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RAWAAT

EYE
Egypt
Youth
Employment



NORWEGIAN MINISTRY
OF FOREIGN AFFAIRS

► Sector Selection and Rapid Market Assessment in Egypt's Agribusiness sector:

Focus on Dairy and Medicinal and
Aromatic Plants (MAP)





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Foreword

Achieving rural development through advancing employment and decent work has been, for a long time, a high priority for the International Labour Organization (ILO). For ILO, rural areas, especially in emerging economies, hold significant potentials and enormous resources, and can work as engines of growth and job creation for the entire economy. ILO's work in rural development builds on its expertise in key technical areas, including local economic development, entrepreneurship, youth employment, value chain development, skills and career guidance, green jobs, microfinance, among many other areas of work.

It is within this framework that the project Egypt Youth Employment (EYE): Jobs and Private Sector Development in Rural Egypt "RAWABET" has been established. The EYE RAWABET project is an ILO Cairo Office project that is funded by the Norwegian government, and is implemented in partnership with the Ministry of International Cooperation. The project aims to stimulate local economic development in rural Egypt through promoting decent private-sector employment opportunities especially within rural micro, small and medium enterprises (MSMEs) along value chains of highest employability and growth potentials. The project works to capitalize on ILO's expertise and tools in rural employment and decent work to empower rural communities, and to build on and scale-up past and ongoing rural-focused initiatives implemented in Egypt.

A core component of the project involves the selection of value chains in rural areas with high employability and growth potentials. Within the selected value chains, the project will work to identify decent work deficits and respond to them. The project's response would take place through the provision of relevant technical support and necessary access to business management services to develop the capacities of rural micro, small and medium enterprises, with an aim to boost their competitiveness and growth potentials and, subsequently, improve their ability to generate decent work opportunities.

During the inception phase of the EYE RAWABET project, and building on a series of technical consultations with key government agencies and other key stakeholders including development partners and relevant national initiatives, the food-processing sector has emerged as one of the promising and strategic sectors that maintains high growth and job-creation potentials. The sector is identified among Egypt's national priorities and had witnessed significant developments upon which the project can build and scale up. Within the food-processing sector, the dairy and the medical and aromatic plants (MAP) were further recommended as being essential inputs to the economies of rural communities. The project's initial review suggested that planned project interventions could make an important contribution to rural empowerment through supporting employment and growth of both sub-sectors, in line with ILO comparative advantages. However, a more in-depth assessment was needed to identify specific value chains within the dairy and MAP subsectors that are most conducive to the project's approach and tools, in light of the project's duration and scope. The assessment will not only generate more information on the shortlisted subsectors, but will also highlight areas of interventions through which the project can best contribute to and partner with existing interventions, while taking into account the employability potentials.

This study works to validate the outcomes of the technical consultations that took place during the inception phase of the project, providing a rapid, but rigorous, market assessment for the two identified subsectors, the dairy and MAP. I hope you find useful and that it would guide similar interventions.

Finally, I would like to thank Mr. Mohamed Youssef, Chairman and CEO of Dcode Economic and Financial Consulting, the Dcode team as well as the EYE RAWABET team for their great efforts and contribution towards providing such a reliable and comprehensive document. Thanks are, also, due to the technical department at the ILO Headquarter, SECTOR, and the SME unit in ENTERPRISE for their support to review and comment on this study.

Eric Oechslein
Director
ILO Decent Work Team for North Africa/Cairo

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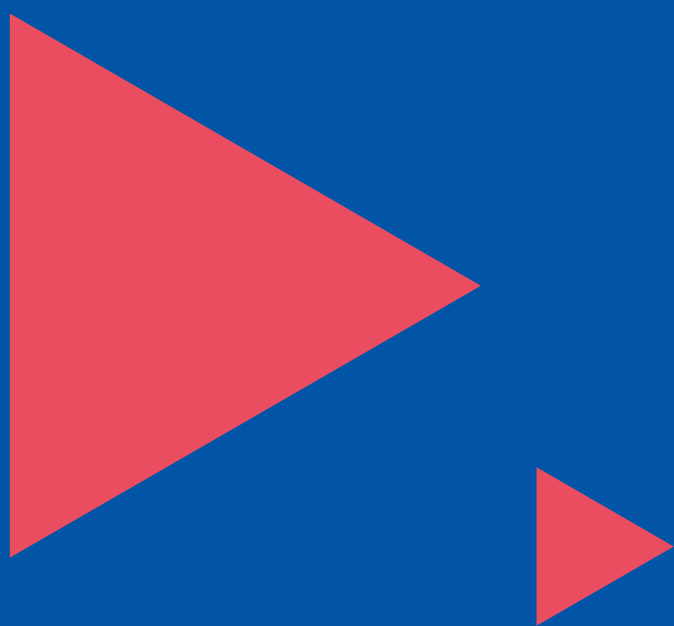
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Introduction



