



MINISTRY OF  
AGRICULTURE

# IRAQ

# Sustainable Development Strategy

# Potato Sector (2024-2028)

*A growing sector with unique products  
and a cornerstone of food security*



The Sustainable Development Strategy for the Potato Sector is an official document of the Government of Iraq. For any queries about the Strategy, please contact the Ministry of Agriculture:

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The Strategy was developed by the International Trade Centre (ITC) as part of the Strengthening the Agriculture and Agrifood Value Chain and Improving Trade Policy project funded by the European Union.

ITC is the joint agency of the World Trade Organization and the United Nations. As part of the ITC mandate of fostering sustainable development through increased business and commerce opportunities, the Research and Strategies for Export section offers a suite of trade and small and medium-sized enterprise (SME)-related strategy solutions to maximize the development payoffs from SME development and trade. ITC-facilitated SME and trade development strategies and roadmaps are oriented to the specific objectives of a country or region and can be tailored to high-level economic goals, specific development targets or sectors.

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## Sustainable Development Strategy

### Potato Sector

(2024-2028)

*Iraq potatoes: a growing sector  
with unique products and a cornerstone  
of food security*

# ACKNOWLEDGMENTS

The Republic of Iraq's Sustainable Development Strategy for the Potato Sector was developed under the leadership of the Ministry of Agriculture. This strategy was designed with the assistance of the International Trade Centre as part of the European Union-funded Strengthening the Agriculture and Agrifood Value Chain and Improving Trade Policy in Iraq (SAAVI) project. SAAVI is intended to support economic growth and diversification, along with the expansion of employment and entrepreneurship opportunities, particularly for youth, through strategy development, the establishment of value chain alliances, skill development and trade policy reform.

This document reflects the ambitions of the public and private stakeholders who defined the enhancements and future orientations for the sector. The strategy benefited particularly from the inputs and guidance provided by the sector stakeholders that steered the strategy's formulation, namely:

Institutions
Ministry of Agriculture
Ministry of Planning
Ministry of Trade
Federation of Farmers Associations
Federation of Iraqi Chambers of Commerce
Prime Minister's Office
Reform Management Cell
Ministry of Higher Education and Scientific Research
Agricultural Engineers Association
Iraqi Businessmen Union
Women's Chapter in the Businessman Union
Businesswomen's Council in the Iraqi Federation of Chambers of Commerce
College of Agricultural Engineering
College of Agriculture Engineering Sciences
Iraqi Agricultural Engineers Syndicate

In addition, valuable suggestions and other contributions were received at various stages of the project from development partners, particularly the International Potato Center and those agencies with interventions under the European Union (EU) Special Measure for Iraq. These include the Food and Agriculture Organization (FAO), International Labour Organization (ILO), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), International Organization for Migration (IOM) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), as well as partners including as the Norwegian Refugee Council (NRC), Cordaid and Interdisciplinary Research Consultants (id:rc), among others.

Technical facilitation, guidance and support for the process were provided by the ITC project team.

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# ACRONYMS AND ABBREVIATIONS

Unless otherwise specified, all references to dollars (\$) are to United States dollars, and all references to tons are to metric tons.

The following acronyms and abbreviations are used:

<b>CoC</b>	Chamber of Commerce
<b>COSQC</b>	Central Organization for Standardization and Quality Control
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>GAP</b>	Good Agricultural Practices
<b>HS</b>	Harmonized System
<b>ITC</b>	International Trade Centre
<b>MoA</b>	Ministry of Agriculture
<b>MoP</b>	Ministry of Planning
<b>MSME</b>	micro, small and medium-sized enterprise
<b>PoA</b>	Plan of Action
<b>R&amp;D</b>	research and development
<b>SAAVI</b>	Strengthening the Agriculture and Agrifood Value Chain and Improving Trade Policy
<b>SME</b>	small and medium-sized enterprise
<b>WFP</b>	World Food Programme

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• طازجة • نظيفة • صحية •



أفضل  
بطاطا محلي

كل صحن  
عائلاً سعيداً

From LOCAL FARMERS to you

eat good  
FEEL GOOD

• FRESHNESS • TASTE • VALUE •

450 IQD

Local Potatoes  
from Farms



لذيذتكه  
خوماليه كاتجوه  
• طازجة • نظيفة • صحية •



باشترین  
به تانه خومالی

باش بون  
عائلاً سعيداً

هه موو روزگ زیاتر به دهسه

بازاری بکه و پوینته کات راسته و خوه به های

2 پوینت

1 بازاری بکه

به دهسه بکه




مای کلمه

اسه کله

جوانه

SHACK 60

عزیزان

Cut Fruit Salad

Local FARMERS

450-

Local Potatoes

450-



# Note to the reader

Iraq's Sustainable Development Strategy for the Potato Sector (the Strategy) was developed under the leadership of Iraq's Ministry of Agriculture, based on a participatory approach during which Iraqi industry leaders, small business owners, farmers and public sector representatives held consultations to reach consensus on key sector competitiveness issues and priority activities. [These inclusive consultations were held in Baghdad, Mosul and the Kurdistan Region of Iraq.](#)

Besides in-depth research and value chain analysis, these consultations were complemented by:

- [More than 600 firms and farmers surveyed](#), making use of the International Trade Centre (ITC) Small and Medium-sized Enterprise (SME) Competitiveness Survey to develop detailed profiles of their operations and perspectives on the business environment.
- [Field observations and factory visits](#), through which supply chain assessments were carried out to gain further knowledge on key issues such as quality procedures, technical skills, lean management, quality of raw materials and access to markets.
- [More than 2,500 interviews with Iraqi consumers and market actors](#) to acquire strategic insights and market intelligence as well as buyers' requirements in terms of quality standards, food safety, packaging, buying cycles, distribution channels and prices
- [Donor coordination meetings](#) to identify synergies with ongoing / planned initiatives of development partners to eventually result in collaboration during the implementation phase.

This Strategy was developed in collaboration with the [International Potato Center](#).

**In spirit and in action:** The Strategy is aligned with existing national and sector-specific plans and policies, and builds on ongoing initiatives from development partners – including the Food and Agriculture Organization of the United Nations (FAO), International Labour Organization, the International Organization



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for Migration, German Corporation for International Cooperation and the United Nations Educational, Scientific and Cultural Organization – in areas related to job creation, economic diversification, agriculture development, investment, and youth and women's economic empowerment.

An effective structure for strategic management will enable an adequate framework for implementation. Details on the structure are included in the "Managing Strategy Implementation" section.

Equally important, this Strengthening the Agriculture and Agrifood Value Chain and Improving Trade Policy (SAAVI) Strategy initiative already accommodates budgeting to support implementation of critical pilot activities identified during the design process. This will ensure that impact and momentum are generated from early on and support further resource mobilization and confidence-building.

The development of the Potato Sector Strategy follows on the endorsement and implementation of the Tomato and Poultry Sector Strategies of Iraq.



# Executive summary

Potatoes, with their versatile nature and nutritional value, have become an integral part of the Iraqi diet. Introduced by the government in the 1980s, favourable conditions for potato production in Iraq play an important role in the country's agriculture and agrifood sectors.

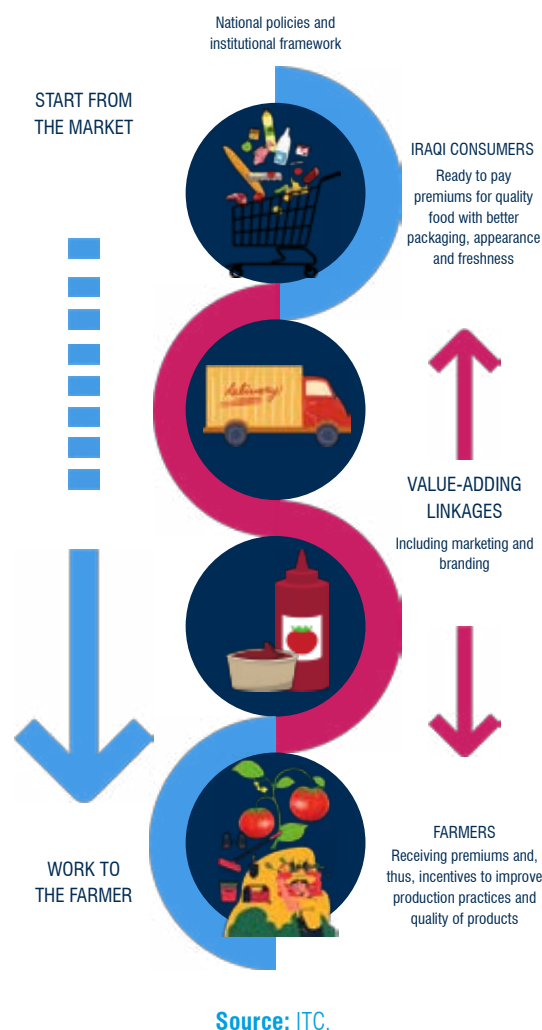
The Iraqi potato sector presents significant opportunities for growth and development, driven by current and projected demand for fresh potato and processed potato products in the domestic market. Import demand for fresh potatoes is projected to be \$135 million by 2025, while prepared and preserved potatoes and frozen potatoes present projected import demand of \$100 million and \$11 million, respectively, according to ITC estimations. Moreover, consumer preference for local products and the possibility of obtaining premiums based on added value further underscore the potential of the sector. While there is already considerable demand for potato products in the Iraqi market, there is room for growth and capturing a larger market share. By improving the competitiveness of local potato production, the sector can meet the rising demand and reduce reliance on imported products.

However, to strengthen the sector's performance, several factors and practices need enhancement.

Low profitability, primarily caused by high production costs of seed potato, is a significant limitation on sector growth. Price fluctuations and limited product availability also pose constraints for consumers, along with concerns regarding product quality. Addressing these challenges involves increasing local production volumes and improving quality, encouraging targeted investments in the sector and fostering better coordination among producers.



Source: ITC.



Source: ITC.

Additionally, creating direct market links between farmers and large buyers represents a significant measure to enhance efficiency along the entire value chain.

The Strategy for the potato sector aims to address these challenges and leverage opportunities for growth. Its vision is presented below.

## **“ Iraq potatoes: a growing sector with unique products and a cornerstone of food security ”**

The Strategy outlines a comprehensive and actionable plan focused on three strategic objectives.

### Strategic framework of Iraq's Potato Sector Strategy

<b>Strategic objective 1: Improve both the sector's profitability and its production practices</b>	<ul style="list-style-type: none"> <li>1.1. Ensure access to affordable quality seeds</li> <li>1.2. Increase access to other key quality inputs, such as fertilizers and pesticides</li> <li>1.3. Foster the adoption of improved agriculture practices</li> <li>1.4. Promote better water management and climate change adaptation</li> </ul>
<b>Strategic objective 2: Create a conducive business environment to upgrade sector operations</b>	<ul style="list-style-type: none"> <li>2.1. Improve sector representation and advocacy</li> <li>2.2. Enable the creation and growth of agribusinesses</li> <li>2.3. Develop financial options for sector growth and development</li> <li>2.4. Upgrade cold chain infrastructure and postharvest services</li> </ul>
<b>Strategic objective 3: Improve the sector's capacity for marketing and to expand and sustain market connections</b>	<ul style="list-style-type: none"> <li>3.1. Create and sustain direct links between producers and buyers</li> <li>3.2. Expand market opportunities through improvements in policies and procedures</li> <li>3.3. Enhance the visibility of Iraqi potatoes in local and regional markets</li> </ul>

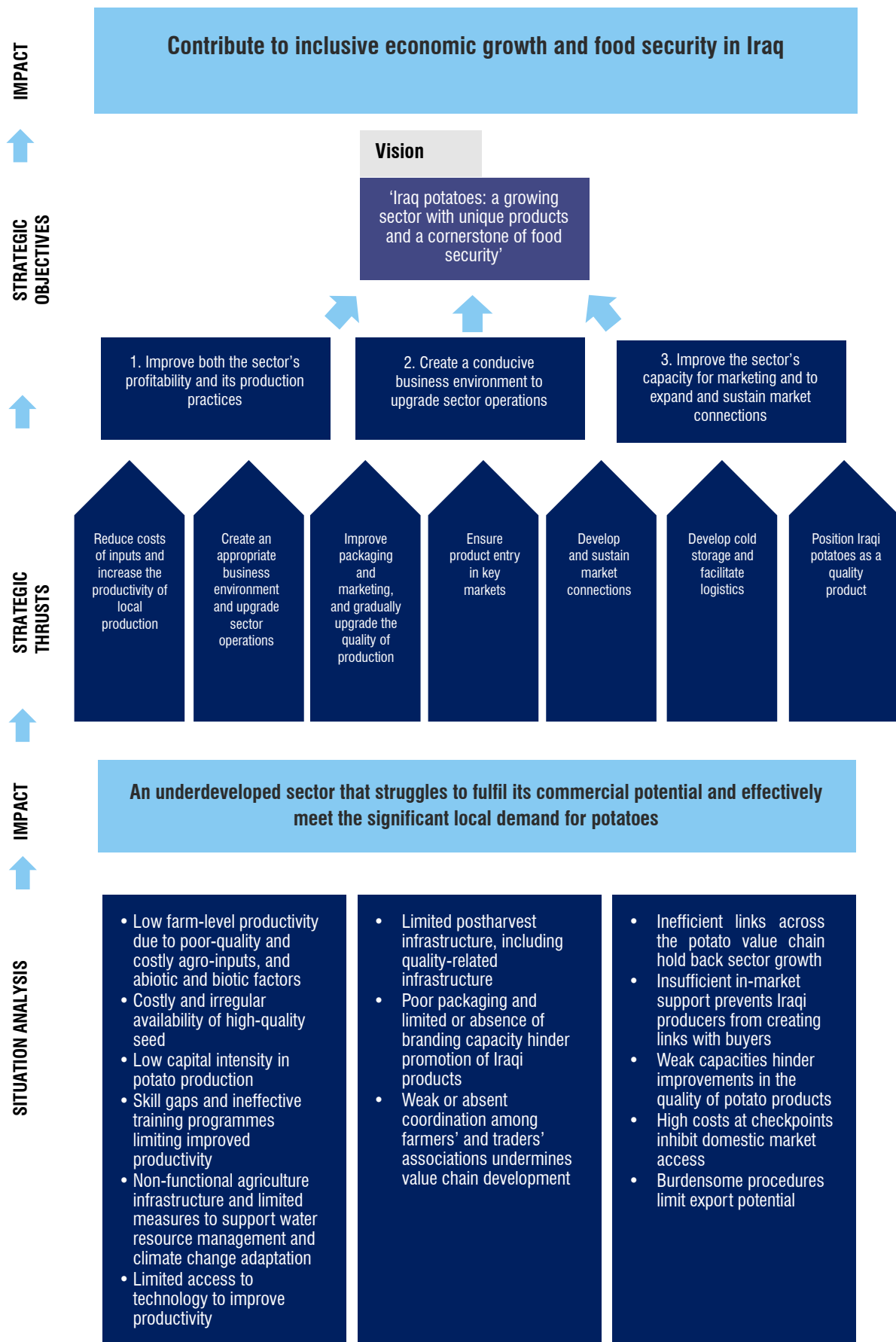
- **Improve both the sector's profitability and its production practices:** This objective seeks to reduce input costs and increase productivity through enhanced seed systems, access to affordable inputs, and adoption of good agricultural practices (GAP). Water resource management and climate change adaptation are key considerations for sustainable production.
- **Create a conducive business environment to upgrade sector operations.** This objective seeks to strengthen governance and coordination, simplify registration processes and empower agribusinesses, particularly youth-led and women-led micro, small and medium-sized enterprises (MSMEs). Access to finance and investment in infrastructure, including cold storage facilities and aggregation hubs, and packing and sorting, are vital for modernizing operations and improving market links.
- **Improve the sector's capacity to expand and sustain market connections:** This objective aims to improve the sector's capacity to diversify market connections. This involves enhancing market information dissemination, organizing retailer buying groups, establishing business partnerships between farmer

groups and local buyers, exploring new distribution channels, and enhancing marketing capacity. Streamlining export procedures, strengthening institutional capacities for trade compliance and promoting Iraqi potatoes through targeted marketing and branding activities are also key components.

The Strategy envisions a transformed potato sector that drives economic advancement, employment generation and addressing food security in Iraq. An effective structure for strategic management will enable an adequate framework for implementation. Figure 1 illustrates the Strategy's theory of change.



Figure 1: Theory of change





# Opportunities in potato sector development

The development of agriculture and the agrifood value chain has the potential to contribute to economic growth and diversification, job creation and reducing poverty, particularly in rural areas. The potential seen in the agriculture sector as a driver of resilience and economic diversification is based in part on its proven capacity to attract private sector investment and generate employment. Private sector investment in agriculture picked up more quickly than public sector investment after a drop in 2014, rising from \$112 million in 2016 to \$503 million in 2017. In addition, the sector's development can contribute to enhancing food security and access to nutrition in Iraq.

According to a recent ITC study, with a moderate growth rate in agricultural production of 3% per year,

more than 170,000 additional jobs could be created in Iraq by 2030 (ITC, 2021). This includes indirect jobs created within the same value chain through the use of domestic inputs such as fertilizer, electricity and water; and induced jobs created in the whole economy through an increase in demand as those newly employed increase their consumption more generally. At 22%, the share of women in new direct employment is highest in processed food, twice as high as in agriculture and livestock. However, the overall impact of increasing processed food production on women's employment is weakened by the lower share of female employment in the sectors in which indirect and induced jobs would occur (see Figure 2).

**Figure 2: Share of men and women in direct employment in Iraq, by sector**



Source: ITC.

There is ample scope for expanding potato production and processing activities given the high level of domestic demand, which is currently supplied to a considerable degree by imports. The crop has potential for value addition and improvements in quality that will attract higher prices in domestic markets. Enhanced value chain links, storage facilities and connections with markets – including the supermarkets that are increasingly popular among consumers – will also be needed. This development of the sector has the potential to contribute to inclusive and sustainable growth in Iraq.



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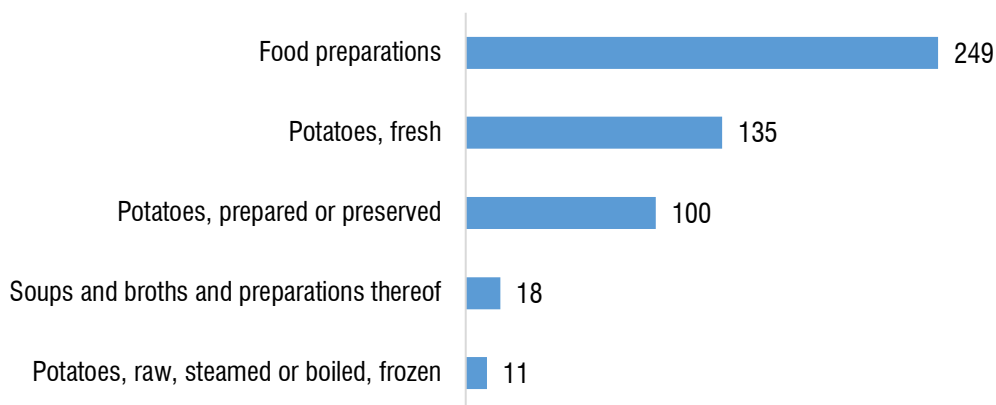
## Untapped market opportunities and market requirements

Realizing the considerable potential in Iraq's potato sector will require the adoption of new approaches to production, value addition and connecting to markets, all of which will need to be informed by an understanding of domestic market functioning and consumer expectations.

After tomatoes, potatoes have the second highest expected future demand among fresh horticultural products in Iraq. Projected demand for fresh potatoes in

2025 is expected to reach \$135 million (see Figure 3). Prepared and preserved potato products are expected to see demand of \$100 million, and frozen products an additional \$11 million. In addition, potatoes are used as an input in food preparations, which account for a projected import demand of \$249 million, as well as soups and broths (\$18 million). Further, potatoes are an essential component of the Iraqi diet, with per capita consumption estimated at 40 kg per year.

**Figure 3: Total projected demand for selected potato products, 2025 (\$ millions)**

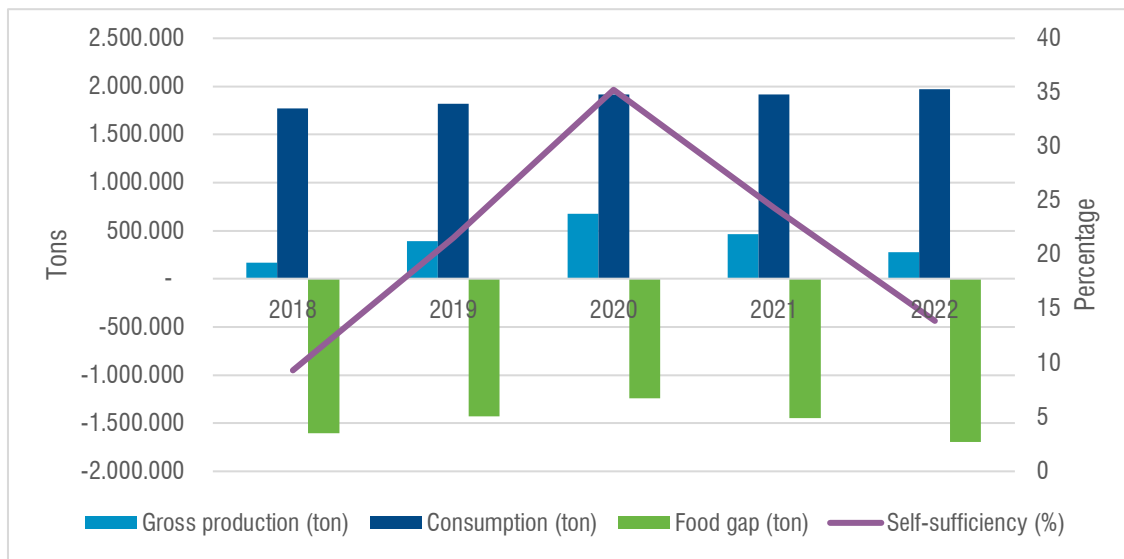


Source: ITC.

While this high demand presents an opportunity for the Iraqi potato industry, the sector is not yet taking full advantage of the local market. The large Iraqi market for potato products is served by domestic production and imports. According to Ministry of Agriculture (MoA)

estimates, from 2018 to 2022, on average, Iraq produced nearly 400,000 tons of potatoes and consumed close to 1,878,000 tons, resulting in an average food gap for this product of over 1,480,000 tons.

