are issued for one year, producers run the risk of being 'stuck' with a worker who is not sufficiently productive or knowledgeable for a full year.

Respondents displayed a preference for Egyptian migrant workers over Jordanian workers, both men and women. This echoes the findings of previous ILO studies, as do the reasons cited for this preference, including: productivity, knowledge, commitment, lower worker turnover, and their willingness to work longer hours.

There is a clear need for trained workers in the floriculture sector. The interviews reveal a greater reliance on workers' knowledge than on the technical expertise of professional agricultural engineers. Respondents reported that only seven engineers are engaged in Jordan's floriculture sector.

While labour on farms suffers from an extreme gender imbalance, women workers are better represented in retail shops. According to JFSO's records, there are 300 flower shops in the country, which employ more than 600 workers. Women account for approximately 20 per cent of flower shop owners and 20 per cent of workers in flower shops.

This suggests an opportunity for more women to be integrated in the floriculture sector. However, this would require sustained awareness raising campaigns, paired with training to ensure their proper assimilation.

²³ ILO, *Decent Work in Jordan's Floriculture Sector*, February 2021.

(b) Imports and nurseries

Importance of the activity

Importing is the first step in the value chain, in which inputs for production become available. Key inputs for the floriculture sector include equipment, fertilizer, pesticide/herbicide, machinery, seeds/seedlings and bulbs. This analysis focused on seeds, which must be sent to nurseries, as well as seedlings and bulbs, which require a seven-day quarantine period.

Current situation

- Very few importers in Jordan import seeds and seedlings. Even fewer import bulbs, the bulk of which come from EU countries like Italy and the Netherlands.
- The trend of importing inputs from less costly countries – such as Turkey and India – is on the rise.
- During the quarantine required by the Ministry of Agriculture up to 20 per cent of seedlings and bulbs may be lost due to inadequate conditions.
- Nurseries are usually not owned or operated by floriculture farmers. These nurseries are separate entities that provide seedlings to farmers.

Gaps

- Jordan lacks a local industry for tissue production. Instead, producers rely on imports from other countries.
- Quarantine is a time-consuming process involving significant losses in seedlings and bulbs.



Areas for improvement	Desired impact
<ul style="list-style-type: none"> ► Create a local tissue industry in Jordan for suitable species that are currently imported, as well as the development of new varieties, perhaps derived from indigenous species. 	<ul style="list-style-type: none"> ► The creation of a local tissue industry with better control over the costs of inputs. ► The propagation of new varieties of plants and flowers.
<ul style="list-style-type: none"> ► Reform policies in collaboration with the Ministry of Agriculture to minimize losses during the quarantine period. 	<ul style="list-style-type: none"> ► Reduced losses of bulbs and seedlings and better input economics.
<ul style="list-style-type: none"> ► Study the possibilities for establishing an integrated nursery 	<ul style="list-style-type: none"> ► Better 'growing economics' and control over quality and processes.

(c) Pre-production planning

Importance of the activity

Planning is an essential step in the value chain, wherein producers decide which species to plant, when and where (on how much land area, or in how many greenhouses). This planning enables producers to identify the inputs, labour and finances required for production.

Current situation

- ▶ The types of species planted, when they are planted, and the area they are planted in depends on producers' past knowledge and conservative market expectations for coming seasons.
- ▶ Inputs are largely procured from known channels based on established relationships.
- ▶ The capital used is largely procured through personal guarantees, rather than on the basis of a business plan.
- ▶ Operational finances are usually based on different arrangements than lines of credit provided by suppliers.

Gaps

- ▶ Planning processes are conservative, with most producers favouring familiar species.
- ▶ There is little diversification in terms of the plants produced.
- ▶ The floriculture sector lacks a competitive procurement process.
- ▶ There is little access to finance through standard financial channels or based on business plans.
- ▶ Producers tend to lack business, planning and accounting skills.



Areas for improvement

- ▶ Improve business planning activities and encourage risk-taking by venturing into new lines of production and greater diversification.

- ▶ Encourage a formal procurement process and record-keeping to ensure the competitive cost of inputs.

Desired impact

- ▶ Enhanced competitive advantage for each farm and the enhanced performance of the overall market.

- ▶ Improved economics of operations.



Areas for improvement (continued)

- ▶ Improve business planning and financial skills in order to enhance producers' negotiations with financial institutions.
- ▶ Work with government bodies to provide loan guarantees for small floriculture projects.

Desired impact (continued)

- ▶ Enhanced access to capital with improved financial performance and growth opportunities.

(d) Production

Importance of the activity

Production is the core activity of the floriculture value chains, during which seedlings (either imported or from nurseries) are planted in soil and cared for throughout the plant's lifecycle.

Current situation

- ▶ Operations in the floriculture sector are very basic, with production methods relying on conventional techniques rather than modern technologies. Producers depend on the conventional knowledge of hired workers with little applied or advanced technical knowledge.
- ▶ Floriculture operations and production in Jordan appear specialized, with very few instances of joint production with other horticultural products such as fruits, vegetables and other cultivated food items.
- ▶ Most producers use ordinary soil and traditional drip irrigation.
- ▶ Fertilizers and pesticides/herbicides are applied manually, based on conventional knowledge.
- ▶ Almost all farming takes place in basic plastic greenhouses which are becoming more expensive to construct and maintain. Greenhouses consume large amounts of electricity or other fuels for cooling or heating purposes.
- ▶ No records are kept on plantation, success rates, quality or quantities.

Gaps

- ▶ Producers and workers tend to lack advanced technical skills in floriculture.
- ▶ Advanced technologies – such as hydroponics and control systems – are rarely used.
- ▶ The sector lacks advanced cooled storage and transportation to maintain the freshness of cut flowers.

- ▶ No records are kept of the performance of planting and growing activities.
- ▶ Current greenhouses (most of which are plastic covered sheds) consume high levels of energy.

Further analysis

According to the interviews conducted to inform this analysis, floriculture operations and production involve a number of activities. These run the gamut from preparation and the use of agri-inputs (fertilizers, pesticides, herbicides, etc.) to growing, cutting, packing, storing, addressing logistics, handling, and transportation.

