



Iraq agribusiness market research and consumer insights: a technical brief – Report

Strengthening the Agriculture and Agrifood Value Chain and Improving Trade Policy in Iraq (SAAVI)





Iraq agribusiness market research and consumer insights: a technical brief –Report



Strengthening the Agriculture and Agrifood
Value Chain and Improving Trade Policy
in Iraq (SAAVI)

ACKNOWLEDGMENTS

The *Iraq agribusiness market research and consumer insights: a technical brief* report was prepared by a team led by Eric Buchot. The report was drafted by Mohamed Tarek Issa under the supervision of Ky Phong Nguyen and with substantive contributions by Karla Solis and Derek Carnegie.

The study was conducted as part of the Strengthening the Agriculture and Agrifood Value Chain and Improving Trade Policy in Iraq (SAAVI) project. The project is funded by the European Union and implemented under the leadership of the Government of Iraq through the Ministry of Planning (MoP), Ministry of Agriculture (MoA) and Ministry of Trade (MoT).

This technical brief is based on findings from the original research conducted by Interdisciplinary Research Consultants (id:rc), to whom we are grateful. Most of all, we appreciate the time and trust of the Iraqi business owners, managers and farmers, and all the consumers who responded to these surveys.

Vanessa Finaughty provided editorial and production management. Jesús Alés Villota led art direction and layout, with inputs from the SAAVI project team.

Publisher: International Trade Centre, Partner

Title: *Iraq agribusiness market research and consumer insights: a technical brief*

Publication date and place: Geneva, March 2022

Page count: 42

Language(s): English

Citation: International Trade Centre (2022). *Iraq agribusiness market research and consumer insights: a technical brief*. ITC, Geneva.

For more information, contact Eric Buchot, buchot@intracen.org

ITC encourages the reprinting and translation of its publications to achieve wider dissemination. Short extracts of this paper may be freely reproduced, with due acknowledgement of the source. Permission should be requested for more extensive reproduction or translation. A copy of the reprinted or translated material should be sent to ITC.

Digital image(s) on the covers:

front: ©ITC; ©Hüseyin Özen @Pexels; (CC BY 2.0) Adam Jones. back: ©ITC

Other images (if not otherwise attributed): Interdisciplinary Research Consultants

© [International Trade Centre \(ITC\)](#)

ITC is the joint agency of the World Trade Organization and the United Nations.



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 term 'billion' denotes 1 thousand million.

CSO	Central Statistical Organization
id:rc	Interdisciplinary Research Consultants
FAO	Food and Agriculture Organization
GDP	Gross domestic product
ITC	International Trade Centre
KRI	Kurdistan Region of Iraq
MoA	Ministry of Agriculture
MoP	Ministry of Planning
MoT	Ministry of Trade
MSMEs	Micro, small and medium enterprises
SAAVI	Strengthening the Agriculture and Agrifood Value Chain and Improving Trade Policy in Iraq

CONTENTS

ACKNOWLEDGMENTS	II
ACRONYMS AND ABBREVIATIONS	III
ABOUT THE REPORT	IX
EXECUTIVE SUMMARY	1
CHAPTER 1. COUNTRY PROFILE	5
OVERVIEW OF IRAQ'S AGRICULTURAL SECTOR	5
OVERVIEW OF SPECIFIC SECTORS AND MARKET POTENTIAL	6
Tomatoes	7
Potatoes	8
Livestock and dairy	9
Poultry (meat and eggs)	11
Chicken meat production	12
CHAPTER 2. CHALLENGES AND OPPORTUNITIES IN AGRICULTURAL VALUE CHAINS	15
VALUE CHAIN STRUCTURE AND MAIN SECTORS	15
Vegetables (tomatoes and potatoes)	15
TOMATOES AND OTHER VEGETABLES VALUE CHAIN ANALYSIS	17
Production	17
Wholesale	17
Producers face numerous challenges:	17
Retail	18
Market margin across the tomato value chain	18
Interviews with farmers	19

POULTRY VALUE CHAIN	20
Interviews with poultry farmers	22
Key insights from the poultry value chain	22
Market margins across the broilers value chain	23
Layers value chain	23
LIVESTOCK AND DAIRY VALUE CHAIN	24
Interviews with dairies farmers	25
INTERVIEWS WITH OTHER VALUE CHAIN ACTORS	26
Input suppliers	26
Transporters	26
Agents	28
CHAPTER 3. CONSUMER BEHAVIOUR AND PREFERENCES IN IRAQ	29
HOUSEHOLD SURVEYS	29
Vegetable consumer survey results	29
Poultry consumer survey results	31
Dairy consumer survey results	34
Main takeaways of household surveys	35
LARGE CONSUMER PREFERENCES	36
STORE CHECKS	38
CHAPTER 4. POLICYMAKING RECOMMENDATIONS	41

FIGURES

Figure 1: Evolution of tomato production in Iraq	7
Figure 2: Evolution of potato production in Iraq	8
Figure 3: Recent evolution of animal husbandry in Iraq	9
Figure 4: Hatching chicken production in Iraq (2020)	11
Figure 5: Chicken meat production and stock size in Iraq	13
Figure 6: Vegetable value chain in Iraq	16
Figure 7: Tomato market margin in Iraq	18
Figure 8: Poultry value chain in Iraq	21
Figure 9: Market margin of the broilers value chain	23
Figure 10: Cost breakdown of production of 450,000 eggs	23
Figure 11: Meat and dairy value chain in Iraq	24
Figure 12: Cost breakdown to produce a litre of milk	25
Figure 13: Transportation map in Iraq	27
Figure 14: Criteria affecting shopping for vegetables in Iraq	30
Figure 15: Weekly expenditure on poultry products	31
Figure 16: Factors affecting poultry purchase	32
Figure 17: Factors affecting shopping for dairy products in Iraq	34

TABLES

Table 1: Tomato imports (2019)	7
Table 2: Tomato price indices and value of imports in recent years	8
Table 3: Potato seed imports (2019)	9
Table 4: Milk production in Iraq in recent years	10
Table 5: Dairy imports production in Iraq (2019)	10
Table 6: Egg imports (2019)	12
Table 7: Poultry meat imports (2019)	13
Table 8: Breakdown of input costs for vegetable farmers per season	19
Table 9: Crops price at central markets (in IQD; per kg)	28
Table 10: Average monthly income	29
Table 11: Quality parameters for large consumers	37
Table 12: Purchase prices for restaurants	37



About the report

This *Iraq agribusiness market research and consumer insights: a technical brief* report combines data analysis and recommendations to guide policymakers, businesses and trade and investment support institutions in improving the business environment for farmers and micro, small and medium enterprises (MSMEs) in the agriculture and agrifood sectors in Iraq.

This technical brief presents the key findings of a nation-wide market research implemented in partnership with the interdisciplinary research consultants, id:rc. The study's main objective is to gain better understanding on how the market operates for selected agriculture and agri-food products in Iraq and how this behaviour affects value chain players, particularly MSMEs. Moreover, the study aims to provide insights on the current market situation and identify potential market opportunities and challenges for local production. Also, it seeks to quantify and elaborate on key relationships and factors driving value chain actors' decisions in wholesaling, distribution and retailing.

The national market research consisted of three main phases, as follows:



Market Level Analysis

Early information gathering on market size, characteristics and consumer trends for vegetables and animal products at the national level (Federal Iraq and KRI) based on both primary and secondary data sources. Data collection and information through in-depth interviews, along with site visits and store checks to understand market dynamics including distribution channels and commercial linkages. Relevant stakeholders included but were not limited to farmers, retailers, wholesale agents, distributors, transporters, households, large consumers, input suppliers, governmental bodies, among others.



Consumers Survey

The consumer survey aimed at capturing consumer behavior and preferences and demand currently unmatched by local production. It also includes preferences and attitudes to Iraqi products versus imported products, and willingness to pay for premium or value added products, among others.



Market and Consumer Analysis

The analysis built partly on the results obtained from activities under areas 1 and 2, as well as from additional data collected through store checks and face-to face interviews. This part will require store checks and face-to face interviews with the distributors, retailers and food processors.



©ITC, Poultry farm

This report was elaborated within the framework of the European Union-funded *Strengthening Agriculture and Agrifood Value Chains and Improving Trade Policy in Iraq* (SAAVI) project. The findings from this study directly inform SAAVI's activities and contribute to the elaboration of Iraq's Sustainable Development Strategies on Poultry and Tomatoes. These farm and agribusiness surveys complement additional research under SAAVI, including a panel study of COVID-19 impacts on SMEs, a market research analysis, a climate change risk assessment, and additional targeted quantitative and qualitative analyses.¹

1. The implementation of the surveys was complemented by the roll-out of 18 focus group discussions with farmers and agribusinesses specifically on poultry, tomatoes, gender issues, climate change and environmental issues in northern and southern Iraq.

Executive summary

Agriculture is an important sector in the Republic of Iraq and is a potentially important contributor to private sector growth and economic diversification, inclusive job creation and improved sustainability. Reviews of domestic demand and production capacities highlight tomatoes and other vegetables, poultry products, and livestock and dairy as being particularly promising product categories. Despite the potential in these sectors, there is a need to address challenges in value chain connections and market linkages in order to realize the benefits of their sustainable and inclusive growth.

In order to inform efforts to improve the prospects of high-potential sectors, this report provides a thorough overview of studies undertaken on the relationships between value chain actors in Iraqi agriculture and agrifood, including markets and final consumers. It includes the results of original research conducted by Interdisciplinary Research Consultants (id:rc) in support of the Strengthening the Agriculture and Agrifood Value Chain and Improving Trade Policy in Iraq (SAAVI) project being implemented by the International Trade Centre with funding from the European Union.

Following reviews of recent trends in production and trade in high-potential agricultural products, this report outlines [in-depth market research, including interviews, surveys, store checks and site visits in Baghdad, Najaf, Ninewa, Erbil, Sulaimaniyah, Kirkuk and Basra](#) conducted with input suppliers, farmers, wholesale agents and distributors, transporters, retailers, households, large consumers, and institutional and government representatives. Moreover, [close to 2,500 consumers](#) were surveyed nation-wide to understand and measure consumer behaviour and preferences.

At the farm level, gaps in access to information and assistance hold back advancements in productivity, quality and connections with suppliers and buyers. Interviews with vegetable farmers highlighted the need for value chain development and support. Few farmers indicated that they had access to a sorting and processing facility, with most doing this on their own farms. In addition, few farmers receive information on markets. Farmers do not show much responsiveness to market forces in deciding what crops to produce, and largely continue to produce what they have in the past. Almost

all interviewed farmers indicated that imports were their main source of competition, mostly because of lower prices and seasonal timing.

Overviews of priority sector value chains cover input and cost breakdowns, processing and slaughtering, and markets. Interviews with other value chain actors working in the vegetable, poultry and dairy sectors – including input suppliers, sales agents, transporters and food processors – focused on their roles in the value chain and constraints on their activities.

The results of consumer surveys used to better understand drivers of final demand highlight how consumers care about quality, tend to prefer local products and are mostly willing to pay more for local products. Among the findings on consumer behaviours and attitudes in shopping for vegetables, poultry products and dairy products, the following stand out:

Nearly half of consumers shop for vegetables on a regular basis, 1–3 times per week, buying tomatoes and potatoes in small quantities on each trip. Most consumers shop for vegetables at the neighbourhood grocer. Their decisions on which products to buy are most affected by flavour, colour and local production. Indeed, most consumers prefer local vegetables to imports at the same price, and most are even willing to pay more for quality local products. However, few respondents are aware of what certified organic means, and less than half of surveyed respondents preferred these or would be willing to pay more for them.

Generally, survey respondents report spending approximately 10%–20% of their income on poultry products, which most consumers buy from butchers or supermarkets. Their decisions on which products to buy are mostly affected by taste, slaughter date and local production. More than 80% of respondents said that local chicken is better than imports (and 74% say the same about eggs), and the majority of respondents are willing to pay more for locally produced chicken and eggs.

Consumers of dairy products mostly base their buying decisions on the date of production, flavour and local production. They are also mostly willing to pay more for local products, though packaging and quality are

among the most important improvements that consumers think are needed for dairy products.

At the retail level, interviewed stores reported steady or declining demand, mostly attributed to the effects of restrictions implemented in response to COVID-19. On the supply side, most large stores did not indicate facing challenges in securing products, though there are inconsistencies in supply and price instability and increasing prices as a result of currency effects and trade policies. Store visits and interviews highlighted consumer preferences and offered descriptions of supply channels and pricing, including that stores

prefer local products in many cases, except in the case of dairy.

Demand for vegetables, poultry and dairy among large consumers such as restaurants has been steady in the recent past, except for the disruptions caused by the pandemic. These interviewees also shared information on their experiences on product quality, client feedback and preferences, and supply systems.

An in-depth value chain analysis reviews and identifies priorities for increasing value added in the vegetable value chain.



Iraq agribusiness market research and consumer insights: key findings

VEGETABLES (TOMATOES AND POTATOES)

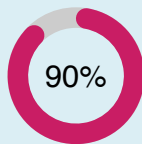


Near **half** of Iraqi consumers shop **1–3 times a week**, mostly buying tomatoes and potatoes every time (small batches)

Neighbourhood grocers are the **most preferred** place for purchase, **except in KRI** where supermarkets are favoured



Purchase decision based on:



90% prefers local vegetables to imports

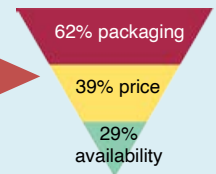


40% of the sample is willing to pay up to 20% more for local tomatoes and potatoes.

Untapped **remunerative market opportunity**

however challenges remain

Disadvantage of local vegetables:



POULTRY (CHICKEN MEAT AND EGGS)



Each governorate has its own shopping habits

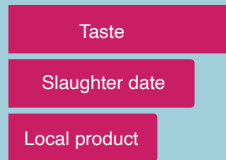


82% Preferred to buy meat from butcher markets



90% prefers local chicken to imports

Purchase decision based on:



More than 70% of consumers are ready to pay up to 20% more to get local products.



Availability is a challenge due to

Shorter shelf life of local poultry products

DAIRY



82% Buy dairy products from supermarkets

70% of respondents are willing to pay more for local products

Purchase decision based on:



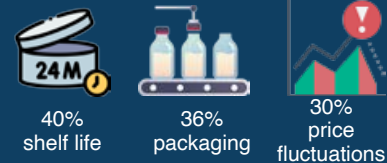
Most are willing to pay up to 10%–20% more for local dairy products



78% prefers local dairy products to imports

However challenges remain

Key issues identified by respondents



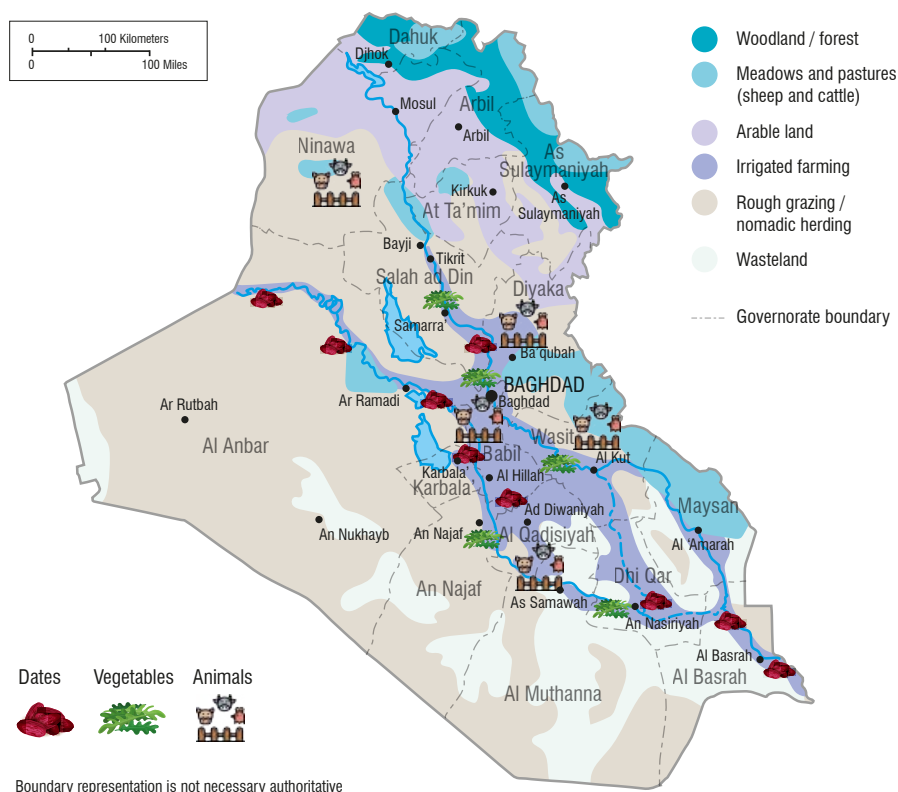
POLICY RECOMMENDATIONS





Chapter 1. Country profile

Overview of Iraq's agricultural sector



Source: ITC

Agriculture in Iraq has a significant economic and social value. Only second to the oil sector, agriculture has the largest contribution to gross domestic product (GDP) at 5%¹. It is strategic for food security and provides employment and income for millions of Iraqi families.