**Figure 4:** Gross production, consumption and food gap (tons) of potato products in Iraq, 2018–2022

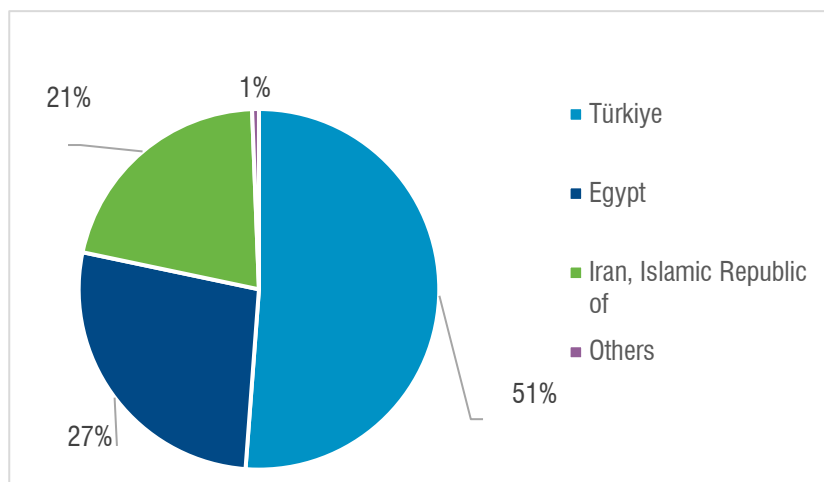


Source: MoA.

Available data indicates that fresh potato imports (Harmonized System (HS) code 0701) in 2021 amounted to nearly 27,584 tons (mirror data) for an approximate value of over \$52 million, representing a decline

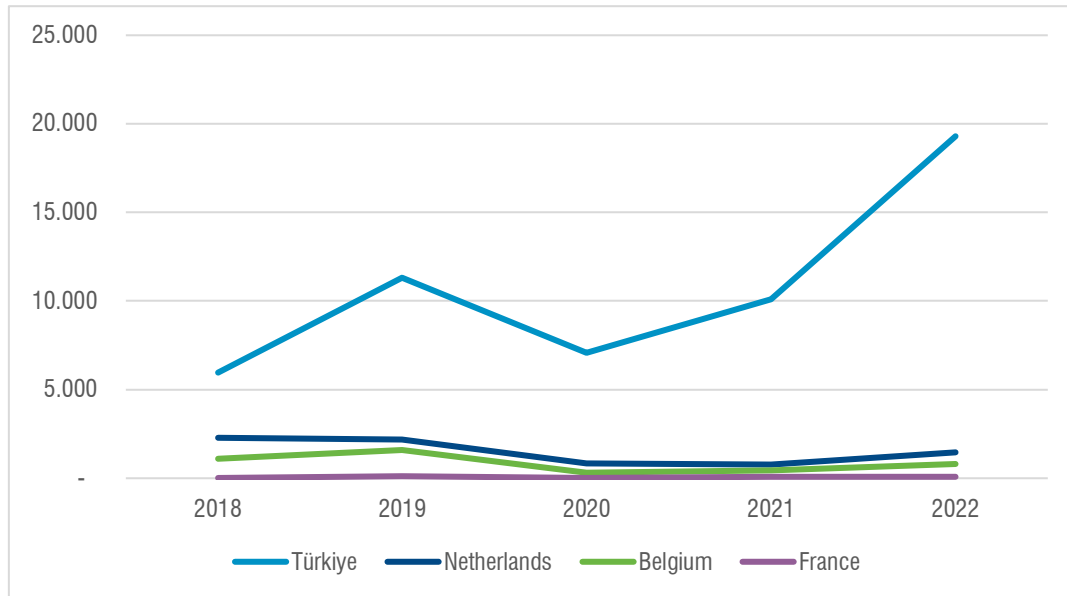
from the two preceding years. Imports of fresh potatoes are mainly from Türkiye (51%), Egypt (27%) and the Islamic Republic of Iran (21%) (see Figure 5).

**Figure 5:** Origin countries of Iraqi imports of potatoes, 2021 (mirror data)



Source: ITC Trade Map (<https://www.trademap.org/Index.aspx>).

Iraq also imports potatoes, prepared or preserved other than by vinegar or acetic acid, frozen (HS code 200410), mainly from Türkiye (88.8%). The import value of these products almost doubled in 2022 (\$21.7 million) compared with 2021 (\$12 million). These figures are based on mirror data.

**Figure 6:** Iraqi imports of potatoes prepared or preserved, frozen, 2018–2021 (\$ thousand) (mirror data)

Source: ITC Trade Map (<https://www.trademap.org/Index.aspx>).

Imports of potatoes prepared or preserved other than by vinegar or acetic acid (excluding frozen) (HS code 200520) were valued at \$989,000 in 2022, according to ITC Trade Map (mirror data). These products include potato chips. Iraqi imports of other potato products – such as flour, meal, powder, flakes, granules and pellets of potatoes (HS code 1105) and potato starch (HS code 110813 – are minimal.

Imports, particularly of fresh potatoes, have been affected by importing trade policy as well as local product production. MoA bans the importation of agricultural crops as part of its plan to support local agricultural products in accordance with the agricultural calendar and based on the supply and demand base. The ban includes other agriculture products.



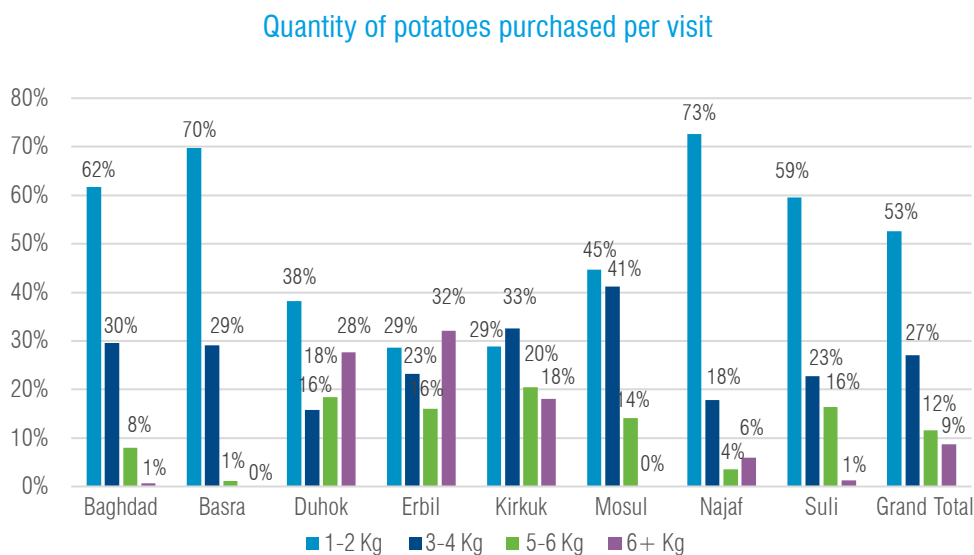
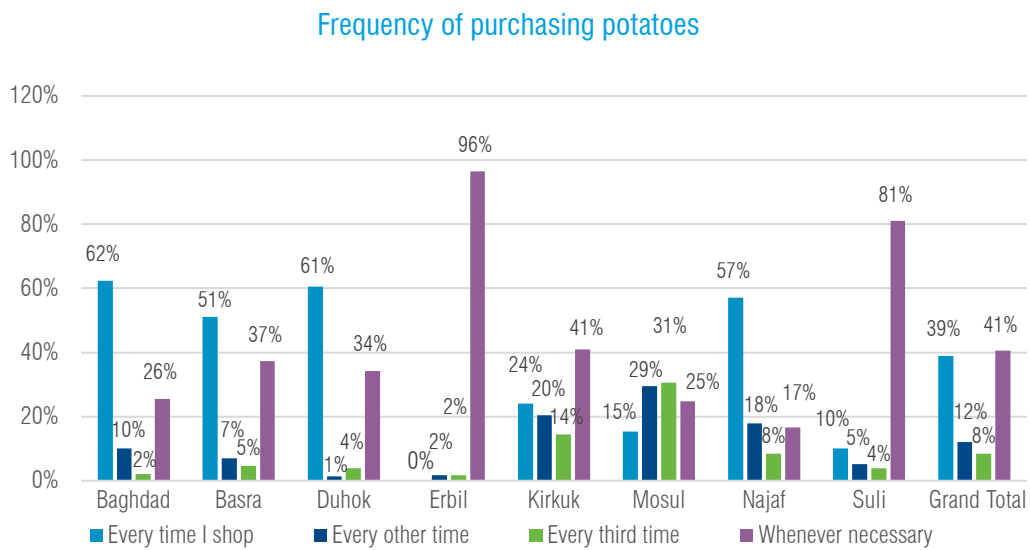
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## INSIGHTS INTO A BURGEONING MARKET: TRENDS AND PATTERNS FOR POTATO PRODUCTS IN IRAQ

Consumers make their decisions on buying potatoes based on a number of factors. Most surveyed consumers reported buying potatoes either whenever necessary (41% of respondents) or every time they shop (39%). There is significant variation in shopping habits across governorates, though in most cases the most popular response is either to buy potatoes on every shopping trip or as necessary. Across the country, consumers are most likely to buy potatoes in small quantities, with

1–2 kgs purchased at a time. In other words, they prefer to buy small batches that are fresh rather than buy larger batches that they can store at home, likely due to the quick perishability of potatoes. Male and female consumers buy similar quantities of potatoes each time they buy them. Younger consumers are more likely to buy in small quantities; 69% of those less than 20 years old and 65% of those 21–30 years old buy only 1–2 kgs at a time, which is above the national average.

**Figure 7: Purchasing patterns of potato products, by location (%)**



Source: ITC (2022).

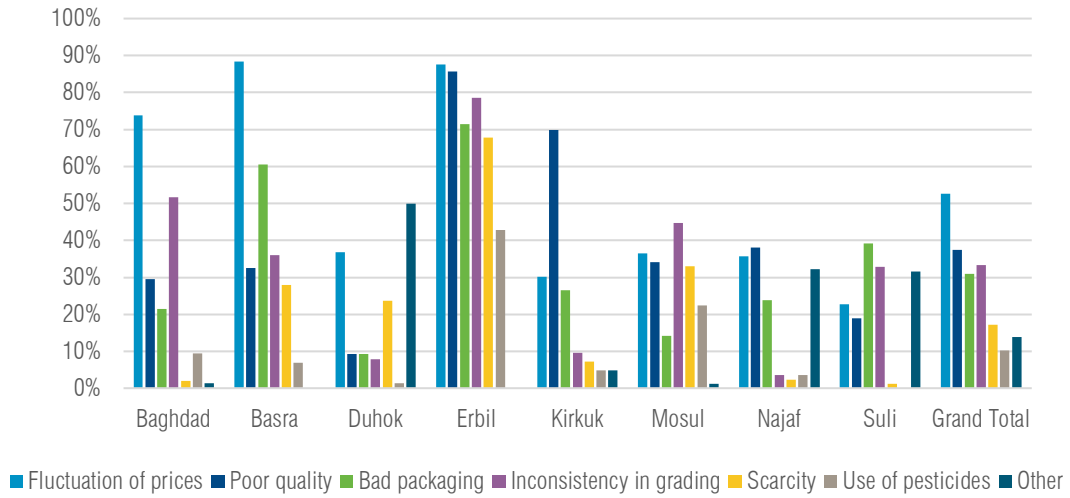
Most large buyers have seen steady demand for vegetables, poultry and dairy products in general recently, except in 2021, due to COVID-19 restrictions.

Procurement managers confirmed that, on average, there is little to no difficulty in sourcing basic ingredients such as vegetables, poultry and dairy products. However, when there is a difficulty, it usually pertains to fluctuations in prices. Procurement managers typically go to the central market on a daily basis and have no contract with suppliers. Facilitating direct trade between farmers and large buyers, who typically purchase vegetables from open markets, would benefit both buyer and seller, if risks can be appropriately managed.

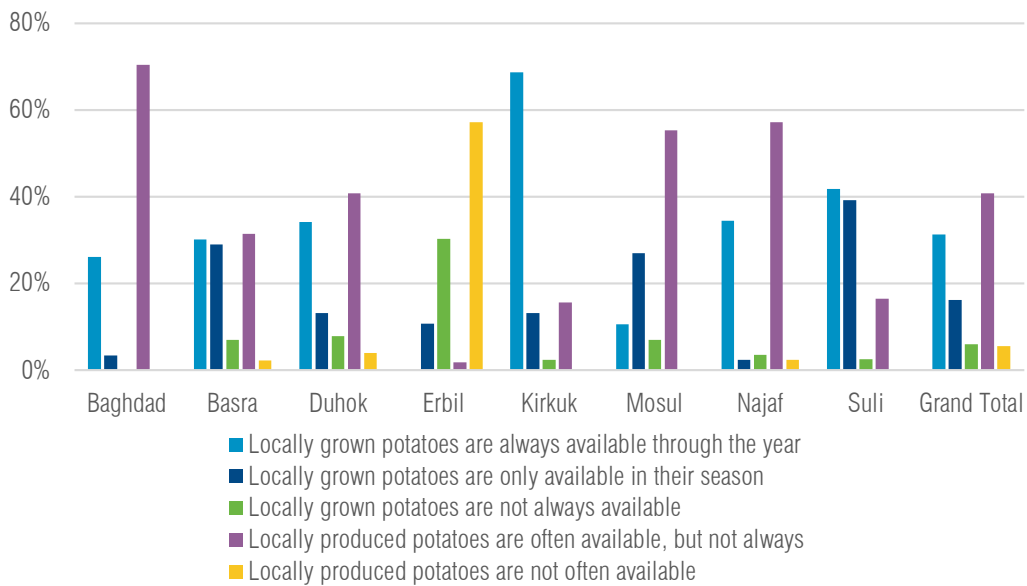
Related to consumers' preferences for buying potatoes in small quantities and having fresh products at home is their stated preference for freshness and quality in their products. When asked about challenges faced in buying potatoes, consumers cited price fluctuation (53%) most often, followed by poor quality (37%), inconsistency in grading (33%) and bad packaging (31%). In contrast, relatively few respondents cited concerns about the use of pesticides and scarcity. Imported products may be particularly susceptible to price fluctuations as a result of changes in the exchange rate and frequent adjustments to trade policies affecting agricultural products. This confirms this Strategy's recommendation on the need to support Iraqi farmers to improve quality in production and to expand access to cold storage infrastructure across the value chain. Doing so would allow for better crop storage to maintain freshness for longer.

**Figure 8: Consumer views on potatoes, by location (%)**

Problems reported by consumers when purchasing potato products



Local potato availability, as reported by consumers



Source: ITC (2022)

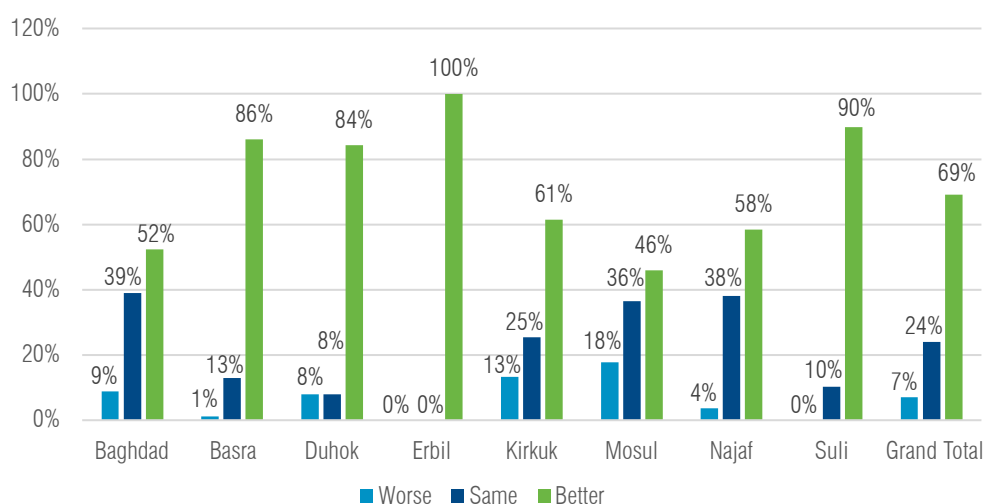
Consumers were generally positive about the availability of local products. In fact, when it comes to vegetables in general, the majority of consumers strongly prefer domestically grown vegetables over imported ones, and potatoes are no exception. Across the country, 70% of respondents expressed that domestic potatoes were best, while an additional 23% expressed they were as good as imports. While these rates varied by governorate, local products were seen as superior in all surveyed governorates.

However, domestic products are not always available. Among all respondents, 41% said that local products were often but not always available, and 31% said that local products were always available throughout the year. In Erbil, however, local products were often unavailable. When local products are unavailable, buyers tend to select Turkish and Iranian imports instead.

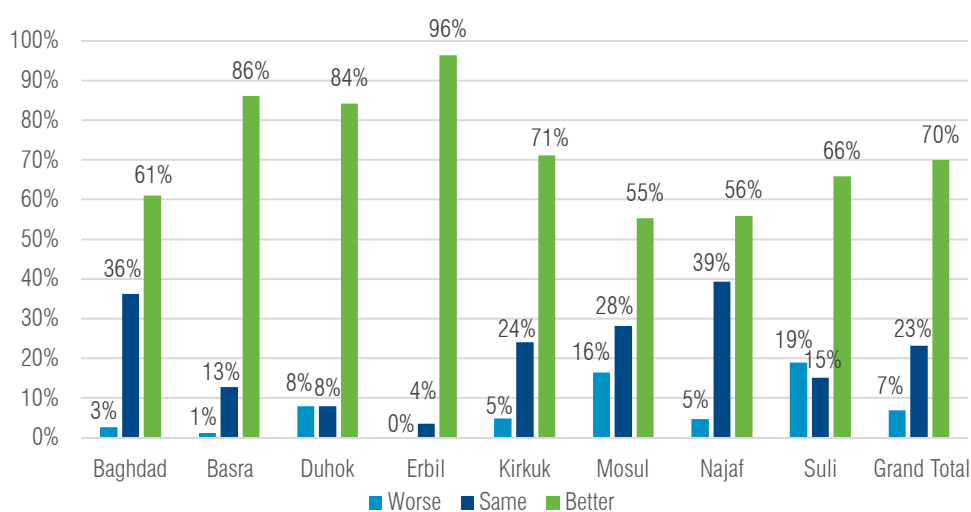


**Figure 9: Consumers' opinions on the quality of local and imported products, by location (%)**

If the price was the same, do you think that locally produced vegetables (in Iraq) are worse, better or the same quality as vegetables imported from other countries?



If the price was the same, do you think that locally produced potatoes (in Iraq) are worse, better or the same quality as vegetables imported from other countries?

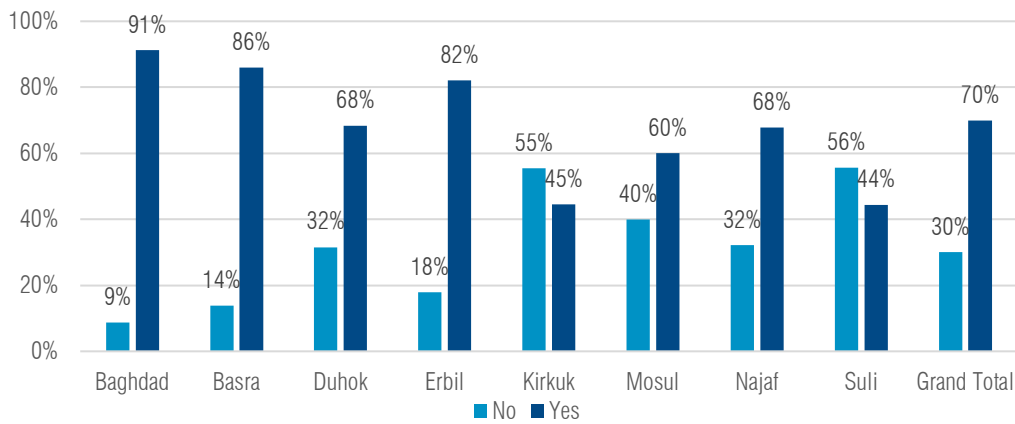


Source: ITC (2022).

The majority of respondents (70%) stated that they would be willing to pay more for local potatoes compared with imports. This strong preference for domestically grown products holds across all surveyed governorates except Kirkuk and Sulaymaniyah.

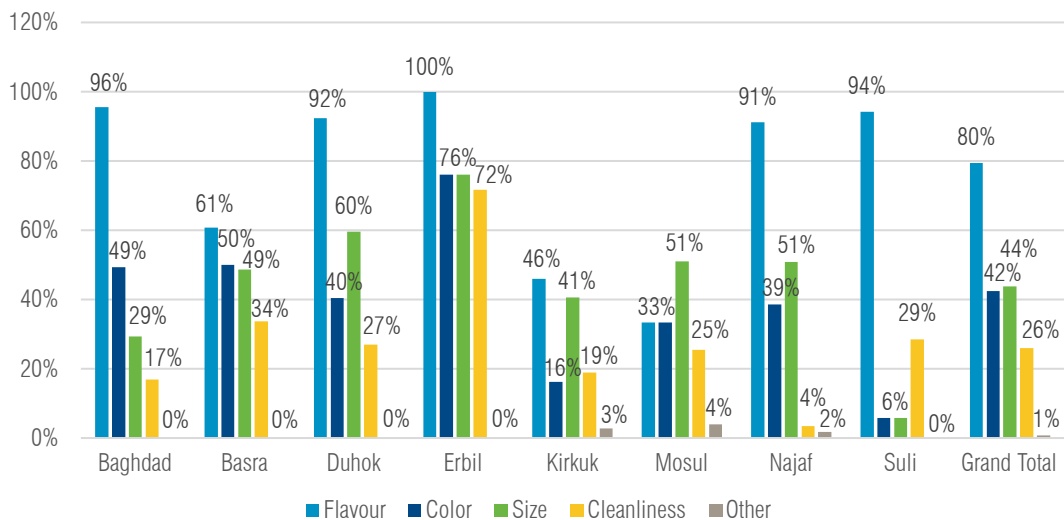
There were no differences among males and females on willingness to pay more for local vegetables of good quality, and most age groups showed similar preferences, though those younger than 20 were less willing to pay more for local goods. In general, consumers are willing to pay more for potatoes on the basis of flavour (80%), size (44%) and colour (42%).

**Figure 10: Survey results of number of consumers willing to pay more for local potatoes, by location (%)**



Source: ITC (2022).

**Figure 11: Reasons for consumers' willingness to pay more for potatoes, by location (%)**



Source: ITC (2022).