Producers' capacities are limited due to their small size and lack of expertise, technical capabilities, financing and government support. Specifically:

- ▶ There is no specialization in terms of growing certain types of flowers or plants.
- ▶ Limited local capacities for growing seedlings result in lower quality plants. However, importing good quality seedlings is expensive because they are subject to intellectual property protection. For example, seedlings typically cost 2.25 dinars or more. Producers are increasingly resorting to lower cost providers in countries such as India, incurring an average cost of 0.50 dinars per seedling because intellectual property rights do not apply.
- ▶ Many producers use normal soil, although tuff soil is recommended for its rich mineral content which supports the health of flowers. There is a general lack of suitable conditions for storing, transporting and displaying flowers. For example, the floriculture sector largely lacks:
 - ▶ efficient heating/cooling conditions in plastic greenhouses;
 - ▶ proper climate-controlled transportation trucks;
 - ▶ cold storage; and
 - ▶ the use of preservative material in buckets to protect the health and longevity of cut flowers.

Given these limited capacities, when a surge in production occurs, it often results in high rates of damage to plants and flowers. For instance, the interviews revealed cases where limited technical knowledge has led to wholly unsuitable attempts to cool or heat greenhouses. One producer destroyed his entire crop by attempting to heat a greenhouse with conventional wood stoves and heaters. Similarly, cold storage is usually only available on farms themselves, with few cooled trucks available. This impacts the quality of cut flowers when they reach auction markets, which typically do not provide cooling facilities.

In general, production techniques rely on traditional practices rather than modern approaches. As noted above, only one of the farms surveyed uses hydroponics. One common practice is rearing fish in pools and using this water to fertilize plants. However, this practice is based on conventional wisdom, rather than scientific or technical expertise. The interviews reveal little variation in fertilizer use in response to the extra nitrogen intake from fish pools. Other typical practices include bending the first rose blossom in a bid to enhance productivity. Producers were largely unaware that this practice forces the 'extra rooting' of the plant.

FIGURE 18.

Number of greenhouses at surveyed farms before and after COVID-19

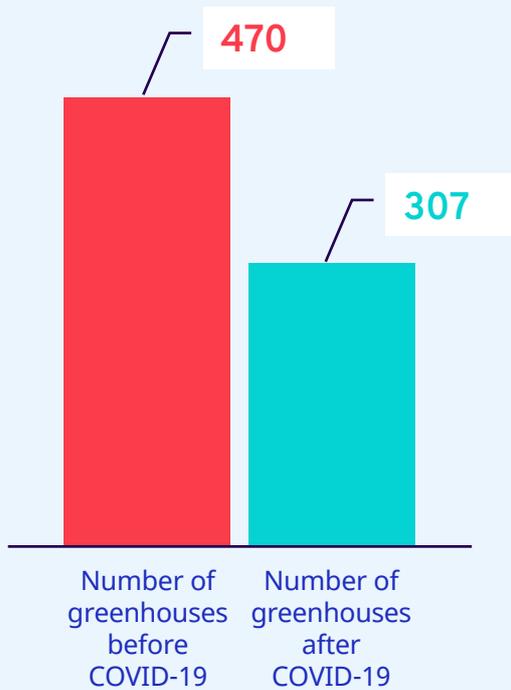
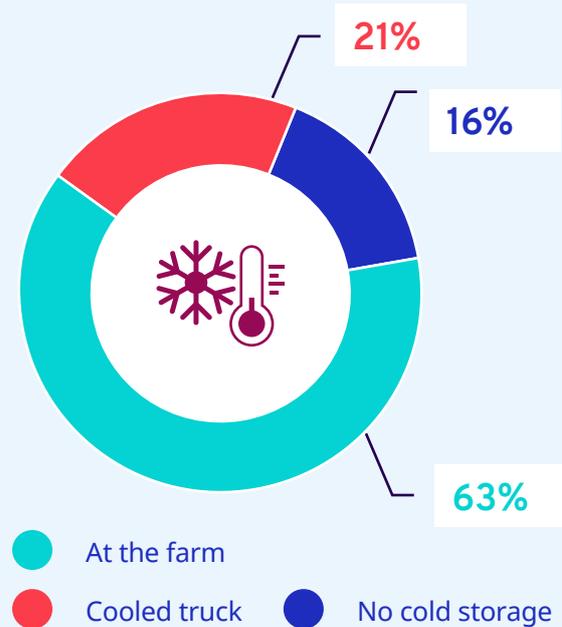


FIGURE 19.

Cold storage availability



Overall, little in-depth, sound technical information is available for floriculture producers. Very few agricultural specialists exist in Jordan, leaving producers to rely on the knowledge of their workers. Other challenges include high production costs, such as the costs of plastic greenhouses, which have risen from 700 to 1,700 dinars.

The COVID-19 pandemic has had an adverse impact on the number of greenhouses operating in Jordan, reducing their number by 150 greenhouses (30 per cent) among the interviewed sample. Nevertheless, producers generally have a positive outlook in terms of bringing the numbers of greenhouses back to pre-COVID levels.

Farm owners very rarely grow vegetables on their farms in slow times, preferring instead to concentrate on flowers. On rare occasions, some vegetable growers have ventured into floriculture, although this does not appear to be a common trend.



Areas for improvement	Desired impact
<ul style="list-style-type: none"> ▶ Enhance producers' and workers' skills, including advanced technical skills, rather than relying solely on conventional wisdom. Activities such as cutting, sorting and packing can readily performed by women and even persons with disabilities with relatively simple training. 	<ul style="list-style-type: none"> ▶ Improved cultivation, quality and overall competitiveness.
<ul style="list-style-type: none"> ▶ Leverage advanced agricultural technologies – such as hydroponics and other control systems – to optimize the use of water, fertilizer and pesticide/herbicide. 	<ul style="list-style-type: none"> ▶ Improved use of inputs – including water and energy – with a positive effect on the economics of production.
<ul style="list-style-type: none"> ▶ Introduce better documentation practices and record-keeping for the entire production cycle. 	<ul style="list-style-type: none"> ▶ Greater ability to measure performance and enhance knowledge management, resulting in continuous improvement and, ultimately, a total quality management system (TQM).

(e) Marketing and sales

Importance of the activity

Marketing and sales are an essential step in the value chain. This involves getting products to the market and ensuring the 'right reward' for all the efforts made up to this point.