Out of a total population of approximately 41 million,² an estimated 5 million Iraqis are involved in the agricultural sector and approximately one-third of the population live in rural areas and are dependent on agriculture-related activities for their livelihoods.

Nearly 75% of farmers produce crops, while the remaining 25% depend on livestock production. Cereals,

mainly wheat and barley, are the main crops in the northern regions, while in central and southern Iraq, where agriculture depends mainly on irrigation from the Tigris and Euphrates Rivers, mixed farming systems prevail. Dates are also of major value for food crops, including vegetables, especially tomatoes and potatoes. Animal husbandry, fishponds and poultry are also practiced. A significant portion of Iraq's agricultural lands are under irrigation. However, it still depends highly on rain-fed agriculture for grain and livestock production. The concentration of rain-fed agriculture is in the northern parts, which have higher precipitation rates. Despite its vast area, less than 30% of its land is suitable for agriculture. The remainder of the country includes deserts

1. FAO (2021). Agricultural Value Chain Study in Iraq.

2. See <https://www.worldometers.info/world-population/iraq-population/>.

with low rates of precipitation and steep mountains, which are the natural grazing.

Soil salinity and water-related issues restrain cultivated areas to less than half of its potential. The Food and Agriculture Organization (FAO) reports that the total area that has been used for agricultural production is approximately 8 million hectares. This accounts for less than 70% of the cultivable area. Recently, however, and due to soil salinity rates, drought, shortage of irrigation water in summer, fallowing and political conditions, it is estimated that only 3 million to 4 million hectares are cultivated.

In the past decades, Iraq has transformed from a food-producing country covering its population's needs to a major importer of food. Wheat and barley production mostly take place in the northern part of the country, and most of the vegetable production takes place along rivers and areas where irrigation is available. Fruit and date orchards are well suited to Iraq's temperate hillsides and arid regions where water is available. As a consequence, its overall impact on employment has declined from 30% in the late 1980s to nearly 19% in 2018. Nevertheless, several international organizations have maintained that Iraq's agriculture and food sector can play a major role in rural job creation and income generation and, thus, contribute to political and economic stability.³

According to Iraqi farmers, cheap food and agricultural product imports flood into the country. They are unable to compete with such products. This could be due to improper national cropping plans, high local production costs, and subsidies offered by the governments of exporting countries. This is despite the existence of a law to protect local production (Law No. 11 of 2010), which requires the Ministry of Agriculture to coordinate with stakeholders and their counterparts in other countries to protect local products against imports. It is suggested that the law be altered in a manner that better enables it to simultaneously protect local interests. The

law specifies the Ministry of Agriculture's role in combatting the flooding of markets with food imports and assigns it the responsibility of raising awareness related to training local producers on what actions to take in case of facing such competition.

Institutionally, the Federal Ministry of Agriculture is governed by Law No. 10 of 2013, which assigns it as the body responsible for achieving agricultural development through conducting agricultural research to improve productivity and providing services related to horticultural production and animal husbandry. It is also responsible for promoting modern agriculture, supplying agricultural equipment and improving extension services. Other responsibilities include the implementation of agricultural reform programmes and other agricultural programmes.

Despite government efforts, agriculture in Iraq is severely hampered by ineffective policies, mismanagement, and conflict-related destruction of infrastructure. The bulk of agriculture in Iraq is practiced on small farms that operate with a relatively low input system and thus give low output. Technology used on farms is limited and very basic, which leads to low economic gains. The use of available poor-quality chemicals along with the misuse and scarcity of organic fertilizers make agricultural crops somewhat scarce according to the comparison criteria. All this has led to lower agricultural productivity, which has made the country dependent on imports to meet its domestic food needs.

There is an extreme need to reinstate the sector as a major contributor to food security and a major contributor to enhanced livelihoods in Iraq. Improving the agricultural sector and reinstating its previous levels of performance and income generation will help create new job opportunities, improve the sector's contribution to the gross domestic product (GDP), enhance economic performance in agrarian communities, and contribute to trade development locally and possibly regionally.

Overview of specific sectors and market potential

ITC conducted an analysis⁴ to identify the agrifood products with the highest potential in Iraq. The sectors with the highest combined demand include animals

and animal products (\$2.3 billion), horticulture (\$1.7 billion) and processed food (\$1.1 billion). Following is an overview of specific products and their market potential.

3. MDPI (2019). The Politics of Agricultural Development in Iraq and the Kurdistan Region in Iraq (KRI).

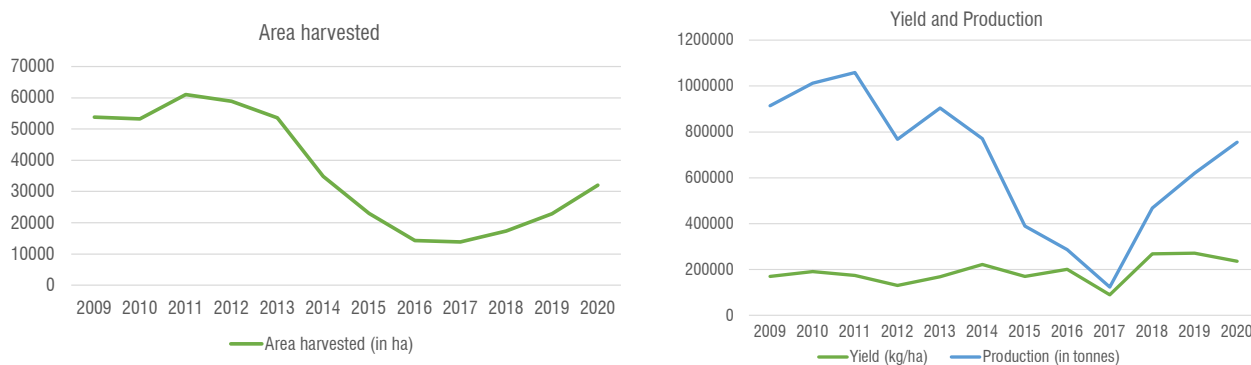
4. ITC (2021). Identifying agricultural and agrifood products with potential for production and commercialization in Iraq. Available from https://www.intracen.org/uploadedFiles/intracenorg/Content/Redesign/Projects/SAAVI_Iraq/SAAVI%20TMI%20report%202_web.pdf.

TOMATOES

Tomatoes are the most grown vegetable in Iraq. According to the Ministry of Agriculture, approximately 771,000 tons are produced nationwide, with high production in Karbala, Basra and Najaf. The government has shown support for tomato production through trade policies. In 2017, government imposed an import ban on tomatoes to protect local producers. Iraq imported \$98.5 million worth of tomatoes in 2014, \$82.8 million in 2015 and \$88 million in 2016. Other bans were declared in following years, the last of which was in 2020 on several products, including tomatoes.

Figure 1 shows the trend of tomato harvesting areas and the overall and unit production in the past 10 years in Iraq. There is a significant drop in the harvested area of tomatoes in the past decade by nearly 50%. There was a steady drop in the area in 2009–2016, after which there is a gradual increase in the area, but still significantly below 2009 areas. The drop in harvested area has reflected on the overall production, and a similar trend can be detected. Interestingly, the unit production per hectare in 2019 is nearly 60% higher than that in 2009. In other words, the reduction in harvested areas was made up for with better production yields, which could be indicative of improved farm practices.

Figure 1: Evolution of tomato production in Iraq



Source: Food and Agriculture Organization (FAO).

Fresh tomatoes are the horticultural product with the highest projected import demand in Iraq (\$183 million), with an even higher projected demand for prepared tomatoes (\$291 million).⁵ Table 1 summarizes the imports of fresh and/or chilled tomatoes into Iraq in 2019. The overall tomato imports in 2019 were nearly 145,000 tons. The proportion of the volume of imports into Iraq

is nearly 10% of the volume of production, while for the Kurdistan Region of Iraq (KRI) the same ratio is nearly 120%. Assuming the reported figures are accurate, there is more reliance on imports in the KRI. This highlights the potential for additional production to meet this demand. The FAO sources indicated that the 2019 imports were 478,000 tons at a value of \$206 million.

Table 1: Tomato imports (2019)

Iraq			Kurdistan region of Iraq		
Country of origin	Total volume (kg)	Total value (\$)	Country of origin	Total volume (t)	Total value (\$)
Iran	39 251 092	9 816 510	N/A	100 732	N/A
Jordan	4 338 260	1 087 090	Total	100 732	N/A
Kingdom of Saudi Arabia	46 080	46 080	Details on country of origin not available, but believed to be Iran and Turkey.		
UAE	40 000	20 000			
Total	43 675 432	10 969 680			

Source: Central Statistical Organization (CSO) and Kurdistan Region Statistics Office (KRSO).

5. ITC (2021). 'Identifying agricultural and agrifood products with potential for production and commercialization in Iraq'. Available from https://www.intracen.org/uploadedFiles/intracenorg/Content/Redesign/Projects/SAAVI_Iraq/SAAVI%20TMI%20report%202_web.pdf.

As per the CSO figures, the price indices for tomatoes per ton and the value of imports are shown in Table 2. The most alarming figure is the value of imports in 2017 – the year there was supposedly a ban on tomato imports. Also, it is worth noting the discrepancies in

values of imports reported by different sources. Using the 2017, 2018 and 2019 import volumes and reported values results in prices per ton of \$253, \$238 and \$251, respectively. This supports the claim of local farmers not being able to compete with imported vegetables.

Table 2: Tomato price indices and value of imports in recent years

Year	Value (USD per ton)	Value of total domestic production (USD million)	Value of imports (USD million)	Year	Value (USD per ton)	Value of total production (USD million)	Value of imports (USD million)
2011	488.9	518.01	N/A	2016	368	105.47	2
2012	496.5	381.50	N/A	2017	390.2	48.23	1 600
2013	506.9	458.14	N/A	2018	396.5	185.40	40
2014	448.5	345.60	N/A	2019	410.3	254.20	11

Source: Central Statistical Organization (CSO).

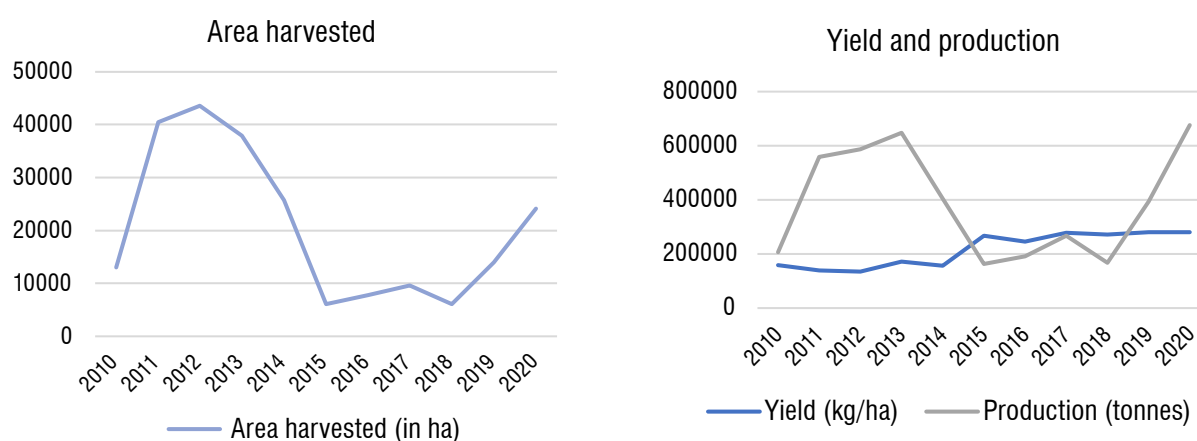
POTATOES

Iraq produced 392,348 tons of potatoes in 2019, a drastic twofold increase from the previous year. Potatoes are grown mainly in the northern uplands around Mosul and the central valley of the Tigris and Euphrates Rivers near Baghdad. Some potatoes are also grown in the lower Tigris–Euphrates valley, but production there is limited due to soil salinity.

Figure 2 shows the trend of potato harvesting areas and the overall unit production in the past decade in Iraq. In 2010, the government imposed a ban on potato imports to protect local farmers. The graphs show

a sharp increase in production and area harvested in 2010–2012 and the peak is reached in 2012. The year 2012 marked a turning point for Iraq's potato production. The steep decrease in the area harvested is portrayed in an equally steep decrease in production. However, the yield in weight per unit area throughout that period remained relatively unhinged, which could imply advances in technology or a change in agricultural methodology or improved varieties grown. In 2018, the Ministry of Agriculture also banned the importation of agricultural crops as part of its plan to support local agricultural products, which is reflected in 2019.

Figure 2: Evolution of potato production in Iraq



Source: Food and Agriculture Organization (FAO).

Table 3 summarizes the imports of potato seeds. In total, the overall potato imports in 2019 are nearly 65,065 tons. The percentage of imports into Iraq is 17%. Imports of potatoes for 2016, 2017 and 2018 were 17,000, 104,059 and 74,393 respectively. Their values were \$4.3 million, \$24.7 million and \$20 million respectively. Similar to tomatoes, potato imports in 2017 were alarmingly high.

Table 3: Potato seed imports (2019)

Country of origin	Total volume (t)	Total value (USD)
Iran	41 915	10 971 773
Netherlands	9 209	1 033 572
France	8 766	1 028 366
Syrian Arab Republic	3 642	934 197
United Kingdom	1 123	115 721
Jordan	203	64 273
Turkey	79	39 500
China	90	22 475
South Africa	13	5 400
Lebanon	21	5 250
South Korea	4	378
Total	65 065	14 220 905

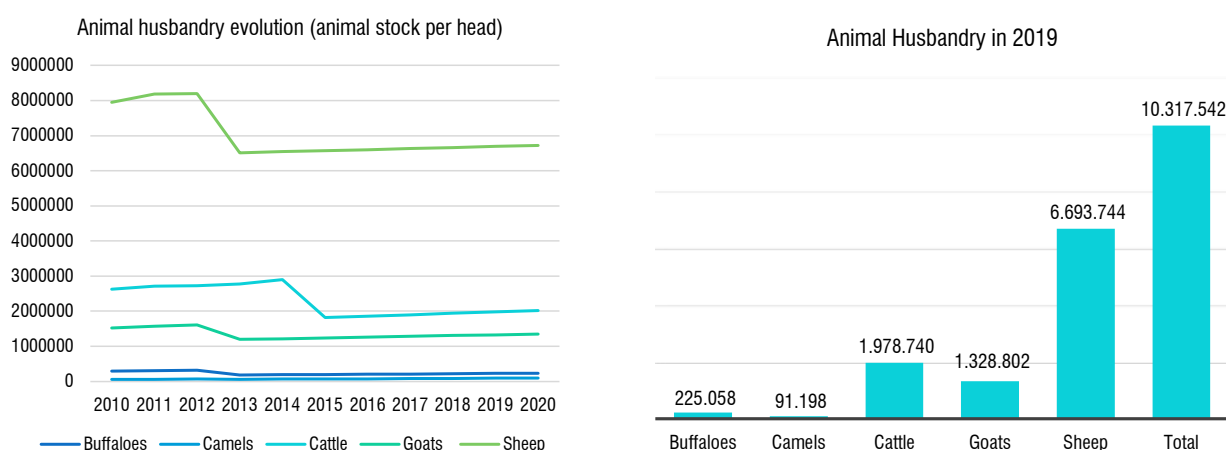
Source: Central Statistical Organization (CSO).

