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Skills for Trade & Economic Diversification (STED)

Food Processing & Beverage Sector

Jordan



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Regional Office for Arab States

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Cornelius Gregg, Mohamed Nayef and Bolormaa Tumurchudur

September 2015

International Labour Organization

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Foreword

“Skills development is [...] essential to address the opportunities and challenges to meet new demands of changing economies and new technologies in the context of globalization.”

Conclusions on skills for improved productivity, employment growth and development, International Labour Conference, 2008

“On the demand side, the strategic goal is to enable the private sector to move up the value chain and increase value added, to improve its productivity, and to expand its ability to export products and services. On the supply side, the goal is to graduate a skilled and motivated labour force armed with employable skills and technical knowhow as demanded by the labour market.”

Jordan’s National Employment Strategy 2011- 2020

This report presents an application of the International Labour Organization’s (ILO) Skills for Trade and Economic Diversification (STED) methodology to the Food Processing sector of Jordan’s economy. STED is a sector-based approach to identifying and anticipating the strategic skills needs of internationally tradable sectors. The Food Processing sector is one of Jordan’s leading export sectors. It has grown rapidly since the early 2000s, principally through serving markets in the Middle East and North Africa (MENA) region, including its own domestic market. It was selected for the application of the STED methodology in support of the objectives of Jordan’s National Employment Strategy, which emphasises the development of improved skills in exporting sectors, and of skills development as a means towards competitiveness and employment.

STED has been developed in recognition of the fact that having the right skills among workers is crucial for firms or industries to succeed in trade, and, conversely, understanding trade is important to providing workers with the right skills. Availability of skilled workers contributes to higher and more diversified exports, more foreign direct investment (FDI), higher absorption of technology, and more sustainable growth and productive employment creation. At the same time, skills are the key determinant for a worker’s success in finding a good job and making a living.

Providing the right skills at the right time is anything but easy, and it is not just a question of putting in more resources. In order for skills supply to match skills demand in the labour market, it is necessary to take a forward looking perspective, and to ask not just what skills are in demand today, but what skills will be in demand in the future. This is what STED does.

The methodology has been applied in two economic sectors in Jordan – Food Processing and Pharmaceuticals – under the Applying the G20 Training Strategy project which is funded by the Russian Federation. In addition to this report, the project has also prepared a similar report on the Jordanian Pharmaceutical sector. The sectors were chosen in consultation with the ILO’s tripartite constituents in Jordan, and the STED process was undertaken in collaboration with sector level stakeholder steering committees.

This report, and the companion report on the Pharmaceutical sector, set out a range of recommendations that together amount to a strategic skills agenda for each of the two sectors covered. Implementation of these agendas depends primarily on Jordanian stakeholders at sector and national level, although there is room for development partners to play a supporting and enabling role. The project is following up the reports by supporting implementation of a number of these recommendations in collaboration with stakeholders.

This project also provides technical assistance in four other countries: Armenia, Kyrgyzstan, Tajikistan and Viet Nam.

Acknowledgements

The Applying the G20 Training Strategy project is funded by the Ministry of Finance of the Russian Federation, and is active in five countries: Jordan, Viet Nam, Armenia, Kyrgyzstan and Tajikistan.

This report was written by Cornelius Gregg (Skills Technical Specialist, ILO Employment Policy Department, Geneva), Mohamed Nayef (National Project Officer, Skills for Trade and Employment, Applying the G20 Training Strategy Project, ILO Amman) and Bolomaa Tumurchudur (Skills Technical Officer, ILO Employment Policy Department, Geneva). The report forms a part of the work of the Applying the G20 Training Strategy Project, which is funded by the Russian Federation.

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Nader Mryyan (Consultant) advised on the research, and organized a section of the consultation with stakeholders. Noora El-Wer (Researcher) undertook much of the research work, including the enterprise interviews.

Logistical support was provided by Diana Al Akkad (Finance and Administrative Assistant – ILO Jordan), Sanaa Abou Sleiman (Programme Assistant, ILO ROAS, Beirut), Moussa Toufaily (Programme and Administrative Assistant, ILO ROAS, Beirut), Tala Kayyali (Administrative Assistant, ILO Jordan) and Marie-Helene Shala (Secretary, ILO Headquarters, Geneva).

Many industry stakeholders from government, private sector, and trade unions generously gave their time and insights during workshops and interviews, and through participating in the steering committee for STED work in the sector. We are particularly grateful to Mr. Isaq Hovsepian, formerly of Nabil Foods, who chairs the steering committee.

All errors and omissions remain the responsibility of the authors.

Abbreviations:

VTC: Vocational Training Corporation

GFJTU: General Federation of Jordan Trade Unions

NCHRD: National Centre for Human Resource Development

JFDA: Jordan Food and Drug Administration

JCI: Jordan Chamber of Industry

DOS: Department of Statistics

CAQA: Centre of Accreditation and Quality Assurance

GCC: Gulf Cooperation Council

GMP: Good Manufacturing Practice

E-TEVET: Employment, Technical and Vocational Education Training

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Part 1 Introduction & Overview on STED Process

1.1 Introduction

This report on the Skills Needs of the Food Processing and Beverage sector in Jordan was prepared under the ILO's Skills for Trade and Employment project, which is the Jordanian component of the global Applying the G20 Training Strategy project. It reports on the findings of a forward-looking study of the sector's skills needs based on the International Labour Organization's (ILO) Skills for Trade and Economic Diversification (STED) methodology. The methodology combines sector level technical research and consultation with the social partners and other stakeholders to develop a shared analysis of the trade and skills challenges facing the sector, and proposals as to what should be done on skills to meet these challenges and secure a positive future for the sector.

This report sheds light on the situation of the Jordanian Food Processing and Beverage sector from a skills and labour market perspective. It reflects on Jordan's exports within the region and to other international markets, examining the challenges that affect this sector in improving its competitive position, especially in comparison with competitors in regional markets - from within the region and from Europe and Asia.

The report summarises key findings of the research and stakeholder consultations, and sets out the main recommendations.

The Food Processing sector is one of two Jordanian sectors studied under this project, the other being the Pharmaceutical sector. These were chosen based on a combination of technical analysis to identify traded sectors in which skills could make a meaningful difference to future levels of decent employment in Jordan and consultations with the ILO's tripartite constituents in Jordan on their priorities. The work is intended to fit with the priorities set out in Jordan's National Employment Strategy, which emphasises strengthening traded sectors with potential to grow exports and generate more employment, and also emphasises raising skills levels in targeted sectors.

When choosing from among Jordan's traded sectors, those other sectors in which sectoral development strategies with a significant skills component had been developed in recent years, were excluded from consideration in order to avoid duplication of effort.

1.2 Methodology

This report is a summary of the findings from applying the ILO's STED methodology in the Jordanian Food Processing sector. This methodology is designed to study the existing and emerging skills needs of an internationally traded sector, and to create a practical strategy to develop the skills needed for future market success, and for maximising sustainable decent employment.

Technical aspects of the methodology include considerable desk research, including analysis of a wide range of statistics, a survey of employers in the sector, and integrating the results of this research into an analysis based on the STED analytic frameworks. Statistics were primarily from the Department of Statistics (DoS) with some special data extractions provided by National Center for Human Resource Development (NCHRD) - (Al Manar Project). Trade statistics were sourced both from DoS and the International Trade Centre's Trade Map. As the Jordanian dinar (JOD) is pegged to the US dollar (USD) at the rate of 0.709 JOD to USD, it is straightforward for a reader to convert between the two currencies.

Twenty two companies in the sector were surveyed, mostly through in-person interviews. The main products produced by these companies are (not in any particular order): juice, processed meats, poultry/eggs, bottled water, biscuits, cake, canned vegetables, other canned products, vegetable oils, olive oil, margarines, frozen lamb/beef/chicken, spices, yeasts, chocolate spread, pretzels, jelly, custard, toffee, frozen pastries, pies, ready meals, dairy product, chocolate, ice cream, popcorn, carbonated drinks, beer, tea and coffee. Additional perspectives and data were sourced through individual consultations with steering committee members.

The STED methodology emphasises close collaboration with sector stakeholders on improving the analysis, agreeing a shared vision for the sector's future development, and identifying practical recommendations to address the current and future skills gaps identified through the work. In the case of the Jordanian Food Processing and Beverages sector, this collaboration has taken place mainly through a steering group made up of employers from the sector, a workers' representative from the sector nominated by the General Federation of Trade Union (GFJTU), representatives from The Jordan Chamber of Industry and a representative of the Ministry of Labour.

1.3 Where we are in the Process

This Summary Report summarizes the outputs resulting from the following main activities:

- Food Processing sector interview survey;
- Desk research on Food Processing sector;
- Reports to food processing stakeholder steering committee based on research and analysis under ILO's STED framework;
- One-to-one consultations with steering committee members;
- Development of proposed recommendations for review by steering committee;
- Planning of sector level project interventions, based on the recommendations, in collaboration with sector stakeholders.

Planned future steps are as follows:

- Sharing knowledge on the process and findings of this study, and of the similar study of the Pharmaceutical sector with Jordanian stakeholders at national level and with other development partners;
- Implementation of sector level project interventions; and
- Assisting Jordanian stakeholders and other development partners in identifying how recommendations that are beyond the scope of what can practicably be implemented within the project can be pursued.

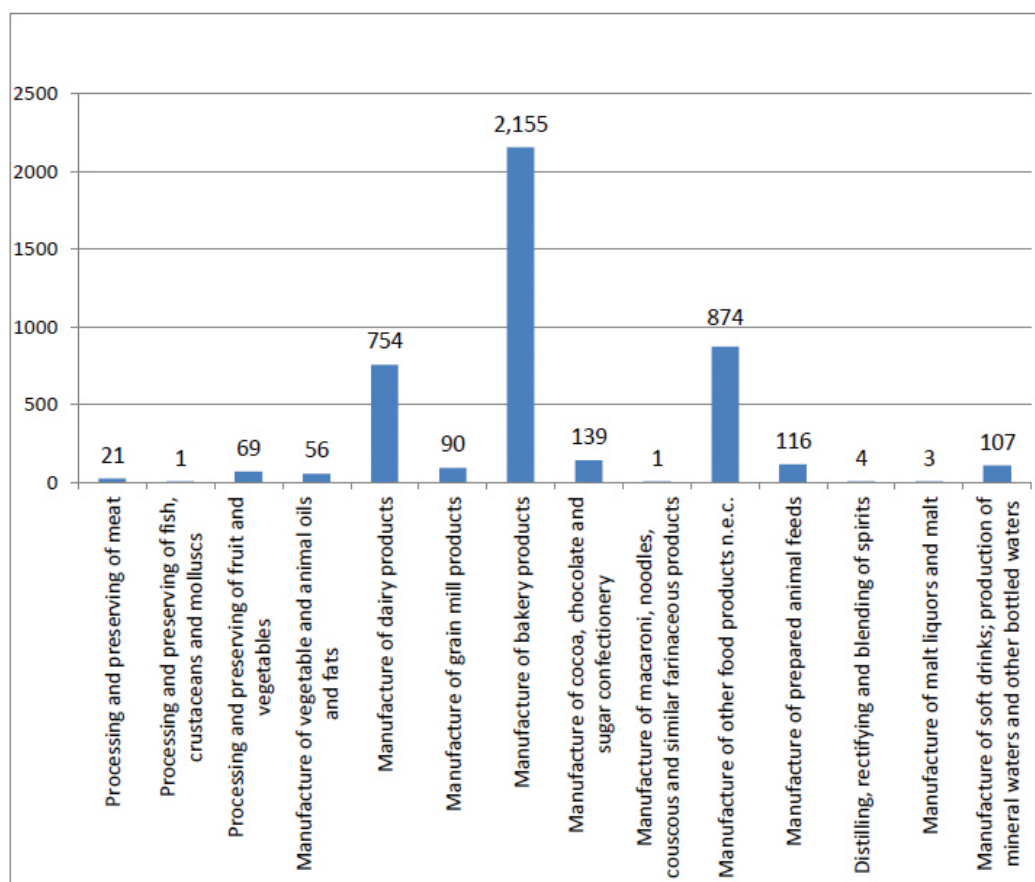
In addition, if there is demand for capacity development in skills anticipation in Jordanian institutions, such as training in the STED methodology, this could be provided within the scope of the project.