Current situation

- ▶ Marketing and sales practices are very weak in the floriculture sector. Most producers rely on sending their produce to daily markets.
- ▶ Advanced e-commerce channels are not used for marketing purposes.
- ▶ While some producers have exported their plants and flowers, this no longer appears feasible due to high costs of production, transportation and shipping.
- ▶ The central market is the key marketing channel for Jordan's floriculture sector. However, it involves costs, in the form of fees paid to the municipality and agents' commissions.

- ▶ There is also an urgent need to upgrade facilities at the central market, especially cooling.
- ▶ Producers come to an agreement with a marketing agent at Jordan's central market, who sells cut flowers on their behalf, for a commission.
- ▶ This process is an established one, involving clear commitments between the parties involved.
- ▶ Pricing is highly dynamic and changes throughout the course of a single day, based on supply and demand. Producers are paid in 15-day cycles.
- ▶ Some retailers or event management may directly visit farms for special orders on an ad hoc basis.
- ▶ Very few women work in marketing and promotion. Those who do are concentrated in administrative and accounting roles at marketing companies.
- ▶ While the possibility of creating a new auction market has been under discussion, the process appears to be stalled at present.

Gaps

- ▶ There is no active marketing and sales process through which floriculture producers share information about their products.
- ▶ Floriculture producers have limited online presence or social media presence which they could use to promote their products.
- ▶ No strong branding efforts appear to exist in Jordan's floriculture sector.
- ▶ There is no formal sales process involving an agreement on prices, quality, quantity and deliveries.

Further analysis

The interviews and online research conducted for this analysis reveal very weak marketing and sales efforts in the floriculture sector, if any. Only a handful of producers have social media profiles, which do not appear particularly active. The central market remains the key marketing channel for floriculture in Jordan. Almost all floriculture products are auctioned at the central market, in line with regulations, particularly as producers have limited capacity to export products. Only 16 per cent of respondents reported successfully exporting their products in the past. However, exports have fallen considerably due to higher production costs and the fact that the quality of Jordanian floriculture products cannot compete in global or regional markets.

In terms of marketing and sales, some level of 'leakage' does occur, with some producers directly selling products to wedding planners or retailers. However, this appears to be the exception, rather than standard practice. While it is difficult to obtain precise figures on this practice, approximately 20 per cent of the respondents interviewed admit that they use channels other than the central market.

FIGURE 20.

Have producers turned to channels other than the central auction market?

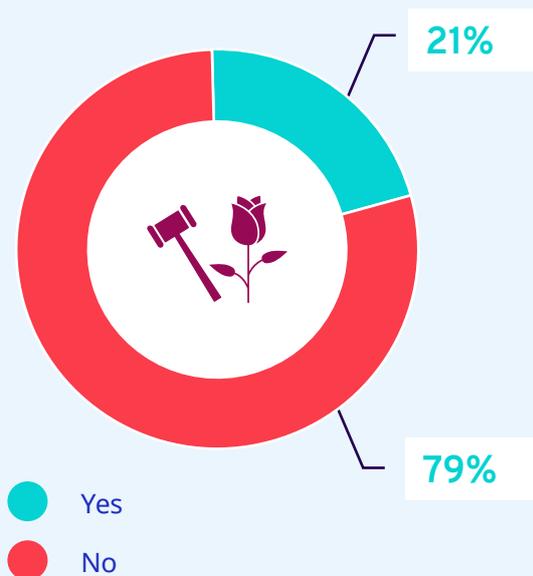
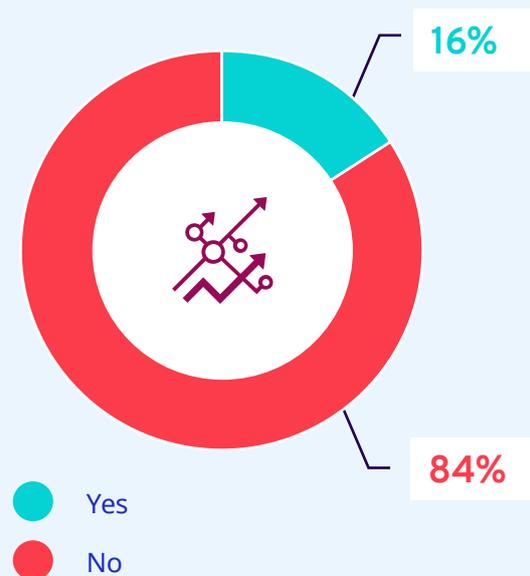


FIGURE 21.

Have producers exported?



Despite the fact that auctions at the central market are the principal channel for marketing and selling floriculture products in Jordan, many producers do not consider the market satisfactory. This is due to a number of factors, including:

- inadequate space and distribution;
- a lack of proper cooling;
- an obscure location that is not well-known by the general public; and
- the practice of 'reserving' lots, which means that produce may be left to rot if no buyers meet the reserve price.

Pricing practices are not transparent or structured. Instead, they are dictated by supply and demand, under the aegis of the marketing agent. The classification of flowers by grade depends on expertise and considers the following factors: appearance, colour, density, the distribution of petals, and other elaborate factors.