LIVESTOCK AND DAIRY

There is limited comprehensive and recent data for the animal husbandry and dairy sector in Iraq. The animal population declined steeply in the embargo years due to severe shortage of feed and vaccines, and it has not recovered. The last official statistics from the CSO

dates to 2008 in a report that addressed animal husbandry. The report indicated that, in 1964, the livestock population exceeded 13 million. In 2008, this number was estimated at 12 million. Figure 3 shows the recent evolution of animal husbandry, as per FAO statistics.

Figure 3: Recent evolution of animal husbandry in Iraq



Source: Food and Agriculture Organization (FAO).

Iraq's dairy sector is in dire need of urgent improvements. Most dairy plants are situated in and around Baghdad Governorate. The quality of milk delivered to the factories is poor in the absence of cooling and hygienic handling facilities for milk. The factories are producing very small quantities compared with their rated capacities. Their equipment is very old, and power supply is unstable and insufficient for refrigeration.

As a result, Iraq is a major importer of dairy products. Jordan alone exports approximately 17,000 tons of retail milk powder to Iraq.

There is no reported data on dairies by the CSO, but Table 4 shows the FAO statistics on animal production of milk in recent years.

Table 4: Milk production in Iraq in recent years

Item	Year	Quantity (t)	Item	Year	Quantity (t)
Milk, whole fresh buffalo	2015	31 593	Milk, whole fresh goat	2015	16 053
	2016	33 348		2016	16 240
	2017	33 348		2017	20 887
	2018	35 103		2018	21 224
	2019	35 981		2019	21 609
Milk, whole fresh camel	2015	235	Milk, whole fresh sheep	2015	56 775
	2016	255		2016	57 050
	2017	274		2017	57 297
	2018	294		2018	57 545
	2019	333		2019	57 821
Milk, whole fresh cow	2015	263 472			
	2016	267 950			
	2017	272 505			
	2018	277 137			
	2019	281 848			

Source: Food and Agriculture Organization (FAO).

Table 5 shows Iraq's dairy imports in 2019. Iran is the leading supplier in most product categories, including cheese, yogurt and other fermented products, and milk. Other important supplier countries include the Republic

of Turkey and the Kingdom of Saudi Arabia for milk, yoghurt and cheese, and Europe (mainly the Kingdom of the Netherlands, the French Republic, the Kingdom of Belgium and the Kingdom of Denmark) for butter.

Table 5: Dairy imports production in Iraq (2019)

HS code/product category	Imports in tons	Value in USD
0401 – milk of various categories	144 000	111 million
0406 – cheeses	75 000	79 million
0402 – milk and cream	72 000	59 million
0405 – butter	829 000	0.7 million
0404 – whey	195 000	0.15 million

Source: Central Statistical Organization (CSO).

POULTRY (MEAT AND EGGS)

Poultry is defined as domestic fowls, including chickens, turkeys, geese and ducks, raised to produce meat or eggs. The word is also used for the flesh of these birds used as food. The poultry sector in Iraq –especially in Kurdistan– is witnessing a remarkable prosperity as a result of the new laws and regulations of 2020⁶ that prohibit the import of frozen chicken and impose more taxes on the commodities that are still allowed to be imported, which resulted in substantial economic growth in this sector.

The quantities of eggs produced in Iraq were estimated to be 1,118.4 million eggs for 2020 (Figure 4). This is an increase of 15.4% compared to 2019, despite the fact that nearly all sectors faced a huge negative impact in 2020 due to the COVID-19 pandemic. According to the CSO, there were 4,828 farms registered in 2020.

With more than \$900 million in yearly production (whole and cut combined), chicken meat is the product with the highest projected demand in Iraq. Additionally, \$26 million in demand is projected for prepared and preserved chicken meat or offal. Eggs have a significant projected demand as well, of more than \$350 million.⁷

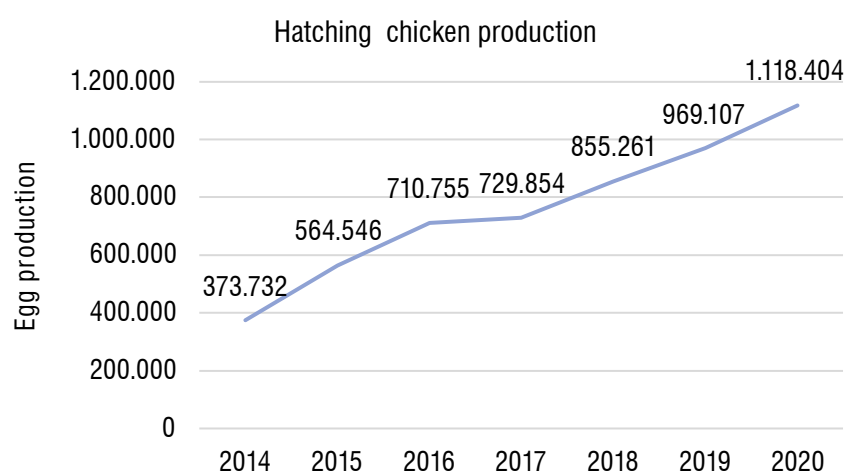
The value of total fresh egg imports is almost \$10 million, with a total weight of 11 million kilograms (Table 6). At an average weigh of 50 grams, this translates to 220 million eggs, which is nearly 20% of the national



©shutterstock, Poultry farm

production. At the published price of IQD 169 per egg, the market value of those imports is \$25 million (two and a half times their import value), which confirms the high local demand.

Figure 4: Hatching chicken production in Iraq (2020)



Source: Central Statistical Organization (CSO).

6. See <https://www.middleeastmonitor.com/20200922-iraq-bans-import-of-29-agricultural-animal-products/>.

7. ITC (2021). 'Identifying agricultural and agrifood products with potential for production and commercialization in Iraq'.

Table 6: Egg imports (2019)

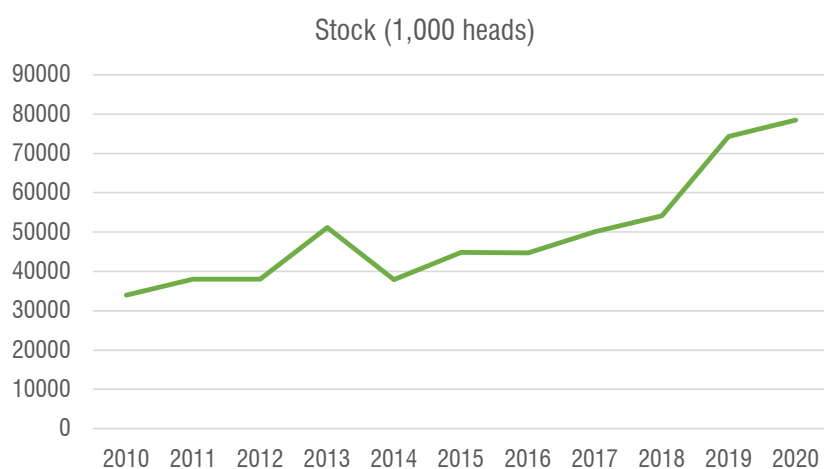
Category of imports	Country of origin	Value in USD	Weight (kg)
Birds' eggs, in shell, fresh	Turkey	7 164 274	8 754 150
	Ukraine	1 029 763	1 317 500
	Iran	1 011 782	797 500
	United Kingdom	313 098	6 500
	European Union	142 487	69 000
	Kuwait	68 895	45 500
	Saudi Arabia	46 167	52 000
	China	38 278	36 000
	Syrian Arab Republic	19 644	13 000
	Egypt	15 840	13 000
	Russian Federation	11 500	6 500
	India	8 193	6 500
	Jordan	3 880	6 500
	United States	3 074	5 500
	Mexico	780	5 500
Subtotal	9 877 655	11 134 650	
Birds' eggs, in shell for hatching	Jordan	3 769 140	2 739 003
	Belgium	738 720	430 188
	Iran	505 880	588 860
	Turkey	470 664	232 551
	Netherlands	116 640	70 265
	Subtotal	5 601 044	4 060 867
Birds' eggs, in shell, preserved	Turkey	1 534 005	1 712 200
	Ukraine	890 835	960 000
	Jordan	887 700	511 200
	Belgium	57 600	16 000
	Moldova	14 850	16 000
	Subtotal	3 384 990	3 215 400

Source: Central Statistical Organization (CSO).

CHICKEN MEAT PRODUCTION

Chicken production has remained at a constant rate of increase with the exception of a spike in 2013. The 2014–15 dip is attributed to the avian flu outbreak (Figure 5). The steady increase in production can be explained by farmers gradually improving their farming practices year after year, thus impacting overall efficiency, or that the curve is simply following the increasing demand of the Iraqi population, which is more likely.

Import figures in 2019 were nearly 90,000 tons, with a total value of \$105,988,600 (Table 7). The average price per ton across all countries is \$1,170. The country charging the highest price per ton is the United States of America, with each imported ton costing \$11,887, and the country charging the cheapest price is the Arab Republic of Egypt, with each ton costing \$102.

Figure 5: Chicken meat production and stock size in Iraq

Source: FAOSTAT

Table 7: Poultry meat imports (2019)

Country of origin	Total volume (t)	Total value (USD)
Brazil	36 893	36 276 548
India	19 595	17 793 778
Jordan	15 564	26 790 294
China	9 952	13 541 209
Iran	2 302	2 891 720
European Union	1 263	967 000
United Arab Emirates	1 144	1 428 628
Turkey	1 074	2 450 121
Egypt	445	45 500
Ukraine	420	230 040
Spain	334	293 000
Saudi Arabia	308	431 816
Netherlands	208	260 000
Kuwait	186	258 946
United States	178	2 116 000
Belgium	168	133 600
Greece	124	80 400
Total	90 158	105 988 600

Source: Central Statistical Organization (CSO).



Grocery shop in Baghdad, ©ITC

Chapter 2. Challenges and opportunities in agricultural value chains

Value chain structure and main sectors

VEGETABLES (TOMATOES AND POTATOES)

The structure of Iraq's vegetable market is quite traditional and generally applies to most products, including tomatoes and potatoes. Figure 6 illustrates the vegetable value chain actors in Iraq.

Suppliers are defined as providers of input materials to the farmer (seeds, fertilizer and irrigation equipment, etc.). Main inputs for vegetables (tomatoes and potatoes included) are seeds, fertilizers, pesticides and irrigation equipment. Suppliers usually have retail shops throughout the governorates, but they also sell through agents for the materials they have exclusive distributorships on.

Farmers use supplies, labour, electricity and water to produce vegetables. While both potatoes and tomatoes are grown throughout Iraq, some areas are better known for certain crops. For example, Basra and the KRI grow tomatoes extensively, while Ninewa and Baghdad are more known for growing potatoes.

At the centre of the chain is the wholesale market, and most farmers haul their products there daily during the harvest season. Most farmers haul their produce using their own small trucks to the nearest wholesale market, but imported and cross-governorate produce is usually transported using larger transportation vehicles and is mostly refrigerated.

Wholesale markets are very similar in Iraq; some are public and others are private, and the range of the level of services and infrastructure varies. Some are advanced in terms of concrete ramps, paved roads and the availability of cold storage. Markets are mostly divided into two main sections: one for local products and one for imports. However, imported products can be seen on both sides.

Farmers choose agents to sell their products to based on several factors, including cooperation history, how well connected in the grocery store market they are, and advance payments offered by the agent. Advance payments could be considered as an informal financing, especially if those agents are also connected to input suppliers or if they are input suppliers in addition being agents.

Retailers come to the market and purchase directly from those agents and then arrange their own transportation to their shops. Other buyers, such as large consumers like hotels and restaurants, also come to the market, although some of them buy from wholesalers directly.

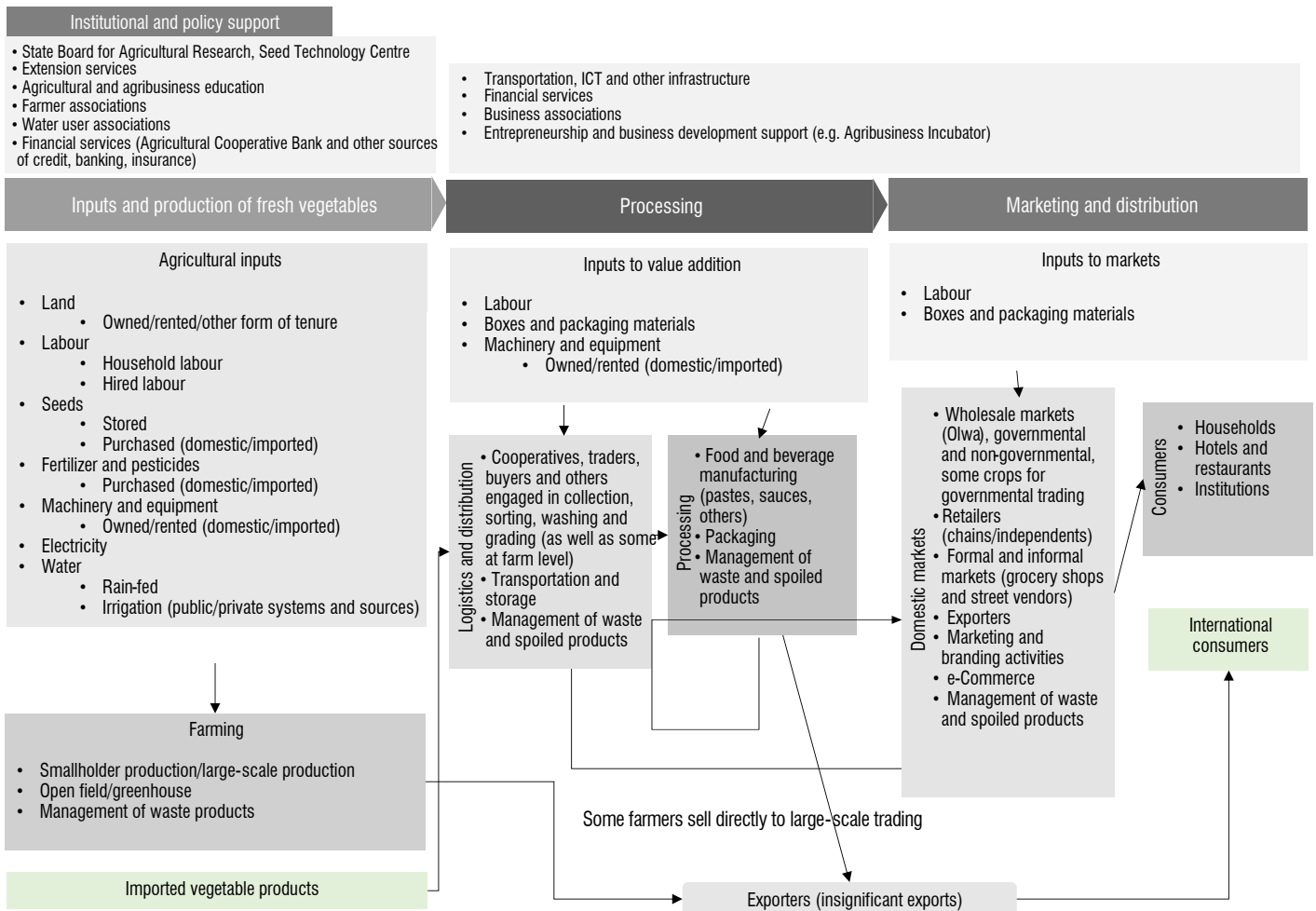


©ITC, Crop field



©ITC, Wholesale market

Figure 6: Vegetable value chain in Iraq



Source: ITC generated

Tomatoes and other vegetables value chain analysis

PRODUCTION

According to the Central Statistics Organization and FAO statistics, approximately 620 tons of tomato were produced in an area of nearly 230 million square metres in 2019. Using an average price of IQD 480 per kg, the total value of produced tomato is approximately \$212 million. The bulk of the production (80%) is winter production, and it comes from relatively small farms that

employ 3–6 workers, of which some are female workers. The total supply of tomato in Iraq is estimated at 1.1 million tons, of which 57% is supplied locally and the remaining 45% from imports, mainly from the Islamic Republic of Iran, Turkey, the Syrian Arab Republic, and the Hashemite Kingdom of Jordan.