### Implications for the Iraqi potato sector

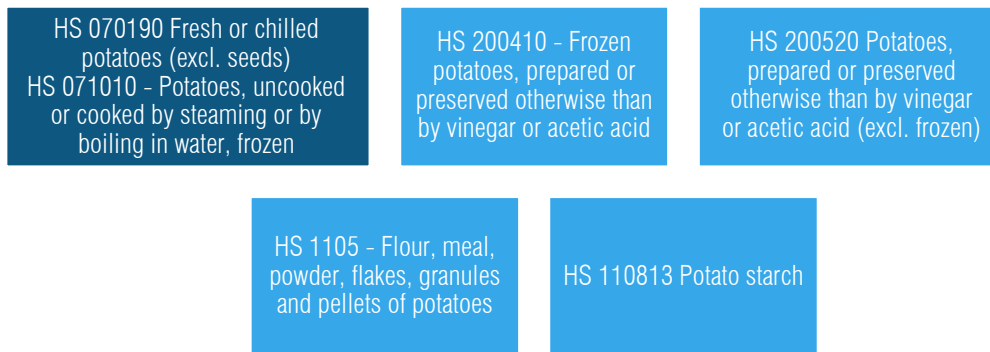
- There is considerable demand for potato products in Iraqi markets. Local producers can take advantage of this demand by improving their competitiveness relative to imports.
- Local products are preferred by consumers and there are opportunities to produce more affordable food, thus contributing to food security, as well as to obtain premiums linked to added value in products. However, several factors and practices need to be enhanced to strengthen the quality and attractiveness of domestic potatoes.
- Price fluctuations, availability of production and quality of products are additional factors negatively affecting consumers. Increasing local production volumes and ensuring greater availability of locally produced potatoes through improving access to inputs (particularly affordable seed) and improving productivity as well as required infrastructure are among the key strategic thrusts to address market demand issues. Additionally, creating direct market links between farmers and large buyers, if risks can be appropriately managed, is another significant measure emanating from the market-side analysis.

# Sector profile and value chain mapping

- **Sector Strategy and product focus:** The Strategy encompasses various potato products, emphasizing fresh potatoes due to their dominant share in national production. Diversification and innovation, including in by-products like frozen or prepared potato products, are also highlighted.
- **Historical development and conflict impact:** The potato industry in Iraq has faced setbacks due to conflict, which led to the destruction of crucial infrastructure and storage facilities. Investment is needed to rehabilitate / develop infrastructure.
- **Agricultural importance and socioeconomic impact:** Potatoes hold a significant place in Iraqi diets, being extremely valuable for food security goals. The potato industry represents a vital source of income and employment for many farmers, especially in mid-mountain regions.
- **Opportunities for empowerment:** The potato industry presents an opportunity to empower women and young entrepreneurs, who make up a significant portion of Iraq's population. However, cultural and social norms have hindered their participation in the economy.
- **Call for inclusive growth and economic diversification:** Given the challenges and untapped potential, especially for women and youth, leveraging the sector's opportunities is crucial to foster inclusive growth, economic diversification and job creation in Iraq.
- **Pricing dynamics and production costs:** A cost analysis of potato production reveals that seed costs are the most substantial component. Seeds cost significantly more in Iraq compared with international prices. This impacts farmers' profit margins, which vary between seasons due to quality differences. Wholesalers and retailers also have set profit margins in the supply chain, affecting the final price paid by consumers.

The strong demand for potatoes and potato products in Iraqi markets, observed in part by the considerable performance of imports, highlights the growth potential of this sector. This indicates promising opportunities that, if realized, can be a major catalyst for economic advancement and employment generation. However, to take full advantage of these prospects, several challenges along the value chain must be overcome. The value chain, institutional and policy context maps describe the interrelated systems, available assistance and factors that affect the performance of farms and companies operating in the sector.

This Strategy covers all potato sector products, ranging from **fresh potatoes** to **prepared and preserved** potatoes, and **other potato-based food preparations** (see Figure 12). It has a particular focus on fresh potatoes due to their dominant share in the country's production. The Strategy also recognizes the importance of diversifying and innovating within the potato sector. Thus, in addition to the emphasis on fresh potatoes, the Strategy also encompasses the progressive development of potato by-products. This includes but is not limited to frozen or prepared potato products.

**Figure 12: Potato product map**

## Analysing production growth in recent years: How conflict has stalled sector development

In 1980, the Potato Development Project was launched by MoA with the aim of producing seed potato to support the development of this strategic crop. In 1990, the project was awarded to Ibaa Centre for Agricultural Research, and Ninewa Governorate was selected for production. Production reached 30,000 tons in four years, filling all storage facilities in Iraq without the need for seed imports. Tissue culture laboratories were established in Baghdad to produce starter material for seed production, which became an alternative to importing. In 1997, planting was piloted in Kirkuk Governorate to manage viral infections, and the project continued until 2003. In 2004, management of the project and all related infrastructure were awarded to the Horticulture Department of MoA.<sup>1</sup>

Between 2006 and 2014, the Ninewa cooled warehouse had a storage capacity of 1,071 tons of seed. The Ninewa tissue culture unit was also part of these projects. During that period, this unit produced 6,557 tissue culture plants. Tissue culture is essential for onward production of high-quality planting material and maintaining varieties and breeding material. Another key infrastructure unit was the Fallujah strategic warehouse, which stored 668 tons of seeds until 2014. This warehouse played a crucial role in preserving the agricultural biodiversity of the region. Iraq underwent a period of conflict and instability between 2013 and 2017. The year 2014 was particularly devastating in the north of the country, with the capture of major cities, such as Mosul, by the Islamic State of Iraq and the Levant (ISIL / Da'esh). This resulted in the destruction of much of

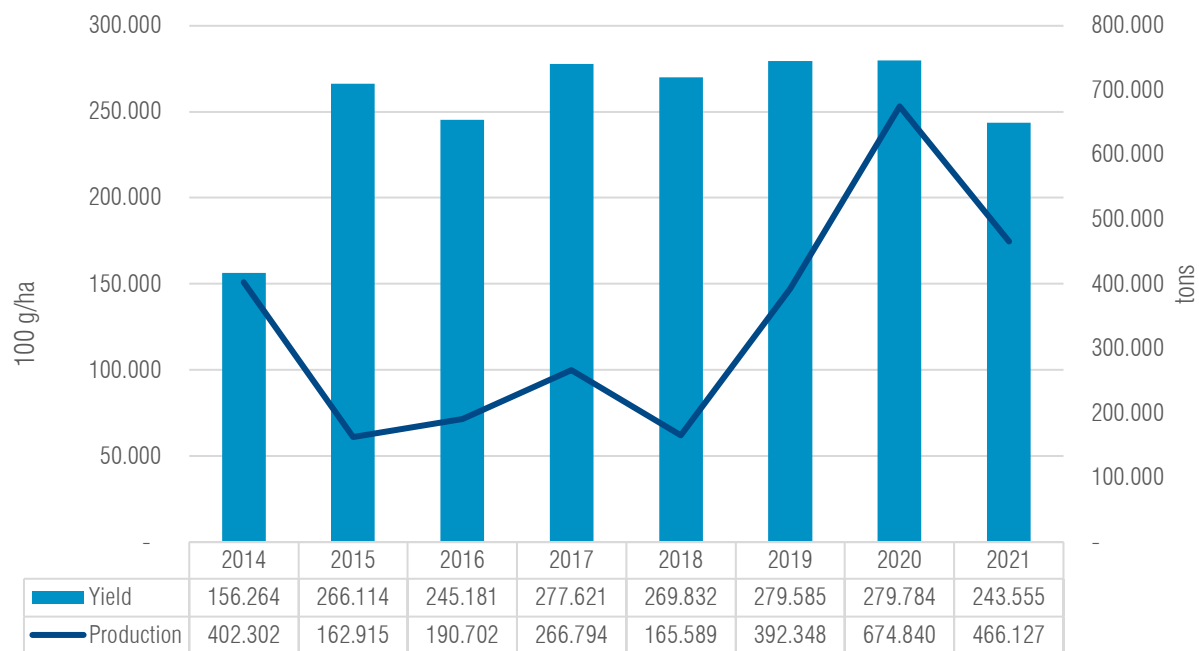
that region's infrastructure, including warehouses and seed storage facilities.<sup>2</sup>

Proper storage facilities are essential for seed production. Seed storage facilities play a crucial role in maintaining the quality of plant genetic resources, including seed potato. When these facilities are absent, the availability of high-quality seeds can be severely limited, which can lead to a reduction in potato production. Further, the use of poor-quality or contaminated seed potato can result in reduced yields and poor crop performance. In addition to life losses, the destruction of infrastructure due to conflict represented a major setback for economic development, including that of the potato industry.

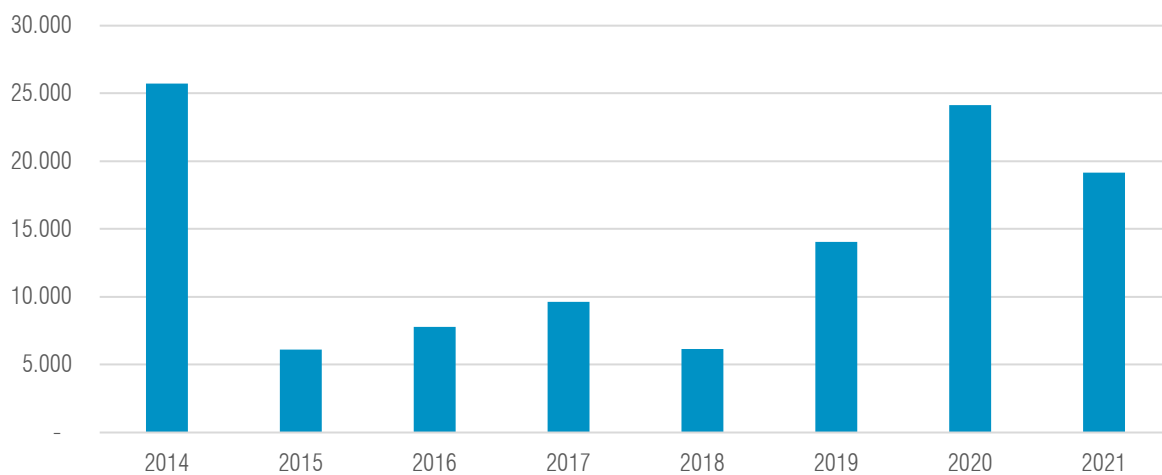
This can explain the fact that despite an increase in potato production in Iraq, total output has not yet reached the levels observed before 2017. For instance, in 2021, Iraq produced 466,127 tons of potatoes (see Figure 13). However, this was still lower than the much higher production levels of 2011–2014, when the highest volume (627,337 tons) was reached in 2013 (<https://www.fao.org/faostat/en/#home>). While there has been a slight improvement in yields over the past decade, most of the variation in production has occurred through changes in the area harvested. All these aspects indicate that soil fertility and the identification of the right soil for potato cultivation are important factors that can have an impact on harvests and yields. To increase potato production, therefore, it may be necessary to take soil quality into account and solve soil fertility problems.

1. Source: MoA

2. Idem

**Figure 13:** Iraqi potato sector performance by yield (100 g/ha) and production (tons), 2014–2021

Source: FAOSTAT (<https://www.fao.org/faostat/en/#home>).

**Figure 14:** Evolution of harvested area for potato production in Iraq, 2014–2021 (ha)

Source: FAOSTAT (<https://www.fao.org/faostat/en/#home>).

## Socioeconomic importance of the sector

The potato crop is appreciated nationally and internationally for several reasons, in addition to the fact that it ranks fourth behind wheat, rice and maize in terms of dietary importance. Potatoes are also known for their high nutritional value. The Iraqi potato is highly valued

for its versatility in cooking, as it is a staple ingredient in many traditional Iraqi dishes, such as 'mashkoul' and 'dolma'. This explains why potato plays a crucial role in the Iraqi diet, with only tomato and onion in higher demand.

### Box 1: Improving food security in Iraq

Undernourishment in Iraq has long been relatively high, when compared to other countries in its region or income group. The situation has worsened with the Ukraine–Russian Federation conflict, as Iraq relies heavily on food imports, leading to increased local food prices due to global fuel and food price rises and disrupted agriculture imports. This, in turn, has strained the government’s food subsidy programme and hindered its ability to support the most vulnerable during times of heightened need. As a result, the poverty rate has increased and people’s purchasing power has been eroded, forcing them to allocate a larger portion of their budget to food.

According to the World Food Programme (WFP) Iraq Annual Country Report (WFP, 2022), 83% of beneficiary households from a project were food insecure or vulnerable to food insecurity, marking a 5% increase compared to March 2022 findings. These statistics emphasize the urgent need for effective interventions to combat food insecurity in Iraq. Similarly, according to findings by the United Nations Children’s Fund (2022), poverty and food insecurity in 2022 were exacerbated by inflation, rising food prices and the ongoing impact of COVID-19. Iraqi children and young people faced many challenges, resulting in worsening intergenerational exclusion and poverty. Half of all children have been deprived of at least two basic rights, and child poverty has reached 37.9% due to years of instability and the socioeconomic impact of the COVID-19 pandemic.

Because the country confronts significant challenges concerning food security, addressing these issues holds great importance and potential benefits. In this context, achieving food security is a main objective for Iraq’s government. This is reflected in the goals set by the agriculture and water sectors in the National Development Plan 2018–2022, and in the launching of the National Food Security Project in Iraq (2020–2022) by the Ministry of Planning (MoP). The aim is to reduce production costs, improve product quality and minimize losses in order to lower prices for consumers, while guaranteeing the safety and nutritional value of the food they eat.

Iraq has immense potential to develop agricultural production and increase farmers’ yields, and enhancing productivity and competitiveness in the agricultural sector is essential to improving the country’s food security. In addition to contributing to economic development goals such as job creation, competitive agricultural systems make a considerable difference in enhancing food security – measured in terms of people’s access to sufficient, safe, affordable and nutritious food.

This can be achieved through better access to knowledge, better varieties, quality inputs, better market information and better market connections. Strengthening market connections is essential to guarantee better physical access to food throughout the country. Support for improving competitiveness, expanding production and improving links with the domestic market through strategies for the potato, tomato and poultry sectors will help improve physical, social and economic access to food, ultimately defining food security for the population.

Potatoes in particular have high adaptability and yield capacity, and act as a high-quality food offering balanced nutrition. In addition to carbohydrates, potatoes provide high-quality protein, a variety of minerals, rich vitamins, very low fat and high dietary fibre.

This industry also represents an important source of employment and income for thousands of farmers and agricultural workers in the country, especially in the mid-mountain areas. According to the United States Agency for International Development, 705 farmers were growing potatoes in the Kurdistan Region of Iraq in 2017, double the number in 2015, when they were mostly present in Erbil and Duhok.

The agricultural sector also presents a tremendous opportunity for Iraq to empower women entrepreneurs and youth, the latter of whom constitute a significant 60% of the country’s population, totalling over 26 million individuals. Despite facing numerous challenges – such as conflicts, internal displacement and the COVID-19

pandemic– this socioeconomic group has encountered difficulties in uplifting themselves, sustaining their livelihoods and making substantial contributions to the nation’s economy. Promoting and enabling opportunities for entrepreneurship and employment in the potato sector is critical, especially in a context where cultural and social norms hinder the participation of young Iraqi women in the economy.

In light of these circumstances, it becomes increasingly crucial to harness the untapped potential of the sector, particularly for women and youth in general, as a means to foster inclusive growth, economic diversification and job creation in Iraq.

## A value chain with high potential for growth and scalability

The country has ideal climatic and geographical conditions for potato cultivation. The main regions for potato cultivation are the Kurdistan Region of Iraq, the northern uplands around Mosul, and the central valley of the Tigris and Euphrates rivers near Baghdad. Potato production has spread widely in the Kurdistan Region of Iraq due to its fertile soil and appropriate climatic conditions for crop growth. The country has an arable area of over 5 million hectares (ha) and its climate varies from subtropical to arid. There is potential to increase potato production through extending areas of cultivation and introducing higher-yielding varieties and new technologies.

“**Ninewa is considered the breadbasket of Iraq, as it provides food to all governorates. Potatoes, in particular, are a strategic product for the region.**”

Potato farmer from Ninewa

Baghdad and Ninawa are the two governorates in Iraq that contribute the most to total potato production in the country. In 2021, these two governorates alone accounted for 88% of the area cultivated with potatoes,



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with over 51,540 *donums*<sup>3</sup> (12,885 ha) in the 2021 autumn season. Wasit and Anbar are also key production areas. Although potatoes are also grown in the lower Tigris–Euphrates Valley, production is limited due to soil salinity. Table 1 shows the contribution of the governorates to potato production in the autumn and spring seasons of 2021.

**Table 1: Potato production by governorate in 2021**

Cultivated area production and average yield for autumn potatoes for private sector at governorates level for 2021

Governorate	Average yield (kg donum)		Production (ton)	Donum cultivated area		
	Harvested area	Total area		Damaged area	Harvested area	Total area
Ninawa	5,271	5,271	159,216	-	30,204	30,204
Ambar	5,820	5,781	13,550	16	2,328	2,344
Baghdad	6,267	6,266	133,705	5	21,334	21,339
Babil	8,267	8,267	15,443	-	1,868	1,868
Karbala	7,278	7,278	131	-	18	18
Wasit	5,522	5,522	8,051	-	1,458	1,458
Salah al den	8,696	8,696	200	-	23	23
Al-Najaf	8,500	8,500	17	-	2	2
Al Qadisiya	8,500	8,500	34	-	4	4
<b>Total</b>	<b>5,771</b>	<b>5,769</b>	<b>330,347</b>	<b>21</b>	<b>57,239</b>	<b>57,260</b>

3. An Iraqi donum is equivalent to 2,500 m<sup>2</sup> or 0.25 ha.

### Cultivated area production and average yield for spring potatoes for private sector at governorates level for 2021

Governorate	Average yield (kg donum)		Production (ton)	Donum cultivated area		
	Harvested area	Total area		Damaged area	Harvested area	Total area
Ninawa	5,716	5,716	35,729	-	6,251	6,251
Ambar	5,254	4,780	5,028	95	957	1,052
Baghdad	7,115	7,077	3,977	3	559	562
Babil	7,775	7,775	68,148	-	8,765	8,765
Karbala	9,141	9,141	16,106	-	1,762	1,762
Wasit	9,765	9,765	332	-	34	34
Salah al den	6,369	6,369	5,649	-	887	887
Al-Najaf	7,781	7,781	319	-	41	41
Al Qadisiya	8,339	8,339	492	-	59	59
<b>Total</b>	<b>7,030</b>	<b>6,994</b>	<b>135,780</b>	<b>98</b>	<b>19,315</b>	<b>19,413</b>

Source: Iraq Central Statistical Organization.

## The Iraqi potato industry is marked by price fluctuations and low profit margins

In Iraq, the pricing of potatoes is largely determined by the market forces of supply and demand, quality, and the size of the crop. However, prices are also influenced by governmental policies such as subsidies and import restrictions. The lack of market information and market transparency in Iraq leads to inefficient pricing, as farmers and traders often have limited access to up-to-date market information, making it difficult for farmers to negotiate fair prices for their products. Additionally, limited access to storage and transportation infrastructure in Iraq leads to higher transaction costs for farmers and traders, further reducing their profits. A considerable share of the total potato production in Iraq goes to waste. There is an urgent need for appropriate boxes or containers, and storage facilities. The lack of quality control measures, standardization in the potato industry in Iraq also hampers the development of a modern marketing system.

A cost analysis of potato production provides valuable insights into the factors influencing the pricing of potatoes at production level. Among these factors, the cost of seeds stands out as the most significant component, accounting for 47.8% of the total cost per *donum*. The price of potato seeds is exorbitantly higher than the average in international markets. Comparatively, the cost in Iraq is approximately \$1,800 per ton, while international prices average between \$500 and \$600 per ton.

According to farmers, on average, the cost of first-generation industrial potato seeds ranges from \$1,600 to \$1,800 per ton. The price of first-generation table potato seeds is much lower, at between \$354 and \$380 (IQD 500,000 to 550,000) per ton. Second-generation table potato seeds are priced between approximately \$241 and \$276 (IQD 350,000 to 400,000) per ton. These prices may vary slightly depending on the specific market conditions and region. Some 700 kgs of seeds are required per *donum*. Given that 1 kg of industrial potatoes costs \$1.60, the total amount is per *donum* is \$1,120.

Other significant costs factors include labour, fertilizers and land. Table 2 shows the average breakdown of the costs of potato production in the spring planting season.



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**Table 2: Average breakdown of the costs of potato production during spring**

Input	Cost per donum (in IQD)
Seeds	1 466 002
Water	110 000
Land rental (1 <i>donum</i> )	250 000
Pesticide	200 000
Labour	450 000
Transportation	150 000
Power	150 000
Land preparation	100 000
Fertilizers	400 000
<b>Total</b>	<b>3 276 002</b>

**Source:** ITC consultation in Mosul, February 2023.

The analysis reveals that the cost structure of potato production is influenced by a range of factors, with seeds being the main cost driver. The overall cost estimate is IQD 3,276,000 per *donum* (\$2,602.05), for a production of approximately 10 tons / *donum* (around 40 tons per ha). Farmers indicated that the costs lower in autumn, as well as production, which is around six tons per *donum* (24 tons per ha).

On the other hand, farmers estimate that they obtain roughly IQD 400,000 in profit in spring (equivalent to around \$305) and IQD 120,000 (equivalent to \$90.35) in autumn. The quality of potatoes in spring is better, enabling farmers to sell their products at higher prices. The estimated profit margin is around 15%, although it may vary depending on market prices.

In the middle of the supply chain, wholesalers purchase potatoes from farmers and sell them to retailers. Wholesalers aim to set prices that will cover their costs and provide them with a profit margin. The price of potatoes may also be influenced by the level of competition in the market. It is estimated that wholesalers earn 10.5% of the price paid by final consumers.

At the retail level, the price of potatoes is influenced by the level of demand from consumers. Retailers may set prices based on their costs, the quality of the product and the level of competition in the market. According to estimations, retail traders earn 33.3% of the price paid by final consumers.

## Value chain mapping: The current situation

The roles and functions of the multiple actors –from farmers, input suppliers, processors, traders and retailers, to consumer – in the complex value chain of the potato sector in Iraq are described below, in the

different stages of production, distribution and consumption. Figure 16 displays the interrelationship between actors at different levels of the value chain.

### INPUT SUPPLY

Seeds, pesticides and fertilizers are essential inputs for potato production. Farmers tend to purchase inputs from local dealers or markets. The dominance of a few suppliers in the distribution of agricultural inputs, many of which are imported, discourages competition and reduces efficiency, potentially pushing out disruptions in these supply chains that would reduce costs for farmers or improve their access to a broader range of products.

Since local availability of seed potato is insufficient, demand is covered with imports that come mainly from the Netherlands and France. In 2021 alone, the value of seed potato imported by Iraq from these two countries accounted for \$10.7 and \$3.2 million correspondingly (See Table 3).

**Table 3:** List of supplying markets for seed potatoes imported by Iraq in 2021 (mirror data)

Exporters	Value imported in 2021 (\$ millions)	Share in Iraq's imports (%)	Quantity imported in 2021 (tons)
Total	15.1	100.0	22 040
Netherlands	10.7	70.6	14 468
France	3.1	20.9	5 426
Germany	0.6	4.0	1 071
Others	0.6	4.5	1 075

Source: ITC Trade Map (<https://www.trademap.org/Index.aspx>).