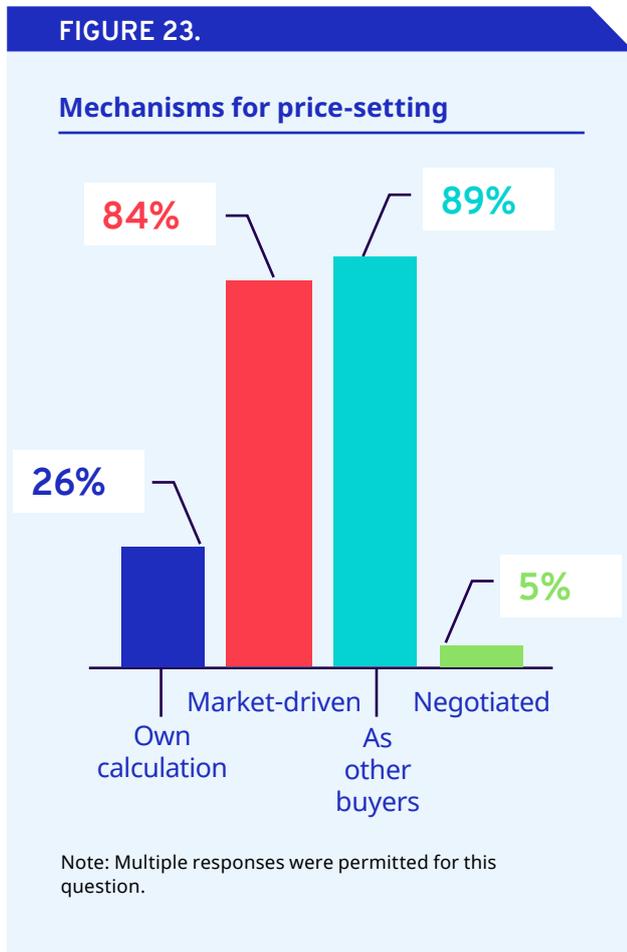
However, there are no formal documented criteria for the classification or pricing of flowers. Prices are determined on the spot at the market, according to supply and demand. These may change on a daily, or even an hourly, basis. While some respondents claim that they set their own prices based on the market or buyers, producers largely appear subject to market prices, with little room to negotiate or influence prices. Instead, marketing agents monitor the quantities of products entered and registered at the central market, match these with typical demand, and set prices accordingly.

Producers tend to send their daily produce to the central market without expectations about prices, often because the lack of cold storage facilities leaves them with no other option. Their expectations may change in exceptional circumstances, such as when they produce uncommon or special products.

Producers are usually paid every 15 days. In exchange for selling their produce, marketing agents charge producers between 7 and 8 per cent of their earnings. These agents themselves must pay expensive rents and fees, reaching 10,000 dinars per year. Amman municipality's average annual earnings from service fees are estimated at 150,000 dinars.

Very few women work at the central auction market. This analysis identified a handful of women employed as accountants or in administrative roles. Among municipal workers, no women were identified. Flowers remain at the auction market for up to three days – losing some of their value every day that they remain unsold.

Afterwards, they are disposed of, with no attempts made to recycle them. An initiative to create a new auction market was recently under discussion. While Amman municipality is ready to allocate the land required, no consensus has been reached on the parties that will provide local co-investment for the initiative. As such, the way forward for the establishment of a new auction market appears to have stalled.



Areas for improvement

- Actively promote farms and production by increasing online presence on social media with distinctive branding.
- Improve the export potential of the floriculture sector.

Desired impact

- Businesses are promoted and new marketing channels opened up, based on competitive advantage. This will drive sales, potentially at better price points.
- New export markets increase demand for Jordanian floriculture products, boosting revenues and conditions in the sector.

(f) Market-bound logistics

Importance of the activity

Logistics are a required step to get the merchandise to the market (either the central market or other market) in good condition, economically and while maintaining quality.

Current situation

- ▶ Producers cut flowers, package them (usually 20 roses per bouquet) and transport them to Jordan's central market.
- ▶ Packaging usually takes the form of thin plastic wraps.
- ▶ Cut flowers are sometimes stored in cold storage on farms (where available) as they await transportation.
- ▶ Most products are transported by regular (uncooled) trucks owned by the farms themselves. Some farms rent trucks for transportation purposes.

Gaps

- ▶ Cutting, sorting and packaging is a time-consuming manual process.
- ▶ The plastics used in packaging can be environmentally harmful.
- ▶ Transportation by uncooled regular cars can negatively impact the quality of cut flowers.
- ▶ A lack of cold storage on farms can put pressure on producers to send their produce to the central market as soon as possible, which risks low sales prices.



Areas for improvement

- ▶ Use cold storage at farms and cooled transport trucks.

Desired impact

- ▶ The improved quality of cut flowers when they arrive at the market.
- ▶ The creation of a buffer of a few days before flowers must reach the market, thereby improving price points.

(g) Auctioning

Importance of the activity

Jordan's central auction market is the main official marketing channel for floriculture. It enables the aggregation and display of farm production to meet local market demands. Most buyers at the market represent retail shops or florists, and sometimes large-scale event planners.

Current situation

- ▶ When flowers enter the market, dues are paid to the operator (Amman municipality).
- ▶ Assigned agents display flowers directly on the floor of the market, or in buckets filled with tap water that can remain unchanged for days.
- ▶ Prices, as noted above, are set by experienced marketing agents based on supply and demand, as they who monitor the quantities available against demand.
- ▶ After a sale, the agent receives payment and, after subtracting a commission, provides the payment to producers (usually every 15 days).
- ▶ Unsold flowers depreciate in value for every day they remain unsold. They are usually disposed of after three days, or as their condition dictates.
- ▶ Disposal involves shredding in trash containers.

Gaps

- ▶ The central market is not properly equipped to display or store flowers and plants, especially due to a lack of cooling facilities.
- ▶ The water used in buckets for storing/displaying flowers does not contain antiseptics to guard against bacteria or fungi.
- ▶ Pricing processes are not transparent and it is extremely difficult to anticipate prices.
- ▶ The collection of payments and settling these with producers is a lengthy process.
- ▶ Unsold flowers are not recycled.



Areas for improvement	Desired impact
<ul style="list-style-type: none"> ▶ Improve conditions at the central market by creating specialized displays, introducing cooling, and ensuring hygienic conditions. 	<ul style="list-style-type: none"> ▶ The improved quality of featured flowers, with positive knock-on effects on prices.
<ul style="list-style-type: none"> ▶ Introduce a more transparent pricing mechanism by leveraging technology, including display screens and, potentially, mobile applications to check prices and place orders. 	<ul style="list-style-type: none"> ▶ A transparent pricing process, which will increase buyers' trust in producers. ▶ The collection of data, which will help farmers plan for future cycles and foster a learning process.
<ul style="list-style-type: none"> ▶ Use e-payment channels with farmers to ensure faster settlements. 	<ul style="list-style-type: none"> ▶ Better cash management and availability for farmers, which would alleviate operational expenses.

(h) Markets

Importance of the activity

Markets are the ultimate destination for floriculture products, and it is essential that these have a trusting and transparent working relationship with Jordan's central market.