CHALLENGES

- Climatic issues related to the increase of water salinity and deterioration of water quality and quantity, especially in Basra Governorate;
- Low productivity due to the lack of proper seed variety, quality of inputs used and good farm management;
- Limited access to finance the purchase of high-quality inputs such as seeds, fertilizer, chemicals, and boxes for harvesting;
- Lack of powerful cooperatives that farmers can use as a vehicle for better bargaining power in obtaining better prices for their products.

OPPORTUNITIES

- Improve irrigation efficiency through proper irrigation scheduling and using efficient irrigation equipment;
- Build the capacity of producers in the different areas of agricultural production, including offering technical assistance and training on simple financial management skills;
- Reduce post-harvest losses due to poor handling of the harvested produce at the farm level or during the transportation process;
- Introduce or enforce quality standards and specifications that will improve the competitiveness of Iraqi products in local markets against imported products;
- Create revolving funds for farmer co-ops to reduce reliance of farmers on informal financing such as relatives and other farmers.

WHOLESALE

Market agents are a critical actor in the value chain. The wholesale markets play a crucial role in the horticultural marketing system due to the expected marketing functions that should be offered by their actors.

Interviews with the agents revealed the following challenges:

- Very limited marketing functions are provided to producers and their products at the marketplace, except the selling function either by negotiations or by limited auctioning;

- Although data on price and quantity is collected in the wholesale markets, it is not used to provide information or any type of analysis for market actors;
- The exchange rate fluctuations between the USD and the IQD, which causes a sudden drop or increase in value, which reflects on the prices;
- The central markets are crowded, which increases competition between agents.

Wholesalers believe that there is room to improve this sector by promoting central market products by a social media means managed by the market's management.

RETAIL

Retailers are the third important actor in the tomato and other vegetables value chain. The interviews with more than 60 retail stores identified some challenges securing enough supplies due to:

- Price instability due to changes in the currency exchange rates of the IQD versus the USD;
- Curfews and political instability have affected the quantities, continuity and timeliness of supply delivery;
- Significant time is lost through poorly equipped central markets in dealing with highly perishable products, which causes losses and quality reduction;

- Rejections reaching as high as 10% for some products, which is indicative of weakness in post-harvesting practices.

Some opportunities that could be taken advantage of to face the challenges in the value chain include:

- Sorting and primary grading conducted by many stores would increase the obtained prices and bring additional value to consumers;
- Consumers and retail stores indicated that they would be willing to pay 0%–20% more for higher-quality products, which implies an opportunity for suppliers to invest in quality and get higher returns.

MARKET MARGIN ACROSS THE TOMATO VALUE CHAIN

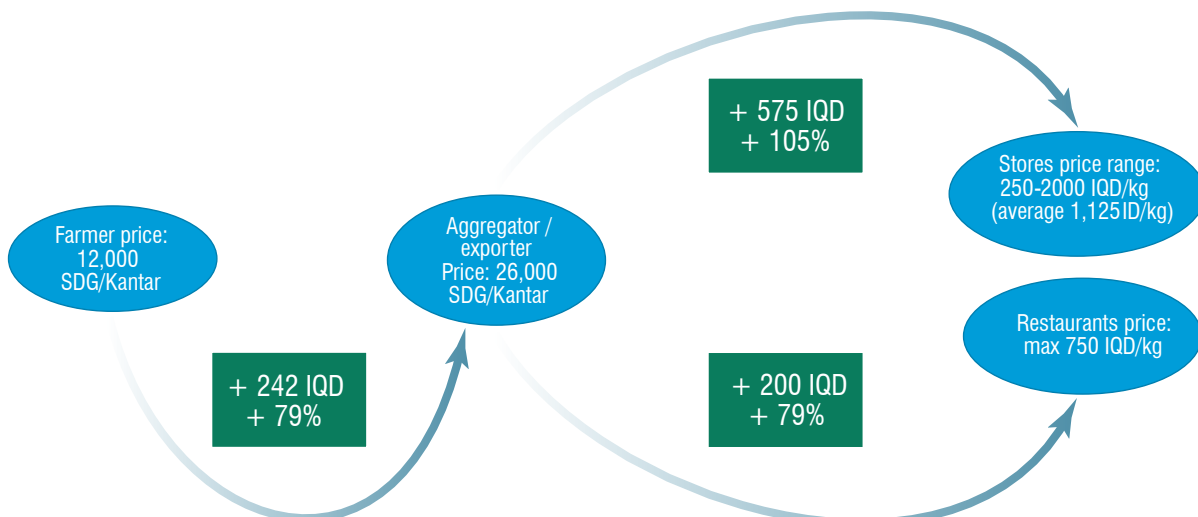
An important indicator of the marketing system’s efficiency is the marketing margins across the main segments of the value chain. The term margin refers to the profit margin the firm, farmer or wholesale makes out of the activities of the value chain. The producer–wholesaler–retailer–consumer channel was found to be the dominant marketing channel. Marketing margin analysis shows that tomato marketing is a profitable venture to all value chain actors, including two-thirds of the interviewed producers during the study, who indicated that they did recover their cost.

However, the analysis shows that wholesalers have made a profit margin of 79% compared to farmers,

who made 26%–50%. The retailers (stores) made the highest margin of 105% compared to wholesalers and producers (Figure 7). It should be mentioned here that these results do not differentiate between locally produced and imported tomatoes. Some of the producers who did not make profits blamed the competition with imported tomatoes.

The results of this analysis call for improvement of the dissemination of marketing information to enable value chain actors to make knowledgeable marketing decisions such as when to harvest, when to sell, how to pack and how to make contracts with suppliers.

Figure 7: Tomato market margin in Iraq



Source: Interdisciplinary Research Consultants calculations based on interviews with value chain actors.

INTERVIEWS WITH FARMERS

Interviews were held with approximately 110 farmers. The estimated average age per farmer is 45–50. Most farms have 3–6 workers on their farms, which is indicative of a predominantly small operation. A typical interviewed farmer has more than 20 years of experience, indicating high levels of expertise in the sector. The crop grown the most is tomatoes, followed by onions and potatoes.

Farmers mostly overlook the financial aspects or demand patterns when deciding which crops to grow. Most farmers indicated that they grow the crops that they do simply because they have always done so. There is a need to raise awareness about the financial aspects of a particular crop. Additionally, only a few indicated that they receive information during the season

on market outlooks before they harvest. After harvest, most of them do receive market information from other farmers and agents.

According to most farmers, electricity, seeds and fertilizer are the key costs for farmers (Table 8). Those items were all highly subsidized before 2003. Most input supplies were provided by the government at very low prices, and equipment was financed through extremely easy loans supported by the government. The average cost of production per ton was reported to be IQD 300,000 to IQD 50,000 per ton. However, only half of the interviewed farmers were able to give a cost of production figure. A significant number of respondents indicated needing access to credit for seeds, fertilizer, chemicals and boxes for harvesting.

Table 8: Breakdown of input costs for vegetable farmers per season

Item	Cost			
	IQD	USD	per donum (average of 11.5 donum)	%
Energy	410 086.21	282.82	24.59	15.10%
Equipment (tractor parts, etc.)	375 500.00	258.97	22.52	13.80%
Fertilizer	356 666.67	245.98	21.39	13.10%
Seeds	319 090.91	220.06	19.14	11.70%
Harvesting	315 250.00	217.41	18.91	11.60%
Water	204 264.71	140.87	12.25	7.50%
Chemicals		127.53	11.09	6.80%
Boxes for crop	151 195.65	104.27	9.07	5.60%
Storage or cold storage	137 500.00	94.83	8.25	5%
Loading	110 500.00	76.21	6.63	4.10%
Sorting	79 166.67	54.6	4.75	2.90%
Packing	80 000.00	55.17	4.8	2.90%
Total	2 539 220.60	1 878.72	163.39	

Source: Interdisciplinary Research Consultants calculations based on interviews with value chain actors.

Most of the interviewed farmers sell their harvest at the wholesale market, or sell it directly by setting up street kiosks. Fees paid at the wholesale market include agent fees, market entrance fees, loading/unloading fees and, when needed, storage fees. Nearly the entire group of interviewed farmers indicated that they have never sold directly to a large chain supermarket, and they do not know about the requirements and standards of such chains. This is an area where tremendous awareness and capacity building are needed to help farmers become more understanding of critical issues such as size, distribution and packaging preferences.

Prices, varieties and seasonal demand are the main challenges farmers face when competing with imported products. Iraqi farmers still use old traditional varieties of vegetables. Timing in the season could be highly correlated with varieties, but also with agricultural techniques. Therefore, an assessment on what advancements are needed, and promoting such new techniques could help farmers achieve better timing in terms of production.

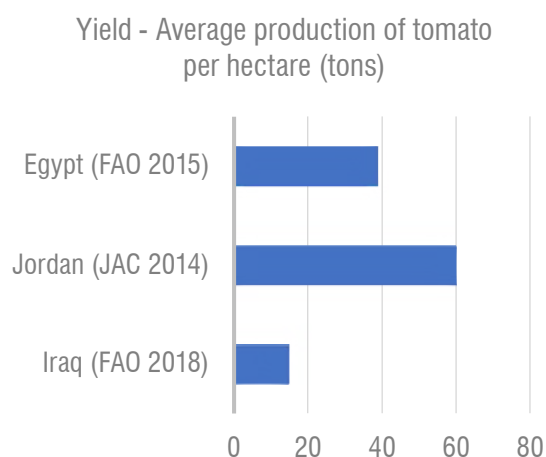
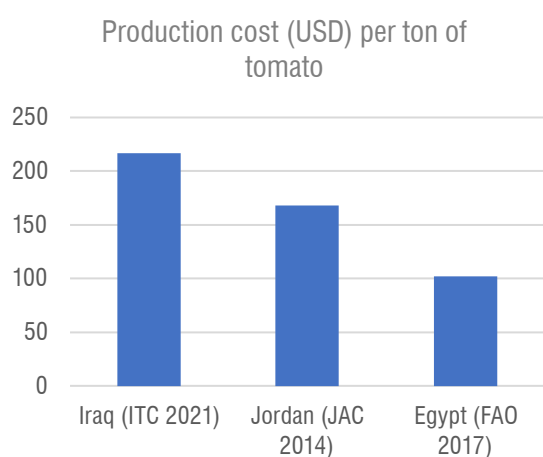
Farmers, as other local value chain actors, believe that local products are better than imported goods in terms of quality and taste. Policy changes such as subsidizing input materials similar to the pre-2003 practice,

better controlling of import quantities and imposing heavier taxes on these, when necessary, would be of great support to local goods, according to interviewed farmers.

BENCHMARKING IRAQI TOMATO PRODUCTION AGAINST REGIONAL COMPETITION

The Agricultural Credit Corporation's latest publication on agricultural costs and revenues published in 2014 indicates the overall production cost of tomatoes is JOD 679 per 1,000 square metres (nearly \$960 per 1,000 square metres). With an average production of 6 tons per 1,000 square metres, the cost for production of 1 ton is \$160. Adjusting this figure for inflation between 2014 and 2021 results in an average production cost of \$168 per ton compared to the average of \$200–\$233 per ton as reported by the interviewed Iraqi farmers. Sources of

the difference in cost is mostly attributed to the differences in costs related to energy, quality of inputs used, higher efficiency among Jordanian farmers, cost of water, weather conditions and others. Additionally, when comparing the yields in an open field system, we find that productivity of tomatoes produced in Jordan is almost sixfold that of tomatoes produced in Iraq – in Jordan, productivity is 6 tons/donum (1,000 square metres) or 15 tons/Iraqi donum (2,500 square metres).



Poultry value chain

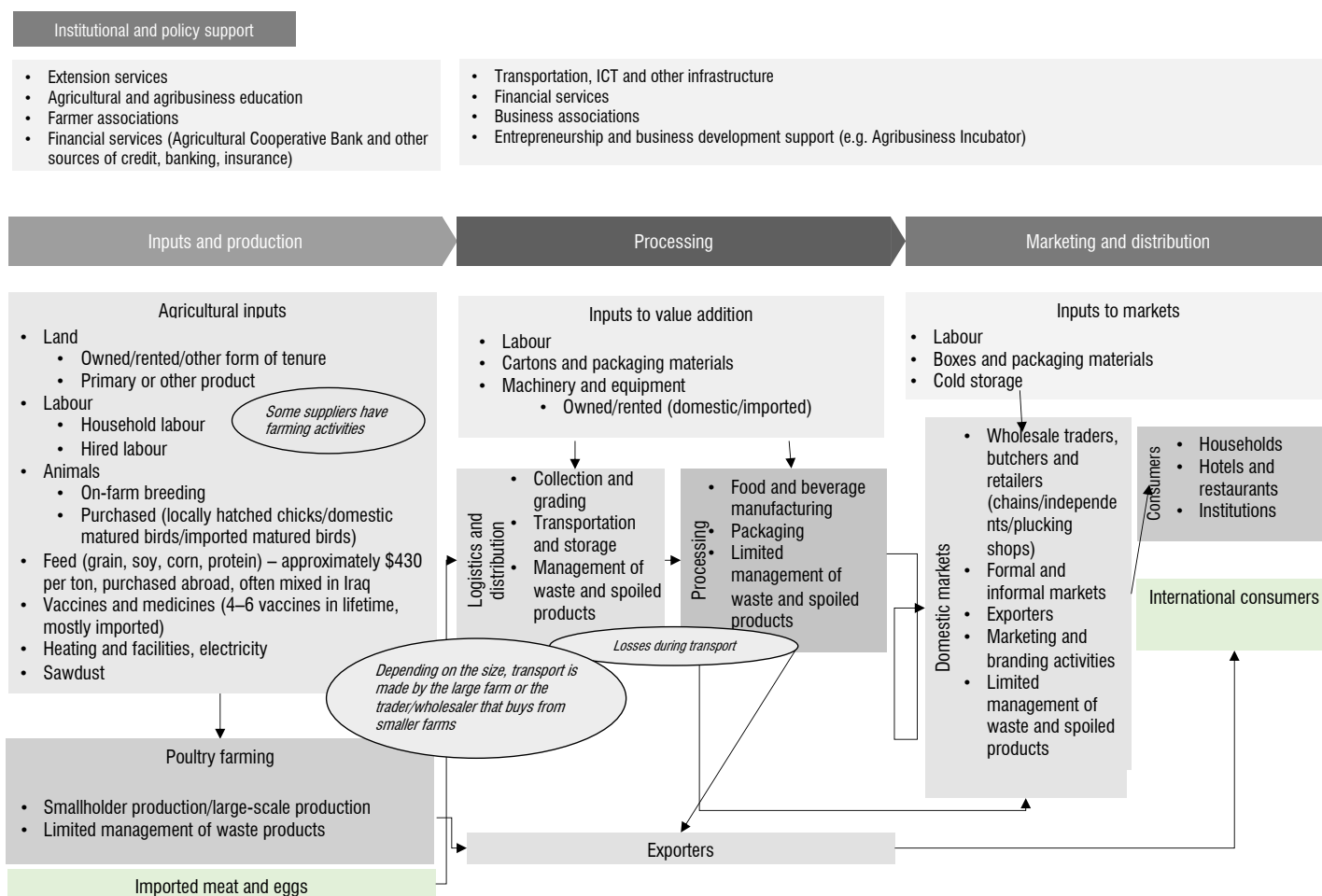
There has always been significant poultry activity in Iraq; in rural areas, poultry-keeping at the household level has a long history. Commercial poultry production started in Iraq in the 1960s and consists of two separate subsectors: broilers (for meat) and layers (for eggs). Figure 8 describes Iraq's poultry value chain.

Generally, egg-laying hens need six months of care before they produce eggs, and this period requires providing fodder and special care. Production of eggs takes place throughout the year, with manual harvest of eggs, except in the larger farms that use automated systems.

Distribution takes place via wholesalers and agents in the local market, who sell the eggs directly in the local market to retailers and other large consumers. Wholesalers usually collect the eggs from the poultry producers and transport to the retailers using their trucks.