Fertilizers are also mostly imported and sold through large wholesalers to small shops. Nitrogen and/or potassium-based fertilizers are frequently used. Organic animal fertilizer or manure is also used by farmers. Plants are treated with fungicides and pesticides to prevent and treat pests and diseases such as blight.

Key machinery used includes cultivators, seed and ploughing machines, and tractors. Some farmers own their own machinery, while others rent. Agreements are arranged based on projected production quantity. Seed machines and plough machines are expensive so farmers rotate their use.

The potato industry is highly labour-intensive. During both planting and harvesting, demand for labour increases considerably, particularly during harvesting. Daily rates go to around IQD 10,000 (around \$8). In spring, seven hours of work a day is the norm for labourers. Between 30 and 45 workers are needed per *donum*. Women work mostly on sorting and packing products.

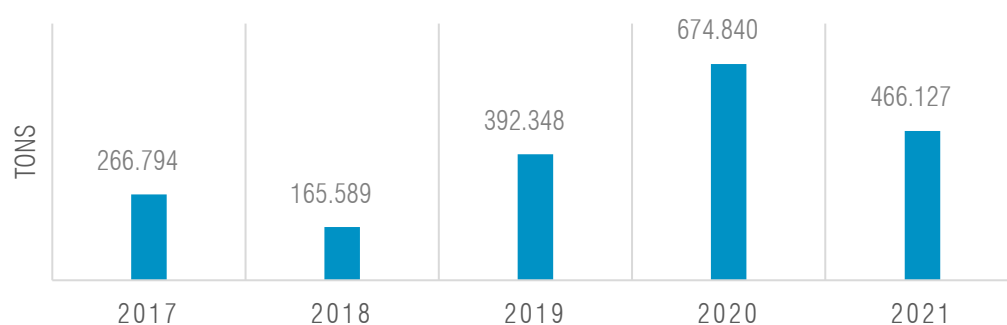
The type of irrigation used depends on the area. Both flood irrigation and sprinkler systems are used. Electricity is required for water pumps and generators used for irrigation. Finally, additional inputs include bags and packing materials. They are either made of fibre or plastic. Waste potatoes are packed in nylon bags of 25–30 kgs.

## PRODUCTION

Potato production in Iraq operates within a distinct set of circumstances. The sector is dominated by smallholders, while a few vertically integrated companies also contribute to the industry. Farmers tend to opt for fast-growing seed varieties to accommodate dual-season usage. Renting land is common. Despite limited access to land ownership or rental, Iraqi women play an active role in the value chain, particularly in sorting and packing.

Potato cultivation follows a crop rotation pattern, often alternating with wheat cultivation. This practice serves to maintain soil quality and reduce build-up of soil-borne potato pests and diseases. Fields are typically allocated to wheat for one season and then transitioned to potato cultivation for the subsequent season.

The potato production landscape exhibits a clear focus, with approximately 90% of the output dedicated to table potatoes and a minimal 10% (or even less) allocated to industrial potatoes.

**Figure 15:** Evolution of total potato production in Iraq, 2017–2021 (tons)

Source: FAOSTAT (<https://www.fao.org/faostat/en/#home>), 2021.



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Table 4 shows the most common varieties of industrial and table potatoes produced in Iraq. Hermes is the main variety grown for processing (industrial potato),

and Arizona is the chief variety for table or home consumption.

**Table 4: Most common varieties of industrial and table potatoes produced in Iraq**

Industrial potato varieties	Table potato varieties
Arsenal	Arizona
Hermes	Riviera
Lady Rosetta	Bradsuon
Caruso	Ari
	Georgina

Source: ITC.

Potato production has a growing season from November to April. During consultations, farmers indicated harvesting an average of around 10 tons of potato per *donum* during the main season (spring) and six

tons per *donum* during the second season (autumn). The calendar of the potato planting seasons can be seen in Table 5.

**Table 5: Planting seasons of potatoes in Northern, Central and Southern Iraq**

Region	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Northern												
Central												
Southern												

Source: ITC.

The challenge of potatoes' relatively short shelf life is magnified in hot weather, prompting careful choices between sales and storage strategies to prevent spoilage. These multifaceted factors collectively contribute to shaping the unique dynamics of potato production in Iraq.

Temperature and rainfall play a pivotal role in potato production, particularly in regions like Iraq, which ranks fifth globally in vulnerability to challenges stemming from reduced water and food availability, extreme temperatures, and associated health concerns. Estimates indicate a trajectory of rising temperatures and a projected decrease in rainfall for Iraq (Hashim et al., 2022).

## PROCESSING AND MARKETING

Potatoes are usually harvested by hand in Iraq, with most farmers using traditional methods, such as hoes, which results in considerable postharvest losses due to damage and bruising. After harvest, potatoes are transported to be sold immediately or stored. Storage facilities can be owned by either the public or private sector. Storage facilities serve two main purposes: i) storing potatoes for market supply; and ii) preserving them as seeds for the next planting season. When cold storage is available, a fee is charged for its use. Once harvested, industrial potatoes are stored at temperatures between 8 and 12°C. Table potatoes are stored at between 4 and 6°C.

Sorting and grading activities are minimal. Packaging is usually done manually, with limited use of mechanized equipment. The lack of mechanization in the postharvest handling process leads to higher labour costs and lower efficiency.



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Potato processing factories exist in Iraq, although some are not operational. They tend to be in larger cities, such as Erbil. Chips and frozen French fries are some of the potato products processed in Iraq. Industrial potatoes are cleaned, peeled and sliced. Then they are either put in boiling hot water machines or moved directly to the fryer. After frying, flavour is added and then the product is packed as chips. For French fries, the process is the same, except that after frying they go into a shock freezer before being packed.

## DOMESTIC AND INTERNATIONAL MARKETS

Fresh potatoes are sold to traders or processors at the *a/was* or wholesale markets, mostly by individual farmers; and less frequently are sold directly to consumers, since they prefer to purchase potatoes from retail shops. The commercial exchange between farmers and buyers is usually done by verbal agreement and cash payment. Some large potato farms enter into written contracts with processors and wholesalers.

Transport to the traders is usually organized by the farmers. Transport is done by road and products pass through multiple checkpoints within Iraq, where at every stop the product is checked and additional costs are requested, including informal payments.

Fresh potatoes are transported to markets or *a/was*, which can be public or private. The range of services offered, as well as the available infrastructure, varies. Markets are mostly divided into two main sections, i.e. one for local products and one for imports; however,

one can see imported products on both sides. During any given day at the market, unsold products are usually left at the agent's lot until the next day or hauled back by the farmer and brought back the next day. When these markets are full, the price of potatoes drops. The *a/was* are subdivided into lots rented by agents who are basically marketers. Retailers come to the markets and purchase directly from agents. They usually arrange transportation to their shops. Other large buyers also purchase potatoes from the markets, although some buy from wholesalers directly.

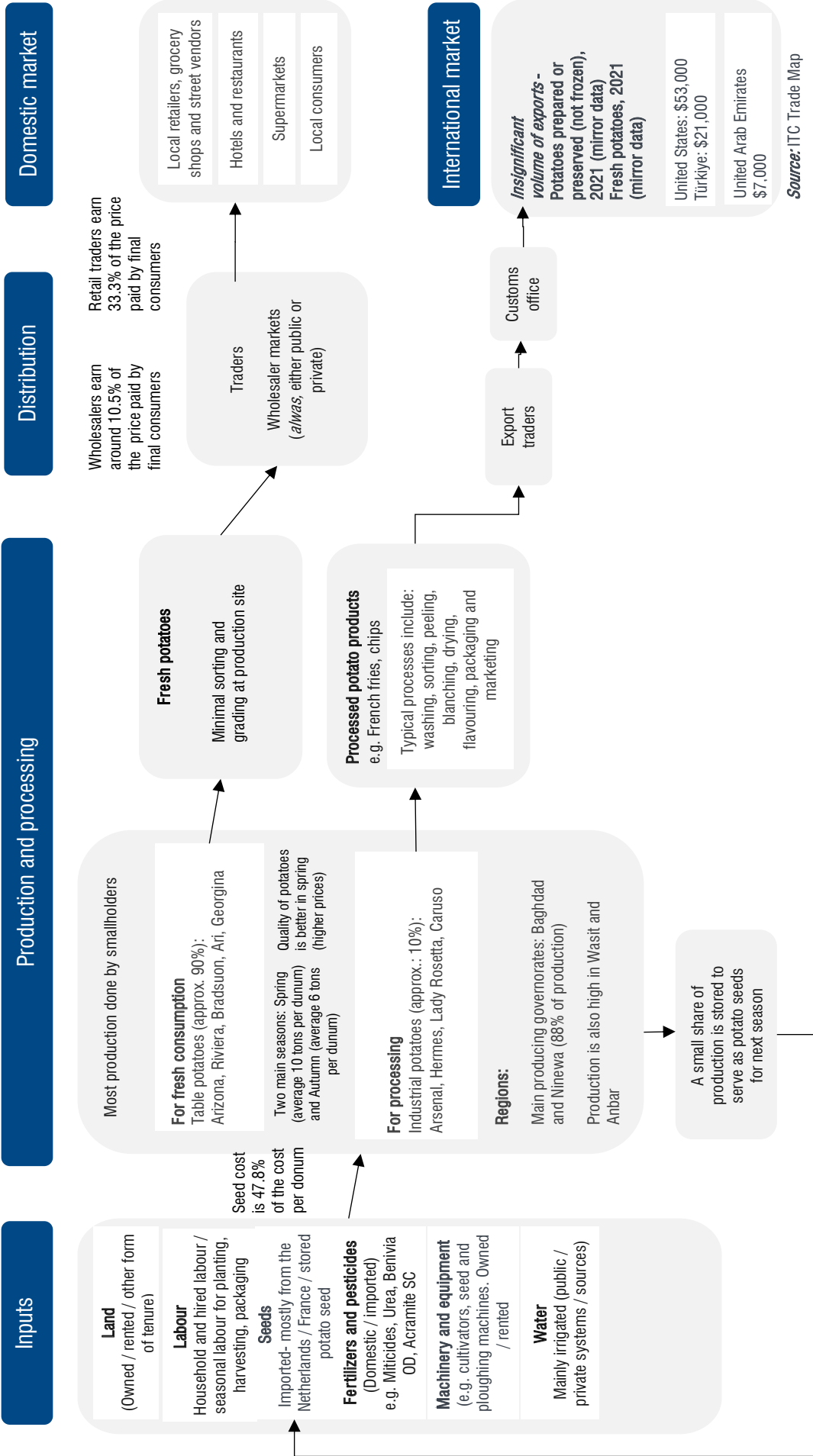
Exports of fresh potatoes from Iraq are insignificant and inconsistent. In 2021, Iraq exported potatoes prepared or preserved (not frozen) to the United States of America and Türkiye for a value of \$53,000 and \$21,000, respectively; and fresh potatoes to the United Arab Emirates for a value of \$7,000, according to mirror data.

## Value chain mapping

Roles and flows of goods and services –from pre-production to final consumers in the potato sector—are

illustrated in Figure 16 in a stylized mapping from raw products to value addition and markets and consumers.

Figure 16: Potato sector value chain



## POLICY FRAMEWORK GOVERNING THE SECTOR

In recent years there has been a decline in production. This is attributed to several factors, such as drought, poor soil quality and the use of outdated farming techniques. This has prompted the Iraqi government to launch several initiatives aimed at supporting potato growers and improving the overall productivity of the sector.

- The policy framework directing opportunities in the agriculture and agrifood value chain generally and the potato sector in particular includes plans and strategies, legislation and regulations. Some of the particularly relevant recent elements of this framework include:
  - Government Programme: 'The programme outlines the government's vision and plans for the economy, financial and service sectors, addressing poverty and unemployment, combating corruption, ending the waste of public money, establishing security and stability, enforcing the law, strengthening the authority of the state, and meeting the demands of the Iraqi people (Republic of Iraq, 2022). The Government Programme identified reforming the economy and the financial, agricultural, industrial and banking sectors supporting the private sector as a key priority.
  - **National Development Plan 2018–2022**: The Plan seeks to 'establish the foundations of an effective development state with social responsibility' through objectives related to governance, economic reform and recovery, investment attraction, income growth, improved employment, human security and development, and decentralization and urban planning (Republic of Iraq MoP, 2018). Explicit targets regarding the agriculture sector include an increased contribution to gross domestic product and a higher rate of growth, sustainable food security, and progress towards clean agriculture. Under the previous National Development Plan, investments were made in agriculture for modernization, employment generation, rural development, fostering private sector investment and enhancing competitiveness. An update of the National Development Plan (2023-2027) is under development.
  - WFP Iraq Country Strategic Plan (2020–2024): Aligned directly with Iraq's National Development Plan 2018–2022 and the government's commitment to achieving the Sustainable Development Goals by 2030, the WFP Iraq Country Strategic Plan (2020–2024) centres on three interconnected strategic outcomes that contribute to Sustainable Development Goals 2 and 17. These outcomes focus on crisis response, resilient livelihoods and capacity strengthening (WFP, 2019). By pursuing these goals,



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the aim is to assist Iraq in eradicating hunger, fostering development and creating a more conducive environment for peace.

- **National School Feeding Programme 2019–2025**: After a successful pilot in West Mosul in 2018, the Government of Iraq and WFP collaborated to reintroduce the National School Feeding Programme. Leveraging WFP expertise in school feeding management and procurement, the Ministry of Education directly provided support to 180,000 students, accounting for 40% of the total target. WFP covered the remaining 60% (Rapose, 2020). The programme's primary objectives include enhancing children's access to education and health services, and providing support to vulnerable families and communities.
- **Multi-annual Indicative Programme 2021–2027**: This programme aligns with the strategies of the Government of Iraq and is guided by the Partnership and Cooperation Agreement between the European Union and the Government of Iraq from 2012, as well as the European Union Strategy on Iraq from 2018. According to the Iraq Multi-Annual Indicative Programme 2021–2027 (European Union, 2021), the primary objective is to support Iraq's recovery from past crises, fostering overall stability and creating opportunities for all Iraqis – including youth, displaced populations and returnees – to prosper in a more democratic and prosperous Iraq.
- **National Nutritional Strategy 2012–2021**: This strategy defines a comprehensive framework for improving health and nutrition. Strategic objectives relevant to the agriculture sector include those on intersectoral cooperation, a review of relevant national frameworks, the provision of food security to all, and planning for monitoring, evaluation, surveillance and response (Republic of Iraq Ministry of Health, 2011).

- National Food Security Strategy (under development): The National Food Security Committee was established in 2017 to update and further develop an Iraq Food Security Strategy. The strategy is still under development.

Additionally, the government has established requirements and standards for food products based on the Codex Alimentarius and regulations from neighbouring countries. The Food Act No. 29 of 1982 established regulating controls on food in the country.

In recent years, Iraq has made several efforts to promote the sale of potatoes in local and international markets. The Iraqi government is working closely with international organizations and local farmers to improve potato production and promote the sector. Training and technical assistance programmes have

been established for farmers, and storage and marketing systems are being put in place to improve market access.

The government has implemented bans on the importation of certain vegetables, including potatoes. This import ban restricts the entry of imported potatoes (fresh or chilled) into the country's market.

One of the most notable initiatives has been the introduction of new varieties and production technologies. In addition, the Iraqi government has worked to promote the 'Iraqi potato' brand abroad, participating in trade fairs and establishing agreements with international importers. In the local market, some advertising and awareness-raising campaigns have been carried out to promote potato consumption, highlighting its nutritional benefits and versatility in the kitchen.

## INSTITUTIONAL SUPPORT

For the potato industry in Iraq to achieve sustainable growth and development, it is essential to establish a robust network of support institutions comprising governmental bodies, private sector entities and technical agencies. The success of the sector will rely on this network as well as on the capabilities of the companies operating within the sector. To facilitate long-term sustainable growth, participating enterprises must have access to a competent network of support from both the government and the private sector.

- To cater to the specific needs of the potato industry in Iraq, capacity and resource enhancements can be considered within relevant institutions to effectively support the sector's growth, including:
- **MoA:** MoA staff should receive capacity-building programmes focused on tailored GAP based on local conditions and climate-smart agriculture techniques. Adequate capacity-building trainings, advisory support and tools on Strategy implementation planning, management techniques, monitoring and resource mobilization should also be provided.
- **Departments of Agriculture** (Governorate level): These local departments play a pivotal role in reaching out to potato value chain actors at the grass-roots level. It is essential to provide comprehensive training to their staff, particularly focusing on modern agricultural practices, quality control and traceability standards for potatoes. Training on disease control and prevention, specifically for potato-related diseases, should also be included to safeguard crop health and quality.



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Central Organization for Standardization and Quality Control (COSQC): Enhancing COSQC capacities and knowledge on development of tracing systems to monitor the movement of potato products is essential. Prioritizing the swift revision and efficient update of mandatory standards for potato cultivation, processing and packaging should be a focal point. Developing guidelines for use of facilities, equipment and materials for potato production, storing and processing can significantly improve potatoes' market value and quality.

Key institutions from the public and private sector with a bearing on the development of the potato sector are listed in the Appendix.

## SECTOR COMPETITIVENESS DIAGNOSTIC

Improving productivity and quality, developing efficient value chain connections, linking to domestic markets, and ensuring sustainable and inclusive growth are fundamental to realizing the significant potential of the Iraqi potato sector.

Key constraints facing the potato sector directly affect competitiveness, productivity and sustainability in farming; the business environment and value chain development; and domestic and international market connections, with further implications for the sector to realize its potential as a driver of sustainable and inclusive growth (see Table 6). These constraints, which are addressed through activities in the Strategy Plan of Action (PoA), are present at the three layers of farm- and firm-level capabilities, the immediate business environment and the national environment.



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**Table 6: Key competitiveness constraints in the potato sector**

	Key constraints	Relevant PoA activities
Supply side	• Costly and inconsistently available seeds largely contribute to price volatility and low profitability	Access to affordable quality seeds: 1.1.1–1.1.6.
	• On-farm productivity is limited by poor-quality and costly inputs, and limited capital intensity	Access to affordable quality seeds and to other key quality inputs, such as fertilizers and pesticides: 1.2.1–1.2.4.
	• Skill gaps and ineffective training programmes limit productivity growth	Adoption of improved agriculture practices: 1.3.1–1.3.6
Business environment	• Weak or absent coordination among farmers' and traders' associations undermines value chain development	Sector representation and advocacy: 2.1.1–2.1.3.
	• Limited postharvest infrastructure and limited awareness about proper storage techniques, result in significant potato wastage and constrained supply.	Cold chain infrastructure and postharvest services: 2.4.1–2.4.4.
	• Limited access to financial services prevents upgrades in production and processing capacity, and limits opportunities for adoption of climate-smart technologies	Financial options for sector growth and development: 2.3.1–2.3.5.
Market entry	• Challenges in market connections impact farmers' pricing ability	Direct links between producers and buyers: 3.1.1–3.1.5.
	• Delays and high costs at checkpoints inhibit domestic market access	Market opportunities and improvements in policies and procedures: 3.2.1–3.2.5.
	• Poor packaging and limited or absence of branding capacity hinder promotion of Iraqi products	Adding value to Iraqi potatoes: 3.3.1–3.3.3.
	• Weak quality management and food safety capacities hinder improvements in the quality of potato products	Quality management and food safety improvement: 3.3.1–3.3.3, 2.4.3.
	• Burdensome procedures limit export potential	Market opportunities and improvements in policies and procedures: 3.2.1–3.2.5.
Development goals	• Few measures on water resource management and climate change adaptation have been implemented	Water management and climate change adaptation: 1.4.1–1.4.3.
	• Insufficient targeted support for Iraqi women's employment and entrepreneurship hinders their contribution to the sector	Inclusive agribusinesses' creation and growth: 2.2.2, 2.2.3.



## Supply side: Competitiveness, productivity and sustainability in farming

Constraints related to competitiveness, productivity and sustainability in potato farming include capital intensity in production, gaps in technical skills, limits in the extent of sector organization and the little progress

made on climate change adaptation. Together, these limit opportunities for inclusive growth in the sector and hinder value chain actors from adapting to pressing environmental risks.

### COSTLY AND INCONSISTENTLY AVAILABLE SEEDS LARGELY CONTRIBUTE TO PRICE VOLATILITY AND LOW PROFITABILITY

- **Relevant layer:** Farm- and firm-level capabilities
- **Severity:** ● ● ●
- **Relevant PoA activities:** 1.1.1–1.1.6.

A shortage of quality and affordable potato seeds and limited access to improved seed varieties limit the potential of farmers to enhance value and resiliency in production. Research on factors driving potato production on Iraqi farms suggests seed quality has the greatest impact. Vegetable seedlings, which are mainly grown in ground nurseries using traditional methods, show weak growth after planting and decreased survivability in weather extremes (drought, high temperature or strong winds) as opposed to those grown with modern methods, which are a minority.

The main reasons behind the shortage of quality affordable seeds lie in the limited competition in the market due to dependence on seed imports, resulting in costs of \$1,800 to \$2,500 per ton; few available suppliers; limited awareness and entry facilitation of licence-free varieties; and overall outdated regulations governing the seed sector. During the spring season, most seeds are imported, while during the autumn season, which is shorter, mostly local seeds are used. The imported seeds for the first season typically come from larger companies and are of higher quality. However, during the second season, when local seeds are used, quality is often compromised due to the prevalence of viruses and pests affecting the crop. It is noteworthy that the price of potato seeds in Iraq is three to four times higher than in regional and international markets. Difficulties in transporting seeds also contribute to their unavailability in the market.

Supporting domestic seed production is key to opening opportunities within the potato sector, which is possible because the essential infrastructure – tissue culture laboratories – already exists and functions. Tissue culture

is the primary starter material for seed production and essential for autonomy in seeds, otherwise other forms of starter material (mini tubers, basic or certified seed) need to be imported for each seed cycle / seed lot. With proper management, tissue culture plants can be maintained indefinitely or renewed from original sources. Locally produced certified seed would be expected to market as per international norms, at around \$500–\$600 per ton – meaning huge savings for farmers that would directly translate into their gross margins, even if local seed sells for more than these norms.

Although many varieties are registered in Iraq, most are protected by plant breeder's rights, so seed of these varieties needs to be imported. Tissue culture plants are the physical form of intellectual property. Only a few businesses in Iraq are licensed to produce and market seed of some protected varieties. There are a few registered varieties in Iraq with expired plant breeder's rights (e.g. Desiree), meaning the intellectual property (i.e. tissue culture) can be obtained, which is essential for seed autonomy because seed can be produced indefinitely, representing an effective starting point for local seed production. Varieties from public institutions (such as the International Potato Center) are an open public good, so once a variety is released, seed businesses can access tissue culture of these varieties for seed production.