Current situation

- ▶ Buyers usually visit the central market in the early morning to check on the availability and prices of flowers and plants.
- ▶ Sales only occur when buyers approve of the prices and quality of the products.
- ▶ Buyers pay a marketing agent for their purchase, in exchange for an invoice.
- ▶ External markets have little knowledge of Jordan's floriculture sector.
- ▶ A black market of lower quality flowers exists, which are usually sold at traffic lights.

Gaps

- ▶ There is no way of learning about the availability, quality or prices of flowers and plants without visiting the central market and shopping around.

- ▶ External markets lack knowledge of Jordan's floriculture sector, depriving it of a potentially lucrative sales channel.
- ▶ Black market can impact legitimate florists.



Areas for improvement	Desired impact
<ul style="list-style-type: none">▶ Establish an online market to regulate the relationships between the parties involved.	<ul style="list-style-type: none">▶ A more efficient and transparent process, which will enhance market trust and mitigate challenges in relations between the parties involved.
<ul style="list-style-type: none">▶ Promote Jordan's floriculture sector to potential external markets, highlighting its competitive advantages.	<ul style="list-style-type: none">▶ Opening new markets, which will enable the growth of Jordan's floriculture sector.



▶ 4

Chapter 4

Recommendations

Prioritization of recommendations

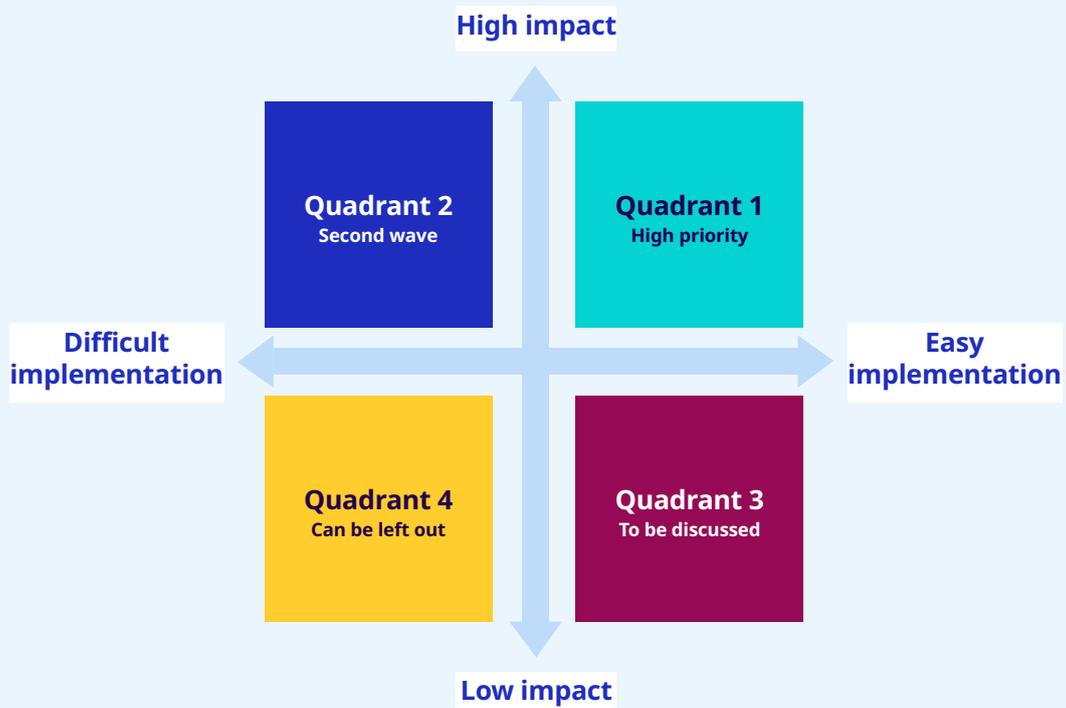
The findings of this floriculture value chain analysis yielded recommendations, which are prioritized here, based on two criteria:

- the anticipated level of impact, from low to high; and
- the relative ease of implementation, from difficult to easy.

Presented on two axes, these criteria yield a four-quadrant prioritization matrix, as illustrated in the figure below.

FIGURE 24.

Prioritization matrix



Each recommendation was rated so that it could be mapped to this matrix, as summarized in the table below.

Table 5. Rating recommendations by ease and impact

Value chain	Recommendations	EASE	IMPACT	QUADRANT
Import	Create a local tissue laboratory for suitable species, including species that are currently imported as well as the creation of new varieties, perhaps from indigenous species	Moderate	High	1
	Undertake policy reform with the Ministry of Agriculture to minimize losses during quarantine	Difficult	Moderate	4
	Study the possibility of creating an integrated nursery for growing floriculture products	Moderate	Moderate	3
Pre-production	Improve business planning activities and encourage risk-taking, including venturing into new lines of production and more diversification	Difficult	High	1
	Encourage a formal procurement process and record-keeping to ensure the competitive cost of inputs	Difficult	Low	3
	Improve business planning skills and financial skills to enhance producers' negotiations with financial institutions	Difficult	High	1
	Strengthen producers' skills to uphold decent work standards	Difficult	High	1
	Work with government bodies to provide loan guarantees for small floriculture projects	Difficult	High	3