Introduction

1.1 Background

The “Egypt Youth Employment (EYE): Jobs and Private Sector Development in Rural Egypt” Project is a 3-year, Norway-funded project running from 2017 to 2020. A core component of the project is value chain and enterprise development, through which the project aims to promote decent private-sector employment in rural Egypt, making rural areas more attractive to Egyptian youth. This is to be accomplished through both increased opportunities for direct employment created by large private investors and for indirect employment in rural micro, small and medium enterprises (MSMEs) and as small-scale producers along value chains. The project is in the process of identifying value chains/sub-sectors within the rural economies of the governorates where assistance can be provided.

The identification process commenced by conducting preliminary discussions/meetings with key government agencies and other actors (Including development partners’ projects, and private sector) in February 2018 in order to gain insights on which economic sectors, and subsectors would hold a potential to grow if targeted by the planned project. Given the project’s aim and design, the emphasis from the stakeholders was on the agribusiness sector because of the large number of business owners and workers engaged in the sector, potential for growth and employment creation, as well as the feasibility for the project to intervene and stimulate market systems change, among others. Within agribusiness, the dairy sub-sector and the medicinal and aromatic plants (MAP) sub-sector were identified as the most relevant subsectors/value chains.¹

Within this context, this study commissioned by the International Labour Organization (ILO) verifies the selection of the sub-sectors, and presents the findings of a Rapid Market Assessment (RMA) conducted to further identify the potential interventions in the selected sub-sectors to achieve the objectives of the project.

1.2 Methodology

The ultimate objective of this study is to verify the selection of the dairy and MAP value chains and their potential to generate decent private-sector employment in rural areas. These value chains were initially identified on the basis of qualitative research (interviews and meetings with the relevant stakeholders) conducted by the ILO. This study objectively evaluates this selection using both quantitative and qualitative methods, and presents the findings of a RMA for the two chosen sectors. As per the Terms of Reference, the RMA aims to generate a deeper understanding of these value chains and their potential impact on identified target groups and collect information to enable the project to

- a. make an informed decision about the potential and relevance of the identified sub-sectors and value chains, and to ascertain whether interventions to develop these sectors would be feasible;
- b. better target enterprise and business/entrepreneurship development interventions in order to allow businesses to tap into existing market demand and increase economic opportunities for employment, particularly through value addition initiatives;
- c. develop initial assessment about the underlying constraints in the market systems and identify possible sectoral interventions that can help target groups to capture economic opportunities in the sub-sectors and value chains with strong potential for inclusive growth and systemic change.

¹ Subsectors and Value-Chains are used interchangeably in this section

1.2.1 Analysis of Egypt's economic sectors

This section covers the findings of a quantitative study conducted to assess the performance of 12 economic sectors² with regards to their contribution to growth and employment, gender and youth inclusion, and government priority. The study benefitted from the sectors' prioritization report by Dcode EFC in 2016, by updating the existing information and including additional criteria and variables in determining the best performing sectors. A quantitative ranking of the sectors' performance was conducted based on a weighting scheme, which corresponded with the project priorities.

1.2.2 Analyzing subsectors and identifying value chains

From the three priority economic sectors identified (Wholesale & Retail Trade, Agriculture, and Construction & Building), sub-sectors were selected on the basis of; qualitative research including interviews with stakeholders and experts, a literature review and information from secondary sources and available studies and programmes/projects which had adopted a value chain approach in their interventions. This selection was further verified quantitatively.