Laws on variety release, seed quality and testing have been criticized as being outdated, limiting the potential for innovation and the adoption of improved varieties, though Law No. 15 of 2013 concerning plant variety registration has allowed foreign seeds to enter the market. Further efforts are needed to ensure the quality of seeds entering the country. The destruction of the country's seed bank in Abu Ghraib following the 2003 invasion was particularly damaging to the supply of local seeds. More efforts are needed to identify varieties

with resilient traits as a way of helping to adapt to climate change and other challenges.

Addressing this issue can help optimize production costs and enhance the profitability of potato farming operations in Iraq. During consultations, sector stakeholders requested empowering and supporting local seed production through production and storage centres, and policy-level interventions.



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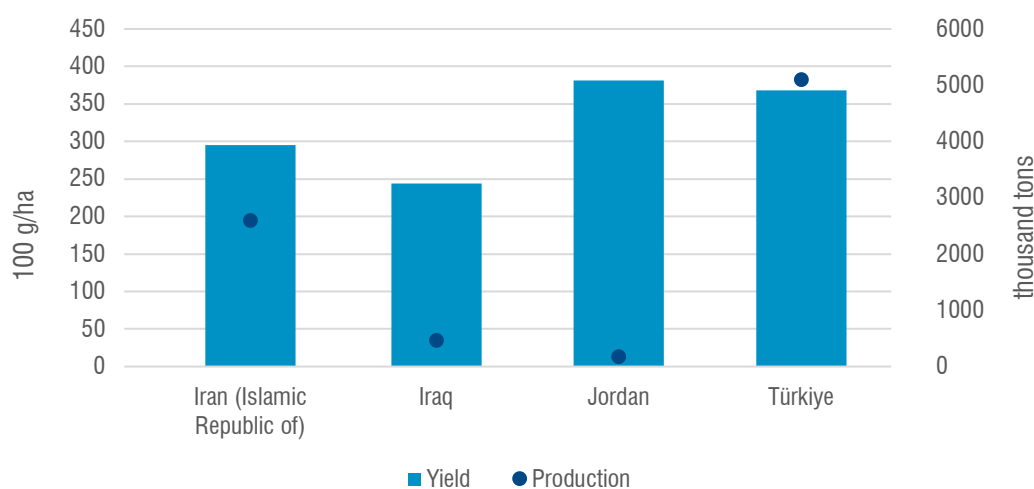
## ON-FARM PRODUCTIVITY IS LIMITED BY POOR-QUALITY AND COSTLY INPUTS, AND LIMITED CAPITAL INTENSITY

- **Relevant layer:** Farm- and firm-level capabilities
- **Severity:** ●●●
- **Relevant PoA activities:** 1.2.1–1.2.4.

Iraq's production of potatoes is lower than the average for the Western Asia region, which is 571 thousand

tons. In 2021, Iraq's production was 366 thousand tons, which was significantly lower than neighbouring countries such as Türkiye with a potato production of 5,100 thousand tons and Jordan with a potato production of 178 thousand tons (see Figure 17).

**Figure 17: Potato and yield in Iraq and neighbouring countries, 2021**



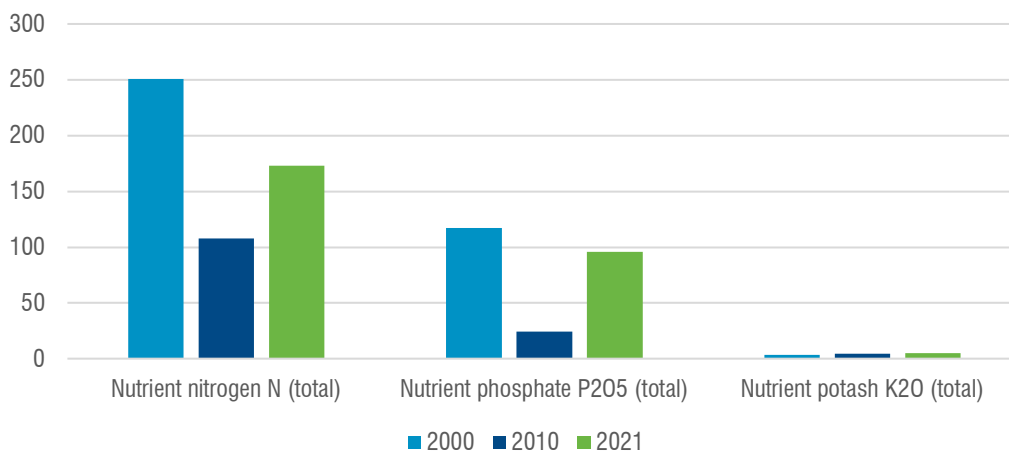
Source: FAO.

Relatively low levels of essential inputs for the improvement of on-farm productivity are used, which can be partly explained by their often-prohibitive costs, as well as lack of awareness and training on good production practices.

Fertilizer consumption was just 35.8 kg/ha of arable land in 2016, compared with an average of 187.1 kg/ha across upper middle-income countries and 94.8 kg/ha across the Middle East and North Africa. Total use of nitrogen and phosphate fertilizers in agriculture in 2021 had

increased from levels used in 2010 but remained below levels of use from 2000 (see Figure 18). Potash use remains low but is increasing. Many of these inputs are not produced domestically. Fertilizers and other inputs sold in informal markets can be expensive. At the same time, a lack of knowledge on the proper use of fertilizers is an issue for some farmers, who overuse certain inputs on their fields. Input suppliers express concerns that farmers are reluctant to accept new inputs and farming methods. These suppliers, like banks, are hesitant to grant loans to farmers who might present a repayment risk.

**Figure 18:** Agricultural use of nitrogen, phosphate and potash fertilizer in Iraq, 2000, 2010 and 2018 (thousands of tons)



**Source:** FAO, FAOSTAT (<https://www.fao.org/faostat/en/#home>).

The cost of fertilizers and pesticides in Iraq is significantly high due to various factors, such as governmental policies, including import restrictions. A lack of market transparency and information further exacerbates the situation, making pricing inefficient. As a result, the availability and affordability of pesticides are major challenges for Iraqi farmers. In addition, high production costs – which include expensive seeds – contribute to low profitability in the sector, estimated at only about 10%–15%. The fluctuations in prices resulting from the unavailability of imported

products during production peaks further compound the issue.

Many farmers harvest potato by hand, making use of family or hired labour. Much of agriculture in Iraq has a relatively low level of capital intensity, lowering potential output and labour productivity. In 2017, the most recent year for which data are available, the ratio of agricultural investment to value added in Iraq was 0.11 and the sector's net capital stock totalled just \$4.9 billion, among the lowest in the Middle East and North Africa.

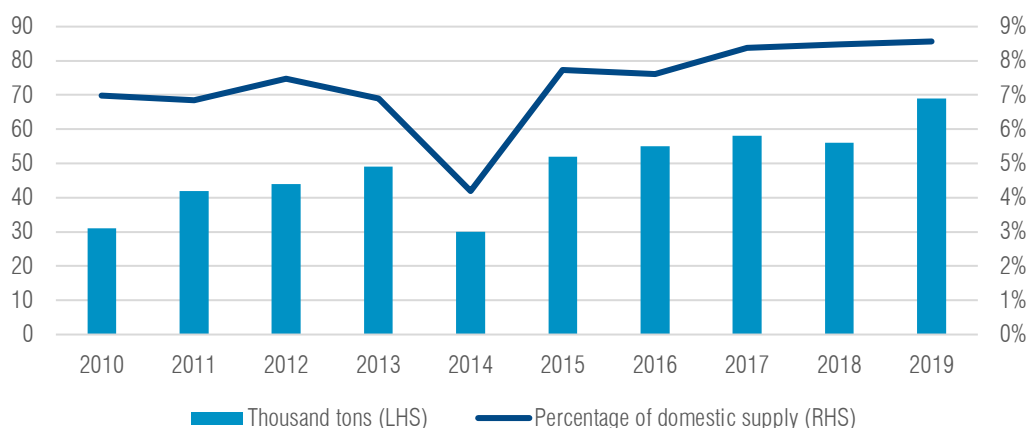
## SKILL GAPS AND INEFFECTIVE TRAINING PROGRAMMES LIMIT PRODUCTIVITY GROWTH

- **Relevant layer:** Farm- and firm-level capabilities, immediate business environment
- **Severity:** ● ● ●
- **Relevant PoA activities:** 1.3.1–1.3.6

Technical skill gaps depress farm and firm productivity in the potato sector directly and prevent the adoption of productivity-enhancing practices. Traditional sources of knowledge and on-the-job training are common but may slow the adoption of new inputs, technologies and practices, as well as limiting the potential for growth and innovations in business practices. Where extension services are available, they tend not to be very useful as a means of sharing information with farmers on improved techniques and tool use. The new conditions and risks brought about by climate change further raise the importance of regularly updated training for farmers, covering topics such as management of water

resources, pest and disease control, and the use of improved seeds.

The lack of technical skills in handling harvested products often further complicates these challenges. Inefficiencies in the potato value chain also reduce competitiveness and contribute to postharvest losses, further depressing incomes and profits. Aside from a brief improvement in 2014, potato losses have generally been increasing in absolute terms and as a percentage of total domestic supply over the past decade (see Figure 19). In 2019, losses reached 8.6% of domestic supply, above the Western Asia average of 6.7%. Strengthening the value chain as a whole will require targeted interventions and improved coordination more generally through enhanced flows of information and effective sector organization.

**Figure 19: Annual potato losses in Iraq, 2010–2019**

Source: FAO.

Fostering stronger partnerships with research centres and universities is instrumental in advancing agricultural practices. By investing in research and development (R&D), exploring and adopting innovative production techniques that positively impact the entire agricultural value chain becomes possible. This collaborative approach could not only empower extension officers with up-to-date knowledge but also pave the way for continuous improvement and sustainable growth in the agricultural sector.

Enhancing the dissemination of valuable information is key to further improve the work of extension officers.

This can be achieved by implementing a system that makes information readily available to extension officers, including details on the seeds and fertilizers purchased by farmers. For instance, (radio) advertisements can be used to reach a broad audience and promote best practices and advancements in agriculture. By equipping extension officers with comprehensive information and promoting knowledge-sharing among farmers, we can enhance productivity, promote sustainable practices and drive positive change throughout the agricultural community.

## Business environment

Constraints in the business environment and value chain development include insufficient institutional supports; minimal packaging, branding and related activities; underdeveloped business skills; limited capacities

for technology use; the little progress made on female entrepreneurship; and policy barriers to farm and firm operations. Together, these hold back sector dynamism and responsiveness.

## WEAK OR ABSENT COORDINATION AMONG FARMERS' AND TRADERS' ASSOCIATIONS UNDERMINES VALUE CHAIN DEVELOPMENT

- **Relevant layer:** Immediate business environment
- **Severity:** ●●○
- **Relevant PoA activities:** 2.1.1–2.1.3.

Sector organization plays a fundamental role in the development of competitive value chains. It facilitates the transfer of information on regulatory requirements and markets, offers training and other services to farms and

firms, and facilitates public-private dialogue to shape policy design. However, conflict and neglect have hindered effective cooperation and coordination in the Iraqi potato sector.

Some sector groups that were established before the conflict are currently non-functional, and existing organizations – particularly those serving farmers – have

limited capacities to represent farmers' interests or engage in other forms of support. Similarly, among the associations representing private sector actors, weak or missing coordination mechanisms undermine cooperation on shared interests in policy and other areas, with implications for efficiency across the value chain as well. The consequences of weak organization have

been exacerbated by the breakdown of social cohesion during prolonged periods of conflict and instability that have damaged traditional modes of cooperation and coordination. In turn, fragmented representation and lack of collective coordination among the private sector weakens its influence and ability to advocate for the sector's needs and interests.

## LIMITED POSTHARVEST INFRASTRUCTURE AND LIMITED AWARENESS ABOUT PROPER STORAGE TECHNIQUES, RESULT IN SIGNIFICANT POTATO WASTAGE AND CONSTRAINED SUPPLY.

- **Relevant layer:** Immediate business environment, national environment
- **Severity:** ● ● ○
- **Relevant PoA activities:** 2.4.1–2.4.4.

Proper storage of potatoes after harvest is crucial, as improper storage can lead to rotting and deterioration of potato quality. A lack of appropriate storage is a particularly important constraint to the potato sector in terms of supplying markets and storing seed for the next planting. As indicated previously, there is a high percentage of potato waste throughout the value chain.

Existing storage units tend to be old-fashioned. There are no standards for cold storage, nor minimal awareness among stakeholders regarding basic technical aspects, such as humidity and temperature control requirements. There is insufficient capacity to store potatoes so everything is sold at the same time, depressing prices. This occurs largely due to the destruction of most of the infrastructure, notably cooled

warehouses, and limited investment in recent years. Further, the growth of storage facilities within this sector of the chain has been restricted due to legal limitations on construction, despite a significant number of these facilities being owned by private sector companies. Farmers without access to proper storage instead use basements or insulated mud and straw huts, which have sanitary and quality implications.

The lack of sufficient cold storage reduces the lifespan of potatoes, especially in one of the two seasons of production. Such facilities would enable farmers to hold back their produce from the markets, thus potentially obtaining better prices and providing consistent supply for consumers and income for farmers.

Furthermore, potato processing remains limited in the country. There are some modern processing plants; however, investments of this type face different challenges in terms of high investment costs and irregular supply of raw materials.

## LIMITED ACCESS TO FINANCIAL SERVICES PREVENTS UPGRADES IN PRODUCTION AND PROCESSING CAPACITY AND LIMITS OPPORTUNITIES FOR ADOPTION OF CLIMATE-SMART TECHNOLOGIES

- **Relevant layer:** Farm- and firm-level capabilities, immediate business environment, national environment
- **Severity:** ● ● ○
- **Relevant PoA activities:** 2.3.1–2.3.5.

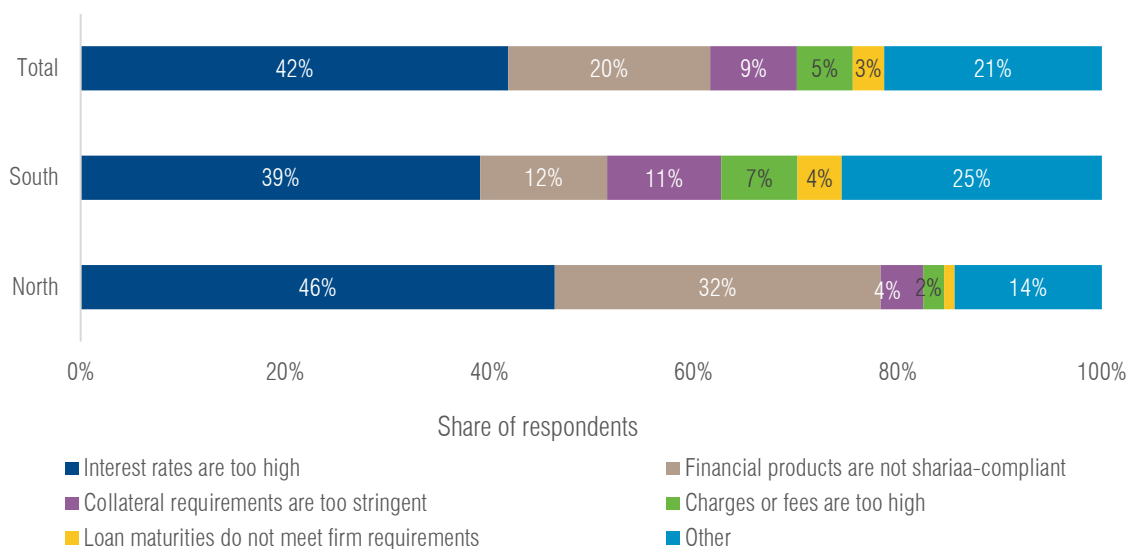
Access to finance remains a constraint for many farmers and smaller firms across all sectors in Iraq. Unsubsidized credit programmes in Iraq are offered to farmers on an unsystematic basis but institutional credit is often unavailable to farmers, raising the costs

of borrowing and discouraging investment. Generally, financial services are less developed in rural areas, which have low population densities and weaker infrastructure. In Iraq, regulatory factors and the low-risk preferences of private and state-owned banks have further discouraged their involvement in the agricultural sector. Although some support is provided through the activities of the Agricultural Cooperative Bank, its operations are fairly inefficient and it regularly faces liquidity shortages. Surveyed agribusinesses report that high interest rates are the greatest barriers preventing

their borrowing, and one out of three surveyed agribusinesses said that lack of access to finance was a grave obstacle to their operations (see Figure 20).

An additional constraint could include difficulties in finding guarantors.

**Figure 20: Barriers preventing firms from borrowing in Iraq**



Source: ITC agribusiness survey.

Among the main barriers reported by farms and firms are the complexity and cost of opening bank accounts, high interest rates and the short terms available to borrowers, as well as lack of information on grants and other available support. Many interviewed farmers and business leaders active in agriculture and agrifood value chains expressed concerns about the lack of sharia-compliant finance options available to them.

At the same time, financial services are needed by farmers and those active in related activities to help manage risk, considerable seasonal and annual variations in cash flow, long gestation periods and investments in lumpy assets. Securing improved access across the value chain can therefore increase on-farm productivity, improve postharvest practices and access

to markets, enable investments in enhanced sustainability and climate change adaptation, and ensure more predictable cash flows for households.

**“ We need options to postpone loan repayment, preferably interest-free loans ”**

Mosul potato producer

The scarcity of climate finance products is a particular challenge, limiting opportunities for investment in adaptations such as the use of water-efficient technologies and climate-resilient production infrastructure.

## Domestic and international market connections

Domestic and international market connection constraints include weak links across the value chain, underdeveloped market links, quality management shortcomings, and limited access to finance by farms and small firms. Together, these reduce the potential of farmers and firms to benefit from investment in

enhanced capacities and productivity improvements. These constraints are addressed in the third strategic objective of the PoA.

## CHALLENGES IN MARKET CONNECTIONS IMPACT FARMERS' PRICING ABILITY

- **Relevant layer:** Farm- and firm-level capabilities, immediate business environment
- **Severity:** ● ● ●
- **Relevant PoA activities:** 3.1.1–3.1.5.

The sector's challenges do not end at the farm level, and many of the most important issues to overcome are related to market connections in the value chain. Farms often face limitations in their capacity to engage in direct transactions with buyers, thus limiting their ability to obtain better prices. The dominant position of a few traders poses challenges to the ability of farmers to expand their commercial networks.

Access to information on market conditions, prices, logistics services and supply is critical for efficient markets and for all value chain actors to maximize their

earnings. However, access to few markets, uncompetitive trade and the high costs of obtaining market information in the Iraqi potato sector are all common. Constraints in information flows between value chain actors reduce efficiency and can lead to both higher prices for consumers and lower revenues for producers. As with many other constraints facing the sector, this is partly the result of institutional factors: insufficient in-market support prevents Iraqi producers from creating links with buyers.

In particular, insufficient or unreliable capacities for key value-added activities – such as quality, packaging, transportation and cold storage – hold back the ability of farmers to negotiate and sustain market connections with key buyers, such as retailers.

## DELAYS AND HIGH COSTS AT CHECKPOINTS INHIBIT DOMESTIC MARKET ACCESS

- **Relevant layer:** Farm- and firm-level capabilities, immediate business environment
- **Severity:** ● ● ●
- **Relevant PoA activities:** 3.2.1–3.2.5.

High costs at checkpoints in the potato trade can be attributed to several factors, such as weak coordination among relevant ministries, including MoA and the Ministry of Trade, as well as corruption and weak infrastructure. Corruption is a major issue, as corrupt officials controlling checkpoints may demand bribes from truck drivers carrying potatoes. The issue of mobility within the country remains twofold: the passage of agricultural products across provinces and the lack

of necessary registration / documentation for producers to access their farms and transport their products.

Poor infrastructure, including a lack of modern inspection equipment and trained personnel, can also contribute to increased costs and waiting times, potentially reducing potato quality. Finally, armed conflict and political instability can limit checkpoint access and increase security risks, further increasing transport costs and potentially deterring traders from participating in the potato trade. Overcoming these challenges is crucial to facilitate product mobility, reduce food waste, mitigate financial and economic losses, and ultimately enhance overall food availability.

## POOR PACKAGING AND LIMITED OR ABSENCE OF BRANDING CAPACITY HINDER PROMOTION OF IRAQI PRODUCTS

- **Relevant layer:** Immediate business environment, national environment
- **Severity:** ● ● ●
- **Relevant PoA activities:** 3.3.1–3.3.3

In addition to increasing appeal to customers and sharing information on the product, packaging can help maintain quality and facilitate storage and

transportation. Packaging was listed as a key challenge by Iraqi consumers.

Farmers' limited experience in packaging options, as well as in sorting and grading, limits their potential to negotiate more favourable prices in wholesale markets. Especially in comparison with imported potato products, the packaging and branding of domestically

produced alternatives is often less elaborated. The proximate causes of this are rooted in the limited technical capacities at the farm and firm level, including the results of both underinvestment in machinery and limited skills. There are not enough advanced grading and/or packing facilities. At a deeper level, poor

connections and flows of information across the value chain and with markets hinder progress being made by increasing uncertainty and making the benefits of investment in packaging and branding less clear to farmers and firms.

## WEAK QUALITY MANAGEMENT AND FOOD SAFETY CAPACITIES HINDER IMPROVEMENTS IN THE QUALITY OF POTATO PRODUCTS

- **Relevant layer:** Farm- and firm-level capabilities, immediate business environment, national environment
- **Severity:** ● ● ○
- **Relevant PoA activities:** 2.4.3, 3.3.1–3.3.3.

Quality management is a central component of competitiveness, affecting the reach of products and their ultimate market values. Barriers to improving quality and recognizing the quality of potato products hinder the sector's development. Improvements to quality management in the Iraqi potato sector are needed in the supply of inputs and regarding both raw and processed outputs. These improvements will need to be supported through upgraded capacities at the farm and firm level, as well as among the institutions responsible for standards and certification, such as COSQC.

Improvements in quality management and food safety practices are needed throughout the value chain. There is limited knowledge about these topics among key

stakeholders, particularly farmers, which contributes to the manual and rudimentary methods employed for grading. Furthermore, the grading process is frequently overlooked at the farm level, leading to inconsistencies in quality control and a lack of standardization throughout the value chain. Significant repercussions occur when attempting to access higher-value markets, such as retailers, where products often face rejection due to quality issues. Moreover, inconsistency in grading was listed as a key challenge by Iraqi consumers.

In addition to the relevance for market performance, there is evidence that the adoption of GAP and the use of higher-quality inputs may help strengthen resilience to climate-based shocks in agriculture. In reaching out to international markets, it will be increasingly important for quality management systems in the sector to take international requirements and buyer expectations into consideration in order to move into new markets and to increase the value of Iraqi potato products.