Part 2 Food Processing Sector in Jordan

2.1 Sector Profile

According to the Department of Statistics establishment census, the sector is made up of over 4,000 business establishments. Most of these businesses are small enterprises, and only 4% are substantial businesses with turnover in excess of JD 500,000. This study focuses mainly on the larger enterprises that have sufficient scale to get involved meaningfully in exporting, and which are most likely to be exposed to direct competition from imports in the domestic market.

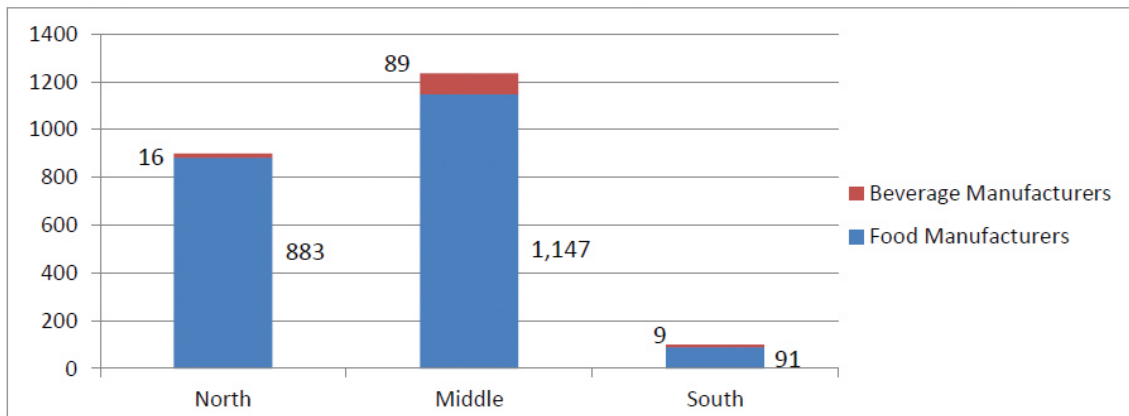
Figure 2.1 Number of Food Processing Establishments by Product Category, 2011



Source: Department of Statistics, Establishment Census, 2011

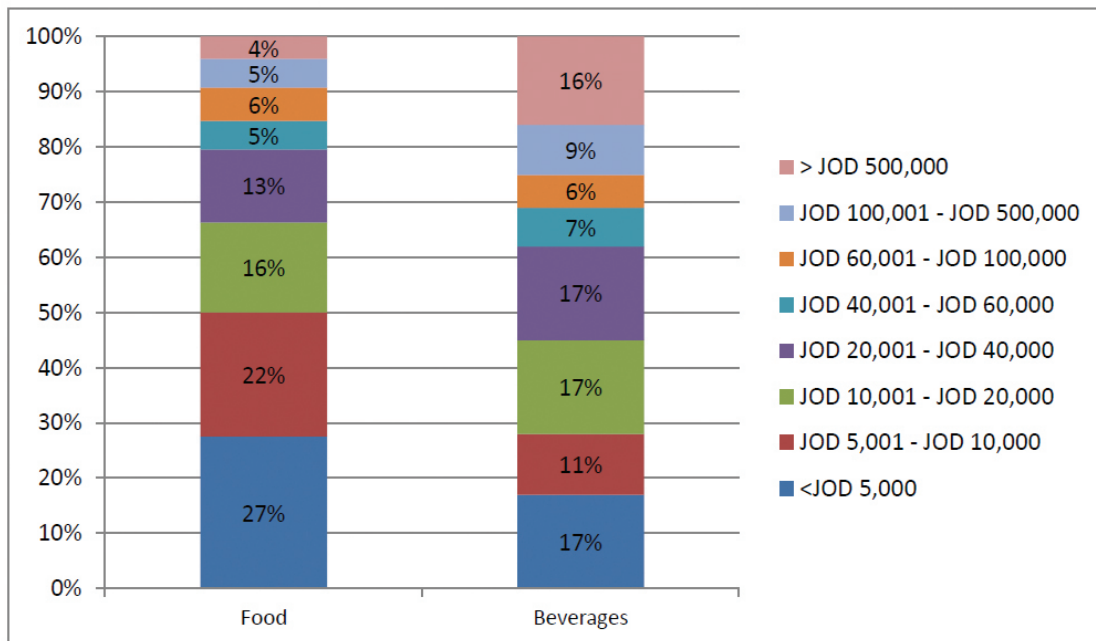
While smaller enterprises tend to service local demand for fresh baked or dairy products, the larger enterprises included in this study, focus mostly on processed and packaged foods and beverages. The sector is mainly located in the middle part of Jordan, close to Amman, and in the north, closer to the Syrian and Iraqi borders.

Figure 2.2 Number of Food Processing Establishments (excluding bakeries) by Region, 2011



Source: Department of Statistics, Establishment Census, 2011

Figure 2.3 Annual Revenues of Food & Beverage Manufacturers in JOD

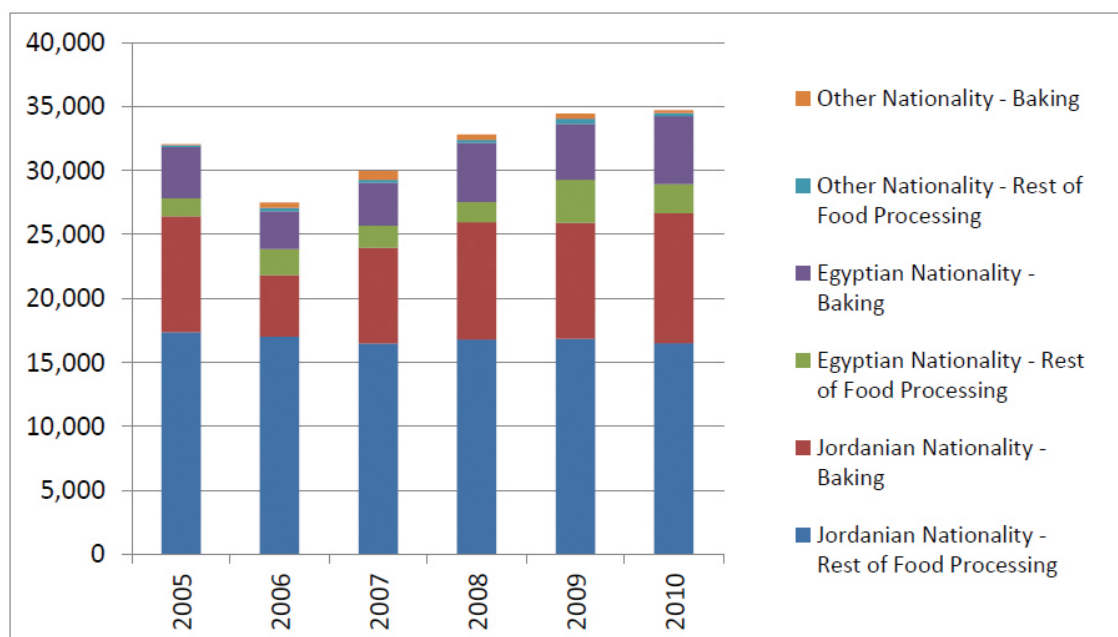


Source: Department of Statistics, 2011

2.2 Employment in Sector

The sector employs about 35,000 workers, and this has tended to rise over time. However, most of the increase has been in the baking subsector, which is mostly neither involved in nor exposed to competition from international trade. Overall employment in other parts of the sector has remained approximately stable over time. Employment in the sector is male dominated, with women accounting for approximately 8% of total employment. In 2010, three quarters of those employed in the sector were Jordanian, and most of the rest were Egyptian. It is not known how the composition of employment in the sector by nationality has changed since 2010, but the large inflow of refugees from the Syrian conflict has caused changes to the labour market, that may have significantly increased the “Other Nationality” component of employment¹.

Figure 2.4 Total Number of Workers in Food Processing Sector 2005 – 2010 by Nationality (Jordanian, Egyptian, Other), distinguishing between Baking and Other Food Processing

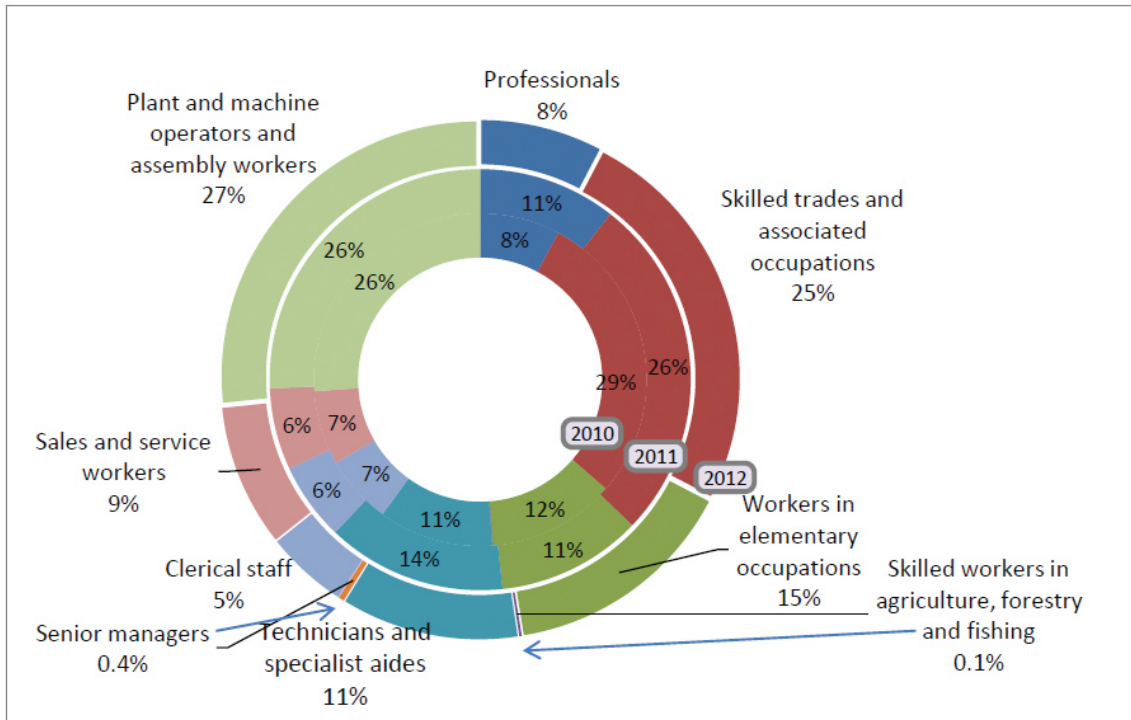


Source: Department of Statistics 2013, extraction from Employment Survey

The occupational composition of employment in the sector, reflects the fact that most of those employed, work in manufacturing activities. In 2012, the main manual skilled occupational categories – Plant and Machinery Operators and Assemblers; and the Skilled Trades and Associated Occupations – accounted for 52% of employment. The low skilled category – Workers in Elementary Occupations – accounted for another 12%, and the Technicians category accounted for a further 11% of employment. Clerical Workers accounted for 5%, and Sales and Service Workers for 9%. Professionals (mostly managers) accounted for 8% of the employment.