Similar to the vegetable chains, there are solid relations between farmers and distributors that often include extending lines of credit. The imported eggs are sold directly to wholesalers, who often also import, and then distribute the imports through their marketing channels.

Figure 8: Poultry value chain in Iraq



Source: ITC generated

The chain for broiler chicken is very similar (Figure 9), with some minor differences in the inputs and processing of the birds. The main difference is that egg poultry requires no processing at all.

The main inputs include different types of chickens that are specifically bred for meat. In this sector, chicks are produced from a 'mother chicken', which is usually imported from the Netherlands or Turkey. In the past, Iraq produced all chicks needed for the domestic poultry sector through Ibaa Research Centre (Ministry of Agriculture), but it was closed in 2004. Other inputs such as feed and medications are very similar to those in the eggs chain.

With the price for chicken meat being higher than eggs, and the fact that it takes less time for broiler chicken

to start maturing, broiler farms are preferred. Broilers require only 35–40 days to raise the chicken and make it ready for selling, as opposed to six months for layers.

Agents buy chicken from farmers and sell them to owners of chicken-plucking shops, who also often buy directly from farmers. Like other products, the choice of farmer depends on the working relationships established over the years.

Large farms slaughter and pack their product themselves and then sell to wholesalers, who distribute to retailers. The chickens from the smaller farms that end up in plucking shops are slaughtered at the shop. There is no packing involved at the plucking shops. It is not uncommon for a consumer to buy a live chicken and slaughter it at home.

INTERVIEWS WITH POULTRY FARMERS

Approximately 30 poultry farms were visited, spanning eight governorates and focusing on farms that specialize in both meat and egg production. The majority were specialized in poultry meat production, because the barriers to entering the egg production business are relatively higher. Most farmers are relatively young, in the 40–50 years age group. A younger farmer population could be more open to adapting new techniques and changes to traditional practices. The sector is not labour intensive, and an average poultry farm employs 5–6 people, who are usually comprised of a family or two.

Two of the main drivers for getting into the sector are shortage in supply and lack of incentives offered by authorities. Many farmers stepped into the poultry industry in 2009–13, because there was a government loan in the KRI of IQD 100,000,000 that was offered with very competitive interest rates. This acted as an incentive for many people to pursue a career in farming poultry, whether it be for meat or eggs. Those loans were funded by the agricultural banks in the KRI and covered various sectors.

Farmers usually undergo 4–5 cycles throughout the year. Most of them agreed that electricity was by far the costliest input, followed by feed and medicine. Electricity is needed for lighting, and heating and cooling the hangers. An average cost of electricity per 1,000 birds was estimated at nearly \$120 per month. Therefore, a small farm with approximately 7,500 birds can expect an estimated diesel bill of \$10,000 annually. Additionally, a typical small farm has an average monthly cost of \$400–\$500 for water, with an annual cost of approximately \$5,000–\$6,000. Medicines and



©ITC, Poultry farm in Mosul

veterinary supplies/services are bought from input suppliers. The cost of feed is nearly \$1,300 per 1,000 birds per month, which is roughly \$15,000 annually. Where they usually sell their produce depends on the size of the farm and is different for meat and eggs. For eggs, the larger operations have their own packing and distribution channels to wholesalers and retailers. A similar trend was found for the broilers, where they are sold to the chicken slaughterhouses or directly to the neighbourhood stores. It is apparent that there are drastic fluctuations in prices, as for vegetable farmers. For example, one farmer sells for IQD 1,400/kg and another for IQD 3,200/kg, with the average being IQD 2,300/kg. For eggs, the prevailing prices were IQD 50,000 to IQD 60,000 per carton.

Most farmers acknowledged that local quality is far superior to imported goods. However, packaging and presentation make it difficult for local goods to have a level playing field with imported goods. Farmers also pointed out that the infectious bronchitis virus (IBV) is among the key risks the sector face. Additionally, long delays and smuggling of low-quality inputs affect the competitiveness of local goods.

KEY INSIGHTS FROM THE POULTRY VALUE CHAIN

According to the CSO, there were 4,828 farms registered in 2020 owned by the private sector. The bulk of broiler chicken projects are concentrated in Baghdad, Diyala and Babylon, with broiler farms accounting for nearly 46% of the farms. The overall poultry imports in 2019 were nearly 90,000 tons, with a total value of \$105,317,448. The average price per ton is \$1,170. The country charging the highest price per ton is the United States, with each imported ton costing \$11,887, and the country charging the cheapest price is Egypt, with each ton costing \$102.

One of the challenges that small farmers face is the increase in the prices of production inputs such as feed and medicine. There are also challenges related to the quality of the medication and high mortality rates in some farms, which sometimes exceed 60%. There are also losses during transport, because there are too many chickens in a small space and the boxes break during transport.

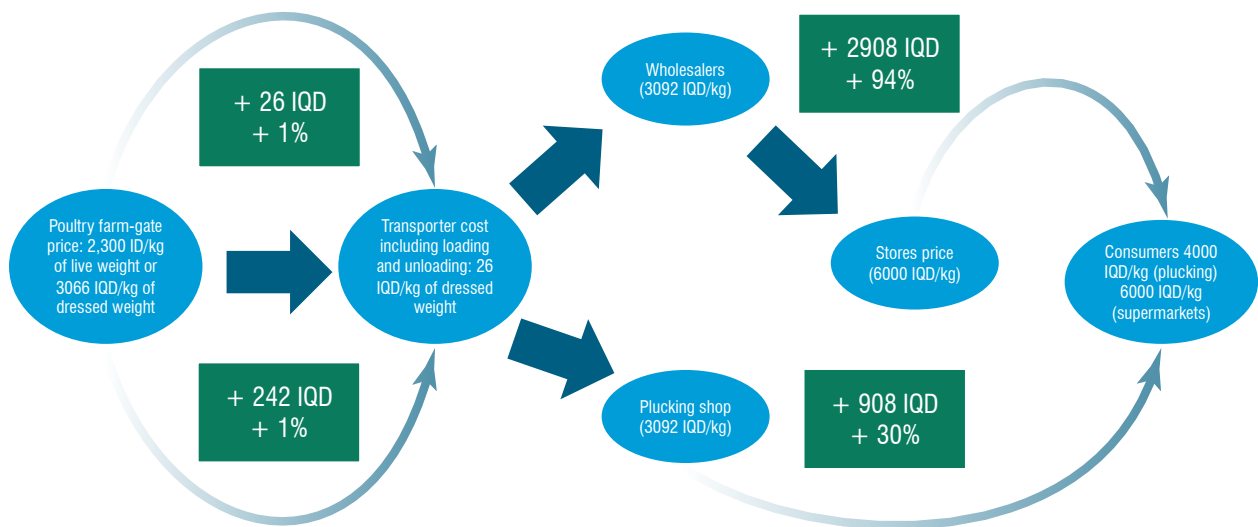
When asked what they managed to sell their last batch for, it is apparent that price fluctuations are extremely drastic, as was seen with vegetable farmers. It is surprising to see one farmer sell for IQD 1,400/kg and another for IQD 3,200/kg, with the average being IQD 2,300/kg.

MARKET MARGINS ACROSS THE BROILERS VALUE CHAIN

The producer–wholesaler/plucking–retailer–consumer channel was found to be the dominant marketing channel. Marketing margin analysis shows that broiler marketing is a profitable venture to all value chain actors. The analysis shows that wholesalers and plucking

shops have made a profit margin of 30%, while farmers did not give any specific figures on their profits or losses. The retail stores made the highest margin of 94% compared to wholesalers and producers (Figure 9).

Figure 9: Market margin of the broilers value chain



Source: Interdisciplinary Research Consultants calculations based on interviews with value chain actors.

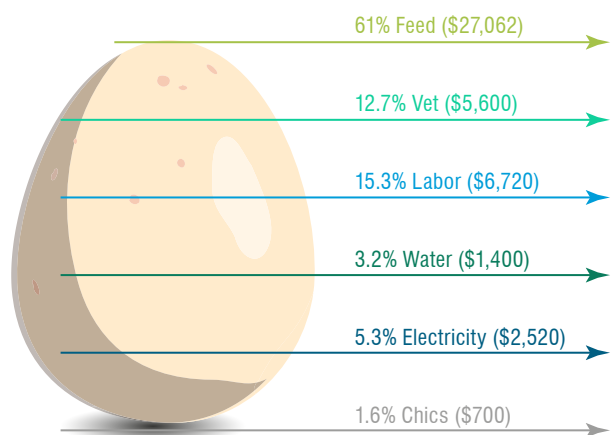
LAYERS VALUE CHAIN

Most of the poultry farms in Iraq are broiler farms. This is mostly because the initial investment required for layers farms is significantly higher than that for broiler farms. When making use of the government incentives, the majority of the investment could be covered by the government loan for broiler farms, while layers farms require more investment from the owner.

Figure 10 shows the breakdown of the egg production based on a two-year cycle (less 21 days, which is the age at which the layer chick is purchased) for 1,000 birds. It takes into account the initial cost, cost of electricity, water, feed, labour and veterinary services. The monetary values shown are for a total of 450,000 eggs, which is the total production of 1,000 layers in a two-year cycle.

On average, the cost of production of an egg is nearly \$0.09. The agent/distributor charges \$0.0019 per egg and the retail price of an egg is nearly \$0.13 when sold as part of a 30-egg carton. This translates into an increase of 2% for distribution and 41% for retailing.

Figure 10: Cost breakdown of production of 450,000 eggs



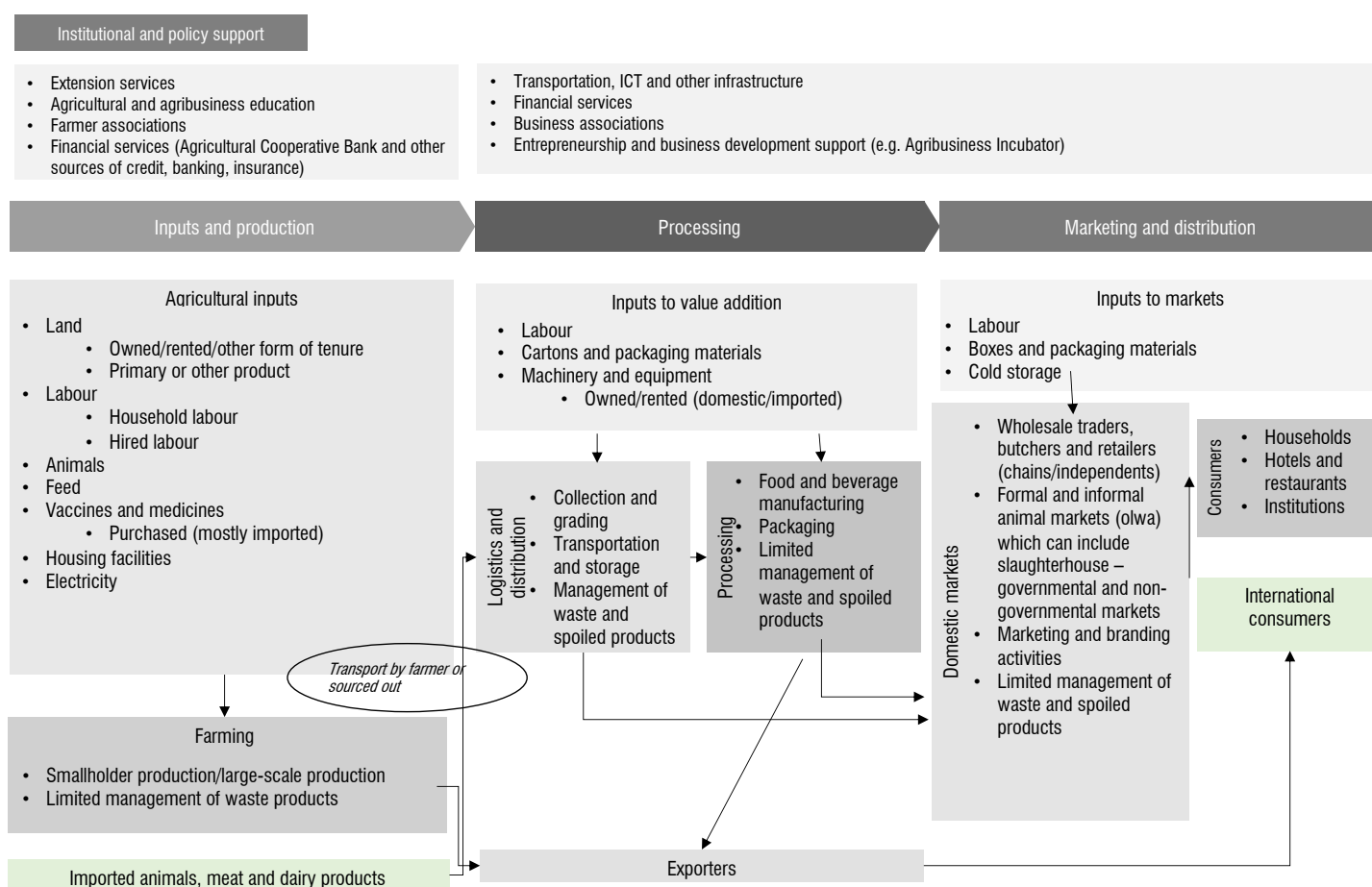
Source: Interdisciplinary Research Consultants calculations based on interviews with value chain actors.

Livestock and dairy value chain

The meat and dairy value chains are structured differently. Figure 11 summarizes the animal husbandry value chain for meat and dairy production in Iraq. While there are animal ‘fattening’ farms that breed and fatten

animals, the majority of animal husbandry follows the traditional system of grazing animals. In this system, flocks of sheep and goats, sometimes even cows, are grazed extensively on natural vegetation.

Figure 11: Meat and dairy value chain in Iraq



Source: ITC generated

Farmers sell their herds at wholesale markets, which usually also include a slaughterhouse. Sheep are also imported from Iran and the Syrian Arab Republic for sale at the market. Local sheep are the highest selling price and the best quality, according to the livestock keepers.

Buyers at the wholesale market include all possible buyers, but it is mostly wholesalers and butchers who come to make purchases. Based on preference, the animals can be slaughtered and skinned at the same

facility for a fee. Wholesalers usually sell directly to retailers, who, along with butchers, sell to consumers directly.

The dairies value chain is not very sophisticated (Figure 11). This is mostly due to the unavailability of good-sized reliable fresh milk-producing farms throughout Iraq. There are established dairy industries in Iraq, but most of them import fresh milk and use powdered milk for inputs.

INTERVIEWS WITH DAIRIES FARMERS

Prior to the sector's sharp decline in the early 1990s, Iraq was self-sufficient in dairy products. However, dairy production has collapsed and most of the dairy products consumed in Iraq are imported. Imports include fresh and powdered milk, cheese and yoghurt. Imports come primarily from Turkey and Saudi Arabia, as well as several European countries. Thus, only a few dairy farmers were interviewed, with small operations. Most of the small-scale dairy farms are family owned and are mostly part of another agricultural activity.

According to some figures shared during the interviews, the average production cost of milk is nearly IQD 1,000 per litre, which includes electricity, water, feed and veterinary supplies and medications. The selling price is nearly IQD 1,400 per litre. Small-scale farmers sell the litre at a much lower price to collectors that tour villages and buy the milk as inputs for small-scale dairy factories.

Most farmers are unable to supply supermarkets due to contractual obligations to supply certain quantities. Contracts with supermarkets commits farmers to certain quantities per day. On certain occasions, when vaccinations are given, the milk produced cannot be used for several days. A solution could be to group small-scale farmers to jointly supply supermarkets to ensure continuity of supply. Another concern is that most supermarkets return unsold products, which the farmer cannot resell. Additionally, farmers complained about the payment terms set by supermarkets, which are usually monthly. Small-scale farms need daily cash flow to finance their operations.

Farmers disclosed that local dairies face difficulties to compete with imported goods due to the weakness in marketing. Most farmers have primitive marketing techniques where they personally deliver to smaller stores, while the packaging is very basic and sometimes not appealing enough. Hence, dairy farmers are usually obliged to sell at loss, because milk is highly perishable and it cannot be kept for long periods once it is milked.