## BURDENSOME PROCEDURES LIMIT EXPORT POTENTIAL

- **Relevant layer:** Farm- and firm-level capabilities, immediate business environment
- **Severity:** ● ● ○
- **Relevant PoA activities:** 3.2.1–3.2.5

In the past, some potato companies have attempted to engage in export activities. However, they have faced considerable challenges due to the presence of excessive bureaucracy and complicated Customs procedures and regulations. These obstacles have resulted in increased costs and significant delays, making it particularly burdensome to navigate these intricate processes.

The complexity of Customs procedures and regulations can pose significant barriers for companies aiming to export their agricultural products. The challenges and

costs associated with compliance and bureaucracy have deterred many from pursuing export opportunities, limiting their market access and hindering their potential for growth and expansion.

**“ Severe hassles exist to gather requirements for exports, and obtain validation from relevant Ministries. More than three months are needed to obtain all documents, which doesn't work for fresh potatoes.”**

Potato processor and exporter in Erbil





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## Development goals

### FEW MEASURES ON WATER RESOURCE MANAGEMENT AND CLIMATE CHANGE ADAPTATION HAVE BEEN IMPLEMENTED

- **Relevant layer:** Farm- and firm-level capabilities, immediate business environment, national environment
- **Severity:** ● ● ●
- **Relevant PoA activities:** 1.4.1–1.4.3.

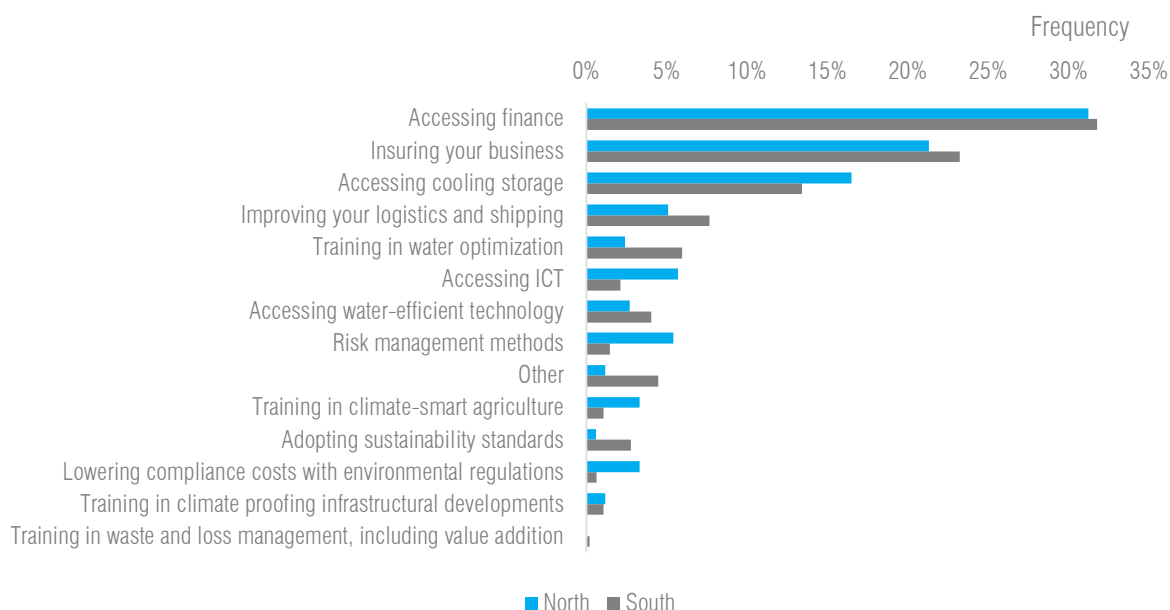
Climate change has serious consequences for Iraq's potato production sector. High levels of soil salinity already limit the expansion of potato farming in some regions. Iraq faces climate risks in the form of slow-onset events such as increasing temperatures, decreasing rainfall, desertification and the salinization of water and soils, as well as extreme weather events such as droughts, high temperatures, heatwaves, strong winds (and sand and dust storms) and erratic heavy rains. While Iraq's exposure to these events is low, its vulnerability remains high because of inadequate adaptive measures in place, with considerable consequences for crop yields. The risk is further exacerbated by an obsolescent irrigation network, which has been degraded by years of insufficient maintenance and limited investment in infrastructure.

The availability of water in the production areas of central and southern Iraq, which heavily depend on the Tigris–Euphrates River system, is also at risk due to the lack of international regulations for water pricing and use. In these regions, water availability is largely determined by rainfall in upstream countries that have established their own river-fed irrigation systems. No

international water use agreement has been signed, and Iraq could face increased shortages of water as a consequence.

Farmers are suffering from degraded soil in the form of reduced moisture content and intrusion of salts from irrigation water. While arable land has not declined in surface area in the past 20 years, changes in the suitability of cropping areas have triggered local changes in the geography of production, causing, in the worst cases, displacement of entire communities. Crop failures, including reduced yields and plant mortality, are recurrent in vegetable farming and are mainly linked to scarce or contaminated water. Downstream, the absence of cold chains in storage, transport and processing exposes vegetables to high temperatures for long periods, especially in the summer months. This is a major threat to product safety and quality, and frequently results in postharvest losses and waste.

The scarce availability of climate finance products is a particular challenge, limiting opportunities for investment in adaptation such as the use of water-efficient technologies and climate-resilient production infrastructure. Similarly, the lack of climate insurance tools hinders the management of financial risks. Surveyed agribusinesses identified access to finance and insurance as the greatest barriers to addressing environmental challenges (see Figure 21).

**Figure 21: Assistance needed by agrifood SMEs to tackle environmental issues**

Source: ITC agribusiness survey.

## INSUFFICIENT TARGETED SUPPORT FOR IRAQI WOMEN'S EMPLOYMENT AND ENTREPRENEURSHIP HINDERS THEIR CONTRIBUTION TO THE SECTOR

- **Relevant layer:** Farm- and firm-level capabilities, immediate business environment, national environment
- **Severity:** ●●●
- **Relevant PoA activities:** 2.2.2, 2.2.3

Women are active in the potato value chain as farmers and workers, particularly in sorting and packaging activities. However, their greater contribution is hindered by prevalent negative community views on women working outside the home, particularly at the market end, and gender norms that may discourage them from seeking employment or starting businesses. Furthermore, their extra chores, such as domestic and care work, or

preparing meals for workers, are not recognized and they receive limited targeted support, which limits their technical know-how on potato production. Stereotypes may also discourage women from developing skills in business and entrepreneurship or lead others to undervalue their competencies in these areas. A small household survey conducted for the Danish Refugee Council<sup>4</sup>, for example, found that only 7% of respondents considered work in farming to be acceptable for women, and many held negative views on women as business leaders. Furthermore, even if women own land, they face barriers to accessing finance, which constrains their ability to generate greater value.

### Implications for the Potato Strategy

The Iraqi potato sector offers significant opportunities, particularly in the domestic market. However, Iraq's ability to realize this potential is hampered by a number of challenges at all stages of the production and value chain, from input supply to on-farm production practices, harvesting and postharvest handling, branding and packaging, as well as the distribution and quality control required to access markets.

A holistic response is necessary to address the challenges and leverage the opportunities in the potato sector. This Strategy aims to address the aforementioned challenges to enable sector stakeholders to harness the promising opportunities in the potato sector, thereby making a positive impact on the country's economy.

4. Danish Refugee Council (2020)

# The way forward: A path to a strong, inclusive and resilient sector

This Strategy aims to have the following impact.

- Improve Iraq's potato sector performance in the domestic market.
- Promote the development and use of varieties that meet market demands and perform reasonably.
- Increase the bargaining power of producers through collective marketing and improving market timing.
- Add value and reduce losses by ameliorating postharvest practices, improving quality management and upgrading processing.
- Promote an effective market system, enabling collaboration among value chain actors.
- Open new markets, also abroad and enhance export capacity

Addressing the root causes of the key constraints holding back the potato sector's development requires the setting of a common vision and goal for the future, supported by a comprehensive and actionable plan for moving towards these. The way forward outlines the direction and steps that will need to be taken.

The potato sector provides opportunities for diversification of the agriculture sector. Potatoes are also a strategic crop for the country's food security. They represent a reliable food source, even in times of crisis, providing comprehensive and balanced nutrition. Further, a more competitive potato value chain has the potential to open up avenues for MSME development and employment generation for women and youth. However, this potential can only be unlocked through targeted interventions for these cohort groups.

Building on sector strengths, improving the performance of potato products in domestic markets has the potential to transform the Iraqi potato sector. The way forward for this Strategy provides an overview of how this can take place. Reviewing the behaviour and preferences of consumers – as well as preceding steps



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along the value chain involving agents, traders and others – highlights the current and potential markets for potato products. Structural value options and the future value chain identify some of the key aspects that would be present in a transformed sector. The vision and strategic objectives outline sector priorities for realizing the benefits of a more resilient and competitive sector. With effective implementation management, the Strategy can provide a clear path for future progress.



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## Leveraging market and product opportunities in the domestic market

The following section details specific markets for the Iraqi potato sector. While the short-term and medium-term focus primarily emphasize enhancing competitiveness within the local market, it's crucial for the sector to also be responsive to and meet the demands of the international export market. Overview of a proposed market orientation approach:

- Short-term (1–3 years): Meeting domestic demand for fresh potatoes
- Medium-term (3–5 years): Higher-value-added products in the domestic market
- Long-term (5+ years): Tapping into regional markets

### SHORT-TERM (1–3 YEARS): MEETING DOMESTIC DEMAND FOR FRESH POTATOES

In both the short and the medium term, the efforts of the Iraqi potato industry should be focused on meeting the demand of the Iraqi market, particularly for fresh potato products.

The domestic market offers sizeable opportunities for fresh potato products. However, Iraqi producers struggle to compete with cheaper imports from neighbouring countries. Most Iraqi consumers prefer local potato products to imports, and are willing to pay more for local potatoes on the basis of flavour, size and colour. While this preference is encouraging, chief issues to be addressed in the view of consumers include the fluctuation of prices, poor quality, bad packaging and inconsistency of grading. Availability of production was reported as a constraint at certain times in governorates such as Baghdad, Najaf and Mosul; and as a frequent challenge in Erbil. When local products are

not available, consumers tend to buy imported potatoes instead.

Based on consumers' preferences and buyer requirements, the Strategy proposes focusing on enhancing competitiveness and the value proposition of locally produced potatoes, and improving the connections between farmers and higher-end buyers in the local market, such as retailers and processors. Large international and national processors have operations in the country, with production mostly geared towards the domestic market. To leverage opportunities for higher profit margins, it will be crucial to enhance and sustain a high quality of potato products through cleaning, sorting, grading and meeting specific requirements, such as packaging, as outlined in Table 7. The organization of small and medium producers will be key to achieve economies of scale and meet the volume requirements of buyers.

**Table 7: Leveraging opportunities in the domestic market**

Segment	Why?	Potato characteristics	How?
Retail shops, higher-end buyers, e.g. restaurants, online retailers	Potential for higher profit margins	<ul style="list-style-type: none"> <li>• Table potatoes varieties, such as Arizona, Riviera, Aladdin, Desiree, Alpha, Burren</li> <li>• Packaging:               <ul style="list-style-type: none"> <li>» Bulk packaging during transportation: 18–20 kgs and 20–24 kgs</li> <li>» Retail: 2 kgs, 5 kgs and 10 kgs</li> </ul> </li> <li>• Clean, free of foreign matter or greening</li> <li>• Round shape, sorting required</li> </ul>	<ul style="list-style-type: none"> <li>• Organize retailers and producers' groups</li> <li>• Create direct links between farmers and buyers</li> <li>• Increase and sustain quality to build and maintain trust, which involves food safety compliance, sorting and grading, and packaging</li> <li>• Supply consistency</li> <li>• Promote local production</li> </ul>
Processors	Growth potential	<ul style="list-style-type: none"> <li>• Industrial potato varieties, such as Arsenal, Hermes, Lady Rosetta, Caruso</li> <li>• Clean, free of foreign matter or greening</li> <li>• Flexible on the shape and colour based on the variety</li> </ul>	<ul style="list-style-type: none"> <li>• Increase volume of production of industrial potatoes</li> <li>• Create direct links between organized farmers and buyers</li> </ul>
Wholesalers	<ul style="list-style-type: none"> <li>• Current low profitability, potential for higher profit margins</li> <li>• Critical actor in the value chain</li> </ul>	<ul style="list-style-type: none"> <li>• Bulk packaging during transportation</li> </ul>	<ul style="list-style-type: none"> <li>• Improve time of market entry</li> <li>• Enhance market information flows</li> </ul>

## MEDIUM-TERM (3–5 YEARS): HIGHER-VALUE-ADDED PRODUCTS IN THE DOMESTIC MARKET

Processed products increase the shelf life of potatoes and have the potential to be sold in more distant markets, thus opening up new opportunities. Rising disposable income, population growth and changing lifestyles will likely drive market growth for these products in the near future.

In Iraq, there has been limited innovation on potato by-products produced domestically. Secondary processed potato products, which are prepared and preserved – such as frozen French fries, and potato chips – are produced to a certain extent in the country. Currently, local products face fierce competition from imports from neighbouring countries, such as Türkiye, which have steadily increased over the past five years.

There is scope for development and innovation in a number of value-added potato products:

- **Frozen processed potatoes, e.g. frozen French fries:** In light of the growing range of quick service restaurants and eating places, as well as consumption patterns for convenience, demand for French fries can be expected to increase.
- **Potato chips:** The demand for snacks such as potato chips is continuously expanding in Iraq. The strong features of potato chips are their easy affordability and wide availability in the market. Innovation, through new flavours or healthier alternatives such as low-sodium chips, represent the most significant focus for product differentiation.
- **Potato flour, flakes, granules and pellets:** These can be used in ready-to-eat vegetable gravies and soups or other snack products, as well as in mashed potatoes and croquettes. Other applications include their use as thickening agents for bakery and baby food, among others. Sales of food preparations and soup and broth products, for which these by-products can be an input, are expected to grow in the near future. Potato flour in particular represents a common gluten-free alternative, which can be interesting value proposition to cater to niche markets.
- **By-products such as potato skin can be used as animal feed or processed into potato chips and snacks. Other by-products such as potato pulp and juice can be used as ingredients in the food industry and in natural remedies or skincare products.**



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**Table 8: Higher-value-added products in the domestic market**

Segment	Products	Why?	How?
Retailers, distributors, food service sector, restaurants	<ul style="list-style-type: none"> <li>Pre-cut and vacuum-packed potatoes</li> <li>Frozen processed potatoes, e.g. frozen French fries</li> </ul>	<ul style="list-style-type: none"> <li>Demand expected to increase</li> </ul>	<ul style="list-style-type: none"> <li>Enhance cold chain infrastructure</li> <li>Establish a reliable supply network to meet required volumes</li> <li>Raise consumer awareness on consuming local products</li> <li>Improve quality management and food safety</li> </ul>
Retailers, supermarkets, distributors	Processed potatoes, e.g. potato chips	<ul style="list-style-type: none"> <li>Continuous expansion of snack demand</li> <li>Established processing facilities in the country</li> </ul>	<ul style="list-style-type: none"> <li>Develop new products that cater to consumers' preferences and tastes</li> <li>Enhance traceability</li> <li>Improve quality management and food safety</li> </ul>
Processors	<ul style="list-style-type: none"> <li>Potato flour, flakes, granules and pellets</li> <li>Potato skin, pulp and juice</li> </ul>	<ul style="list-style-type: none"> <li>Growing demand for food preparations and for soup and broth products</li> <li>Untapped opportunities in other industries, such as cosmetics</li> <li>Use can contribute to minimizing waste in the sector</li> </ul>	<ul style="list-style-type: none"> <li>Increase R&amp;D investment on marketable products derived from potatoes</li> <li>Promote recycling of potato by-products</li> <li>Collaboration with other industries</li> <li>Effective marketing campaigns</li> </ul>

## LONG-TERM (5+YEARS): EXPAND INTO REGIONAL MARKETS

Iraqi exports of potatoes are currently minimal. Longer-term opportunities for the Iraqi potato industry could involve expanding into regional markets, such as Saudi Arabia and the United Arab Emirates, where consumers are willing to pay a premium for high-quality potato products. These markets often have stricter regulations and higher quality standards, but with the right

investment in infrastructure, quality management and more enabling procedures for exporters, the Iraqi sector could eventually tap into these opportunities. A stronger focus on exports of processed potato products would allow entering into niche markets where there may be less competition and greater opportunities to command higher prices.

**Table 9: Expand into regional markets**

Target market	Segment	Products	Why?	How?
Saudi Arabia	Retailers	<ul style="list-style-type: none"> <li>Frozen potato products</li> <li>Processed potatoes, pre-cut and vacuum-packed potatoes</li> </ul>	<ul style="list-style-type: none"> <li>Market dominated by foreign suppliers</li> <li>Demand for frozen food, particularly frozen processed potatoes, is strong</li> </ul>	<ul style="list-style-type: none"> <li>Competitive market, product differentiation is key</li> <li>Introduction of innovative flavours and shapes to cater to diverse consumers' preferences</li> <li>Consideration of healthier alternatives</li> <li>Cold chain enhancement</li> </ul>
United Arab Emirates	Retailers, distributors food service sector	<ul style="list-style-type: none"> <li>Frozen potato products</li> <li>Refrigerated soups and ready-to-eat and ready-to-cook foods</li> <li>Fresh potatoes</li> </ul>	<ul style="list-style-type: none"> <li>Current – although minimal – exports of fresh potato products</li> <li>Increased need for convenience foods, including refrigerated soups and frozen snacks, as well as ready-to-eat foods</li> </ul>	<ul style="list-style-type: none"> <li>Expand into niche markets</li> <li>Premium prices linked to high quality standards</li> <li>Cold chain enhancement</li> </ul>
	Processors		<ul style="list-style-type: none"> <li>Free trade agreement</li> </ul>	
Oman	Retailers and supermarkets, distributors	<ul style="list-style-type: none"> <li>Frozen potato products</li> <li>Fresh potatoes</li> </ul>	<ul style="list-style-type: none"> <li>Steady growth of imports of fresh and processed potato products</li> </ul>	<ul style="list-style-type: none"> <li>Cold chain enhancement</li> <li>Convenient packaging</li> <li>Improved food quality management</li> </ul>

# Structural improvements to the value chain

## STRUCTURAL VALUE OPTIONS AND FUTURE VALUE CHAIN

Strengthening the Iraqi potato sector's prospects to drive growth, create jobs and economic opportunities, expand the private sector and enhance food security will require:

- Improving competitiveness at the farm and firm level and across the value chain
- Improving products' positioning in domestic markets
- Raising the value of sector products by enhancing quality and adding value.

In order to realize the full benefits of these changes, as outlined in the future value chain, sector development will need to be sustainable and inclusive by:

- Fostering opportunities in job creation and entrepreneurship for women and youth
- Improving training and skill development
- Implementing reforms to the business environment
- Strengthening the capacities of supportive institutions.

Thus, unlocking the potential for Iraq's potato sector will require upgrading production and processing capacities, improving quality and packaging activities, and increasing access to affordable inputs. These adjustments will allow the sector to compete on price and quality. To this end, the value chain adjustments detailed in Table 10 have been identified.

**Table 10: Structural adjustments in the potato value chain**

Value retention: Retain greater value locally		
Value option	How to implement	PoA links
Increase the availability of raw materials, including key inputs such as seeds, fertilizers and pesticides	<ul style="list-style-type: none"> <li>• Review and adapt official seed-related documentation, implement a programme to support local seed production, and introduce licence-free varieties as public goods.</li> <li>• Conduct a seed system analysis to identify suitable locations for seed production, involving both public and private sector institutions, and establish seed distribution networks to reach remote or marginalized communities.</li> <li>• Improve the availability and quality of agricultural inputs by reviewing domestic import policies, fostering local production of inputs such as fertilizers and pesticides, and developing a centralized database for farmers to compare prices and quality from various suppliers.</li> </ul>	Activities 1.1.1–1.1.6; 1.2.1–1.2.3
Value acquisition: Acquire greater value by improving efficiency		
Value option	How to implement	PoA links
Facilitate technology upgrading	<ul style="list-style-type: none"> <li>• Use of digital technology to improve production, agroprocessing and transactions.</li> </ul>	Activities 1.3.6, 1.4.1, 1.4.2, 2.3.1, 3.2.2
Facilitate commercial links to decrease transaction costs	<ul style="list-style-type: none"> <li>• Organize retailers into buying groups, create business partnerships between organized farmer groups and local buyers, and develop a programme to build the capacities of farmer alliances or groups.</li> <li>• Streamline checkpoint procedures inside Iraq, exploring the adoption of technologies to facilitate movement of goods, improve data integrity and increase traceability.</li> </ul>	Activities 3.1.1–3.1.5
Value addition: Add value to existing products		
Value option	How to implement	PoA links
Enhance the quality of products and branding	<ul style="list-style-type: none"> <li>• Enhance technical know-how among key value chain actors to implement GAP and develop branding linked to quality products.</li> </ul>	Activities 1.3.1–1.3.6
Improve packaging and marketing	<ul style="list-style-type: none"> <li>• Design and implement improved, more attractive packaging solutions.</li> </ul>	Activity 2.3.5
Enhance storage practices	<ul style="list-style-type: none"> <li>• Develop a cold chain scheme to support sector operations.</li> <li>• Establish guidelines for the standard use of facilities, such as storage, equipment and materials that are commonly used.</li> </ul>	Activities 2.4.1–2.4.4

<b>Improve promotion and visibility in target markets</b>	<ul style="list-style-type: none"> <li>• Develop advertising campaigns that highlight the unique features and benefits of Iraqi potatoes, such as their taste, texture and nutritional value.</li> <li>• Develop a branding of Iraqi products to differentiate them from imported ones, which is connected to quality requirements.</li> </ul>	Activities 3.3.1–3.3.3
<b>Value creation: Develop new products and expand production by creating value within the industry</b>		
<b>Value option</b>	<b>How to implement</b>	<b>PoA links</b>
<b>Expand market opportunities through improvements in policies and procedures</b>	<ul style="list-style-type: none"> <li>• Simplify the registration process for agribusinesses by identifying and removing unnecessary or redundant steps, streamlining procedures and reducing bureaucratic barriers.</li> <li>• Collaborate with Chambers of Commerce (CoCs) to facilitate access and receive guidance.</li> <li>• Provide technical, business and legal assistance to MSMEs, with a particular focus on young and female entrepreneurs. This can be achieved through the forging of links with universities, for instance.</li> </ul>	Activities 2.2.1–2.2.4
<b>Improve the sector's capacity to expand and sustain market connections</b>	<ul style="list-style-type: none"> <li>• Conduct consultations and workshops with government officials and decision makers to address specific challenges and propose solutions to streamline export procedures.</li> <li>• Strengthen national institutional capacities for sanitary and phytosanitary, technical barriers to trade and trade facilitation compliance in line with World Trade Organization obligations.</li> </ul>	Activities 3.2.3–3.2.5
<b>Value distribution: Maximize the economic and social development impact</b>		
<b>Value option</b>	<b>How to implement</b>	<b>PoA links</b>
<b>Integrate women into value chain activities</b>	<ul style="list-style-type: none"> <li>• Develop dedicated workshops specifically focused on female entrepreneurship and provide technical, business and legal assistance to MSMEs, with an emphasis on (young) female entrepreneurs. Having local woman leaders who can serve as role models for aspiring entrepreneurs would be very useful to this end.</li> <li>• Revise regulations and the policy framework to enable their engagement in value chain activities.</li> </ul>	Activities 2.2.2 and 2.2.3
<b>Use of environmentally friendly technology</b>	<ul style="list-style-type: none"> <li>• Facilitate and incentivize investment in climate change mitigation and adaptation, including use of alternative energy.</li> <li>• Capacitate farmers on sustainability and climate change mitigation practices.</li> </ul>	Activities 1.4.1 and 1.4.2.