¹ When asked, DoS was unable to provide more up-to-date data.

Figure 2.5 Occupational Composition of Employment in the Food Processing Sector



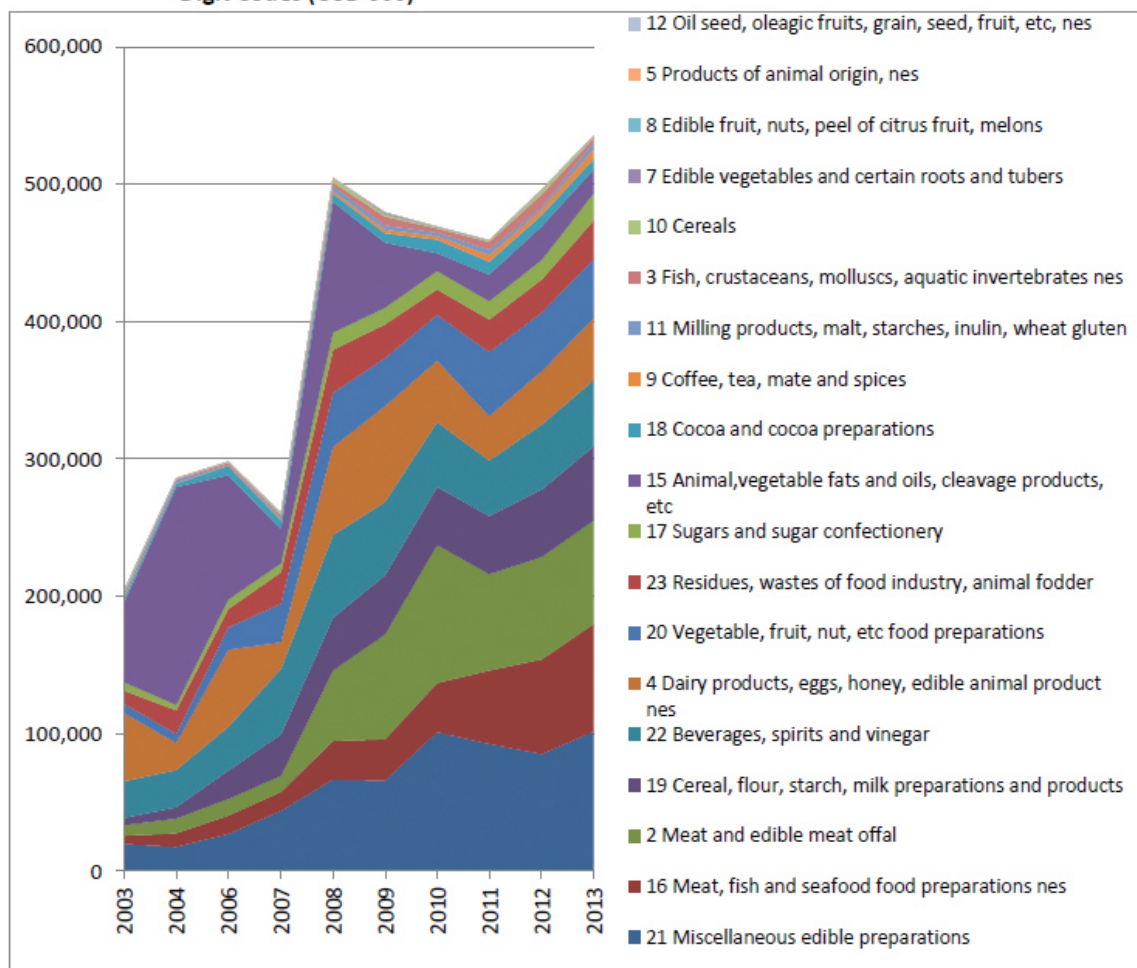
Source: Department of Statistics 2013, extractions from Survey of Employment and Unemployment / Al Manar

Approximately 92 per cent of those employed in the sector are male. Women employed in the sector tend to be in lower level production and clerical jobs, with some in laboratory technician roles. According to businesses consulted, greater flexibility among men in shift working, is one factor that favours employing men over women in production-related work.

2.3 Trends in International Trade

Exports of processed food products from Jordan have increased substantially since the early 2000s – by a factor of about 2.6 between 2003 and 2013 in terms of USD value². The main drivers of this increase have been prepared consumer foods and meats. In approximate terms, prepared consumer foods correspond to the HS product groups described as “preparations” in the chart below. Most of the meat exported is sheep meat. Increasing exports of beverages – both non-alcoholic and alcoholic – and of dairy products – mostly cheese and condensed milk – has also been a significant factor.

Figure 2.6 Exports of Processed Food Products from Jordan by (processed subsets of) HS 2-Digit Codes (USD 000)



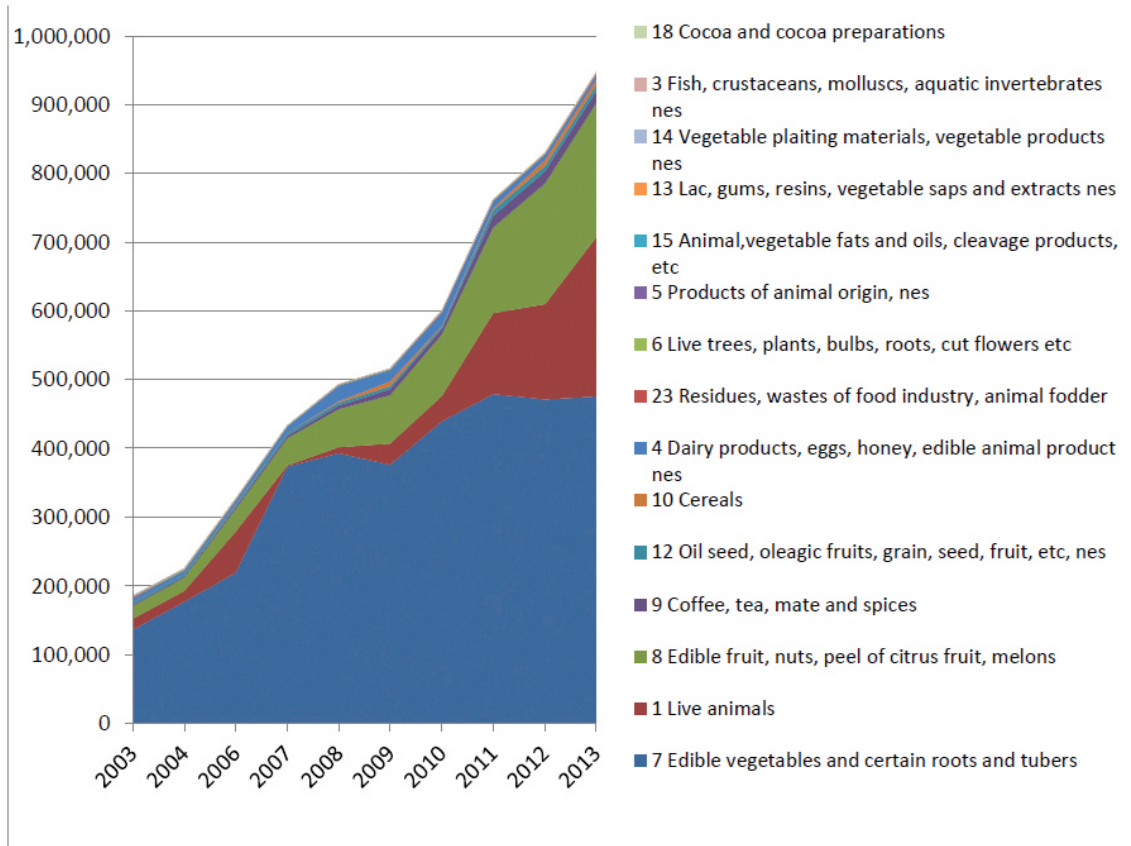
Source: Data from ITC Trade Map analysed by authors using World Bank WITS correspondence table.

² For purposes of trade statistics in this report, we define processed foods as foods that are products of the food processing sector. We select these out of the wider set of food products represented in trade statistics based on the 6-digit HS product codes that correspond to ISIC 15 (Manufacture of Food Products and Beverages) in the World Bank's WITS "HS Combined to ISIC Rev.3" correspondence table.

Over the same period, exports of unprocessed agricultural outputs³ from Jordan have increased even more rapidly. The greatest growth has been in exports of vegetables (principally tomatoes, but also peppers, cucumbers, aubergines and other vegetables), but there has also been substantial growth in exports of live animals (mainly sheep) and of fruit (principally peaches, apricots and citrus, but also some others).

Cross-referencing the chart below with the previous chart, it is apparent that there are some significant product areas where Jordan has increased exports of both processed and unprocessed versions, based on the same type of underlying agricultural production. Sheep are exported live or as meat, and some sheep meat is exported as an ingredient in meat preparations. Fruit and vegetables are mostly exported fresh, but some are used as ingredients in preparations.

Figure 2.7 Exports of Unprocessed Agricultural Outputs from Jordan by (unprocessed subsets of) HS 2-Digit Codes (USD 000)



Source: Data from ITC Trade Map analysed by authors using World Bank WITS correspondence table.