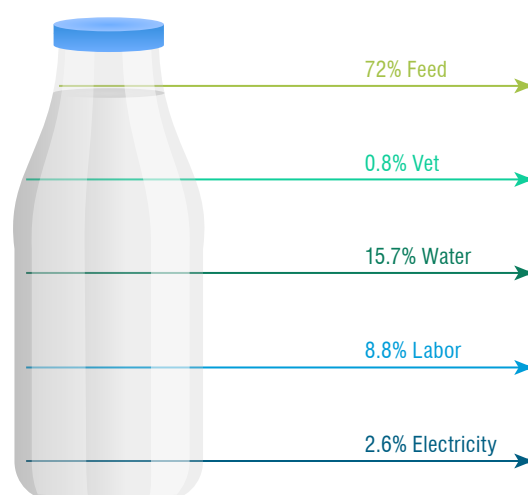
A smaller number of dairy farms were interviewed, because most dairy farmers are small-scale farmers that produce milk as part of another horticultural agriculture operation. Most such farmers keep two or three heads for their own use and sell to nearby dairy processing plants. As such, the data obtained cannot be considered as representative. However, a simple breakdown of the milk production was developed based on the available data.

Figure 12 takes into account the production cost, which entails the cost of electricity, water, feed, labour and veterinary services. Data on the initial investment of cows could not be obtained, and the initial cost of the animals is excluded from the calculation. On average, the cost of production of a litre of milk is nearly \$0.47.



©ITC, Dairy factory

Figure 12: Cost breakdown to produce a litre of milk



Source: Interdisciplinary Research Consultants calculations based on interviews with value chain actors.

Interviews with other value chain actors

INPUT SUPPLIERS

A total of 41 input suppliers across the eight governorates were interviewed. They are open six times a week, with a few exceptions opening seven days a week. Suppliers explained that farmers usually work throughout the week and cannot afford to spend time obtaining supplies, and they opt to do all their shopping on weekends. Input suppliers serve 1,000–3,000 customers annually, with the average number of customers served being 1,350. Respondents confirmed that their entire inventories were imported. This comes mostly from Jordan, Iran, the Republic of India and some European countries. The majority stated that they trust foreign quality and would continue to opt for imported goods even if there were local options.

In addition to selling input supplies, a decent amount of these suppliers also offer services to their customers. For example, suppliers that specialize in selling agricultural inputs such as seeds, pesticides and fertilizers often have an agricultural engineer on their payroll that would physically go to the farm and diagnose any diseases and recommend which inputs to buy. Similarly, a supplier that specializes in irrigation systems would offer their expertise on how to lay down the irrigation pipes in the most efficient way and install them once the systems have been purchased.

Input suppliers agreed that labour, inventory and utilities were the main three annual costs they incur. Labour is one of the biggest annual expenses, because many stores have skilled labour on their payroll in the form of veterinarians or agricultural engineers. Inventory, on the other hand, was identified as a major cost driver,

TRANSPORTERS

A total of 42 interviews took place with transporters in various locations. The interviewed drivers included operators of small picks-ups, mid-sized pick-ups (referred to as Kias in Iraq), lorries, 18-wheelers and refrigerator trucks. The most dominant size of vehicles is usually the Kia, which is preferred by Iraqi farmers. Most farmers transport their own produce; nearly half of the interviews ended up being conducted with farmers and the other half with operators transporting for a farmer. Most of the farmers transporting their own produce indicated that they make the trip to the market at least



©ITC, Cheese production in ThiQar

because most of these stores have a huge inventory that requires a large, rented storage space. With a large storage space comes a large running cost as well; hence, the utility is among the largest costs.

Regarding the main challenges in the input market, suppliers admitted that farmers are not willing to accept the new ways for farming, and instead opt to stick with traditional methodologies. Additionally, the seeds they sell might not meet farmers' expectations, because these seeds were engineered in Western countries where farmers have long adopted new innovations in farming. Input farmers also often have a hard time securing repayment, so many of them only offer loans to the farmers they know will repay.

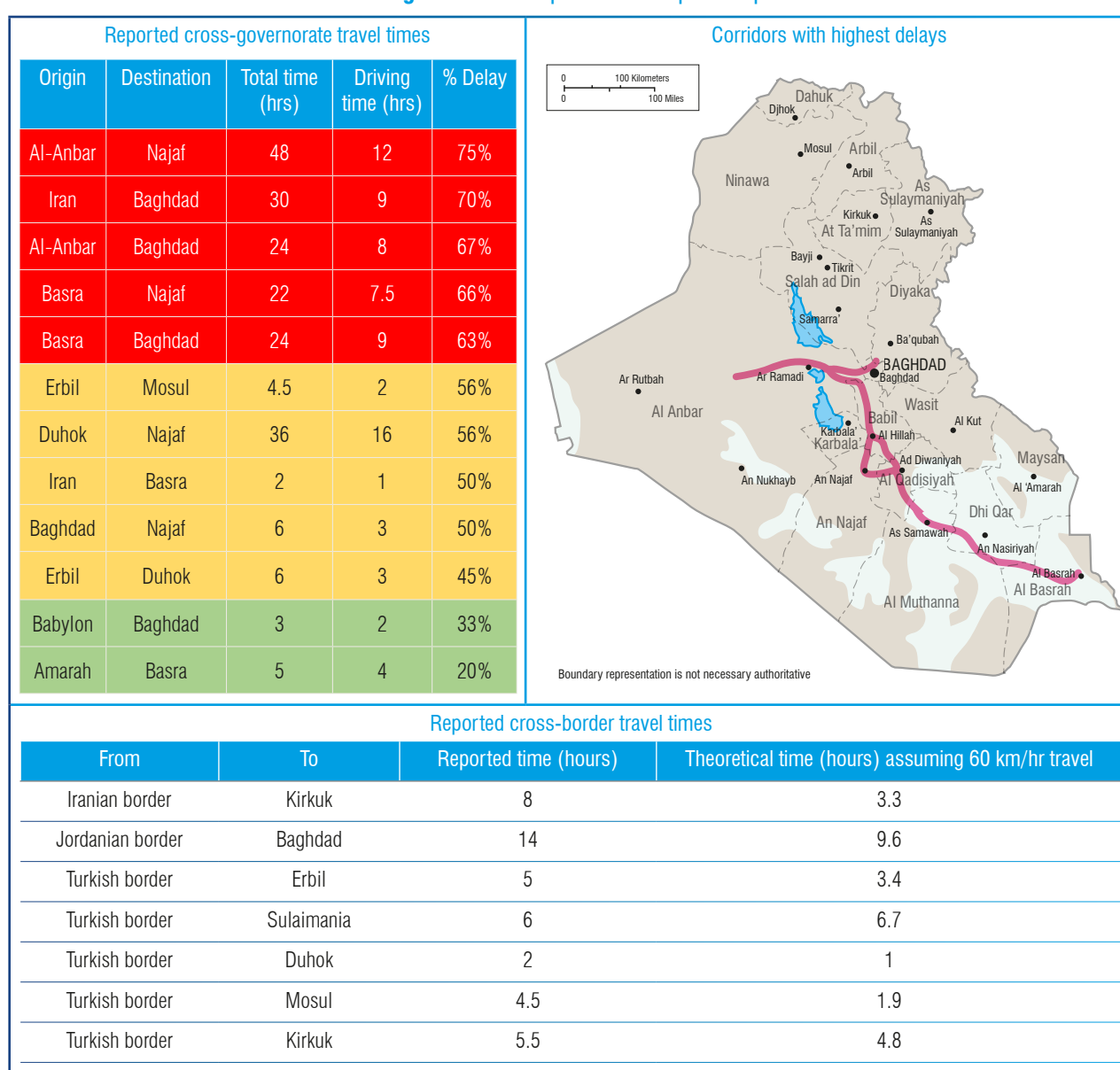
twice a week, which emphasizes the amount of time they waste transporting rather than farming.

The interviewees indicated that 60% of the vegetables they transport are local and 40% are imported. However, transported livestock and poultry are entirely local. This could be because the latter types require especially equipped trucks, which are lacking in Iraq. Interestingly, tomatoes and potatoes each account for roughly 30% of the loads the transporters haul. Figure 13 shows the most travelled routes and travel times and delays.

Many respondents indicated that transportation fees are negotiated. This uncertainty affects farmers negatively, as they become vulnerable in certain seasons. A similar trend was observed for the loading and unloading fees, as most respondents indicated that those were negotiated rather than set. In terms of operating costs, respondents believe that improving road infrastructure would generate approximately 30% savings.

In addition to bad road conditions, delays at checkpoints are among the main barriers. The average reported number of checkpoints on a typical trip from farm to market is five, with an average delay of 42 minutes. Delays of 2–3 hours were reported by some respondents. The main issues faced are inspection and informal payments. Tying this back to challenges faced by the retailers with their 3suppliers, the delays at checkpoints affect the supply chain and result in increased costs.

Figure 13: Transportation map in Iraq



Source: Interdisciplinary Research Consultants calculations based on interviews with value chain actors.

AGENTS

A total of 57 agents were interviewed. Most agents stated that they were the owners of the agency and supervise the market operations themselves. On average, each agent serves 36 farmers and an agent brokers the selling of 5,800 tons per year. Tomatoes accounted for an average of 38% of the brokered tonnage per year, while potatoes contributed approximately 22% of the total tonnage.

Agents stated that 55% of the products are local and 45% are imported. This clearly shows the existing competitiveness between local and imported products in the Iraqi market in that nearly half of the products in the market are imported. Iran and Turkey had the biggest share of the imports market, followed by the Syrian Arab Republic. Taste is considered a key advantage of local products, while packaging is considered a key advantage of imported products. Local products are also seen by agents to be better in freshness, size and ripeness.

Agents agreed that there are three main types of buyers in the central market: consumers, retailers and manufacturers. Each agent sells approximately 12.33 tons of vegetables and 7.7 tons of fruit every day. Agents must pay several fees, which are different between governorates. These are market grading, weighing and storage fees. Such fees can be paid by seller or buyer, but the value and how they are collected differ across central markets.

Most agents revealed that they would settle the price through negotiation, while a few prefer auctioning or pre-agreements. Main factors that affect price negotiations are health benefits, followed by quality of packaging, appearance and size. Meanwhile, the prices of most products in central markets are volatile (Table 9). Reasons for such fluctuation can be attributed to natural seasonality of crops, continual fluctuations in the USD/IQD exchange rate, and minimal supervision of imports volume into Iraq.

Table 9: Crops price at central markets (in IQD; per kg)

	Potato	Tomato	Okra	Carrot	Zucchini	Pepper	Lettuce	Cauliflower	Cucumber	Onion
Maximum price	475.5	920.2	3090.3	1061.8	879.4	897.8	1183.3	1663.9	675.7	655.5
Today price	390.1	548.2	2288.9	616.7	630	845.7	482.1	666.7	473.7	310.4
Minimum price	318.8	428.8	1626.6	570.8	583.3	625	377.8	637.5	425.8	268.3

Source: Based on interviews with agents.

Agents explained that they provide some services to farmers in central markets. For example, most agents offer package renting by providing rented boxes for farmers to display their products. There is no constant renting fee, but most agents stated that it is approximately IQD 1,000 per box. Normal and cold storage are also common services that agents provide. The storage services are free and are used for nearly all products in the market. Services like grading, cleaning and drying were rarely provided by the agents at the central market. If the central market's management could provide such services, it would help promote its products and keep it as fresh as possible.

Crowdedness of the central markets is among the key challenges identified by the agents. Additionally, the absence of governmental supervision and an agents' union were also reported as key challenges.



©ITC, Transport of tomatoes in Al Zubair wholesale market

Chapter 3. Consumer behaviour and preferences in Iraq

Household surveys

There is no scientific scale to objectively compare the flavours of local versus imported products. However, the preference for local products is customary to the region and not just Iraq. It is not clear whether this has a patriotic element, given that the verbal translation of local products in Arabic is *Baladi*, which means 'homeland'.

It is worth noting that Iraqi consumers were almost fully dependent on the Iraqi market and its products until 1990. After the second Gulf War and the embargo that followed, the Oil-For-Food Programme (OFFP) caused a series of challenges, leading many productive

operations to shut down and gradually shifting Iraq into becoming a consuming country.

There has been an evolution towards hypermarkets since 2003. The increasing popularity of large modern malls in Baghdad and other major cities throughout the country is changing the shopping habits of Iraqi families, as they save time and effort.

An intensive data collection effort was undertaken to better understand consumer preferences on vegetables, poultry and dairy products. Three surveys were conducted, with a different sample for each product.

VEGETABLE CONSUMER SURVEY RESULTS

A total of 698 interviews were completed as part of the vegetable consumer survey in the various governorates, with relatively equal samples.

While respondents in such surveys tend to not declare their actual income, the weighted average monthly income of the interviewed sample was nearly IQD 2 million (Table 10). One-third of respondents spend between IQD 10,000 and IQD 20,000 on weekly groceries, with an additional quarter of the sample spending between IQD 20,000 and IQD 30,000.

Table 10: Average monthly income

Governorate	Average income per month (IQD)
Kirkuk	715 000
Mosul	725 757
Najaf	946 097
Basra	981 345
Duhok	1 045 589
Baghdad	1 974 553
Suli	2 104 430
Erbil	2 631 250
Average	1 392 801.28

Consumers have a strong preference for fresh vegetables

Approximately half of Iraqi consumers shop 1–3 times a week, mostly buying tomatoes and potatoes every time, and the consumption of an average family is estimated to be 2–2.5 kg of either product per week. Additionally, consumers prefer to buy small batches that are fresh rather than larger batches that they store at home. This confirms the need to support Iraqi farmers with access to cold storage infrastructure.

Regarding the preferences on where to shop, there were some differences among the governorates, which could be attributed to the overall economic and stability conditions. Neighbourhood grocers are the most preferred place for most consumers. The highest second category was green grocers, who are like neighbourhood grocers, but usually larger and only sell produce. The predominant preference in the KRI (mostly Sulaymaniyah and Duhok) was for supermarkets. This could be attributed

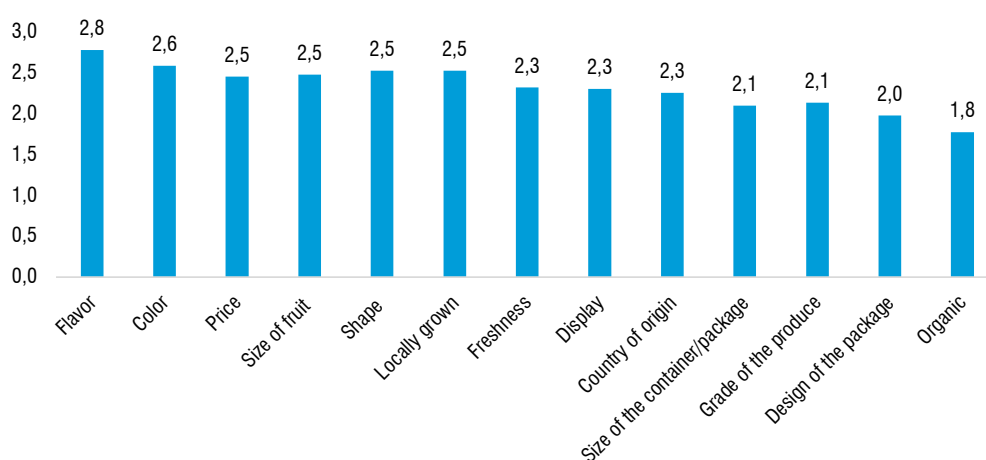
to the fact that hypermarkets in the KRI are more advanced than in other parts of Iraq.

Most KRI respondents indicated that they prefer hypermarkets, because they can find everything under one roof, which demonstrates a change in the grocery shopping culture. The KRI's ability to maintain security early on has encouraged international enterprises, including chain supermarkets, to establish presence there. In other governorates, price and variety were the main drivers.

Flavour and colour affect shopping behaviour

Respondents were asked to indicate the factors that influence their decision when purchasing vegetables and assign a weight to those on a scale from 1 to 3, with 3 being the highest. The highest-ranking criteria were flavour (2.8), colour (2.6) and locally grown (2.5). The least weight received was for being organic (Figure 14).

Figure 14: Criteria affecting shopping for vegetables in Iraq



Source: Interdisciplinary Research Consultants calculations based on interviews with consumers.