## Future value chain map

The future value chain presents prioritizations for sector growth, along with the target market for each sector product. The future value chain is an outcome of a series of consultations held to evaluate the potential of existing and potential potato products. These criteria include strong demand in target markets, high-value-addition potential, job creation potential and intersectoral links.

The future value chain presents upgrades to product development activities aimed at increasing value addition, as well as market development and penetration activities set on increasing the volume of clients and sales. Upgrades to the sector's product and market development activities complement the strategic and operational objectives, which provide more specific improvements to productive capacities. All areas of improvement in the value chain are included in the PoA. Figure 22 provides an overview of the value chain



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upgrades included in the PoA, where key improvements in the value chain are included in boxes outlined with a dash line and intended impacts are represented by boxes in light blue.





## Vision and strategic objectives

In line with the strategic approach presented above, the following is a delineation of the proposed vision. The vision statement was discussed and agreed with all stakeholders in the potato sector.

**“ Iraq potatoes: a growing sector with unique products and a cornerstone of food security ”**

The sector’s vision reflects stakeholders’ eagerness to expand the sector’s production capacity, it takes pride in the distinct qualities and flavours that Iraqi sector stakeholders feel set their products apart from potatoes from elsewhere, and finally it refers to the food security importance of the sector.

The Strategy’s PoA will respond to this vision by addressing constraints and leveraging opportunities in a comprehensively and strategically. To this end, particular efforts will be made to realize the following strategic and operational objectives.

### STRATEGIC OBJECTIVE 1: IMPROVE SECTOR PROFITABILITY AND IMPROVE PRODUCTION PRACTICES

*At the input level, ensuring better access to affordable, quality inputs is an essential prerequisite to support sector growth.* Particular emphasis will be placed on diversifying options to access quality and affordable seeds to reduce their costs, while considering local demand requirements. Accordingly, the Strategy involves a comprehensive approach to enhance the seed system, promote local seed production and establish effective seed distribution networks. Key activities include revising and adapting relevant policies and regulations, elaborating a seed business programme and introducing licence-free varieties, among others.

The first strategic objective also seeks to improve access, affordability and transparency in the availability of other relevant inputs for potato farmers, such as fertilizers and pesticides. Measures to achieve this goal include:

- Revising import policies
- Developing schemes for local production of fertilizers and pesticides
- Establishing a centralized database to provide farmers with access to information on input prices and quality from various suppliers
- Increasing market transparency
- Empowering farmers to make informed decisions

- Organization of business-to-business meetings between potato MSMEs and potential agri-input suppliers to expand networks and facilitate the identification of new business opportunities.

*At the production, harvest and postharvest stages, current practices will be improved to increase productivity and minimize food waste throughout the value chain.* As an entry point for capacity-building and collective marketing activities, potato producers will be organized into larger groups. Activities under this operational objective will be geared towards building producers’ capacities to adopt GAP and foster the adoption of relevant technological improvements. The potential impact extends to various aspects, including agronomic practices, access to market and price information, and more. Based on local buyers’ requirements, potato producers will be guided to grade, sort and pack production to better negotiate and position their products in the market. High importance will be given to tailoring the training offering to cater to women producers and their specific needs.

*Enhance water resource management and climate change adaptation.* Improving water use for potato farming can help expand production in some regions. Preventing and mitigating risks related to climate change through the adoption of adaptive measures will be crucial for the sustainability of the sector.

## STRATEGIC OBJECTIVE 2: CREATE A CONDUCTIVE BUSINESS ENVIRONMENT TO UPGRADE SECTOR OPERATIONS

*Strengthen governance and coordination for the effective management of sector policies and plans, and advocacy efforts.* This operational objective aims to strengthen sector representation and advocacy at relevant coordination structures, including the established National Core Team. This will enable the Team to oversee and lead Strategy implementation, channel key sector concerns and advocate for the inclusion of the potato sector in policies and plans.

*Foster and empower agribusinesses, particularly youth-led and women-led MSMEs.* The Strategy seeks to simplify the registration process for agribusinesses by eliminating unnecessary steps and reducing documentation requirements. Support will be provided to MSMEs, with a focus on young and female entrepreneurs, through tailored workshops and assistance in navigating regulatory procedures. Tailored workshops will be designed to promote female entrepreneurship, showcasing successful role models, and offering technical trainings for women entrepreneurs. Strong links with universities and agro-technical training institutions will be forged to foster and empower agribusinesses from a theoretical and practical point of view, and physical or virtual youth hubs will be established as spaces for collaboration, access to resources, and partnerships with local business associations.

*Increasing access to finance for producers and MSMEs will help modernize current sector operations through machinery acquisition and uptake of new climate-smart technologies at the production, harvest and postharvest stages.* Along with access to finance training, tailored offerings are required to meet producers' and business leaders' needs, taking into consideration sharia compliance, risk management and seasonal variations in cash flow, among other factors.

*Facilitating investment in infrastructure is a main strategic thrust to enable the sector to move forward.* Potato storage facilities with adequate environmental control were identified as one of the chief infrastructure needs of the sector. Proper storage will improve consistent availability in the markets, and allow farmers to maintain the quality of their products for longer and strategically plan when to release them for retail, enabling producers to obtain better prices. Key activities include designing a cold chain scheme, including management structures for the sector, developing and disseminating guidelines for the standard use of facilities for potato storage, and designing and rolling out matching grants to enable equipment and infrastructure, accompanied by technical support and capacity-building. Another key activity will be establishing aggregation hubs in rural areas as entry points for farmer groups and individual farmers to access market-oriented inputs and services.

## STRATEGIC OBJECTIVE 3: IMPROVE THE SECTOR'S CAPACITY FOR MARKETING AND TO EXPAND AND SUSTAIN MARKET CONNECTIONS

*Create and sustain links between producers and buyers.* This operational objective seeks to strengthen market links and improve market access for MSMEs in the potato sector. It includes activities to:

- Enhance the gathering and dissemination of market information
- Organize retailer buying groups to optimize operations and increase local sourcing
- Establish business partnerships between farmer groups and local buyers
- Build the capacities of commercial alliances to meet demand
- Explore new distribution channels.

*Enhance policies and export procedures to expand market access.* This operational objective entails activities such as streamlining checkpoint procedures through the use of enabling technologies, strengthening institutional capacities for trade compliance, and simplifying export requirements through the development of a one-stop shop, enabling easier coordination and the use of digital channels. A training programme will be implemented to strengthen national capacities to comply with sanitary and phytosanitary measures, technical barriers to trade, and trade facilitation.

*Promote Iraqi potatoes through targeted marketing and branding.* This includes activities such as advertising campaigns, designing and implementing funding mechanisms for branding activities, and supporting MSMEs to participate in trade fairs and exhibitions.

## Managing Strategy implementation

The development and implementation of this five-year Strategy relies on a consultative process between Iraqi public and private sector stakeholders involved in the potato sector. Achieving the strategic objectives and realizing the sector's potential depend heavily on the leadership of MoA, and sector stakeholders' ability to start implementing and coordinating the activities defined in the Strategy's PoA.

The Strategy alone will not suffice to ensure the sector's sustainable development. Such development will require the coordination of various actions. While their execution will allow for the Strategy's targets to be achieved, success will depend on stakeholders' ability to plan and coordinate actions in a tactical manner.

Apparently unrelated activities must be synchronized across the public sector, private sector, NGOs and local communities in order to create sustainable results.

To ensure the Strategy's success, it is necessary to foster an adequate environment and create an appropriate framework for implementation. This can be effectively supported through strengthening the established National Core Team and an executive secretariat. Both structures will work hand in hand with existing entities established to streamline government operations and enhance donor operations. The secretariat may be accommodated as part of an existing entity with an extended mandate and resources allocated to it.

### NATIONAL CORE TEAM

A key success criterion for the Strategy is the ability to coordinate activities, monitor progress and mobilize resources for implementation. It is recommended that the National Core Team, established under the leadership of MoA, be further supported.

The National Core Team is responsible for the following responsibilities related to Strategy implementation:

- Coordinate and monitor implementation of the Strategy by the government, private sector, institutions or international organizations to ensure that implementation is on track
- Identify and recommend allocation of resources necessary for Strategy implementation
- Assess the Strategy's effectiveness and impact
- Ensure consistency with the government's existing policies, plans and strategies; and align institutions

and agencies' internal plans and interventions with the Strategy's PoA

- Elaborate and recommend revisions and enhancements to the Strategy so that it continues to best respond to the needs and long-term interests of farms and firms
- Propose key policy changes to be undertaken based on Strategy priorities and promote these policy changes among national decision makers
- Guide the sector secretariat for the monitoring, coordination, resource mobilization, and policy advocacy and communication functions to enable effective implementation of the Strategy
- Provide the sector secretariat with the mandate and the necessary resources to fulfil its functions effectively.

The National Core Team is comprised of key entities involved in the sector, with a special focus on ensuring balanced involvement of both the public and the private sector.

### EXECUTIVE SECRETARIAT

Established in 2022, the secretariat supports the National Core Team by acting as an operational body responsible for the daily coordination, monitoring and mobilization of resources to implement the PoA. It takes on this role with technical support from key ministries and technical agencies. The secretariat is composed of 2–3 technical operators. The sector secretariat's core responsibilities are:

- Support the functioning of the National Core Team

- Collect and manage data to monitor progress and the impact of Strategy implementation
- Liaise with and coordinate development partners for Strategy implementation
- Elaborate project proposals and build partnerships to mobilize resources to implement the Strategy
- Follow up on policy advocacy recommendations from the National Core Team
- Ensure effective communication and networking for successful Strategy implementation.

# Plan of Action

Strategic objective 1: Improve both the sector's profitability and its production practices											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
1.1. Ensure access to affordable quality seeds	1.1.1. Review official seed-related documentation and adapt as required to support an enabling environment for local seed development. <ul style="list-style-type: none"> <li>Revise the national seed policy to address current constraints in the seed subsector, with a focus on potatoes, and to improve its performance and contribution to improved agricultural productivity.</li> <li>Adjust and develop seed regulations that define and outline processes and rules for seed producers, production and sales. This could involve referring to relevant laws and protocols, such as Law No. 15 of 2013 on Registration, Approval and Protection of Agricultural Varieties Protocol.</li> <li>Design and implement a seed quality assurance protocol adapted to processes and risks in Iraq.</li> </ul>	1						<ul style="list-style-type: none"> <li>National seed policy revised</li> <li>Potato seed production regulations developed</li> <li>Seed quality assurance protocol designed</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Regulatory bodies</li> <li>National plant protection organizations</li> <li>Private sector</li> <li>Public and research institutions</li> <li>Universities</li> <li>Potato experts</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Potential donors to be identified</li> </ul>
	1.1.2. Conduct a seed system analysis to identify the most suitable places for seed production, as well as public and/or private sector institutions producing seeds, disaggregating levels in production systems, e.g. early generation seed and onward field multiplication.	2						<ul style="list-style-type: none"> <li>Seed system analysis conducted</li> <li>Suitable places for seed production identified</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Private sector</li> <li>Farmer organizations</li> <li>Public institutions</li> <li>Universities</li> <li>Potato experts</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Potential donors to be identified</li> </ul>
	1.1.3. Based on the analysis in 1.1.2, elaborate a seed business programme describing: <ul style="list-style-type: none"> <li>Seed production systems, considering sites and varieties (open access and licensed)</li> <li>Investment needs and opportunities</li> <li>Quality assurance mechanisms</li> <li>The type of support required to encourage farmers to use quality seed of appropriate varieties and servicing differing market profiles</li> <li>Defined seed targets.</li> </ul>	2						<ul style="list-style-type: none"> <li>Potato seed business programme developed</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Private sector</li> <li>Farmer organizations</li> <li>Public institutions</li> <li>Universities</li> <li>Potato experts</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Potential donors to be identified</li> </ul>
	1.1.4. Introduce licence-free varieties as public goods. This activity can be undertaken in collaboration with international organizations such as the International Potato Centre, research institutions and universities. It can include the following steps. <ul style="list-style-type: none"> <li>Identify and select licence-free varieties and those with expired plant breeders' rights. These varieties should be suitable for Iraq's specific agro-climatic conditions and market demand. Consider factors such as yield potential, disease resistance, marketability and suitability for local farming practices.</li> <li>Enable access to restricted varieties through licences. Support the import of advanced clones for adaptation trials and release.</li> <li>Conduct awareness-raising campaigns, training programmes and extension services to educate farmers about the benefits and characteristics of these varieties.</li> </ul>	1						<ul style="list-style-type: none"> <li>Five licence-free varieties released</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>		<ul style="list-style-type: none"> <li>MoA</li> <li>Potential donors to be identified</li> </ul>

Strategic objective 1: Improve both the sector's profitability and its production practices											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
1.1. Ensure access to affordable quality seeds	<p>1.1.5. Develop a programme to support local seed production to complement seed imports, in order to diversify supply and reduce seed cost.</p> <ul style="list-style-type: none"> <li>• Provide farmers, processors and stakeholders with in-depth knowledge on seed selection, GAP implementation, postharvest handling and traceability.</li> <li>• Avail breeders with seeds for subsequent multiplication.</li> <li>• Facilitate links between seed companies and farmers, and bulk purchase of seed by farmer groups.</li> <li>• Prioritize investment in seed potato multiplication infrastructure.</li> <li>• Collaborate with universities and private sector tissue culture labs to pilot production of potato cuttings for bulking by farmers as an alternative to tubers / seeds.</li> </ul>	1						<ul style="list-style-type: none"> <li>• Programme designed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> <li>• Potential donors to be identified</li> </ul>	
	<p>1.1.6. Establish seed distribution networks that can reach remote or marginalized communities. This can involve working with local authorities, NGOs, private sector actors or farmer organizations to ensure that seeds are transported and distributed efficiently and effectively.</p> <ul style="list-style-type: none"> <li>• Develop traceability systems to monitor the movement of potatoes through the supply chain, ensuring transparency and accountability.</li> <li>• Monitor and evaluate the quality of seeds being produced and distributed, and establish mechanisms for feedback and improvement.</li> <li>• Collaborate with stakeholders to establish recordkeeping practices that facilitate effective traceability.</li> </ul>	2					<ul style="list-style-type: none"> <li>• Seed distribution network concept designed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> <li>• Potential donors to be identified</li> </ul>		
1.2. Increase access to other key quality inputs, such as fertilizers and pesticides	<p>1.2.1. Review domestic import policies (e.g. taxes) for key inputs –such as fertilizers and pesticides – and processes. The review results will guide improvements to the system, to be made in collaboration with relevant ministries and institutions, as well as the private sector and farmer representatives. Analyse the potential benefits and trade-offs associated with reducing these taxes, considering factors such as revenue implications, market competition and the impact on local industries. Revise and provide recommendations on the area of quality control. Propose and advocate for policy improvements.</p> <p>Based on the above, a capacity-building programme can be designed to train relevant staff on updated regulations, including proper control mechanisms to monitor imported products.</p>	2					<ul style="list-style-type: none"> <li>• Import policies on inputs revised</li> <li>• Recommendations developed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Trade</li> </ul>	<ul style="list-style-type: none"> <li>• Customs</li> <li>• MoA</li> <li>• Private sector</li> <li>• Farmer representatives</li> </ul>		

Strategic objective 1: Improve both the sector's profitability and its production practices											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
1.2. Increase access to other key quality inputs, such as fertilizers and pesticides	1.2.2. Develop a scheme to foster local production of inputs such as fertilizers and pesticides, to develop alternatives to imports and increase input availability. The scheme can consider incentives that may target new entrants and existing companies. They may include simplified licensing procedures and tax holidays, among others. The above can be accompanied by a revision and reduction of administrative burdens, shortened approval timelines, and simplifications of regulatory requirements to encourage more businesses to enter or expand in this sector.	1						<ul style="list-style-type: none"> <li>• Scheme designed and developed</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Finance</li> </ul>	<ul style="list-style-type: none"> <li>• Banks</li> <li>• MoA</li> </ul>	
	1.2.3. Establish and disseminate a centralized online database that farmers could access to compare prices and quality of inputs from various suppliers, to increase market transparency and information.	1						<ul style="list-style-type: none"> <li>• Database designed and disseminated</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Trade</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> </ul>	<ul style="list-style-type: none"> <li>• Extension Department</li> <li>• Universities</li> </ul>
	1.2.4. Organize business-to-business meetings between potato producers and MSMEs on one side and potential local and international agri-input suppliers on the other, to expand their networks and identify new business opportunities. Provide practical recommendations for improvements and collaborate with stakeholders to implement necessary changes with clear corrective actions.	2						<ul style="list-style-type: none"> <li>• One annual business-to-business meeting</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Trade</li> </ul>	
1.3. Foster the adoption of improved agriculture practices	1.3.1. Organize individual potato farmers into larger producer groups as entry points for capacity-building and collective marketing activities. <ul style="list-style-type: none"> <li>• Conduct an assessment to identify farmers who are interested in collective organization and who have similar production interests and geographical proximity.</li> <li>• Provide guidance and support to smallholders in organizing and forming producer groups. Assist them in defining group objectives, developing group by-laws and establishing clear roles and responsibilities for group members.</li> <li>• Conduct a legal review to assess the feasibility of formalizing these farmer groups.</li> </ul>	1					<ul style="list-style-type: none"> <li>• 10 farmer groups formed</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> </ul>			



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			2024	2025	2026	2027	2028				
1.3. Foster the adoption of improved agriculture practices	<p>1.3.2. In collaboration with relevant institutions, design a training of trainers through the development of tailored GAP guidelines based on local conditions, to educate stakeholders in the potato sector.</p> <p>Develop and/or expand existing curricular and training material targeting different producers' profiles and knowledge (e.g. small, medium, large, new entrants). Identify one (or more) institution, agency and/or organization to serve as an anchor for dissemination.</p> <p>Identify the most suitable dissemination methods of training, preferably hands-on learning.</p> <p>Train trainers in the designed curricula. Modules to include:</p> <ul style="list-style-type: none"> <li>• Production <ul style="list-style-type: none"> <li>» Seed planting and management</li> <li>» Potato water requirements and irrigation</li> <li>» Soil preparation and fertilizer management</li> <li>» Integrated management of viral diseases and pest control</li> <li>» Sustainable farming techniques</li> </ul> </li> <li>• Harvesting <ul style="list-style-type: none"> <li>» Harvesting techniques</li> <li>» Maturing period</li> <li>» Sorting and grading</li> </ul> </li> <li>• Postharvest procedures <ul style="list-style-type: none"> <li>» Postharvest handling, including storage and transportation</li> </ul> </li> <li>• Food safety and quality management training to improve product quality <ul style="list-style-type: none"> <li>» Basic food safety</li> <li>» Good warehouse practices</li> <li>» Personal hygiene</li> <li>» Proper food handling.</li> </ul> </li> </ul> <p>With support from international and national institutions, revise and provide annual updates to reflect the sector's development.</p>	2						<ul style="list-style-type: none"> <li>• Training of trainers designed</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> <li>• Extension services</li> </ul>	<ul style="list-style-type: none"> <li>• Potato experts</li> <li>• Development partners</li> <li>• Universities</li> </ul>	
	<p>1.3.3. Roll out the training programme through appropriate methods, including in-person (practical) trainings and demo sites. Beneficiaries of this training include the farmer groups under 1.3.1.</p> <p>Develop production guides and briefs targeting different profiles of users, such as extension officers, training centres and producers.</p>	2						<ul style="list-style-type: none"> <li>• Training of trainers implemented</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> </ul>	<ul style="list-style-type: none"> <li>• Private sector representatives</li> </ul>	

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Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
1.3. Foster the adoption of improved agriculture practices	1.3.4. Conduct specific short trainings to sensitize extension workers and service providers to gender issues, addressing biases and stereotypes, and fostering a supportive and inclusive environment. These trainings should be based on gender-responsive assessments through consultations where women farmers identify measures on how to reduce workload and which / how interventions can support them to be productive farmers without doing harm.	2						<ul style="list-style-type: none"> <li>One short training per year</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Private sector representatives</li> </ul>	
	1.3.5. Survey potato producing areas on high-risk diseases and pests to identify pest and disease risks to seed and general potato production. Include a component on identifying active ingredients and pesticide products licensed in Iraq against potato pests and diseases. The following steps can be relevant. <ul style="list-style-type: none"> <li>Develop an integrated pest and disease management programme for the sector.</li> <li>Raise awareness among farmers, extension workers and stakeholders about the identified high-risk diseases and pests through workshops and/or demonstrations in the field. Explore the use of digital tools for pest and disease identification and management, such as applications.</li> </ul>	1					<ul style="list-style-type: none"> <li>Survey conducted and results disseminated</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Private sector representatives</li> </ul>		
	1.3.6. Establish potato R&D programmes in universities and research and higher learning institutions to, among other objectives: <ul style="list-style-type: none"> <li>Explore improvements in seed and potato production</li> <li>Explore different ways to utilize waste from potatoes in alternative ways beyond their traditional use</li> <li>Innovate in developing value-added products from potatoes</li> <li>Establish model farms in collaboration with universities, MoA, development partners like FAO and private sector actors to pilot new and innovative technologies for potato production</li> <li>Link farmers and researchers.</li> </ul>	2					<ul style="list-style-type: none"> <li>Two potato R&amp;D programmes established</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Private sector representatives</li> </ul>		
1.4. Promote better water management and climate change adaptation	1.4.1. Develop a programme to design, construct and implement modern irrigation systems to increase the availability and accessibility of water for irrigation purposes, ultimately improving overall access to irrigation water. Steps include: <ul style="list-style-type: none"> <li>Researching and adopting water-efficient technologies, such as solar-powered drip irrigation or enhanced pivot systems, and cost-efficient tools to monitor soil moisture levels</li> <li>Constructing alternative water sources, including shallow wells and rainwater harvesting systems, to supply water for irrigation purposes</li> <li>Improving drainage systems and water quality for irrigation purposes</li> <li>Supporting the installation of magnetization devices to reduce water salinity levels for irrigation, particularly when planting industrial potatoes.</li> </ul>	1					<ul style="list-style-type: none"> <li>Programme designed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Water Resources</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Trade</li> <li>MoP</li> <li>Ministry of Higher Education</li> <li>Private sector</li> </ul>		