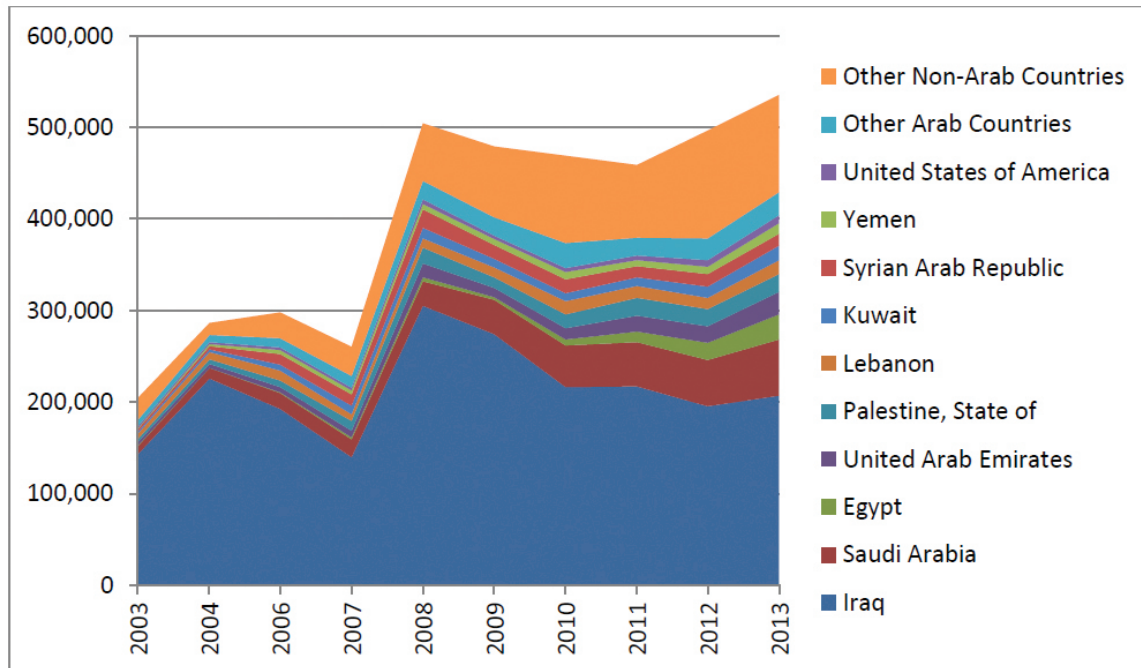
³ For purposes of trade statistics in this report, we define unprocessed agricultural outputs as agricultural products from HS 1 to 23 that are not among the products defined as processed foods.

The sector’s main geographic exporting focus is on nearby Arab countries, principally those of the Mashreq plus Egypt. There are also significant sales to a wide variety of markets outside the region, of which the US is the most significant.

Its largest geographic market by far is that of Iraq, although overall sales to this market are stagnant or on a downward trend, while sales to other markets are generally growing. Substantial sales to Iraq partly reflect a history of Jordanian investment in food processing, specifically to service the Iraqi market, and much of the sector is located in the north of Jordan, partly so as to be located close to the Iraqi border.

Exports outside the region are mainly of types of prepared consumer foods and confectionary that travel well.

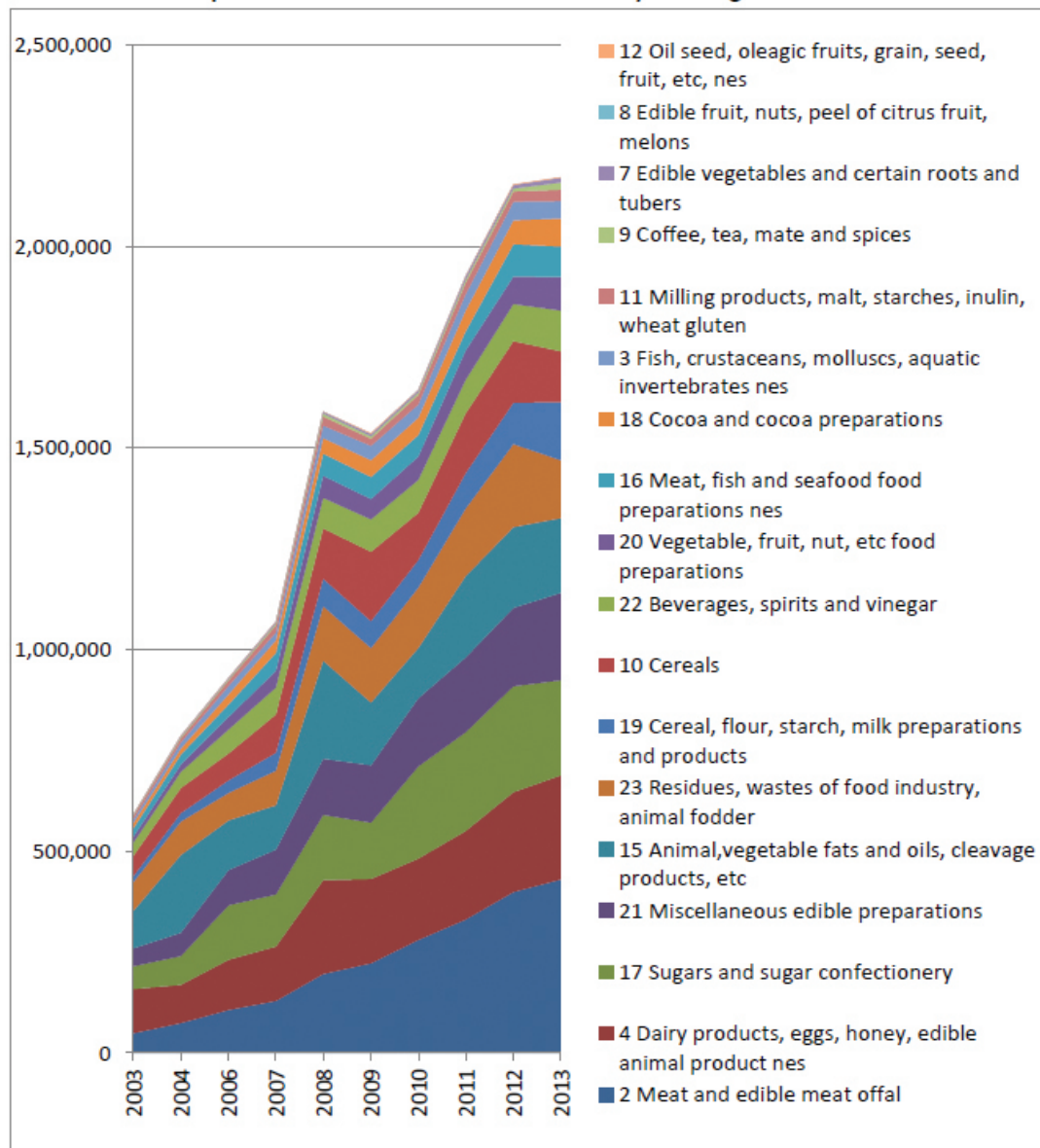
Figure 2.8 Exports of Processed Foods from Jordan by Destination



Source: Data from ITC Trade Map analysed by authors using World Bank WITS correspondence table.

Jordan imports considerably more processed foods than it exports – USD 2,170 million in imports in 2013, versus USD 535 million in exports. A significant part of this arises from importing lightly processed food products, based on agricultural outputs that its own agriculture sector cannot produce in volume competitively, such as beef, sugar, processed cereals, and oils (other than olive oil) such as sunflower oil and palm oil. Similarly, while Jordan has a relatively strong and dynamic dairy sector for a country with little water, for many types of dairy product, it is at a comparative disadvantage to countries with climatic conditions more suited to dairying. As a consequence, it imports more than five times the value of dairy products that it exports.

Table 2.9 Imports of Processed Foods into Jordan by HS 2 Digit



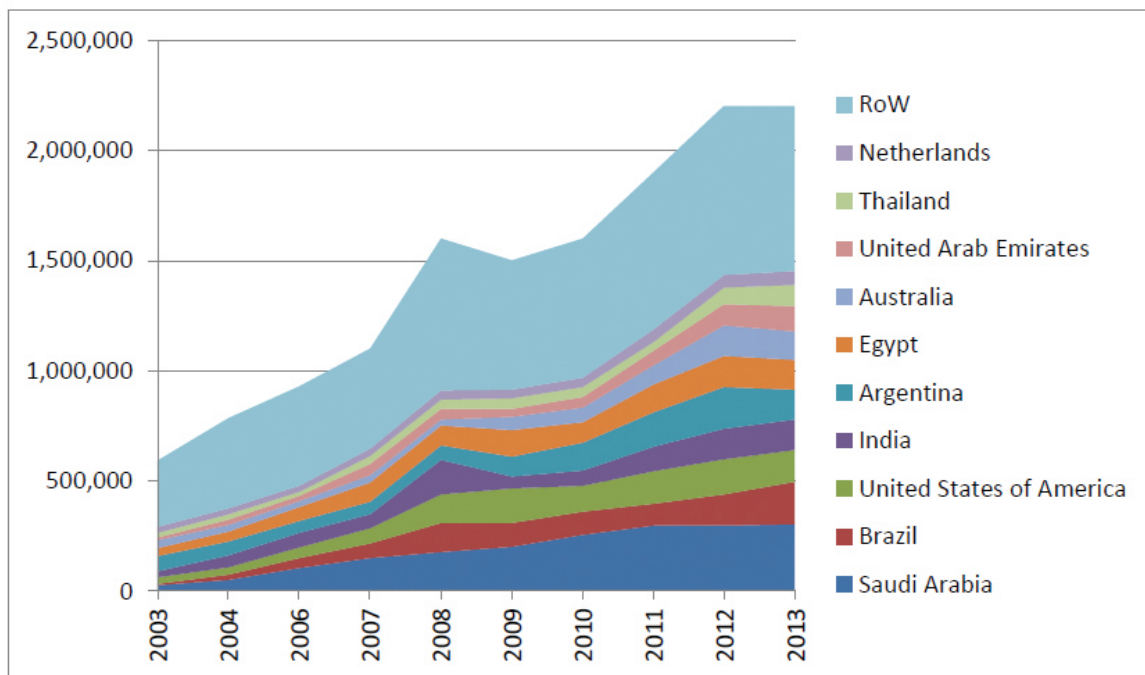
Source: Data from ITC Trade Map analysed by authors using World Bank WITS correspondence table.

However, much of the processed food that Jordan imports is in “food preparations” product categories that broadly compete with products in the same categories produced by the Jordanian Food Processing sector itself.

Reflecting this, imports of processed foods into Jordan come from a wide range of different countries. Particularly significant as suppliers of “food preparations” categories are Saudi Arabia, Egypt and the UAE, which have Food Processing sectors comparable in many respects to that of Jordan. EU countries, taken in total, are also significant suppliers of processed foods including “food preparations”, although only The Netherlands is individually among the global top 10.

Also important are suppliers of relatively lightly processed food commodities such as meat and dairy, with Brazil, the US, Argentina and Australia being major suppliers.