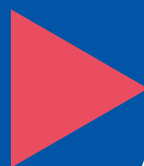
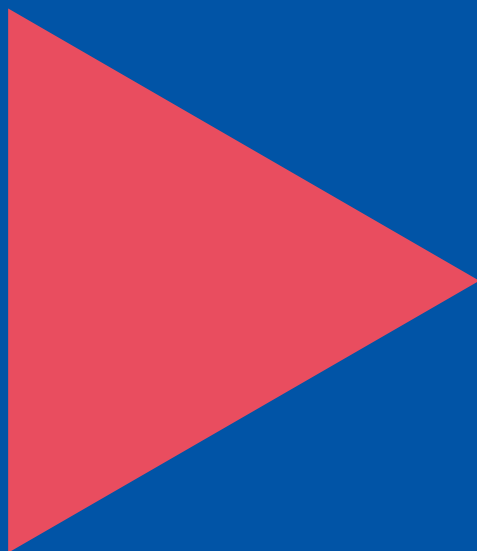
1.2.3 Value chains prioritization

Ten value chains with forward and backward linkages and high potential for employment generation and women and youth inclusion were recommended based on the findings from the qualitative and quantitative research. From the 10 value-chains, dairy and medicinal and aromatic plants (MAP) were identified as of the highest potential due to their relevance to the objectives of the ILO project.

1.2.4 Value chains Analysis; identifying constraints, and interventions

The two prioritized value chains were studied conducted to gain a deeper insight in potential for employment creation, and to identify market constraints that hinder businesses in being profitable producers and job creators.

² Sectors grouped according to type of activity (e.g. Manufacturing, agriculture, services...etc.)



**An overview of
various economic
sectors**



An overview of various economic sectors

This section relies on official data to identify the highest ranked economic sectors (12 high-level sectors) according to their; 1) contribution to economic growth, 2) growth volatility (to measure the stability of the sector through the years), 3) investment efficiency, 4) contribution to employment, 5) female share in total employment, 6) gender coefficient for hourly wage, 7) youth employment. These criteria correspond to the objectives of the project. They have been assigned equal weight, and are based on the available data sets. Below are the methodology and findings of each criterion used, with the final rankings of sectors presented at the end of the section.

2.1 Contribution to Economic Growth and Average Growth

2.1.1 Methodology: Contribution to Economic Growth and Average Growth

- 1.0** Gathered sectors' real value-added (by the private sector only) from FY 2005/2006 to 2009/10 (high growth period) and from 2010/11 to 2014/15 (low growth period) as well as the most recent years (2015/16, 2016/17 and 2017/18)
- 2.0** Identified the most relevant sectors:³
 - a. Agriculture⁴
 - b. Manufacturing
 - c. Wholesale & Retail Trade
 - d. Construction & Building
 - e. Telecommunications
 - f. Financial Intermediation
 - g. Transport & Warehousing
 - h. Real Estate
 - i. Tourism
 - j. Extractive Industries
 - k. Electricity
 - l. Social Services⁵
- 3.0** Defined sectors with "high growth potential" as those with low volatility, high 5-year average annual real growth and/or high 5-year average contribution to real growth, relative to other sectors
- 4.0** Calculated sectors' share of GDP for FYs 2004/05, 2005/06, 2006/07, 2007/08/, 2008/09, 2009/10, 2010/11, 2011/12, 2012/13, 2013/14, 2014/15, 2015/16, 2016/17 and 2017/18
- 5.0** Calculated sectors' annual real growth rates for FYs 2005/06, 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/12, 2012/13, 2013/14, 2014/15, 2015/16, 2016/17 and 2017/18

³ Sectors with no significant private sector contribution (Water, Water waste, Suez Canal, social insurance, general government)