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Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
1.4. Promote better water management and climate change adaptation	1.4.2. In alignment with activity 1.3.1., provide capacity-building training to farmers to adopt climate-smart agriculture and climate adaptation technologies, such as regenerative agriculture, agro-ecology / organic farming, integrated pest and disease management, and irrigation techniques.	3						<ul style="list-style-type: none"> <li>Capacity-building programme designed and rolled out</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Environment</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Ministry of Water Resources</li> </ul>	
	1.4.3. Through demo sites (activity 1.3.2.), design and demonstrate soil and water conservation techniques, the use of organic matter and intercropping. Promote the use of locally adapted potato varieties and support potato farming communities to capture rainwater through dams, access ground / surface water and recycle water where feasible.	1						<ul style="list-style-type: none"> <li>Five demo sites designed and available</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister's Council</li> </ul>	<ul style="list-style-type: none"> <li>Prime Minister's Council</li> </ul>

Strategic objective 2: Create a conducive business environment to upgrade sector operations											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
2.1. Improve sector representation and advocacy	2.1.1. Further formalize the National Core Team, a formal public-private dialogue platform, to oversee implementation of the Potato Sector Strategy. The National Core Team can be a platform to discuss and channel concerns and identified obstacles, as well as opportunities in the sector for decision-making.	1						<ul style="list-style-type: none"> <li>National Core Team formalized</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Private sector</li> <li>Relevant ministries</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Development partners</li> <li>European Union-funded ITC-SAAVI</li> </ul>
	2.1.2. Assist the National Core Team's secretariat through capacity-building trainings, advisory support and tools on Strategy implementation planning, management techniques, monitoring and resource mobilization.	1						<ul style="list-style-type: none"> <li>At least two annual technical trainings provided to the secretariat</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>MoP</li> <li>Universities</li> <li>Development partners</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Development partners</li> <li>European Union-funded ITC-SAAVI</li> </ul>
	2.1.3. Through the National Core Team and other relevant government bodies, advocate for the inclusion of the potato sector in agricultural and development policies and plans – particularly any agricultural strategy and the upcoming Food Security Strategy – for resource allocation, investment and stakeholder mobilization. Set up a mechanism to gather feedback from stakeholders in the potato sector regarding the implementation of policies and their impact.	1						<ul style="list-style-type: none"> <li>Potato sector prioritized in relevant policies</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>CoCs</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Development partners</li> </ul>
2.2. Enable the creation and growth of agribusinesses	2.2.1. Identify and eliminate unnecessary or redundant steps to register agribusinesses. Simplify the documentation and information needed to register an agribusiness, ensuring that only essential information is required. This can include a mapping of the current steps required to register a business and an analysis of bottlenecks, revising application forms, reducing the number of supporting documents, and simplifying the information verification process. Additional measures that can also be implemented: <ul style="list-style-type: none"> <li>Create user-friendly guides and online resources that explain the registration process, requirements and steps involved</li> <li>Conduct training programmes and workshops to educate entrepreneurs on the electronic registration system and guide them through the process</li> <li>Enhance efforts to lower business registration fees</li> <li>Implement campaigns to raise awareness about the many benefits of business registration, making it more appealing to potential entrepreneurs.</li> </ul>	2					<ul style="list-style-type: none"> <li>Reduce the number of steps and simplify the registration process for agribusinesses by at least 30%</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>CoCs</li> </ul>	<ul style="list-style-type: none"> <li>Prime Ministry's office</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Development partners</li> </ul>	

Strategic objective 2: Create a conducive business environment to upgrade sector operations											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
2.2. Enable the creation and growth of agribusinesses	2.2.2. Provide technical, business and legal assistance support to MSMEs, with an emphasis on young and female entrepreneurs, to assist in navigating the regulatory processes and procedures to start, register and scale up a business, through tailored workshops and communication material (e.g. social media). Prioritize inclusive and safe spaces for women in trainings and business associations	1						<ul style="list-style-type: none"> <li>Two workshops per year</li> </ul>	<ul style="list-style-type: none"> <li>CoCs</li> </ul>	<ul style="list-style-type: none"> <li>MoP</li> <li>General Secretariat of the Prime Ministry</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Development partners</li> </ul>
	2.2.3. Develop dedicated workshops specifically focused on female entrepreneurship, which can include: <ul style="list-style-type: none"> <li>Round tables aiming to highlight the contributions of women in the agrifood and agribusiness sector</li> <li>Showcasing successful female youth entrepreneurs as role models</li> <li>Pairing the above activities with technical trainings to provide entrepreneurs with knowledge and skills relevant to entrepreneurship. Topics covered can include business planning, marketing strategies, financial management and accessing markets.</li> </ul>	1					<ul style="list-style-type: none"> <li>Two workshops organized and held</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>CoCs</li> </ul>	<ul style="list-style-type: none"> <li>MoP</li> <li>General Secretariat of the Prime Ministry</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Development partners</li> </ul>	
	2.2.4. Establish or reinforce physical or virtual youth hubs as dedicated spaces where youth entrepreneurs can gather, work, collaborate and access resources, such as training and business support opportunities. Forge partnerships and collaborations with local and relevant business and farmer associations. Implement monitoring and evaluation mechanisms to track the impact of the youth hub(s). Collect data on key metrics such as the number of youth participants, businesses started, revenue generated, and the overall satisfaction and success rates of youth entrepreneurs. Use this data to measure their effectiveness and make informed decisions for continuous improvement.	3					<ul style="list-style-type: none"> <li>At least one youth hub established or reinforced</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Youth and Sports</li> </ul>	<ul style="list-style-type: none"> <li>NGOs</li> <li>Private sector</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> <li>Development partners</li> </ul>	
2.3. Develop financial options for sector growth and development	2.3.1. In collaboration with (micro) financial institutions and business support organizations, develop a financial scheme including (mini) loans and credit products, including digital solutions, targeting the different profiles of potato value chain actors: small- to large-scale farmers, farmer groups, traders and marketing agents, and differing scales of value addition. The scheme should include specific quotas or other measures to serve women-led MSMEs in an inclusive manner. Loans and other credit products could aim at, among others: <ul style="list-style-type: none"> <li>Acquisition of machinery and equipment</li> <li>Promoting the uptake of climate-smart technologies (e.g. solar power and water saving, among others).</li> </ul>	1					<ul style="list-style-type: none"> <li>Financial scheme designed and operational</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Finance</li> </ul>	<ul style="list-style-type: none"> <li>Central Bank of Iraq</li> <li>Association of Iraqi Private Banks</li> <li>Iraqi Private Banks League</li> </ul>	<ul style="list-style-type: none"> <li>Development partners</li> </ul>	

Strategic objective 2: Create a conducive business environment to upgrade sector operations											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
2.3. Develop financial options for sector growth and development	2.3.2. Develop matching grants for tool and equipment acquisition by potato farmers and farmer groups based on sound agribusiness and investment plans selected through a competitive process. These grants will enable farmers to access mechanization to improve quality and the volume of harvested product by facilitating planting and harvesting, and reducing damage during these operations. Grants can include a minimum quota of women-owned MSMEs.	2						<ul style="list-style-type: none"> <li>30 matching grants designed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>Association of Iraqi Private Banks</li> <li>Iraqi Private Banks League</li> </ul>	<ul style="list-style-type: none"> <li>CoCs</li> </ul>	
	2.3.3. Develop a training of trainers programme targeting business support organizations to capacitate them on, among other topics, developing viable business plans, fundraising and scaling up MSMEs, including farmers and farmer groups. The following steps can be included. <ul style="list-style-type: none"> <li>Conduct a thorough needs assessment to identify the specific areas where business support organizations require capacity-building.</li> <li>Design a comprehensive curriculum for the training of trainers programme that covers key areas.</li> <li>Identify trainers who have expertise and experience in the relevant subject areas.</li> <li>Conduct the training of trainers programme, delivering training sessions to business support organization representatives.</li> <li>Implement a robust monitoring and evaluation framework.</li> </ul>	3					<ul style="list-style-type: none"> <li>Training of trainers programme designed and delivered</li> </ul>	<ul style="list-style-type: none"> <li>MoP</li> </ul>	<ul style="list-style-type: none"> <li>CoCs</li> </ul>	<ul style="list-style-type: none"> <li>Development partners</li> </ul>	
	2.3.4. Organize matchmaking events between sector companies and potential input suppliers, buyers and investors. Provide coaching and advisory support to selected companies. Identify the best-suited business partners based on their profiles.	1						<ul style="list-style-type: none"> <li>One matchmaking event per year</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>Private sector representatives</li> </ul>	
	2.3.5. Design and implement an investment attraction package based on identified infrastructure opportunities such as (continue updating the following list as the sector evolves): <ul style="list-style-type: none"> <li>Seed potato multiplication infrastructure</li> <li>Water saving technologies and capture infrastructure</li> <li>Rehabilitating / building cold storage facilities, favouring solar-powered and use of cold ambient air solutions</li> <li>Processing facilities for value addition of locally produced potatoes.</li> </ul>	1					<ul style="list-style-type: none"> <li>Investment attraction package designed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>Investment Authority</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>		

Strategic objective 2: Create a conducive business environment to upgrade sector operations											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
2.4. Upgrade cold chain infrastructure and postharvest services	2.4.1. Develop a cold chain scheme to support sector operations. This involves: <ul style="list-style-type: none"> <li>• Conducting a comprehensive assessment of the current cold chain infrastructure (identify existing suppliers, cost structure, demand). The assessment should include an assessment of financial barriers, regulatory hurdles and other obstacles that hinder the construction of new storage facilities and the expansion of cold chain networks.</li> <li>• Review import regulations (particularly import duties) for cold chain equipment. Consider reducing or exempting cold chain equipment from import duties to promote investment in and establishment of cold chain infrastructure.</li> <li>• Collaborate with cold storage facilities to recommend optimal storage conditions.</li> <li>• Based on the assessment, develop a cold chain scheme for enterprises to start and grow operations. The scheme should encompass support mechanisms to address barriers and development of incentives, such as partial grants / tax incentives, including for the transport sector and land facilitation.</li> </ul>	2						<ul style="list-style-type: none"> <li>• Comprehensive assessment undertaken</li> <li>• Cold chain scheme designed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>• General Secretariat of the Prime Ministry</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Finance</li> <li>• MoP</li> <li>• Ministry of Oil</li> <li>• Ministry of Trade</li> </ul>	
	2.4.2. Establish guidelines for the standard use of facilities, such as storage, equipment and materials that are commonly used. Advise on best practices for postharvest handling to maintain potato quality and safety (use of posters, videos and other visualization tools). Share the guidelines with relevant stakeholders, including farmer groups, cold storage facility operators and other relevant users. Conduct regular inspections and monitoring of the cold storage systems to ensure their optimal functioning.	1						<ul style="list-style-type: none"> <li>• Guidelines developed and disseminated</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> </ul>		
	2.4.3. Design matching grants to upgrade <i>a/was</i> , with the aim of providing them with equipment and infrastructure for quality assurance and product preservation, i.e. storage through a competitive process. Relevant steps can include: <ul style="list-style-type: none"> <li>• Providing technical support to develop proposals</li> <li>• Through matching grants, procuring the necessary storage equipment and materials identified in the proposals</li> <li>• Providing capacity-building to accompany infrastructure investments.</li> </ul>	3						<ul style="list-style-type: none"> <li>• Two <i>a/was</i> supported</li> </ul>	<ul style="list-style-type: none"> <li>• MoP</li> </ul>		
	2.4.4. Establish aggregation hubs as entry point for farmer groups (e.g. alliances) and individual farmers to access market-oriented inputs and services, including storage. Aggregation hubs can serve as one-stop shops for locally identified agricultural needs.	1						<ul style="list-style-type: none"> <li>• Five aggregation hubs established</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> <li>• MoP</li> </ul>	<ul style="list-style-type: none"> <li>• Private sector</li> <li>• Development partners</li> </ul>	

Strategic objective 3: Improve the sector's capacity for marketing and to expand and sustain market connections											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
3.1. Create and sustain direct links between producers and buyers	3.1.1. Based on identified specific buyer requirements, disseminate relevant and timely market information among producers through: <ul style="list-style-type: none"> <li>Organizing market-awareness workshops</li> <li>Developing a catalogue of buyer requirements and relevant, available service providers for required quality certifications and training (harvesting, transport to storage, storing, sorting, cleaning).</li> </ul>	1						<ul style="list-style-type: none"> <li>Two annual workshops organized in Baghdad and North Iraq</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>CoCs</li> <li>Private sector</li> </ul>	
	3.1.2. Organize retailers into buying groups to optimize operations and increase local sourcing to enable economies of scale by consolidating commercially viable quantities from several stores.	3						<ul style="list-style-type: none"> <li>10 buying groups organized</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Trade</li> </ul>		
	3.1.3. Create business partnerships between organized farmer groups and local buyers (e.g. processors, retailers, buyer groups) for potato products (e.g. agribusiness alliances) by: <ul style="list-style-type: none"> <li>Organizing business-to-business meetings between buyers / buyer groups and farmers / farmer groups and MSMEs</li> <li>Providing technical and advisory support to realize contract agreements and business deals.</li> </ul>	2						<ul style="list-style-type: none"> <li>Five business partnerships created between farmer groups and local buyers</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>CoCs</li> </ul>	<ul style="list-style-type: none"> <li>Development partners</li> <li>European Union-funded ITC-SAAVI</li> </ul>
	3.1.4. Based on identified buyer requirements (e.g. quality, volumes, varieties), develop a programme to build the capacities of the farmer alliances or groups created in activity 3.1.3 to meet demand through technical and advisory support, and financial resources, among others. Specifically: <ul style="list-style-type: none"> <li>Develop short modules on quality management, food safety standards, inventory management, demand planning and cold chain compliance, with basic instructions on cold storage requirements</li> <li>Deliver financial products to help farmers upgrade their production</li> <li>Establish links with aggregation hubs (activity 2.4.5) to enable farmers to 'bulk' production in order to meet demand from buyers</li> <li>Monitor the established commercial relationship at key stages of the production calendar</li> <li>Collaborate with regulatory bodies to ensure compliance with food safety standards and regulations</li> <li>Support obtaining certification from the International Organization for Standardization, or any certification required by the buyer.</li> </ul>	1						<ul style="list-style-type: none"> <li>Potato market connect programme designed, launched and monitored annually</li> </ul>	<ul style="list-style-type: none"> <li>MoA</li> </ul>	<ul style="list-style-type: none"> <li>CoCs</li> </ul>	



Strategic objective 3: Improve the sector's capacity for marketing and to expand and sustain market connections

Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
3.1. Create and sustain direct links between producers and buyers	3.1.5. To ensure quality control and traceability: <ul style="list-style-type: none"> <li>• Develop tracing systems to monitor the movement of potatoes through the supply chain, ensuring transparency and accountability</li> <li>• Collaborate with stakeholders to establish recordkeeping practices that facilitate effective traceability</li> <li>• Mandate businesses to maintain accurate records for traceability purposes</li> <li>• Provide training to farmers and processors on traceability recordkeeping.</li> </ul>	2						• Traceability system developed	• COSQC	• MoA	
	3.1.6. Establish partnerships with existing online marketplaces or create dedicated a platform to showcase and sell products in order to explore new distribution channels. This could include online marketplaces and mobile applications to reach a wider audience of potential customers, including other businesses.	1						• At least one partnership with existing online marketplaces or a dedicated platform created	• MoA	• Private sector representatives	
3.2. Expand market opportunities through improvements in policies and procedures	3.2.1. Assess the feasibility of creating dry ports in governorates where no seaports or airports are available.	3						• Feasibility study developed	• Ministry of Transport	• Local governments	
	3.2.2. To streamline checkpoint procedures inside Iraq, develop a master plan to explore the use of enabling technologies to facilitate movement of goods, improve data integrity and increase traceability. The following activities, among others, could be part of the master plan development. <ul style="list-style-type: none"> <li>• Conduct a comprehensive assessment of existing checkpoint procedures, identifying bottlenecks, inefficiencies and areas for improvement. This assessment will serve as a basis for designing the master plan.</li> <li>• Engage with relevant stakeholders – including government agencies, Customs officials, logistics providers and technology experts – to gather insights and perspectives on the potential use of enabling technologies for checkpoint procedures.</li> <li>• Explore the adoption of technologies such as electronic documentation systems, real-time tracking systems and automated inspection processes to enhance the movement of goods through checkpoints.</li> <li>• Develop guidelines and protocols for the implementation of enabling technologies, ensuring compatibility and interoperability among different stakeholders involved in checkpoint operations.</li> <li>• Conduct pilot projects in select checkpoints to test the feasibility and effectiveness of the proposed technologies, monitoring their impact on improving data integrity, traceability and overall efficiency.</li> </ul>	1					• Master plan developed and implemented	• Prime Minister's Council	• MoA • Ministry of Trade	• Ministry of Defense	

Strategic objective 3: Improve the sector's capacity for marketing and to expand and sustain market connections											
Operational objective	Activities	Priority 1=High 2=Med 3=Low	Implementation period					Target measures	Leading national institution	Supporting institutions or partners	Existing and potential programmes
			2024	2025	2026	2027	2028				
3.2. Expand market opportunities through improvements in policies and procedures	3.2.3. Conduct consultations and workshops with government officials and decision makers – e.g. National Core Team, Parliament, among others – to address specific challenges and propose solutions to streamline export procedures. • Collaborate with private sector and development partners to gather data, conduct research and present evidence-based arguments to support the case for smoother and more efficient export processes.	1						<ul style="list-style-type: none"> <li>• One workshop or consultation developed annually</li> <li>• At least two specific policy reforms or measures streamlining export processes</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Trade</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> <li>• CoCs</li> </ul>	
	3.2.4. Design and implement a training programme to strengthen national institutional capacities for compliance with sanitary and phytosanitary, technical barriers to trade and trade facilitation requirements in line with World Trade Organization obligations.	2						<ul style="list-style-type: none"> <li>• Training programme designed and implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Health</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Trade</li> <li>• MoA</li> </ul>	<ul style="list-style-type: none"> <li>• Development partners</li> </ul>
	3.2.5. Develop a one-stop shop through enhancing administrative coordination, emphasizing the use of digital channels to simplify procedures for export requirements and improve access to information.	1						<ul style="list-style-type: none"> <li>• One-stop shop created for exporters</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Trade</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of interior</li> </ul>
3.3. Enhance the visibility of Iraqi potatoes in local and regional markets	3.3.1. Develop advertising campaigns that highlight the unique features and benefits of Iraqi potatoes, such as their taste, texture and nutritional value. Develop a branding of Iraqi products to differentiate them from imported ones, which is connected to quality requirements. Educate the public about the nutritional benefits of Iraqi potatoes. Emphasize their high fibre content, vitamins and minerals, and their role in a healthy diet. Consider collaborating with nutritionists or health professionals to provide accurate information and endorsements. Raising awareness among policymakers on the food security aspects of potato farming could be integrated in the campaign.	2					<ul style="list-style-type: none"> <li>• Advertising campaign developed</li> <li>• National brand designed</li> </ul>	<ul style="list-style-type: none"> <li>• MoA</li> <li>• Extension Department</li> </ul>		<ul style="list-style-type: none"> <li>• Private Sector</li> </ul>	
	3.3.2. Develop a funding mechanism, e.g. grants, to support individual and collective branding activities, in collaboration with all relevant stakeholders.	1						<ul style="list-style-type: none"> <li>• Funding mechanism developed</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Industry and Minerals</li> </ul>		<ul style="list-style-type: none"> <li>• Private sector</li> <li>• MoA</li> </ul>
	3.3.3. Support MSMEs to participate in regional international trade fairs and exhibitions through a scheme (e.g. partial or full grant): • Identify relevant events, e.g. Gulfood • Identify enterprises to be supported through a competitive process • Coach selected companies and producers before the event • Follow up on learnings and business development after the visits.	3						<ul style="list-style-type: none"> <li>• At least 30 MSMEs supported</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Trade</li> </ul>		<ul style="list-style-type: none"> <li>• CoCs</li> <li>• Agriculture associations</li> </ul>

# Appendix: Key institutions involved in the Iraq potato sector

Name of institution	Mandates and functions
MoA	Responsible for the promotion and development of agriculture in Iraq, through the development of policies and strategies to improve the productivity and efficiency of the agricultural sector, including the production of potatoes and other crops. This ministry is also responsible for agricultural research and the promotion of advanced agricultural technologies.
Ministry of Labour and Social Affairs	Elaboration of legal and policy frameworks concerning labour-market access / rights at work / social security.
Ministry of Trade	Policymaking on behalf of Iraq's trade and commerce promotion. Responsible for the regulation of trade and export of agricultural products. Among its functions, we identify the promotion of the exportation of agricultural products, including potatoes.
MoP	Provides specialist planning inputs to other ministries and supports the development of the annual budget.
Ministry of Finance	Responsible for the management of the national budget and the national public debt.
Ministry of Environment	This ministry is responsible for regulating food safety, biodiversity and climate change, among other topics.
Ministry of Higher Education and Scientific Research	Responsible for the management of schooling at the tertiary level of education and vocational training in Iraq.
Ministry of Water Resources	This ministry is responsible for the management and conservation of water resources in Iraq for the agricultural sector, including irrigation of potato crops.
Agricultural Cooperative Bank	This bank supports the agricultural sector, particularly through the provision of services on development funds for major agricultural projects, and fund lending for agricultural mechanization and means of modern irrigation.
Federation of Iraqi CoCs	Responsible for supervising CoCs all over Iraq. Each province has a CoC, including the three chambers of the Kurdistan Region of Iraq, i.e. Erbil, Sulaimaniyah and Duhok.
Federation of Farmers' Associations	Represents the agriculture sector's interests.
Iraq Private Sector Development Centre	This institution represents nearly 50,000 companies from various governorates. It is the private sector representative of several organizations, such as: <ul style="list-style-type: none"> <li>• Basra CoC, with over 35,000 paying members</li> <li>• Iraqi Federation of Industries – Karbala Branch, with 1,600 paying members</li> <li>• Babil CoC, with over 5,000 paying members and 1,600 real estate agents</li> <li>• International Union of Businessmen in Iraq, with over 1,500 paying members</li> </ul>
National Agricultural Research Centres	Agricultural Research Institutions: State Board for Agricultural Research, Baghdad; Centre for Water and Soil Research, Baghdad
Business support organizations	These include business incubators focused on the agricultural sector. They develop early-stage local businesses, SMEs and individual entrepreneurs developing innovative solutions in the agri-business sector and related agriculture and food sectors.

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