Table 2.10 Imports of Processed Foods into Jordan Analysed by Partner Countries

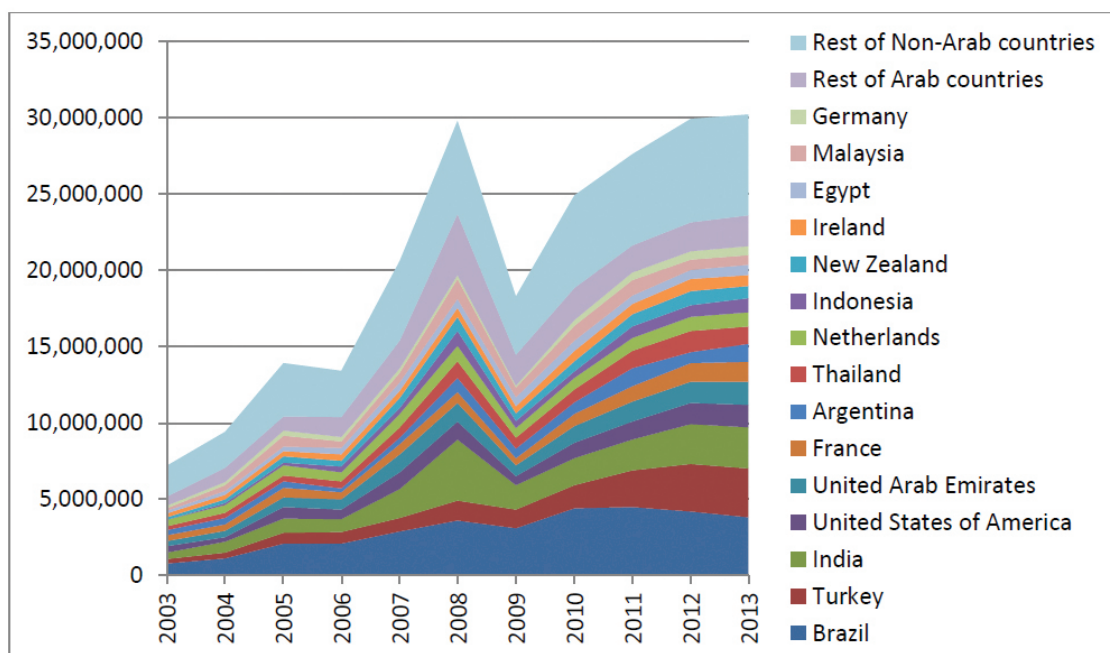


Source: Data from ITC Trade Map analysed by authors using World Bank WITS correspondence table.

As Jordan’s Food Processing sector principally serves other Arab markets, information on what other countries also export as processed foods to these markets, is a source of insights into conditions in those markets. Figure 2.11 shows how imports of processed foods into the Jordanian sector’s top 9 markets have developed over a 10 year period.

The broad shape of the flow of processed foods into these markets is of large and fast-increasing imports of relatively lightly processed foods from outside the region, but with significant imports of more heavily processed foods from places such as Turkey, Egypt and the UAE. However, a substantial part of the UAE’s food exporting activity is in re-exporting imported foods. Out of the 9 countries included in this analysis, Turkey has a particular focus on exporting to its neighbours, especially to Iraq.

Figure 2.11 Imports of Processed Foods into Jordan’s Top 9 Arab Food Export Markets Analysed by Source Country

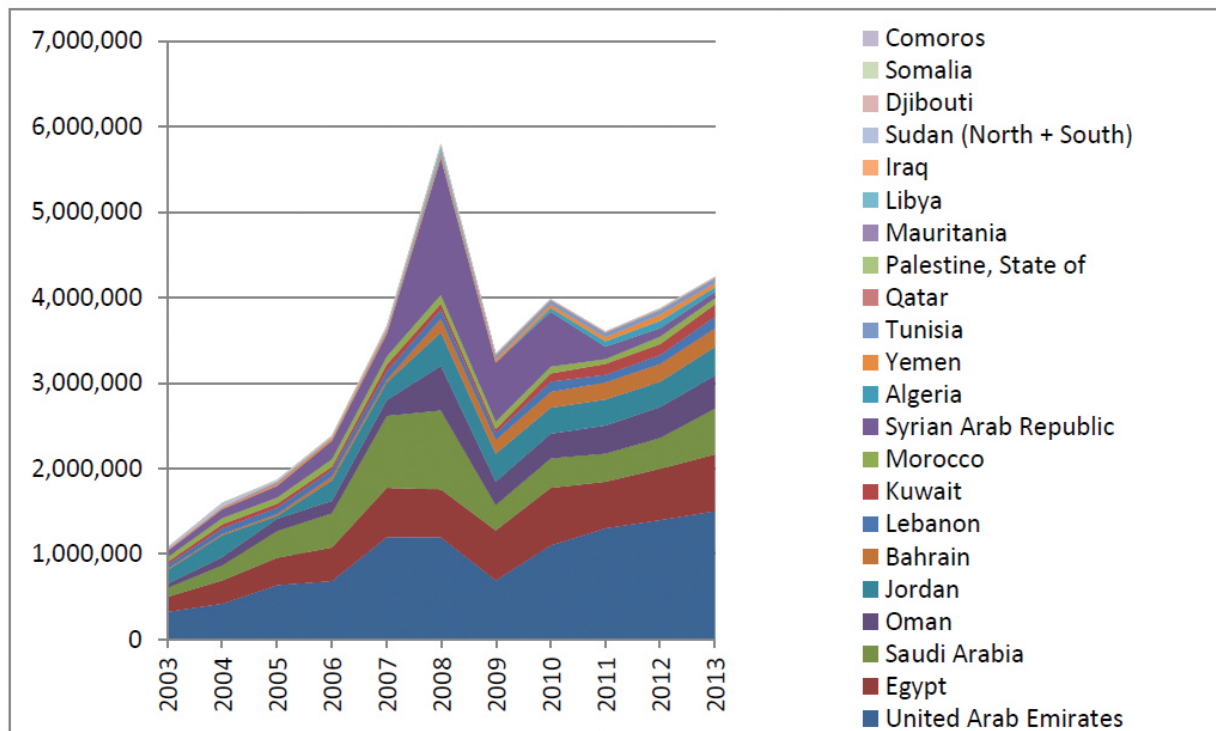


Source: Data from ITC Trade Map analysed by authors using World Bank WITS correspondence table.

As many of the Jordanian sector’s most direct competitors in its main Arab country markets are from other Arab countries, insights into this aspect of the Food Processing market are relevant. This intra-regional trade has grown by a factor of more than 4 since 2003.

Taking the Jordanian sector’s top 9 markets within the region as the relevant market space, the UAE is by far the biggest exporter within the space, although this is significantly because of a high level of activity in re-exporting imported foods. A number of other GCC countries, Egypt and Jordan itself are also important players. As of 2013, Jordan’s share of Arab-sourced processed food imports into this 9-country sub-set of the region was 7.9%.

Table 2.12 Imports of Processed Foods from Arab countries into Jordan’s Top 9 Arab Food Export Markets by Source Country



Source: Data from ITC Trade Map analysed by authors using World Bank WITS correspondence table.

Part 3 Findings from Research and Stakeholder Consultations

3.1 Introduction

This part of the report summarizes key findings from the research and consultation. Parts 4 and 5 of this report draw conclusions based on the findings, and propose recommendations based on these conclusions.

3.2 Sector Overview

The Food Processing sector has an important role in Jordan, both in supplying the domestic market and in supplying export markets with food, mainly within the region. Most businesses in the sector are small, typically bakeries, and supply just the domestic market. However, larger businesses manufacture a range of processed foods for both domestic and export markets.

The sector provides significant employment. Employment in the Food Processing sector, excluding baking which is mainly focused on the domestic market, is approximately levelled over time, reflecting strong growth in output accompanied by improvements in labour productivity. The growth in output reflects a combination of strong export growth and strong demand in the domestic market. Demand in the domestic market has been boosted by economic buoyancy and growth in the resident population. There is tough competition in processed foods in domestic market, particularly from Saudi Arabia, Europe and Egypt.

As seen earlier, exports have grown strongly in recent years. Key features of export growth include: significant investment in food sector in the 2000s; success in the Iraqi market across a range of product areas (although growth in exports to Iraq has levelled off); and diversification from Iraqi and Syrian markets into other parts of region – particularly Saudi Arabia and Gulf – and into global markets.

3.3 Jordan's Position in Export Markets for Food

According to interviews, Jordanian products are being marketed in neighbouring countries as being of low price and good quality.

For many companies, the main export market is Iraq. The market was very receptive to Jordanian products for the first decade after the war. Some of Jordan's food processing factories were opened by Iraqi investors, and sell most or all of their production to Iraq. However, according to interviews, the Iraqi government has been placing stricter restrictions on imports from Jordan over the recent years. Firms feel that there is political pressure to limit imports from Jordan into Iraq, and they have been seeing more intrusive regulation and increasing delays at the border. The key competition, according to interviews, comes from Turkish products.

However, Jordanian products are typically priced lower and that, in the view of respondents, is their biggest competitive advantage.

Many companies also export to other countries in the region. There has been an increased focus on diversifying markets since access to the Iraqi market became more difficult.

Of the companies consulted, only the firms producing Tahini (including canned vegetable motabbal) were entering the markets of high income countries – USA, Germany, and UAE. One company was considering organic certification. These were introducing their products in new forms, such as in glass jars as dips, or Tetra-Pak hummus).

While Jordanian olive oil possesses elements for success, Jordanian production mostly serves the domestic market. Imports are very low, and total exports amounted to USD 6.8 million in 2013, going mainly to Saudi Arabia, Kuwait and Israel.

Most companies rely on agents for export sales. Companies consulted mostly find it difficult to export and sell products without the support of agents who take care of logistics and sales.

3.4 Skills Supply of the Sector

Based on a review of education provision in Jordan including higher education, there is limited provision of courses specifically targeting the sector's needs. Jordan University of Science and Technology provides courses in Food Science and Technology, but otherwise, universities and community colleges do not have technical courses for food processing.

Some community colleges provide courses in Nutrition, Plant Production Technology and Animal Production Technology (Balqa Applied University community colleges). Some community colleges have courses in hospitality and catering that include content relevant to the food processing sector, but they chiefly target the restaurant and hospitality sectors. One Private sector college called Royal Academy for Culinary Arts (Managed and Operated by Les Roches – Switzerland) provides modular courses and grants a Diploma Certificate in Culinary Arts (cooking and catering).

VTC does not have technical training program in food processing, other than one in bakery. It also has training courses in hospitality and catering.

3.5 Threats to the Sector

The survey of employers highlighted the following as being significant threats to Jordanian food processing.