⁴ Agricultural sector includes agriculture, hunting and forestry

⁵ Social services sector includes education, health and personal services

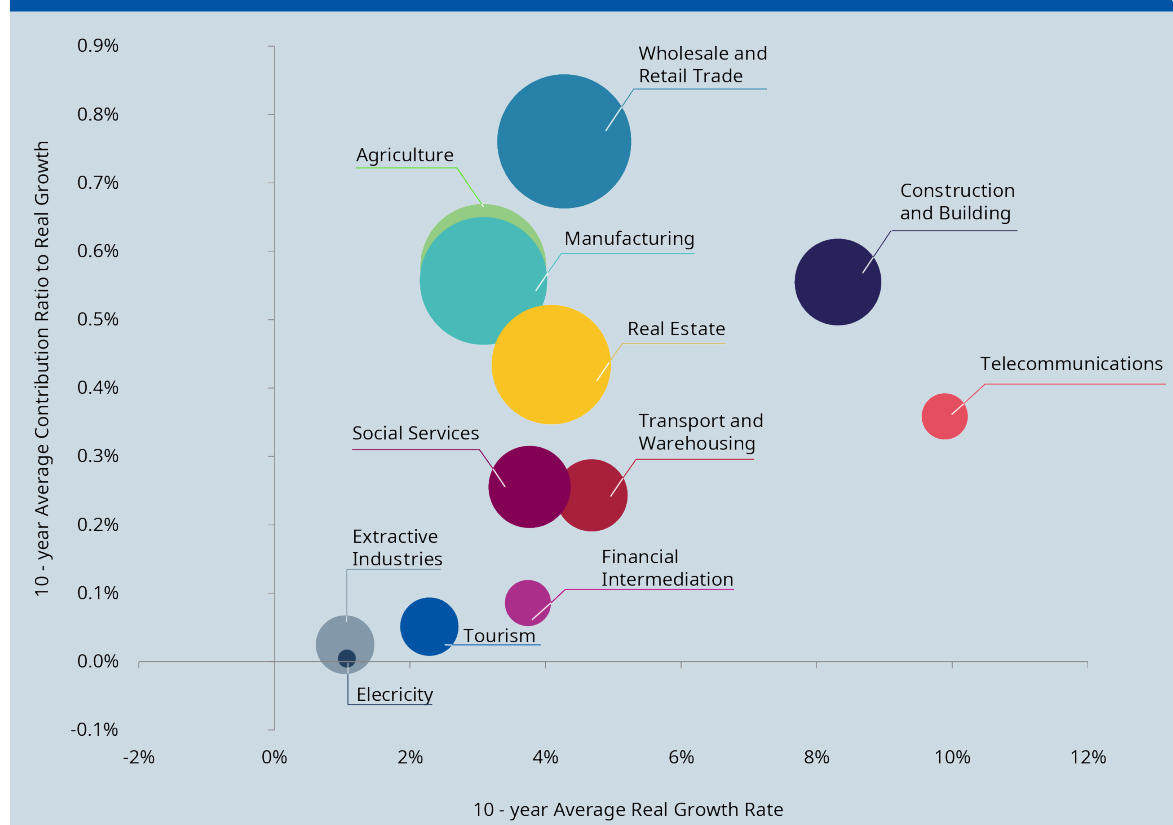
2.1.1 Methodology: Contribution to Economic Growth and Average Growth

- 6.0 Calculated sectors' contribution to growth in FYs 2005/06, 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/12, 2012/13, 2013/14 and 2014/15, 2015/16, 2016/17 and 2017/18
- 7.0 Calculated 5-year average annual real growth and contribution to real growth for each sector during high growth period (FY 2005/06-2009/10) and low growth period (FY 2010/11-2014/15)
- 8.0 Charted the results for the 10-year duration (FY 2008/09-2017/18) using a 3-dimensional bubble chart (Chart 1)
X Axis: Private sectors' 10 year average annual real growth,
Y Axis: Private sectors' 10 year average annual contribution to real growth,
Size of the bubble: the relative weight of the sector in real GDP in 2017/18
- 9.0 Repeated the above step for high and low growth periods
- 10.0 Re-generated (Chart 3) after eliminating sectors with 5-year negative average growth (electricity, extractive industries and tourism)
- 11.0 Divided the adapted chart (Chart 4) into four quadrants (Q)
Q1: Low growth/High contribution
Q2: High growth/High contribution
Q3: High growth/Low contribution
Q4: Low growth/Low contribution