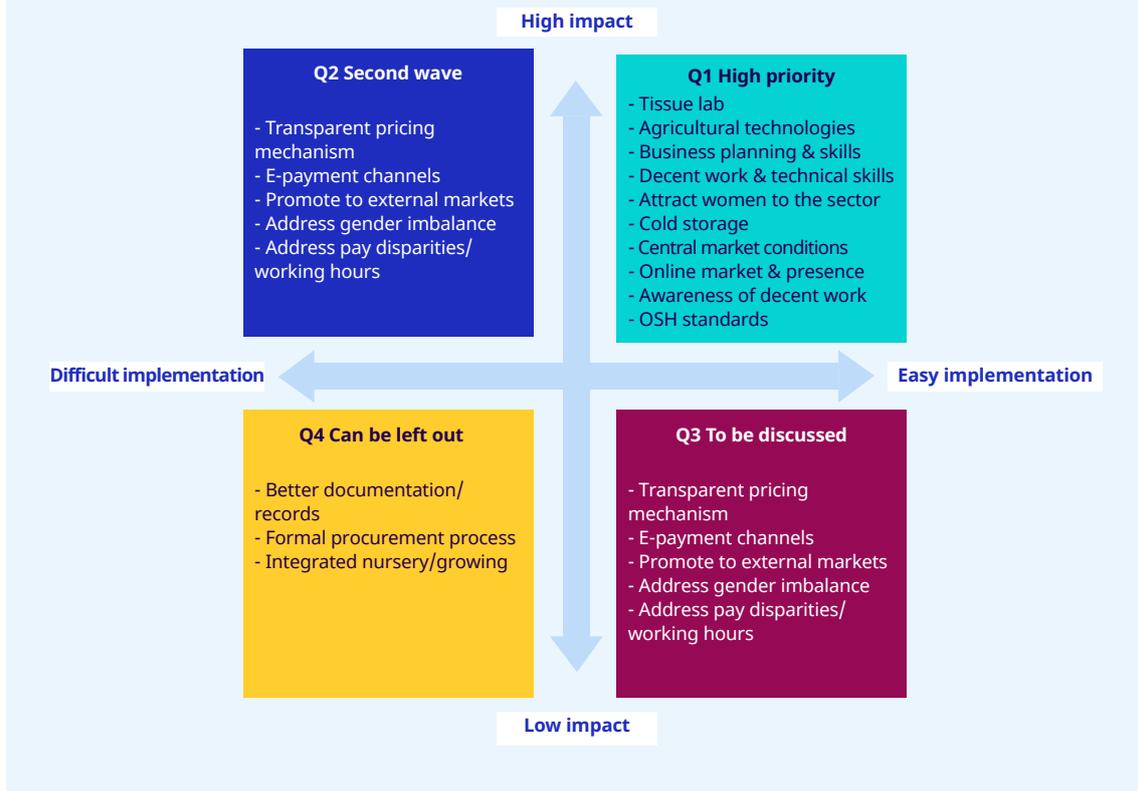
Value chain	Recommendations	EASE	IMPACT	QUADRANT
Production	Strengthen strong, advanced technical skills rather than relying solely on the conventional wisdom of hired workers	Difficult	High	1
	Leverage modern agricultural technologies, such as hydroponics and other control systems, to optimize the use of water, fertilizer and pesticide/ herbicide	Difficult	High	1
	Improve documentation and records across the entire production cycle	Difficult	Moderate	3
	Raise producers' and workers' awareness of decent work standards, including workers' their rights and support them to claim their rights	Difficult	High	1
	Attract women to the sector and improve conditions for women workers such as by installing WASH facilities and providing training to enable them to perform higher-skilled (and higher-waged) jobs	Moderate	High	1
	Improve occupational safety and health standards by encouraging producers to provide protective equipment to all workers, and not just to permanent workers as per current practice	Moderate	High	1
	Address gender imbalance in leadership/decision-making positions by enabling women to get into the sector as producers and increasing their representation among retailers, marketing agents and as representatives of Amman municipality	Difficult	High	2
	Address pay disparities between workers based on their nationality, as well as the excessive working hours performed by non-Jordanian migrant workers	Difficult	High	2

Value chain	Recommendations	EASE	IMPACT	QUADRANT
Marketing and sales	Actively promote farms and floriculture production through online presence on social media, with distinctive branding	Difficult	Moderate	1
Market-bound logistics	Use cold storage on farms and cooled transport trucks	Difficult	Moderate	1
Central market	Improve conditions at the central market by introducing special displays, cooling and hygienic conditions	Difficult	High	1
	Introduce a transparent pricing mechanism by leveraging technology, such as display screens and, potentially, mobile applications to check prices and place orders	Difficult	Moderate	2
	Use e-payment channels, particularly with farmers, to settle accounts rapidly	Difficult	Moderate	2
Markets	Establish an online market to regulate the relationships between the parties involved	Moderate	High	1
	Promote Jordan's floriculture sector to potential external markets in line with its competitive advantages	Difficult	Moderate	2

The figure below maps the recommendations, rated based on the ease of implementation and their impact, on to the prioritization matrix.

FIGURE 25.

Prioritization matrix with recommended interventions



Recommended interventions

This value chain analysis has identified areas for improvement to strengthen Jordan's floriculture sector, including with a focus on enhancing decent work, job creation and sustainable growth opportunities. Based on the prioritization exercise outlined above, this analysis recommends focusing on recommendations which stand to have the greatest potential impact. These are:

- 1. Improve decent work conditions, inclusivity and gender balance across the value chain by raising awareness among producers and workers on social security, social dialogue, working hours and conditions, etc., strengthening the inspection and enforcement of labour laws, enhancing the attractiveness of the sector for women through better working conditions, and improving occupational health and safety practices.
- 2. Create a local tissue laboratory in Jordan for certain species that are currently imported, as well as the creation of new varieties, including from indigenous species, to improve cost-effectiveness, capacitate local production and encourage the diversification of plants.
- 3. Improve business, marketing and technical skills to improve the management of farms.

- 4. Leverage more advanced technologies on farms to upgrade current production systems.
- 5. Explore possibilities for an online floriculture marketplace through further study and investigation.
- 6. Encourage the use of cooled storage and transportation, perhaps by supporting the Jordanian Association for Cut Flowers and Ornamental Plants (JCFA) to procure shared trucks.
- 7. Improve conditions at the central auction market.

Table 6. Top recommended interventions

Recommended intervention	Impact	Potential actors
Improve decent work conditions, inclusivity and gender balance across the value chain	This would expand the workforce by attracting more workers – especially women, and Jordanian and other nationality workers, including refugees – to the sector, while improving productivity and upholding Jordan’s commitments to decent work for all.	Ministry of Labour Producers International organizations/NGOs Workers
Create a local tissue laboratory	This would revolutionize the floriculture sector by reducing reliance on imported seeds and seedlings. It would also open opportunities for creating/ propagating new species for the local market, or even for export purposes	JCFA International organizations/NGOs National Agricultural Research Center Private investors
Improve business, marketing and technical skills	Upgrading business and technical skills will take Jordan’s floriculture sector to the next level of maturity by leveraging new technologies, developing competitive advantages and enhancing productivity	JCFA International organizations/NGOs Local/international experts

Recommended intervention	Impact	Potential actors
Leverage more advanced technologies on farms	This will improve productivity and the efficient use of inputs, especially water	National Agricultural Research Center International organizations/NGOs Local/international experts
Explore the possibility of an online floriculture marketplace	Studying how an online marketplace may be created will lead to an evidence-based approach that connects actors across the value chain – providers of inputs, floriculture producers, buyers, etc.	JCFA International organizations/NGOs Private investors
Encourage the use of cooled transportation	This will improve the conditions and the longevity of flowers and plants as they enter the market which, in turn, will enhance price points	JCFA Producers
Improve conditions at the central market	Improved conditions at the central market will enhance the longevity of flowers and plants as they enter the market and, in turn, improve price points	Amman municipality



▶ 5

Chapter 5

Conclusions

This value chain analysis sheds light on opportunities, gaps and potential interventions to strengthen the floriculture sector in Jordan, including with a focus on decent work, job creation and sustainable growth.