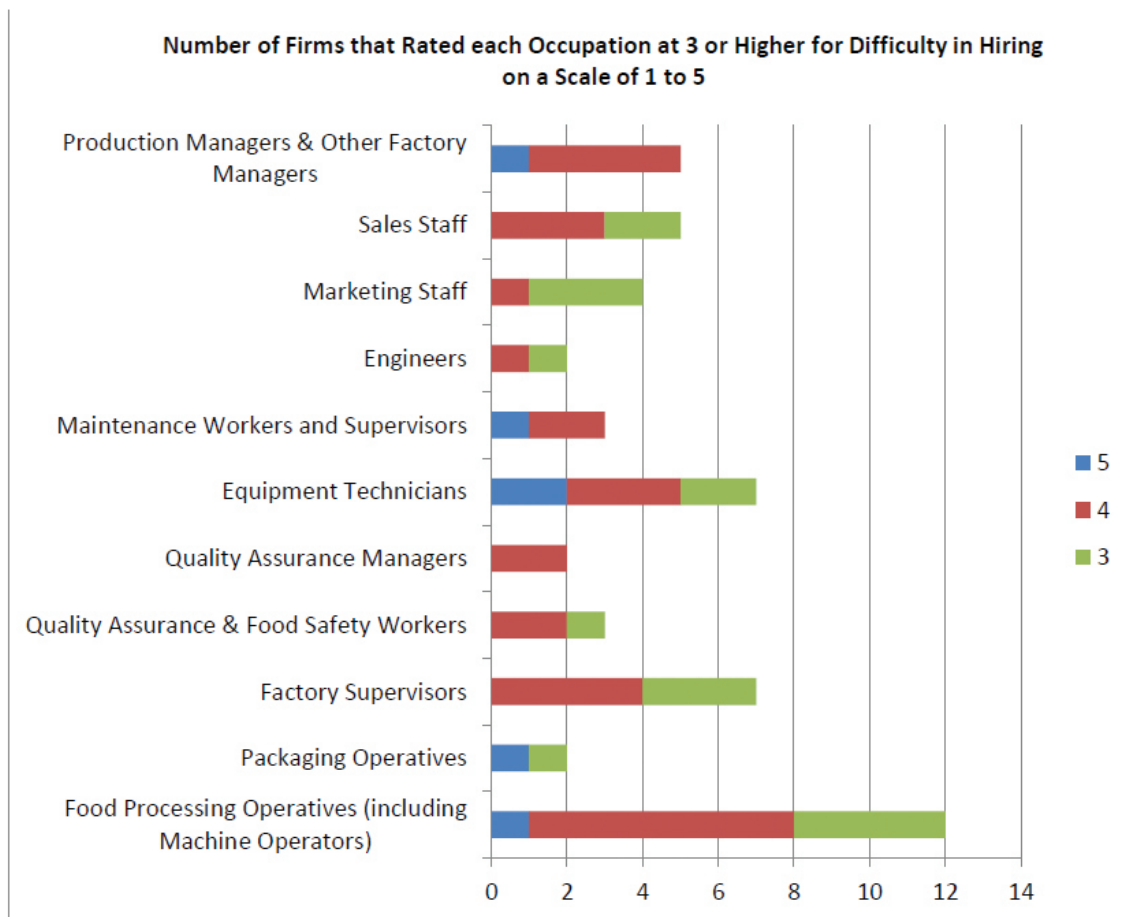
- Political instability, the security situation and the regional political situation
- Competition from food processing sectors in Saudi Arabia, other GCC countries, Turkey and Egypt
- Costs (energy – electricity/oil, raw materials and labour costs)
- Weak skills among the workers in the sector
- Saudi Arabian government support for its food processing industry
- Taxation on raw material imports
- Low purchasing power in Jordan
- Loss of access to logistics: interruption of access to Latakia port in Syria, and Iraqi border closures
- Weak international marketing of Jordan as a source of food
- Quality of local raw material supplies (in some cases)
- The sector is mostly made up of family businesses, and in some cases there are some problems with management in the second generation
- A decrease in tourism into Jordan has affected demand from the higher end of the Jordanian restaurant and hotel sector

It was also noted that Jordan joined the World Trade Organization before a strong domestic Food Processing sector was established, and this has put it at a disadvantage.

3.6 Difficulties in Hiring Workers, by Occupation

Many of the employers surveyed highlighted problems with recruiting for one or more occupations. Figure 3.1 shows the number of firms that confirmed each a range of occupations for which they have difficulty in recruiting. There are particular problems with recruiting machine operators, but there are also problems with a range of other occupations in food processing operations, including supervisors, production managers and technicians. Some employers also confirmed problems in recruiting people with the right skills in marketing and in sales.

Figure 3.1 Occupations in which Firms have Difficulty in Recruiting Workers



Source: Survey of Employers undertaken for this study

3.7 Other Skills Issues Highlighted by Employers

Employers highlighted a range of issues with the skills of their existing workforces. They focused on issues related to core skills, and to skills that are generic across a range of occupations in the sector, more than on occupation specific technical skills.

When asked what challenges the food processing and beverages sector has with human resources, employers highlighted the following:

- High labour turnover rates, particularly among machine operators and young low skilled employees;
- Low loyalty & commitment;
- Lack of knowledge of the fundamentals of health and safety;
- Poor communication between management and workers;
- Weakness in English language skills among workers which limits their understanding of technical documentation and labels on the production lines and machines, with negative implications for proper use of the equipment and in some cases for safety;
- Lack of knowledge among workers about the preventive maintenance procedures;
- Lack of knowledge about food handling;
- Lack of knowledge about food processing, food storage, and food safety;
- Lack of soft skills required for productivity and an effective work environment, like team working, communication and time management;
- Lack of effective systems to motivate employees ;
- Lack of effective systems for personal development of employees; and
- Deficiencies in management skills, particularly people management skills, among human resource managers, production managers and supervisors that make it difficult to resolve human resource issues.

There was common ground between employers and the workers' representative on the steering committee that these problems are largely rooted in food processing manufacturing jobs being perceived as low in status, with relatively low pay, and with working conditions that are not perceived positively by workers. One major employer reported achieving considerable success in tackling these problems through introducing more modern human resource management practices along with some increase in pay, succeeding in reducing employee turnover to about 2 per cent per annum. This made it easier to justify investing in training for workers.

However, employers also highlighted the following general issues that impact on occupation-specific technical skills.

- Not all standards are available for skills training for the main food industry occupations.
- There is a lack of specialization among workers, with few developing deep technical skills in important areas.

The list of occupations for which employers highlighted deficiencies in skills among their existing workforce was much the same as the list of occupations for which they have difficulty in recruiting workers, covering the full range of workers in operations, at all occupational levels, and also in marketing and sales. The most important area of difficulty identified was in the skills of machine operators. With high turnover and lack of access to recruits with the right skills and attitudes, many employers find it difficult to justify investing enough in training these workers in technical and core skills, because of fear of (poaching).

Employers represented on the steering group confirmed a disconnect between their Human Resource Management function and their Production and Operations function. They highlighted a need for closer collaboration between these two functions towards resolving the human resources and skills issues they identified.

3.8 Operational Impact of Skills Deficiencies

The survey asked about the operational impact of gaps in skills. The following are the main areas of impact highlighted by respondents:

- Low productivity;
- Low sales;
- Low profitability;
- Lack of compliance with regulations or with specifications;
- Pressures on production manager caused by skills deficiencies making it difficult to focus on developing the business;
- Many errors;
- Waste of materials destroyed by not being processed correctly;
- Production delays;
- Complaints from customers and returned goods;
- Orders not delivered as required;
- Products not of optimal quality, risking customer dissatisfaction, reputational damage, and in some cases large fines;
- Problems with compliance on food safety;
- Difficulties managing sales teams and meeting targets; and
- Difficulties penetrating export markets.

Given these quite severe difficulties that arise from gaps in skills in the sector, it can easily be understood how bridging the skills gaps could have a substantial positive impact on competitiveness. Several of the companies consulted indicated that they could export significantly more if they had access to an adequate supply of skilled production workers, and that availability of skilled labour is a key constraint on their ability to export and to grow employment.

Part 4 Gaps in Business Capabilities and Skills

4.1 Introduction

A key feature of the STED methodology is to analyse the capabilities in which businesses in the sector will have to be stronger in future in order to underpin their future productivity and competitiveness, and in order to achieve the strategic goals that stakeholders wish to see the sector achieve. Experience with STED-based analysis across a range of sectors in a range of countries shows that the gaps that this analysis highlights provide good strategic guidance for identifying skills development priorities.

4.2 Business Capability Gaps

4.2.1 Introduction

Research into the sector, employer interviews and subsequent consultations with the sector's stakeholders have highlighted the following areas in which stronger business capabilities are necessary to underpin future competitiveness.

- Manufacturing efficiency
- Manufacturing quality, regulatory compliance and regulatory management
- Sourcing inputs
- Domestic and international marketing, including distribution channels management
- Product development

4.2.2 Manufacturing Efficiency

Efficiency in manufacturing will be important to the sector's ability to compete both in domestic markets and in export markets. Price is an important dimension of the sector's competitiveness in both export and domestic markets. At the same time, improving margins is critical to the ability of the sector to fund investment in equipment, product development and market development, and to improve pay for its employees.

4.2.3 Manufacturing Quality, Regulatory Compliance and Regulatory Management

Quality and regulatory compliance in manufacturing are centrally important to the ability to trade in food products both internationally and within Jordan.

There is a number of separate dimensions to this.

- Compliance with Sanitary and Phytosanitary (SPS) regulations imposed by importing countries, which is a pre-requisite for access to export markets;

- Compliance with good practice in food safety and hygiene, in line with Jordanian regulations, and in line with customer requirements;
- Compliance with the company's own specifications, so as to ensure that the product meets customer expectations consistently and is perceived to be of good quality; and
- Compliance with standards and specifications provided by partners, such as suppliers of food packaging solutions.

In some cases, there may also be a need to comply (and document compliance) with additional standards and specifications that are important from a marketing perspective, such as specifications demanded by major retailers or consortia of retailers, standards of a certifying body for organic foods, or specifications for a standard such as fair trade.

In principle, each of these is a separate area in which the business has to comply with specifications, whether imposed by its own need to consistently produce goods attractive to its end customers, or to obtain and maintain markets. In practice, the operational implications overlap, and the measures taken to serve one compliance objective may also serve others. More generally, a culture of compliance, supported by well-designed processes and documentation systems, and by appropriate skills and commitment to compliance among managers and employees, is important to underpinning each of them.

Compliance involves labour intensive activities, in areas such as quality assurance, documentation and food testing laboratories, and the efficiency with which these are designed and operated has a significant impact on overall manufacturing efficiency. Moreover, deficiencies in the quality of manufacturing can cause substantial waste if products do not meet requirements, and have to be disposed of or sold at a discount.

Several employers interviewed for this study indicated that they are dissatisfied with aspects of their ability to manage quality and compliance efficiently and consistently.

4.2.4 Sourcing Inputs

Improved sourcing of food inputs for processing is important to the sector's success, both in terms of inputs produced within Jordan and in terms of raw materials sourced from other countries. In the case of inputs produced within Jordan, such as lambs, milk and olives, the need is to further improve the efficiency and quality of agriculture and of its connections to the food processing sector.

The sector depends on imports of raw materials that are not produced in Jordan, or not in sufficient volume, for many of its products. For some agricultural products produced in Jordan, The biggest single category of inputs imported mainly for use in the Food Processing sector is cereals, with a total of USD 913 million value of cereals being imported in 2014 (ITC Trade Map), but a wide range of other inputs are imported too.

Companies consulted highlighted challenges in sourcing the inputs they need, needing to work hard to obtain low prices and adequate quality. Some also mentioned challenges in adapting manufacturing to changes in the technical characteristics of raw materials when they are obtained from a new source. They noted that tackling these challenges is partly a matter of the effectiveness of their own sourcing efforts and partly a matter of the effectiveness of intermediaries who source raw materials on their behalf.

4.2.5 Marketing, Sales and Channel Management

Businesses consulted for the study said that they need to become better at marketing, sales and channel management, both in the domestic Jordanian market and in export markets. The need is particularly acute in export markets, where investing in improved channel management and marketing is necessary to enter new markets, and to improve penetration and margins in their existing export markets. Strong market intelligence is also key to adapting and improving products and their presentation, in order to better meet the needs and desires of consumers and food service businesses.

4.2.6 Product Development

The parts of the Jordanian Food Processing sector that are the main focus of this report produce and market products in categories in which there is scope for product innovation. Many of the products are “preparations”, prepared and packaged for consumers or for food service businesses, and there is scope to innovate in terms of the characteristics of the product, the process used to produce it or the packaging. Innovation has the objective of creating a new product, extending a product range, making an existing product more attractive to consumers, to food service businesses or other businesses in the value chain, or has the objective of improving the process so as to reduce costs or improve compliance.