2.1.2 Findings

2.1.2.1 Total (10-year) duration

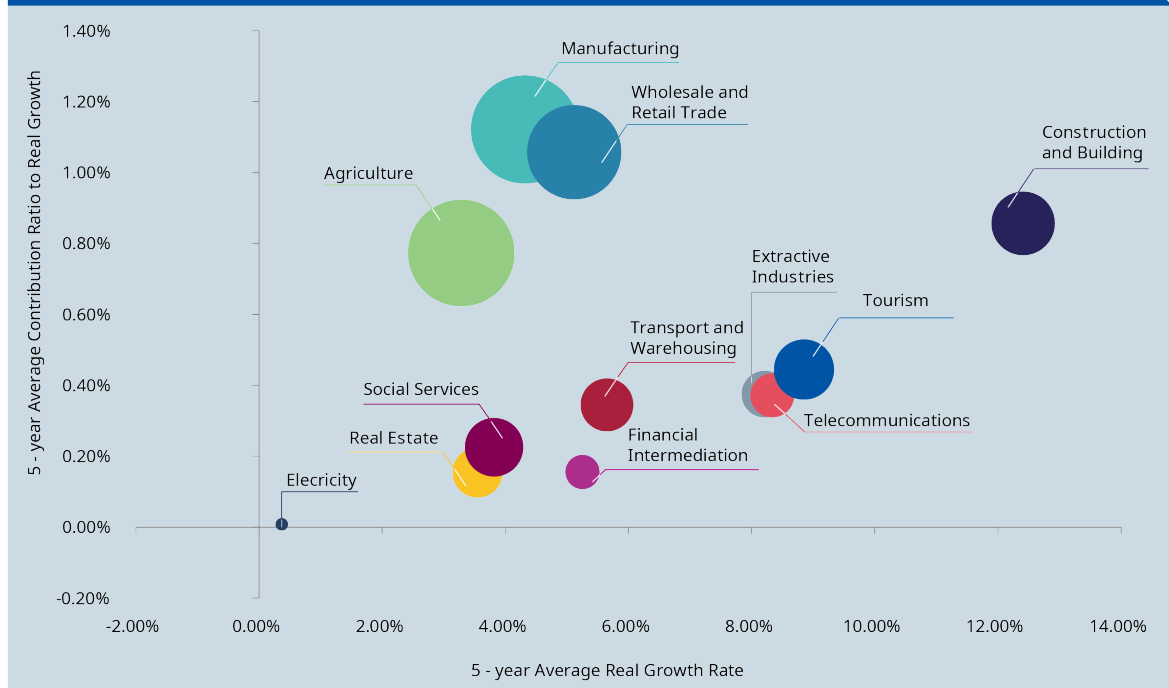
Chart 1: 10 Year Sectoral Growth Profile During The 10 Year Duration (FY 2008/09-2017/18)



- ▶ Telecommunications and Construction & Building had the highest average annual real growth
- ▶ Wholesale & Retail Trade, Agriculture, Manufacturing and Construction & Building and Agriculture had the highest average annual contribution to real growth
- ▶ All selected sectors witnessed positive growth and contribution to Real GDP with Electricity and Extractive Industries being the worst performing sectors

2.1.2.2 High Growth Period

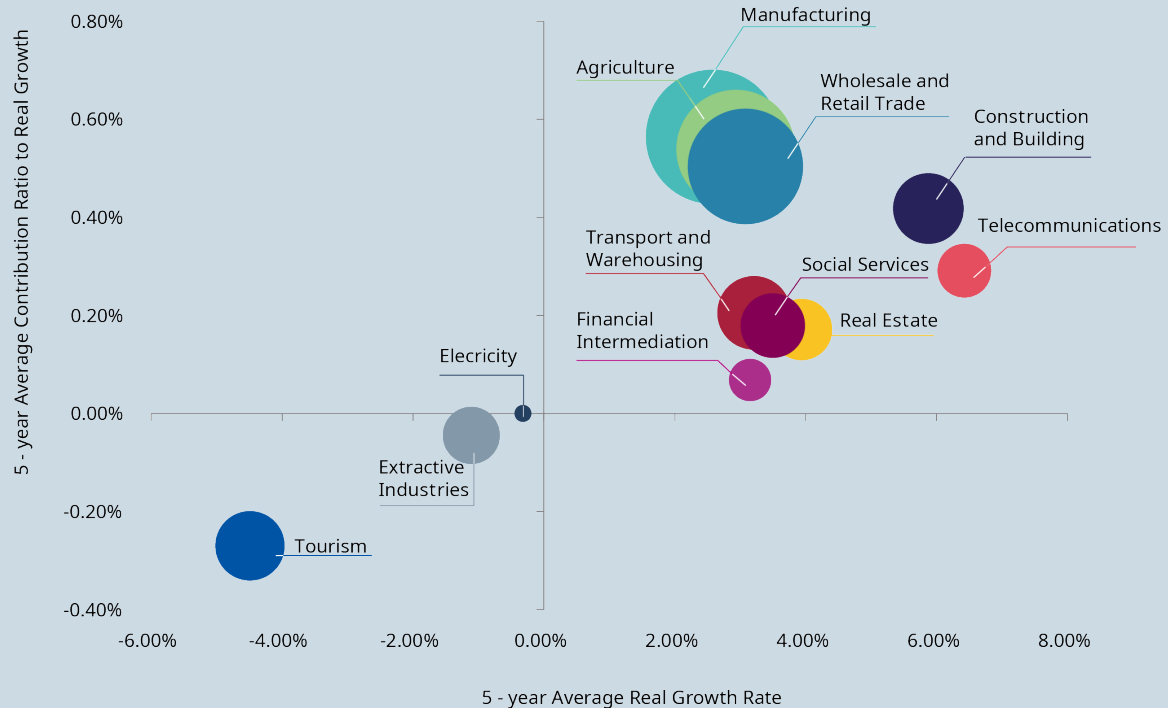
Chart 2: 5 Year Sectoral Growth Profile During High Growth Period (FY 2005/06-2009/10)