Despite its potential, the sector suffers from a lack of diversity in the flowers and plants produced, alongside a lack of advanced technical skills and technologies in production. There is little added value beyond cutting and shipping to markets. Producers rely on imported seeds, seedlings and bulbs, and there is no evidence of mature local tissue culture laboratories in the country. There is also little evidence of properly maintained records or properly documented operations – an essential step for a structured learning process and a path towards continuous improvement. High production costs – especially for inputs like water and electricity – means that farmers do not have the liquidity or capacity to hire large numbers of workers, even when they are needed.

Overall, moreover, fundamental aspects of decent work remain weak in the floriculture sector:

- Deficits are apparent in **skills and employability at all levels** – from farm work to leadership levels. These impact all other aspects of decent work, including gender equality, and all aspects of the value chain.
- **Job creation** in the floriculture sector remains limited. This is largely due to a lack of added value in terms of costs and product diversification.
- Several other **decent work deficits** also exist in the sector, including in terms of rights at work and working conditions. Most farm workers are men and owners tend to prefer non-Jordanian workers, particularly those of Egyptian nationality. The reasons reported for this are partly these workers' knowledge of the work, given their long-standing involvement in the sector in Jordan, and because they accept challenging working conditions – such as long work hours on the farms and taking less leave than Jordanian workers. Despite Jordanian law requiring agricultural workers to be covered by social security, farm owners in the floriculture sector have pushed back against paying for workers' social security coverage. While social dialogue processes between farm owners and the government exist, little dialogue takes place between employers and workers. Occupational safety and health (OSH) measures are limited and non-permanent workers are not provided with protective equipment. As women are rarely formally contracted as permanent workers in the sector, they are particularly affected by the lack of OSH measures and equipment.
- **Gender inequality** exists in the floriculture sector, reflected in a severe gender imbalance at all levels. Very few women work in the sector. Most of those who do are not formally employed, are paid less than men on average (ostensibly because they perform different,

less valued tasks), are concentrated in 'lower level' jobs and lack basic facilities at workplaces, including WASH facilities.

This value chain analysis finds that a **lack of leadership, business and high-end technical skills** in the floriculture sector is one of the primary root causes for current deficits. Another cause is a **lack of awareness** of the latest trends aimed at maximizing productivity, value and decent work conditions. On a positive note, Jordan's relatively small floriculture sector benefits from close-knit relationships between producers and collegial relations with workers. If there is buy-in and commitment for skills development, a swift positive impact will quickly become apparent. Without addressing the skills gap, other recommended interventions – such as a local tissue laboratory, cooling in the value chain and an online marketplace – will struggle to enhance the growth of floriculture, job creation and decent work.

There is tremendous potential to unlock the value of Jordan's floriculture sector, either through cost reduction (involving cooperative arrangements, economy-of-scale operations, and the deployment of technology) or through diversification (by creating a local tissue laboratory that revive and propagate indigenous species) and optimization (introducing technology to optimize the use of water and inputs). This value will serve local markets and pave the way for exports. The central auction market is also an important element that should also be addressed as soon as possible.

Implementing the interventions recommended by this value chain analysis will have positive impacts on decent work and gender equality within the floriculture sector, as highlighted in the tables below.

Table 7. Recommended interventions' impact on decent work in the floriculture sector

Decent work-related attribute	Impact of the recommended interventions
Skills and employability	<p>Better lifelong learning, technical and vocational training which will elevate the overall value created by the floriculture sector.</p> <p>Greater market growth and opportunities, with a spillover effect from the floriculture sector to other sectors, such as marketing, logistics and exports, among others.</p>
Earnings and income	<p>Earning and income will improve due to higher skilled jobs and better economics associated with higher value creation.</p>
Job security and stability	<p>Improved security and stability due to improved economic conditions and more committed working relationships that foster learning and growth.</p>
Health and well-being	<p>Improved economic conditions should support better occupational safety and health, work/life balance, well-being, and overall organizational culture.</p>

Decent work-related attribute	Impact of the recommended interventions
Rights, respect and cooperation	Improved workplace relationships, social dialogue, and gender related issues.

Table 8. Recommended interventions' impact on gender equality in the floriculture sector

Gender-related attribute	Impact
Representation	With focused training programs on gender issues and trainings on women's empowerment, there should be improvements on the representation of women in the industry. There can be opportunities in higher skilled areas of work such as marketing and online operations.
Earnings and income	Better skilled women in higher roles should benefit from better earnings.
Vulnerability	There will be less vulnerability with more formal arrangements and better roles.
Leadership	There are areas of work where women can take on leadership especially with marketing, high-tech jobs in a culture lab, or online marketing channels.
Discrimination	With highly skilled women in better roles, there will be diminished discrimination.

In summary, the floriculture sector is among the most promising agricultural sectors in Jordan. It is among the most attractive to national producers and investors, given the high revenues associated with the production of flowers and ornamental plants. The production and retail of floriculture products already provides over 1,000 jobs. With a greater focus on skills development, diversification and cost reduction – all with the ultimate aim of championing decent work for all – it has the potential to create far more jobs and contribute to inclusive, sustainable growth. The success of Jordan's floriculture sector, in turn, can inspire horticulture to flourish nationwide.