Innovation may extend beyond the business itself into changes in sourcing of inputs or in physical distribution. Many of the opportunities for innovation will be based on acquiring technologies or rights to produce own versions of existing products from international equipment vendors or from other international partners. Many will also be about incremental changes to existing products and processes, driven by Jordanian expertise, whether by expertise within companies or through collaboration with external sources of expertise such as relevant university departments. There may also be scope to develop new products.

Innovation in products and processes is important to the ability of the sector to deepen its position in export markets where it is already present, and to adapt its offerings to meet customer demand in new markets. It is also important to the ability of the sector to compete dynamically with imports in its own domestic market.

4.3 Skills Gaps

4.3.1 Introduction

The business capability gaps identified have significant implications for future skills needs. In addition, the research has identified a range of existing skills gaps that should be addressed in order to underpin the sector's effectiveness.

4.3.2 Skills Gaps Relating to Business Capability Gaps

For each of the main business capability gaps identified, skills gaps form an important component of the wider capability gap identified.

Manufacturing – Efficiency, Quality and Regulatory Compliance

Getting manufacturing operations right in future depends on improving skills across a range of occupations at a range of levels.

Key TVET level occupations are:

- Food processing machine operators
- Food processing machine technicians
- Food laboratory technicians
- Food compliance and quality assurance occupations

For each of these occupational areas, there is a need to level up technical and core skills among those already working, and to upgrade education and training provision in relevant courses. The requirement is: to achieve a higher base level of technical skill appropriate to increasingly automated systems; to attain stronger core skills in areas like communication, team working and problem solving; and to develop the skills needed to work effectively in a sector in which compliance with standards is important to market access and customer satisfaction.

There is also a need to strengthen skills at more senior levels, particularly in people management. Production operations that are both efficient and compliant with standards, regulations and the business's own quality standards depend on a good working culture and appropriate work organization, as well as on formal management and technical processes. Improving skills in these areas is relevant to production managers and supervisors, human resource managers and managers of quality and compliance systems. This need extends to scientists and engineers employed in food processing businesses, who may function as managers within production operations. The most critically important area of skill at management level where improvement is required is in people management.

Sourcing Inputs

The need to improve sourcing of inputs ,has skills implications for Jordan, in a number of areas. These include:

- * Skills of managers and professionals in food processing businesses responsible for sourcing and purchasing inputs, whether from international suppliers, from Jordanian intermediaries or from Jordanian agricultural producers;
- * Skills of those working at a professional level in Jordanian intermediaries that supply food processing businesses with inputs; and
- * Skills of Jordanian farmers and their employees, which impact on the volume of inputs produced, the quality and consistency of the inputs, compliance with standards and regulations in Jordan and export markets, and the cost of production – which impact on the cost of materials to Jordanian processors.

Marketing, Sales and Channel Management

Skills have a central part to play in strengthening capabilities in marketing, sales and channel management. The need to improve skills in sales and marketing for the domestic market is incremental, as businesses in the sector already have functioning sales and marketing operations focused on Jordan. For export markets other than Iraq, the level of market knowledge and the level of control over in-country marketing and sales that Jordanian food processing businesses have, is typically quite limited, as sales are mainly through agents and distributors. However, as exports into existing markets grow, and as companies export to a wider range of destination markets, it will be important to develop a greater level of expertise in international marketing and channel management in order to bring a better understanding of relevant markets into all aspects of the business, both in order to manage relationships with in-country channel partners effectively, and in order to contribute to effective marketing in-country.

Key occupations include: marketing; sales management; and commercial channel management.

Product Development

There are three key areas of skill in developing processed foods: food science; food engineering; and food business. For businesses of the scale of most Jordanian food processing companies, what matters most is strong skills in food business, backed up with enough scientific and technical know-how to make incremental changes to existing products, and to make good use of external sources of expertise to introduce new products. Professional level skills are key, and there is also a need for strong technician level skills in food science and engineering to support them.

To underpin the ability of firms to innovate, it is important that they have access to highly skilled expertise in food science, technology and business externally, such as through enterprise partnership mechanisms in Jordanian universities.

4.3.3 Existing Skills Gaps Needing to be Bridged

The discussion of skills gaps so far has focused on what will be needed for the sector to be successful in the future. It is also necessary to look more narrowly at skills gaps that are currently visible in the sector, and are already causing problems.

A key issue highlighted by many employers in the sector is with work culture among their employees, with a lack of consistent commitment to working productively and in compliance with standard procedures. People management practices seem to be a significant factor in this, which implies a need for action both to address skills among employees working in production, and to address the people management skills of those who manage them and set company policies.

A second key issue highlighted by employers is a shortage of skilled food processing machine operators. Factors that they identify as affecting this include:

- the lack of a system of training to supply the skills needed, compounded by the lack of clear skills standards for the occupation;
- difficulties with retention of machine operator employees, many of whom see the work as low in status and inadequately paid; and
- the reluctance of employers themselves to invest in training employees to a high level of skill, when this makes it more likely that they will lose their investment when employees are recruited by a competitor or find a different type of work.

Part 5 Conclusions & Recommendations on Skills Development

5.1 Introduction

This part of the report summarises the conclusions of the research and stakeholder consultations. It then outlines a vision for the future of the sector agreed with the main stakeholders. Finally, it sets out a number of recommendations for the sector's stakeholders, for government, for education and training institutions, and for the ILO and other development partners.

5.2 Conclusions

The sector's output has grown rapidly since 2003, serving both export and domestic markets. Both exports and imports have grown rapidly, as market integration within the region has increased. The sector's main initial export focus was on the Iraqi market, but the focus has become more diversified over time, with significant growth in exports to GCC countries, particularly to Saudi Arabia. Imports of processed foods into Jordan have increased substantially from a wide range of countries, both within the region (particularly Saudi Arabia) and from Europe and parts of Asia. Imports of unprocessed and lightly processed foods have also increased rapidly, partly reflecting the fact that the sector must import a substantial share of its raw materials.

The value of sales of food products in the domestic market has been boosted by significant inward migration arising from regional conflicts, and also by the impact of economic growth since the early 2000s on the types of food demanded by consumers. As incomes have increased, demand for higher value added processed foods has also increased.

Despite the rapid increase in the value of the sector's output, employment (exclusive of baking) has remained roughly stable over time. This reflects a rapid increase in labour productivity, arising mainly from investment in food processing machinery, and also the successful introduction and marketing of higher value-added products by businesses in the sector.

Viewed as a whole, the sector's margins seem solid, with an operating surplus of typically around 10 per cent to 12 per cent⁴ over time, although the adequacy of margins seems to vary between companies.

While the sector has been successful, it faces significant market challenges, with strong competition from regional, European and Asian competitors both in its main export markets and in its domestic market, and with significant market access barriers appearing in some countries where it has had a strong presence – notably Iraq and Syria. Maintaining or improving its market position requires significant continuing efforts to improve productivity in order to maintain or improve competitiveness.

Despite the fact that the relevant part of the sector has only held employment roughly constant over time, stakeholders, including leading employers, believe that it is realistic to aim to increase employment. They argue that the availability of suitably skilled workers is one of the main constraints on their ability to increase export and domestic sales, and that they could immediately employ significantly more workers if people with the right skills and motivation were available.

⁴ Based on Department of Statistics data.

Looking at employment developments among international competitor sectors, it is reasonable to hope that a competitive Jordanian food processing sector could also increase employment over the longer term. In food processing, the tendency of increases in the volume produced by each worker to drive employment down, can be offset to a significant extent by the manpower requirements of greater attention to quality, implementation and management of automation systems, and greater focus on marketing and product innovation. Any changes in market demand that shift the production mix towards products that require more work to produce, and towards shorter, often more labour-intensive production runs, can significantly raise the employment associated with processing an unchanged volume of food.

Looking further into the future, therefore, a range of possible scenarios for employment in Jordan's food processing and beverages sector are possible, depending on developments in its competitiveness relative to international competitors.

- A loss of competitiveness would lead to a significant loss in employment over the medium and long term, affecting not just the sector itself but also Jordanian agricultural producers and service providers that supply the sector. If the sector stands still, it will lose competitiveness as international competitor sectors improve.
- Maintaining or gaining competitiveness relative to international competitors could plausibly hold employment steady, or even drive a significant increase in employment over the medium term and long term.

Research into the sector and consultations among the sector's stakeholders have highlighted the following areas in which stronger business capabilities are necessary to underpin future competitiveness.

- Manufacturing efficiency
- Manufacturing quality and regulatory compliance
- Sourcing inputs
- Domestic marketing
- International marketing
- Product development

As skills are central to all of these areas of business capability, this report's recommendations focus on doing what is needed to bridge gaps between the skills in these areas that are required for the future success of the sector and the skills that are available now. Stakeholders highlighted progress on skills for manufacturing efficiency, quality and regulatory compliance as the most urgent of these, and for this reason the report places a special and urgent emphasis on tackling skills gaps relevant to these areas of capability. For each of these areas of business capability, skills development is a key part of a wider package of actions that is needed.

In the case of manufacturing efficiency, quality assurance and regulatory compliance, skills development must contribute to a wider shift in work organization and people management practices that is required to bring the Jordanian food processing and beverages sector up to the standards of business practice attained by internationally competitive food processing and beverage sectors in developed countries. Currently, most of the sector is stuck in a poor equilibrium, with outdated management practices and with problems in skills, productivity and work quality among workers. Workers see manufacturing jobs in the sector as poorly paid and low in status. Labour turnover in manufacturing is high, discouraging firms from investing in training, which in turn makes it difficult to achieve progress.

There were suggestions in consultations early in the research that these difficulties reflect a specific problem with Jordanian workers, and are partly caused by a Jordanian cultural preference for graduate-level jobs. However, the difficulties in food processing operations described by stakeholders are familiar from the history of manufacturing in many developed and developing countries in recent decades. The preference for graduate level jobs poses problems for manufacturing industries almost everywhere that skilled TVET level jobs are low in status and poorly rewarded in terms of pay and working conditions. Solutions to these issues are well known internationally, and have been implemented in manufacturing, including in food processing and beverages, across many countries. These solutions involve changing work organization and people management to engage a higher level of commitment, performance and productivity from workers, and rewarding them by providing adequate pay, more interesting work and decent working conditions. Investment in training across all manufacturing occupations is a key part of the shift, and firms typically find that they are well rewarded for the investment by higher performance and retention among their workers.

Where this approach has already been implemented in the Jordanian food sector, it has worked well, with workers taking more pride in their jobs, with improved management, with employee turnover falling sharply, with improved quality and compliance with standards, with reduced waste and with rising productivity. The most urgent recommendations of this report are around enabling other businesses in the sector to make this transition by giving them access to the training needed to develop the skills required.

Based on the analysis undertaken, action is also needed in two other broad areas. These are:

- Bringing together action on the specific skills needs of the food processing and beverages sector with Jordan's strategies for development of TVET (Technical Vocational Education and Training), which emphasise developing and implementing up-to-date curricula and qualifications that meet employer needs; and
- Developing the skills needed to bridge the other business capability gaps identified by the project - sourcing inputs; domestic and international marketing; product development; regulatory management; and cold chain.

5.3 Vision for the Sector

The recommendations that follow are based on a vision of the future of the sector endorsed by the stakeholders involved in the development of this report. The main components of this vision are as follows.