Regarding the key problems when shopping for tomatoes and potatoes, price fluctuation is by far the main challenge in all governorates. Fluctuation is mainly driven by the fluctuation in the exchange rate of the USD (against IQD) in recent years. For both crops, other than price fluctuation, the main challenges are related to grading and packing.

Most consumers prefer local produce

The survey showed that 90% of the sample prefers local vegetables to imports. Half of the sample prefers local vegetables throughout the entire year, while

the other half prefers local products seasonally only. Moreover, the majority would prefer to buy local tomatoes and potatoes if the prices were the same.

While there is a strong preference for local vegetables, only less than 30% indicated that tomatoes and potatoes are available all the time. This reveals that proper crop planning and advanced farming practices are needed to make local vegetables more available throughout the year. Most consumers prefer Turkish vegetables when they cannot find local products. Iran comes second, followed by the Syrian Arab Republic.

Flavour, labour creation and colour are among the key advantages of local goods

The top advantage of local products in all governorates was flavour, according to 90% of the sample. The second advantage of local vegetables varied by governorate between labour creation, colour and freshness. By contrast, the top advantages of imported products were packaging, as selected by most governorates (67% of total sample), colour (43%) and freshness (36%). The vast majority acknowledges that imported products have attractive packaging and colour.

Packaging and price are the main drawbacks of local goods

The top disadvantage of local vegetables was the top advantage of imports, which is packaging (selected by 62% of respondents). Other disadvantages included price, as they have been cited to be more expensive than imports, as reported by 39% of respondents, and availability (29%). The main disadvantage of imported vegetables was flavour, which was ranked as the top advantage of local vegetables.

Most consumers have a strong preference for local vegetables

It is worth noting that more than 70% of respondents indicated that they would buy local tomatoes and local potatoes even if they were more expensive than imported products, provided the quality is good. The main reason to pay more is the flavour, followed by colour and size. The percentages of respondents willing to pay more for local products varied by governorate and

crop. On average, nearly 40% of the sample is willing to pay up to 20% more for local tomatoes and potatoes.

Improved packaging is key to make local goods more appealing

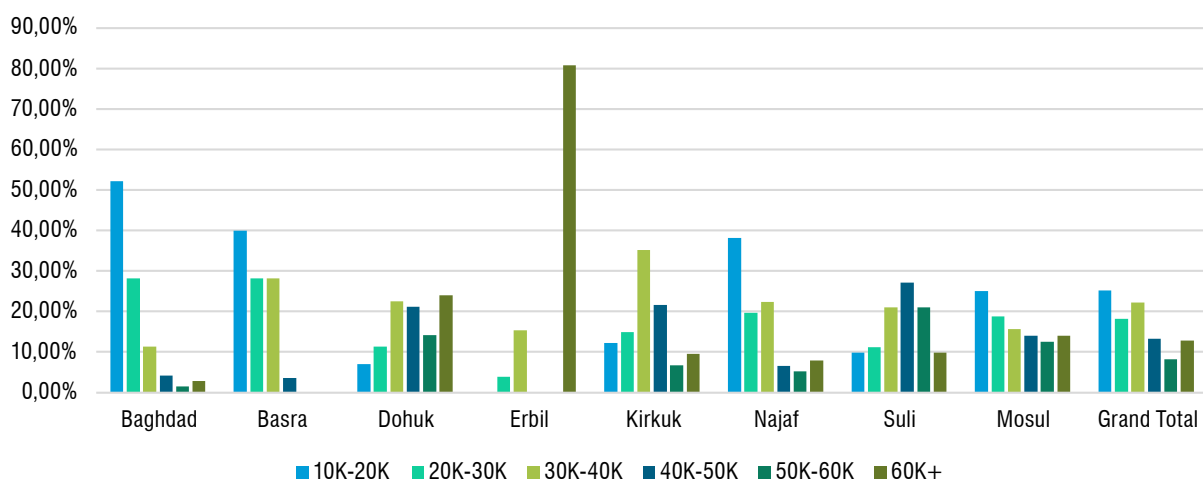
Respondents were asked to give the top three improvements that they would like to see on local vegetables. The most identified areas of improvement were packaging and quality. Local farmers and wholesalers need to improve packaging practices for local vegetables to make them more desirable and appealing, especially since they are perceived to have better flavour than imported products. Availability is another concern, because most consumers do not find vegetables in some periods.

POULTRY CONSUMER SURVEY RESULTS

A total of 548 poultry consumer surveys were conducted in the selected governorates. Male and female respondents were almost equal. The survey found that most households had an average size of 5–6 members, which is in line with the national average. The average income per month across the selected governorates was found to be IQD 1.13 million.

Approximately 25% of the sample spends IQD 10,000 to IQD 20,000 per week on poultry products, 18% spend 20,000 to 30,000, and 22% spend 30,000 to 40,000. Generally, respondents spend approximately 10%–20% of their income buying poultry products (Figure 15).

Figure 15: Weekly expenditure on poultry products



Source: Interdisciplinary Research Consultants calculations based on interviews with consumers.

Each governorate has its own shopping habits

Each governorate had a different shopping pattern, with similarities between some regions. The entirety of Erbil's sample and 62% of Sulaymaniyah's sample shopped for meat products whenever it was necessary, whereas approximately 62% of the sample each in Duhok, Najaf and Mosul shopped up to three times a week. Additionally, the majority buy their poultry products whenever necessary, while the rest buy chicken and eggs every time they shop. This makes sense for eggs, because they are usually sold in a carton of 30 and could last a while in a typical home. It is also worth noting that Iraqis are generally known to prefer meat to chicken.

Nearly 45% of the sample shops for chicken and eggs whenever necessary (40% for chicken and 47% for eggs) and more than half of the sample buys small quantities each time they shop, with 56% buying 1–2 kg of chicken and 81% buying 1 dozen eggs each time they shop. The northern part of the country (KRI) has a different trend to other parts of the country with poultry; northern families prefer large chickens, while the south prefers the smaller size. This is because northern Iraqis normally cook chicken by broiling it, while southern Iraqis prefer it grilled.

Butcher markets are the most preferred place to buy meat for most respondents (82%). The wide availability of butchers across Iraqi neighbourhoods allows

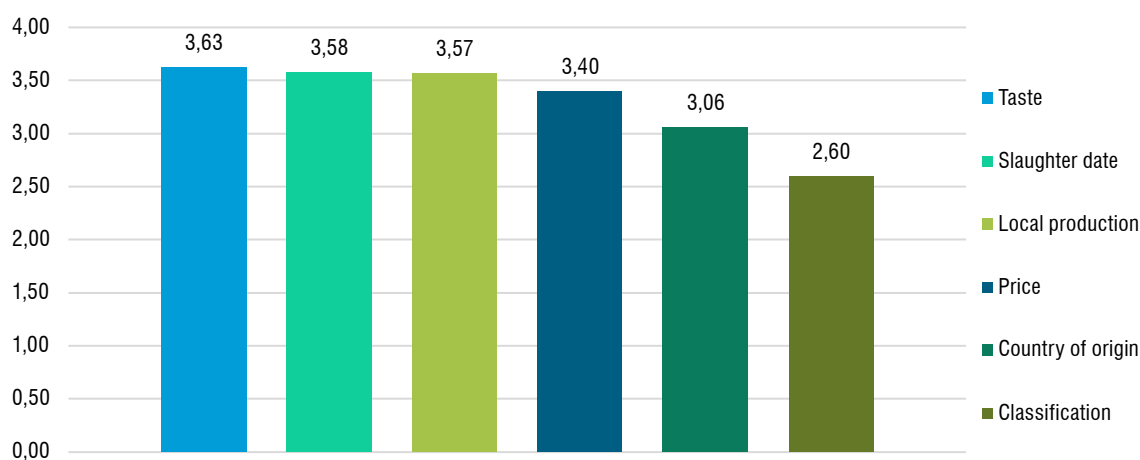
consumers to buy their meat products in small quantities each time they shop. Respondents prefer butcher markets, because they know the seller and trust the source of their meat. This is followed by supermarkets, which are a more common source for shopping for meat products in the KRI than in other parts of the country. Consumers in the KRI answered that they prefer hypermarkets and supermarkets, because they can find all their needs under one roof.

Most shops sell 30-egg cartons, which indicates that simple changes in packaging of local eggs could make marketing easier. The above trends also indicate that Iraqi consumers buy chicken and eggs in small quantities, because they prefer fresh products rather than storing larger quantities at the house. Another important reason for this trend is the electricity blackouts that occur frequently in Iraq.

Taste and slaughter date affect shopping behaviour

When buying poultry products, there are many factors that affect consumers' decision. Respondents were asked to rate a few factors from 1 to 5 according to their importance in the decision-making process (5 being the most important). The highest-rated factor seems to be taste (3.63), followed by slaughter date (3.58) and being a local product (3.57). The least important factor was the classification, which was rated with an average of 2.6 (Figure 16).

Figure 16: Factors affecting poultry purchase



Source: Interdisciplinary Research Consultants calculations based on interviews with consumers.



©ITC, Grocery shop in Baghdad

Poor packaging and price fluctuation affect local products

When respondents were asked about the main problems they face when buying poultry products, they answered that the most important challenge they face is related to price fluctuations. Poor quality and packaging are also challenging when shopping for poultry products. Half of Kirkuk's sample seems to have another big issue, which is scarcity. Price fluctuation can be explained by the availability of local products in different seasons and the continuously changing governmental regulations for allowing and disallowing imports.

Most consumers prefer local products

More than 80% of the sample stated that local chicken is better than imported, and 74% stated the same about eggs. Moreover, the sample stated that the quality of local chicken (13%) and eggs (23%) are the same as imported ones. However, 23% and 37% of the sample indicated that they do not always find local chicken and eggs respectively. It could also be noticed from the figures that Kirkuk and Mosul have a serious scarcity issue, as more than 75% in Kirkuk and 60% in Mosul reported not always finding local chicken and eggs in the markets.

Turkish goods are the most preferred imports

When local products are not available, Turkish chicken was the most preferred by 61% of the sample and 73% preferred Turkish eggs. Iranian products came second, with approximately 25% choosing Iran as a source of their chicken and eggs. Syrian products came next,

with 11% and 17% choosing their chicken and eggs respectively.

Taste and flavour make local products a first choice

Respondents were asked about the advantages and disadvantages of local and imported products. Taste and flavour are the top advantages of local products, selected by more than 92% of the sample. Colour and freshness came second, depending on the governorate. When it comes to imports, packaging is the most selected advantage. Price and availability were selected as the second and third advantages of imported poultry products, followed by shelf life.

Packaging and price put local products at a disadvantage

Disadvantages of local products are in line with the above findings, as packaging and price were the most chosen disadvantages. Shorter shelf life came as the third most chosen disadvantage of local poultry products. Nevertheless, most of the sample (71% for chicken and 58% for eggs) stated that they are willing to pay more for a local product. Taste and flavour are the main reasons for this. Additionally, more than 70% of consumers are ready to pay up to 20% more to get local products.

Price and packaging practices are among the key areas of improvement

The areas of improvement most identified by the respondents were price, packaging, cleanliness and quality. There is a need to improve packaging practices

to make local products more appealing, especially because they are perceived to have better flavour than imported products. Cleanliness was highlighted, as poultry is a perishable product and because it involves

slaughtering, which must be according to Islamic traditions. The low quality is driven by the low levels of access to post-harvest facilities and cold storage.

DAIRY CONSUMER SURVEY RESULTS

The survey interviewed 641 dairy consumers to capture their preferences and needs. The interviews were equally split between governorates and gender. The total average monthly income was found to be IQD 1.35 million, which is in line with other surveys.

Most consumers tend to buy dairy products in supermarkets and in small quantities

When the respondents were asked how many times they shop for dairy products per week, approximately 28% stated that they shop for dairy products whenever it is necessary, and they do not have a set number of times to shop. Nearly half of the sample (45%) shops for dairy products a maximum of three times a week, which shows a high demand for dairy in general. The percentages vary across governorates.

The amounts bought each time the respondents shopped were similar between cheese, milk and yoghurt. Consumers tend to buy dairy products in small quantities, which can be explained by the tendency of Iraqi consumers to buy fresh products in small quantities rather than buying and storing larger quantities. This pattern can also be explained by the constant electricity blackouts across the country, which could cause

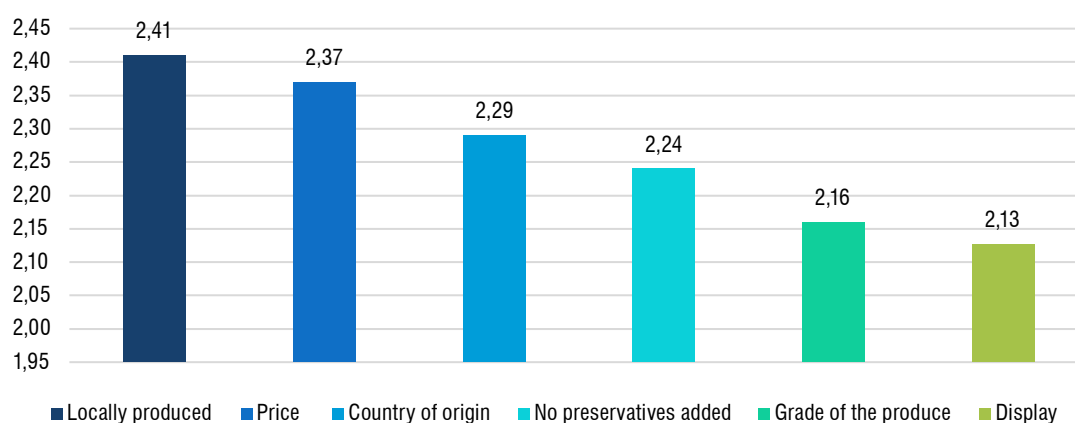
the products to spoil, especially if there are no back-up generators.

Most of the sample (82%) buy dairy products from supermarkets, and 52% buy from neighbourhood groceries as well. Such findings are logical, because supermarkets offer a wide variety of products that are well processed and displayed, unlike other places. Consumers who said that they shop at supermarkets or neighbourhood grocers said that they shop from these places because it is close from their homes (57%) and they can find all their dairy products under one roof (48%).

The date of production and flavour affect shopping behaviour

When buying dairy products, there are many factors that shape and affect consumers' decision. Respondents were asked about these factors and how much they would rate each one according to its importance on a scale of 1 to 3 (3 being the most important). The date of production and the flavour had the highest ranks of 2.68 and 2.66 respectively (Figure 17). This makes perfect sense given the high perishability of dairy products even when stored in refrigerators. Consumers also reported that they care about the country of origin and prefer local products to other products.

Figure 17: Factors affecting shopping for dairy products in Iraq



Source: Interdisciplinary Research Consultants calculations based on interviews with consumers.

Low shelf life affects local dairy products

Respondents were asked about the problems they face when shopping for dairy products. Approximately 40% chose low shelf life as the most common problem they face when shopping for dairy products. Given the common electricity blackouts, consumers look for products with a longer shelf life. Respondents also had problems related to poor packaging (36%) and price fluctuations (30%). Poor packaging is clearly one of the areas that could be a point of concentration for any enhancement in this sector.

The majority of Iraqis have a strong preference for local dairy products

Local products are far more preferred than imported products, as 78% of the total sample stated. Some governorates showed a less obvious difference between local and imported. For example, consumers in Kirkuk and Baghdad prefer imported goods to local production. This different behaviour indicates that local dairy products in these governorates have a lower quality than in other governorates.

When asked if this preference depends on the season, approximately 70% of the sample stated that it is independent from the seasonality of the products and that they prefer the product they chose in every season. However, when it comes to local dairy products' quality vis-à-vis imported goods, each governorate had a different trend that corresponds to the available products and its consumers' preferences. For example, the quality of local products is seen to be far better than imported products in the KRI governorates. This confirms the above statement that northern governorates are known for better dairy products.

Similarly, the availability of local dairy products is inconsistent and subject to each governorate's political and economic situation. Governorates like Baghdad, Kirkuk and Mosul reported a lack of availability of local products, which could open the doors for local farmers to cover these areas where there is a shortage in supply. Surprisingly, Erbil and Sulaimania also reported that local dairy products are not always available. In general,

half of the total sample stated that local products are not always available in the market.