Annexes

► Annex 1. Data collection tools

Questionnaire for floriculture producers

Contact information					
Interviewer		Date			
Farm name		Owner			
Address		Telephone			
Established in		Area			
LL company	Sole ownership	Other			
Full-time employees		Seasonal labour	M		
			F		
What do you in floriculture?					
Main products and seasons (or months)					
Cut flowers	Plants		Other		
Main clients and markets (domestic and export)					
Central market	Local	Flower shops	Export	Hotels	Others
How do you see the market?			Growing	Shrinking	As is
Inbound logistics					
Sources of inputs			Spending on inputs		
	Source		Monthly	Yearly	
Seeds					
Seedlings					
Fertilizer					
Plant protection					
Equipment					
Water	Well	Municipality			
Sourcing through	Relationship	Pricing offers	Other		

Irrigation method			
How do you manage inventory? Recording? Re-ordering? Communications?			
Who are your most important suppliers and what do you buy from each of them?			
Are there problems in obtaining some important inputs? Shortages? Please explain.			
Operations			
Run us through your typical operational cycle, from seeds to cut flowers or plants.			
How do you plant and grow?			
Open field	Closed plastic greenhouses	Both	Other
What are your most important activities in production? Nursery	Seeding	Growing	
If not covered earlier, what about caring? Harvesting	Cutting	Sorting	
Give a workflow with typical durations and labour hours to get cost estimates.			
Standards and certifications			
What standards or certification requirements do your products need to conform to? Who sets them? Local bodies? International bodies (EU, etc.)?			
How do you conform to these standards and requirements? Internal? External? Issues?			
Outbound logistics			
How do you handle sorting and packaging? Material and process			
How do you transport your products?	Own trucks	Leased trucks	
What is the cost component of transport?	_____ Jordanian dinars per trip	_____ % of total cost	
What are the main challenges? Cost? Delivery time? Damage to goods?			
Marketing and sales			
How do you choose which products to grow? Market insight? Following others?			
How do you set prices? Own calculations? Market driven? Like other buyers? Negotiated?			
How often do you send products to the central market?			
Do you opt for channels other than the central market?			
If 'yes' which channels and how do you reach them?			
Do you export? To which countries? Or which countries have you exported to and why did you stop?			
Did you receive any assistance for exports? Exhibitions? Trade missions?			
How do you compete?		Quality	Cost
Price	Relationships	Niche	Other_

What is usually imported?			
Type	Season	Source(s)	Reason
How strong is the market for your products right now? Next year? What trends do you foresee?			
Service and after sale			
Do you have any interaction with clients after sale? Please describe these.			
Do you receive any requests for replacements in case of errors or quality issues? How do you handle these?			
Do you get in touch with your key or repeated clients to check on the products?			
Yes			
No			
If 'yes', what kind of action do you take?			
Infrastructure and technology			
What are the most important infrastructure constraints affecting your business growth and profitability (road/transport conditions, telephone service, electric supply, storage, etc.)?			
What are some of the uses of technology that you may have tried? And Uses			
Websites	Mobile apps	In-farm control	
Any post processing for other products? Yes? What?			
If No, why not? What would it take?			
Human resources			
Number of full-time workers			
How do you find seasonal workers? Contracts?	Yes	No	Some
How much do you pay?		Monthly	Hourly
Finance			
Where do you go when you need money for your business?			Own money
Bank	Micro-loans	Marketing agent	Other
Do you get credit from input suppliers? What are the terms?			
Is financing a constraint?	Yes	No	Amount range
Policy/regulation			
What government policies/regulations affect your business (registration, inspections, subsidies, incentives, etc.)?			

What government policies/regulations are obstacles to growing your business?
Business membership organizations
Are you a member? If not, why?
What are the primary functions and benefits of the association?
What additional services should they provide?
Final open-ended questions
What do you think the strengths of your industry are, locally and/or internationally?
What are the main weaknesses of your industry?
What do you think is the greatest challenge facing your industry today?
Can you name some business owners in your industry who are leaders – for example, in terms of technology, product design, quality or marketing?
How did you get into your business?
Final comments

Questionnaire for florists/retailers

Interviewer		Date	
Shop name		Owner	
Address		Telephone	
Established in		Area (square metres)	
LL company	Sole ownership	Other	
Why are you in the business?			
Main products and seasons (or months)			
Cut flowers	Plants	Other	
How do you see the market?		Growing	Shrinking As is
Where do you procure flowers?			
Central market	Direct from farms	Direct import	Other, please specify
What are the main uses for flowers in the market?			
Personal gifts	Household ornaments	Weddings	Seasons (mother's day/ Valentine's day)
Do you find what you look for in the local market, in terms of quality and quantity?			

Completely	Somewhat	Not satisfied
What is missing from the local market?		
What flowers would you like to see in the local market?		
How do you rate your experience of procuring from the central market?		
Great		Lacking
What issues exist?		
How often do you go to the central market?		
Daily		How many times per week?
How do you know about the prices of flowers?		
What are your thoughts regarding pricing?		

► Annex 2. Photographs from field visits



Growing seedlings at a floriculture farm in Jordan. © ILO/Dr Fadel ElZubi



Early flowering at a floriculture farm in Jordan. © ILO/Dr Fadel ElZubi



Flowering plants at a floriculture farm in Jordan. © ILO/Dr Fadel ElZubi



Sorted flowers in cold storage at a floriculture farm in Jordan. © ILO/Dr Fadel ElZubi



Sorted flowers in cold storage at a floriculture farm in Jordan. © ILO/Dr Fadel ElZubi



Sorted flowers in cold storage at a floriculture farm in Jordan. © ILO/Dr Fadel ElZubi



Florist shop flower display in Jordan. © ILO/Dr Fadel ElZubi



Florist shop flower display in Jordan. © ILO/Dr Fadel ElZubi

Value chain analysis of Jordan's floriculture sector

This value chain analysis maps the core value chain functioning of Jordan's floriculture sector, including observations related to decent work and gender equality across the value chain. It seeks to understand constraints and identify opportunities to build upon across the floriculture sector, with a view to unlocking its potential as a driver of decent work, job creation and sustainable economic growth. The analysis aims to inform the Decent Work in Jordan's Floriculture Sector project – implemented by the International Labour Organization (ILO) and funded by the Government of Australia's Department of Foreign Affairs and Trade (DFAT) – with its focus on improving working conditions, skills and the employability in the sector, while linking producers with market opportunities.

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