Export Markets: Businesses in the sector will aim for more rapid growth in exports to a range of export markets, primarily: GCC countries; other Arab countries; and markets outside the region with an emphasis on developed countries in Europe and North America.

Domestic Markets: Businesses in the sector cannot realistically compete effectively in all food product categories in the domestic market, but they will aim to have a strong domestic market position in a range of specific product categories and niches. Overall, averaged across all product categories, they will aim to maintain or increase their domestic market share.

Economic Benefits: Based on market success, businesses in the sector expect to increase overall direct employment in food processing and beverages. By creating more demand for Jordanian agricultural outputs, they also expect to support more decent employment in agriculture than would otherwise be available in future. Businesses themselves will benefit from higher profitability and an improved ability to invest. Both as a means to improve competitiveness and as a consequence of greater market success, they will be able to deliver higher pay, better working conditions and higher status to their workers, based on improved skills and greater commitment to quality and productivity in the workplace.

Source of Improved Productivity and Competitiveness: The improved productivity and competitiveness driving the improved market position will be based on: stronger operations, with higher productivity, improved quality and improved compliance with regulations; developing/licensing and introducing new and improved products that meet customer desires in target markets; and great branding, marketing sales and channel management.

Underpinnings for Improved Productivity and Competitiveness: Improved productivity and competitiveness will be underpinned by: the right skills at all occupational levels across all business functions; collaboration between managers and workers; adoption of best international approaches to food company management; and support for change from the Jordanian government, the ILO and other partners.

5.4 Recommendations

5.4.1 Introduction to Recommendations

The recommendations here are addressed: to businesses in the sector and their employees; to the Jordanian government including the Ministry of Labour and its agencies, MoPIC and the National Employment Strategy group, the Ministry of Industry and Trade and the Jordan Food and Drug Administration; and to providers of education and training targeting the food processing sector. They

are also addressed to the ILO itself, which has project and other resources that can be applied to implementation, and to other development partners.

The recommendations here are presented in two sets:

1. Recommendations for an immediate programme of action, setting out specific interventions that should be undertaken, and which could be supported under ILO projects; and
2. Recommendations for a longer term skills strategy for the sector.

5.4.2 Recommendations for Immediate Programme of Action

Following consultations with the project steering committee, it is proposed to implement the following training programmes for food processing employees under the current project:

- development and piloting of a modular training course for food processing machine operators; and
- a training programme in Human Resource Management for production managers and human resource professionals.

It is envisaged that these would be delivered jointly between companies in the sector at suitable locations, eventually reaching a substantial share of all the sector's employees working in production and logistics operations. It is hoped that it will be possible to arrange for qualifications to be awarded to successful participants.

Recommendation 1 Modular Training Course for Food Processing Machine Operators

It is proposed that the ILO will support the development and piloting of a course targeting existing food processing machine operators. The aim of the course will be to improve core skills, skills for health and safety, and skills for food safety and quality, so as to address major issues that were identified by employers in the sector, and so as to complement anticipated changes in people management in the sector. The course may be delivered at company premises or at training institutions. While it is not envisaged that pilots will lead to a qualification, the curriculum should be designed so that it could lead to a CAQA qualification in future, and so that the structure and content could be adapted for delivery in an initial training or apprenticeship context.

Box 1 outlines provisional content for the training course.

Box 1 Provisional content of training programme for machine operators

Core skills module

- Employee Duties & Rights (according to the Labour Law)
- Employment Values (Team Work, Loyalty, Integrity & Transparency, Confidentiality... etc.)
- Effective communication between Superiors & Subordinates
- Self-Marketing
- Conflict Management and Problem Solving
- Social Responsibility in workplace.

Basic English language training including technical terms

- Basic English (Elementary level)
- Technical terms related to Food & Beverage Industry
- Technical terms related to maintenance & machines
- Technical terms related to operating electronic monitors of the production lines

General health and safety procedures in the workplace

- Importance of occupational health and safety in the workplace and their role in social responsibility in the workplace
- Types of Risk (Mechanical, Physical & Chemical)
- Risk Prevention
- Prevention of accidents including fire accidents
- First Aid for work-related injuries
- PPE (Personal Protection Equipment)
- Machines & Equipment's Handling
- Dealing with Chemicals & Flammable Gasses
- Important explanatory labels for occupational safety
- Environmental protection, and dealing with food industry waste

General principles of food safety and quality for Food Industry and Catering occupations

- Basic principles of food processing
- Basic principles of food Handling & safety (cleaning, cross contamination prevention, cooking and refrigeration)
- Food poisoning and diseases transmitted through food caused by food contamination.
- Sources of risk associated with food safety (physical, chemical and bacteriological)
- manifestations of damage in processed, chilled and frozen meats
- Food Safety - cleaning and sterilization (including cleanliness and sterilization of sites and work surfaces and equipment)
- Food Safety - Cross contamination (including personal hygiene, hand washing, protective clothing, pest control)
- Food Safety - Cooking and cooling (including Region to danger temperatures, methods of keeping food hot and chilled and frozen including quick freezing and frying, ways to save and store meat (including drying and fermentation) wrapping & packaging)
- Food Quality Control
- Health conditions that must be provided in food factories.
- Fundamentals of storing, transfer and trading food.

Recommendation 2 Training Programme in Human Resource Management for Production Managers and Human Resource Professionals

The most immediately important skills priority for the Jordanian Food Processing sector is to tackle the problems it has with weak commitment, limited core skills and inconsistent application of food safety and quality standards. The proposed modular training course for machine operators is designed to address these issues at the level of production workers themselves, but it is unlikely to be effective without changes in how people are managed, to make the best use of the skills of all workers, and to improve working conditions and the perceived status of jobs in the sector.

The proposed training programme is intended to develop the skills required to assist companies in the sector, to modernise their people management policies and practices, so as to enable significant improvements in operating performance. Box 2 outlines provisional content for the course.

Box 2 Provisional content of Training Programme in Human Resource Management for Production Managers and Human Resource Professionals

High Productivity and High Commitment Strategies for Work Organization and Human Resource Management

Managing Performance:

- Performance management strategies
- Training and development strategies
- Managing the training and development process

Recruitment & Selection

- How to plan for HR
- How to design Job Descriptions
- How to recruit and select employees

5.4.3 Recommendations for Longer Term Skills Strategy for the Sector

Recommendation 3 Food Processing and Beverages Sector Skills Network or Council

The operation of the Food Processing and Beverages stakeholder steering committee for this project has demonstrated the value of stakeholder guidance for sector level work on skills in this sector. Continued stakeholder guidance will continue to be valuable through the implementation phase of the project under which this report has been prepared, so it is envisaged that the steering committee will continue to operate for the remaining duration of the project, and for any new phase added to the project.

It is recommended that national and sector stakeholders should consider establishing the committee on a more permanent basis as a sector skills network or sector skills council. The network or council would include representatives of employers and workers in the sector, and of relevant government ministries and agencies. It would also include representatives of relevant providers of education at TVET and higher levels.

It is envisaged that the network or council would work in collaboration with the ETVET Council, the ETVET Fund and other relevant ministries and agencies including the National Employment Strategy Unit. In addition to coordinating implementation of the strategy set out in this report, and working with the ILO on implementation, the network or council would work with national bodies and with other development partners on planning for and meeting the sector's skills needs.

Recommendation 4 Curriculum Development for Key Food Processing Sector Occupations

The Jordanian Ministry of Labour and its Center of Accreditation and Quality Assurance (CAQA) are going through a process of developing modern curricula for TVET level occupations and developing the capacity of TVET providers to deliver courses based on these curricula. It is in the interests of the food processing sector that curricula for food processing occupations should be updated, so as to improve the quality and relevance of TVET provision. Stakeholders in the sector noted in the course of consultations that there are no clear skills or competency standards for food processing sector occupations.

The occupation of most immediate concern to food processing and beverages employers is that of food processing machine operator, where they identify skills shortages, as well as qualitative skills deficiencies among both existing employees and prospective future employees.

Other TVET level occupations for which modern curricula would be valuable include:

- Food processing equipment technicians and maintenance workers
- Food processing supervisors
- Food processing operatives (not including machine operators)
- Food processing laboratory technicians
- Food processing quality assurance and regulatory compliance workers

As there is significant skills overlap between these occupations in areas like core skills, food safety, health and safety, and significant overlap on technical skills between some occupations, curricula and course delivery should be modular, segregating related occupations only where this is desirable, due to differences in skills requirements between the occupations.

Ideally, curricula should be designed to be suitable for delivery in the TVET school/college context, at the workplace, or through an apprenticeship-based system combining workplace and school/college-based learning. Basic training for food processing operatives could alternatively be delivered in the context of programmes aimed at making young people ready for work. Subject to agreement between stakeholders, the occupation of food processing machine operator would be a good candidate for piloting a food processing sector apprenticeship.

While most bakeries are outside the scope of this report, they form a large part of the overall food processing sector. If the occupation of baker is not covered adequately by existing MoL initiatives, it could logically be included in the curriculum development initiative for the sector.

As much of the skills and knowledge content shared across food processing occupations is also shared by catering occupations, the initiative to develop curricula for food processing occupations could logically be extended to catering occupations such as cook, chef or food service staff.

It is recommended that an initiative to develop curricula for food processing occupations should be undertaken with support from the ILO, and that it should be targeted based on the priorities set out above.

Recommendation 5 **Wider Skills Agenda for the Sector**

The most urgent skills priority for the sector is to provide the skills needed in manufacturing operations. However, taking a longer term view, it is also necessary to take action to provide the skills required to upgrade a range of other areas of business capability. In addition to manufacturing efficiency, quality and regulatory compliance, the following areas of business capability are also important to the sector's future productivity and competitiveness:

- Sourcing inputs
- Domestic marketing
- International marketing
- Product development
- Cold chain

Taking action on these is a shared responsibility of employers, individual workers, education and training providers (particularly in higher education and in organizations of professionals) and relevant government ministries and agencies. Effective action is likely to cover changes to undergraduate courses relevant to the food processing sector, provision of specialist master's degree and professional courses, and provision of shorter courses aimed at professionals already employed in the sector.

It is recommended that the skills network /skills council for the sector should work with education and training providers to identify courses that are required, and to motivate or organize the provision of short courses in these areas as required.

The network / council might collaborate with the Ministry of Trade and Industry on developing initiatives to strengthen international and domestic marketing in the sector, focusing both on skills and on complementary export promotion activities. Key issues are to develop the skills required to reduce reliance on agents for marketing expertise in the main export markets, and to strengthen the skills required for effective branding and marketing in the domestic market. Practical initiatives could include an executive development programme for food sector marketers and commercial managers, and an industry placement and training scheme for marketing graduates.

The network / council might collaborate with the Jordan Food and Drug Administration on the development and provision of courses in regulatory affairs and compliance relevant both to domestic and export markets.

The network / council might collaborate with the Ministry of Trade and Industry, the Ministry of Higher Education and Scientific Research and relevant universities to deliver a programme to develop the sector's capabilities in food product innovation, based on a combination of food business skills, food science skills, food engineering skills and cookery related skills.

Effective action under this recommendation may need to wait until the training programmes set out under Recommendation 1 are up and running.

International Labour Organization

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