When local products are not available, Turkish goods are by far the most preferred substitute, except for in Basra and Najaf. Both governorates favour Iranian goods, which can be attributed to geographical proximity. When it comes to age groups, it is worth noting that youth are more likely to move away from local goods toward imports due to their perception that imports are better. There are no differences by gender.

Flavour makes local dairy products the first choice

The top advantages of local dairy products included flavour, as chosen by 77% of the sample, with a similar trend across all regions. Other key advantages included freshness and labour creation. The main disadvantages included packaging, shelf life and price. As for other products, local products tend to be more expensive than imports for a variety of reasons, the most important of which is the smaller scale of operations in dairies (i.e. there is no economy of scale in the sector). Another reason for higher prices is the high cost of electricity in Iraq.

Despite some disadvantages, the results showed that 70% of the sample was willing to pay more for local products. The main reasons given were flavour (60%), no preservatives (30%) and colour (21%). The majority are willing to pay up to 10%–20% more for local dairy product.

Improving packaging is key to making the sector more competitive

Packaging was the improvement identified by nearly 40% of the sample, followed by presentation (25%) and expiry date (22%). The results are consistent with the suggested improvements of both vegetables and poultry surveys. Given the limited number of fresh milk farmers, there is a tremendous need to assist them with marketing, branding and packaging, provided that all health requirements are met and closely monitored.

MAIN TAKEAWAYS OF HOUSEHOLD SURVEYS

There are three different samples, so it is not viable to compare the results of the three surveys. However, there are similarities that can be generalized across the board for the three products.

In terms of the preferred venues for shopping, the overall preference for all three categories of products is in the neighbourhood shop or grocer or slaughter shop. The small-scale shop is still prevalent in Iraq, and it will be many years before it changes. There is

an abundance of hypermarkets, but local shops are still preferred.

There are also similarities in the key criteria related to decisions to shop. While not necessarily in the same order, the top criteria that were selected across the three product categories were flavour, taste and colour. Depending on the product, freshness and date of production were also ranked high. Therefore, the availability of fresh products is critical, which emphasizes the importance of post-harvest infrastructure for vegetables in particular, and the need for a comprehensive cold chain infrastructure for the sector as a whole.

There are also similarities in the main problems faced when shopping for the three categories of products. Included was price fluctuation, which is probably related to seasonality and inconsistency of production. Another factor that was common was good packaging, which seemed to be an issue for all three and was made obvious during other data collection efforts under this study. Quality was also something identified by most respondents for all three products.

Most respondents across all governorates favour local production in the three categories, with very few exceptions. When local products were unavailable, there were similarities also across the three categories in the preferred countries of origin. Turkey was the most favoured for all three products, followed by Iran.

The perceived advantages for local products were also similar for the three products and included flavour, freshness and colour. There was also consistency in the perceived advantages of imported goods, which included packaging, price and availability. Those set clear areas of improvement for local products. There is also a willingness to pay more for local products in all categories.

The perceived needed improvements of local products were also similar for the three categories and included packaging, quality and availability. Dairy products with a special nature also included prolonging shelf life.

Large consumer preferences

Large consumers are a vital aspect of the value chain, as they are one of the last links between suppliers and consumers. Understanding their operational strengths and weaknesses, preferences and perceptions, and the challenges they face, will be pivotal to strengthening Iraq's agricultural and agrifood value chain. More than 60 restaurants and eight hotels were interviewed in eight provinces.

Most large consumers have seen a steady demand for vegetables, poultry and dairy products in general in the past five years, except in 2021, which was filled with lockdowns and saw restaurants operate at half-capacity due to COVID-19 safety guidelines. Procurement managers confirmed that, on average, there is little to no difficulty in sourcing vegetables, poultry inputs and dairy products. However, when there is a difficulty, it usually pertains to the fluctuation in prices.

Most large consumers stated that they procure their vegetables from open markets such as the central city market. For poultry, however, the majority opts for intermediaries and brokers to source their local meats. Dairy, on the other hand, is sourced from vendors and large-scale agribusinesses who procure directly from small farmers. It could be worth it for restaurants to



©ITC, Wholesale market

attempt to capture more value by going straight to farmers. Not only would this decrease their costs dramatically, it would also allow farmers to increase their profits.

When asked about what their customers prefer, large consumers agreed that freshness, quality and flavour were the main three decisive factors with regards to local products. This is in line with consumer surveys. Eggs, on the other hand, did not follow the trend of

poultry, with both large-scale consumers and their customers preferring imported eggs, as they are bigger, cleaner on the outside, and have a reddish colour that they all agreed looked better when being served.

When asked whether they obtain structured feedback from their clients on the quality of the sold products in the form of customer satisfaction surveys, for example, the sample overwhelmingly stated that nothing of that sort exists. Upstream and downstream transfer of information is key for the development of a supply

chain, especially for small and medium-sized enterprises (SMEs), where one valuable piece of information can be met with immediate change to meet demand. This exchange of information is extremely limited in Iraq, given the lack of documentation, excessive use of word of mouth and the lack of a structured platform.

When asked to list the most critical tangible and intangible quality parameters for vegetables, poultry and dairy products, size, freshness, brand reputation and supplier image are considered as the main criteria (Table 11).

Table 11: Quality parameters for large consumers

Quality parameters	Vegetables	Chicken meat	Eggs	Dairy
Tangible	<ul style="list-style-type: none"> • Size • Freshness • Ripeness • Colour • Uniformity 	<ul style="list-style-type: none"> • Size • Uniformity • Production date • Freshness • Packaging 	<ul style="list-style-type: none"> • Size • Freshness • Colour • Uniformity 	<ul style="list-style-type: none"> • Freshness • Production date • Packaging
Intangible	<ul style="list-style-type: none"> • Brand reputation • Supplier Image • Environmentally friendly production 	<ul style="list-style-type: none"> • Brand reputation • Supplier Image • Environmentally friendly production 	<ul style="list-style-type: none"> • Brand reputation • Supplier image 	<ul style="list-style-type: none"> • Brand reputation • Supplier image

Source: Interviews with restaurants and hotels in Iraq.

When asked about the average prices at which large consumers obtain their products, it was found that

these were extremely volatile and fluctuate aggressively from week to week, even sometimes daily (Table 12).

Table 12: Purchase prices for restaurants

Large restaurants	Price (IQD)	Vegetables/kg	Chicken meat/kg	Eggs/dozen	Dairy
	Low	300	3 000	1 700	750
	High	750	5 000	2 500	1 200
	Avg.	500	4 000	2 000	1 000
Smaller restaurants	Price (IQD)	Vegetables/kg	Chicken meat/kg	Eggs/dozen	Dairy
	Low	500	4 800	1 500	1 000
	High	1 250	6 000	3 000	2 000
	Avg.	875	5 400	2 250	1 500

Source: Interdisciplinary Research Consultants calculations based on interviews with restaurants in Iraq.

When asked about the difficulties they face in working with their suppliers for the various products, procurement managers identified the exchange rate of the USD as a major challenge. They are referring to the increasing exchange rate of the USD to the IQD almost a year ago; \$1 was equal to approximately IQD 1,180, and now \$1 equals IQD 1,450. This is a major problem, because most imported inputs and raw materials are purchased using USD. Managers also complained about the tardy delivery of goods and lack of availability in some periods.

Managers made some suggestions to alleviate the identified challenges:

- Minimize the effect of exchange rate fluctuation for the USD;
- Subsidize and support farmers so that reliance on imported goods can decrease;
- Facilitate the transport of goods across provinces and give exemptions to agricultural-related vendors to travel freely.

Store checks



©ITC, Supermarket in Baghdad

More than 60 stores were visited across eight governorates. These interviews aimed to identify the general trends of practices, preferences and perceptions among stores' managements. It is worth mentioning that the definition of a large or small store is different across governorates. What is considered a hypermarket in Basra and Najaf is the same size as a supermarket in Erbil and Baghdad. This is attributed to several reasons, such as the size of the governorate, its population, the size of its urban centres and other socio-economic factors.

Most of the interviewed stores declined to share details of their monthly expenditures, but all stores identified electricity as one of the larger cost elements. It is higher in areas with a harsher summer climate (e.g. Basra and the southern governorates), but still considerably high for the other governorates. Up to 25%–30% of operating costs were attributed to electricity by various store sizes. Other proportional costs included rent (30%), labour (30%–40%), agent fees (nearly 10%) and waste (5%).

When it comes to demand, the vast majority of stores indicated a steady and/or decreasing trend. The steadiness and decrease in demand were mostly attributed to COVID-19 and the curfews that had been put in place in most Iraqi governorates. Some respondents indicated that, before the pandemic, there was a general increase in demand, which they mostly attributed to the increase of population and the continuous rise of household consumption.

Based on the interviews with store managers, there are two predominant methods of supply. The larger hypermarkets generally use agents or distributors who mostly purchase products from the central markets and producers (some even buy from farmers directly) and sell them to the stores. The other mode, which is followed by the smaller hypermarkets and smaller shops, is purchasing directly from the central market where a procurement officer goes to the market and purchases through an agent. The agents are usually fixed, and stores have been dealing with them for quite some time.

Most large stores interviewed indicated that they do face challenges securing supplies. The challenges for the various products were similar and included:

- Instability and increases in prices due to the changes in the currency exchange rates of the IQD versus the USD;
- Inconsistency in the supply of both local and imported goods sometimes, which significantly affects prices;
- Curfews and political instability and demonstrations taking place in Iraq in the past few years;
- Checkpoints and the delays caused tardiness in delivery of their goods.

Regarding the services provided by the stores to their suppliers, none of the interviewed stores indicated that they provide any capacity building, financing or input supplies. The only feedback provided to the suppliers by the retailers is general information about market requirements and customer preferences. Even this type of feedback is not provided in a structured and/or scientific manner based on actual consumption rates and quantified demand.

In terms of customer preferences, the stores confirmed that the criteria are similar for vegetables, poultry and dairy products across all governorates. Local source was the one top common criterion across all stores and for all products. Price was also an important decisive factor, which often puts the customer in a dilemma when imported products are more competitive than local products. For chicken meat, customers will prefer it to local due to the lower price and the perception that health regulations in exporting countries are higher. However, this is only applicable if it is imported from an Islamic country to guarantee it has been slaughtered according to Islamic practices (halal).



©ITC, Vendor in Baghdad grocery shop

When comparing local and imported goods, managers believed that packaging put Iraqi goods at a disadvantage. Branding was also identified as an area where local products need some improvements. For example, while some local dairies have old-fashioned and extremely basic graphics, designs and resolutions, Iranian and Turkish brands have very appealing designs and quality of graphics.

When it comes to the stores' preferences, the majority echoed the consumers' responses. Most stores indicated that they prefer local products. There were some exceptions, and those were mainly for dairy products. This is understandable given the weak local dairy processing and health concerns. Additionally, most stores shared their willingness to pay more to acquire local products, but also with reservations when it comes to dairy products. Stores would pay at 5%–20% more to get local products.

There is a general satisfaction among the interviewed stores with their suppliers' performance as it relates to quantity and quality. However, many stores complained about timeliness of deliveries, which is attributed to several issues, including road closures, political instability, demonstrations and occasional border crossings. However, it is believed that this also partly due to weak fleet management systems among Iraqi enterprises. Moreover, instability in prices is a key issue, which could be a serious problem for stores that do not have supply contracts with distributors and suppliers. This makes stores more vulnerable to price instability, which always reflects on the consumer.

Price instability is among the main challenges faced by stores. Hence, managers provided some ranges for each product. For vegetables, tomatoes are bought for IQD 250 to IQD 2,000 per kg, and IQD 500 to IQD 1,500 per kg for potatoes. Poultry prices range from IQD 4,000 to IQD 6,000 per kg, while 30 eggs are bought for IQD 3,500 to IQD 6,000 per carton. The prices for dairy products vary from IQD 1,000 to IQD 3,000 per kg.

Managers provided some suggestions to improve the competitiveness of local products:

- Local products are fresh, but significant time is lost through poorly equipped central markets. Technical assistance to enable top farmers to have contracts for direct supply to supermarkets would reduce time from picking to display, and thus increase the perception of freshness. Another idea is to upgrade the services provided by central markets, such as cold storage.
- Branding is quite weak in Iraq and, even though several local producers have their own brands, those are usually very basic and simple. Organizing farmers to follow certain standards throughout the entire process from seeding to harvesting and packing, which would allow them to use a nationally recognized new brand, is an idea worth exploring.
- There is a critical need to improve post-harvest infrastructure and provide technical and financial support to groups of farmer co-ops or associations.



Chapter 4. Policymaking recommendations

The market research analysis indicates a strong preference by national consumers for local products, which is extremely encouraging for the sector. Further, the assessment highlights existing scope for MSMEs to obtain premiums linked to added value in products. In this regard, the market research sheds light on key opportunities and enabling factors to be enhanced for the Iraqi agrifood industry to further position itself in the domestic market. While there is considerable room for improvement, below are the key recommendations.

- Availability of production: Availability is a chief concern, because most consumers do not find vegetables in certain periods. Similarly for poultry, availability of products is one of the root causes for price fluctuations. This issue can be tackled through measures such as introducing proper crop planning and advanced farming practices, appropriate varieties and new technologies. An important note, for tomatoes in particular, is the seasonality of production between south and north, which should be further looked into to identify product–market combinations.
- Post-harvest activities at the farm gate: Increasing capacities in post-harvest activities, such as washing and grading, can have a major impact in the positioning of local production compared to imported products. A more efficient post-harvest management of agriculture produce can be achieved through a combination of measures. These include improving producers' techniques for harvesting, introducing activities such as product grading, enhancing access to agriculture extension services, and exploring new solutions to increase the reach of capacity building for farmers by, for example, extending the network of trainers to include private sector actors (e.g. input suppliers).
- Cold storage infrastructure: Consumers have a strong preference for fresh vegetables, which confirms the need to support Iraqi producers and firms with access to adequate cold storage infrastructure. Investment in cold storage infrastructure, particularly looking into the introduction of energy efficient, low-carbon cold chains, should be facilitated and promoted. Improvements in the cold chain will help reduce food loss and waste in the value chain, and thus enhance producers' revenue.
- Quality and food safety: Among the main areas of improvement across all products, respondents identified quality and cleanliness, which is directly related to food safety. Cleanliness was pointed out, particularly for poultry, because it is not only a perishable product, but also requires slaughtering in accordance with Islamic traditions. Both issues, which are closely intertwined, can be addressed, among others, by capacitating producers and firms, facilitating access to adequate post-harvest and cold storage facilities, and strengthening the capacity of institutions responsible for food control and quality management.
- Packaging: Poorly packed products lead to damage during transport and exposure of food to contaminants. Packaging, in particular, was acknowledged by consumers as one of the main areas of improvement, especially in comparison with imported products available in the market. Development of packaging solutions needs to be affordable and adapted to local conditions. They should also consider the need to reduce waste and be adapted to local consumers' needs and preferences. As many technical solutions in packaging can encounter difficulties in adoption, efforts would be needed to enable changes at the institutional and even policy framework levels to address any barriers to their acceptance and implementation.

- **Reliable and timely information:** Few producers receive information on market outlooks before they harvest. Interviews with agents also revealed that, even when data on price and quantity is collected, it is not disseminated among market actors. At different stages of the value chain, the limited collection and dissemination of market information was evident. Constraints in information flow among value chain actors reduces efficiency of business operations and can lead to higher prices for consumers and lower revenues for producers. Digital technologies have the potential to significantly lower the costs of collecting and sharing data on production, finding and disseminating information on markets, as well as other markets of business operation.
- **National branding:** Leveraging the existing preference for local products, a national brand proposition that positively revives the Made in Iraq campaign can help to sensitize consumers about the importance of buying local quality produce and animal products. Such a campaign can be linked to exalting Iraqi cuisine in virtue of the flavour of local products using international branding experts and regional examples.

The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of the International Trade Centre concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

This document has not formally been edited by the International Trade Centre.



International
Trade
Centre

Contact person: Eric Buchot, Project Manager

Email: buchot@intracen.org

Street address: ITC Country Office, UN Compound (Diwan), Karadat
Maryam District, Hay Al-Tashreet, 10011 Baghdad, Iraq

Internet: www.intracen.org