- ▶ Construction & Building, Tourism, Telecommunication and Extractive Industries had the highest average annual real growth
- ▶ Manufacturing, Wholesale & Retail Trade, Construction & Building and Agriculture had the highest average annual contribution to real growth
- ▶ All selected sectors witnessed positive growth and contribution to Real GDP with Electricity being the worst performing sector

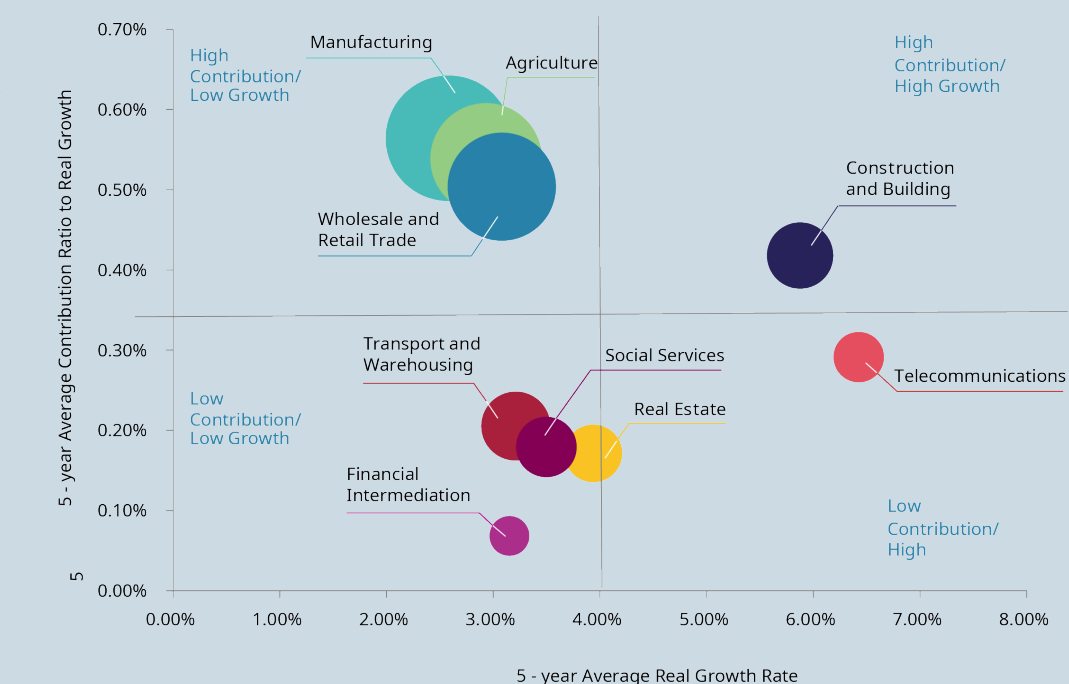
2.1.2.3 Low Growth Period

Chart 3: 5 Year Sectoral Growth Profile During Low Growth Period (FY 2010/11-2014/15)



- ▶ Telecommunications, Construction & Building, Real Estate, social had the highest average annual real growth
- ▶ Agriculture and Wholesale & Retail Trade and Manufacturing had the highest average annual contribution to real growth
- ▶ Extractive industries and Tourism and Electricity had negative average annual real growth

Chart 4: 5 Year Sectoral Growth Profile During Low Growth Period (FY 2010/11-2014/15) After Excluding Contracting Sectors



- ▶ 3 sectors (Manufacturing, Agriculture and Wholesale & Retail Trade) fell in Q1 due to their high weight in GDP
- ▶ Only Construction & Building fell in Q2 due to its high growth on average despite its average weight in GDP
- ▶ Telecommunication, Real Estate and Transport & Warehousing fell in Q3 due to their low contribution to growth
- ▶ 3 sectors (Financial Intermediation, Social Services and Electricity) fell in Q4 due to relatively lower growth, on average, and smaller weights in GDP

2.2 Sectors' volatility (coefficient of variation)

2.2.1 Methodology Sectors' volatility (coefficient of variation)	1.0	Calculated 5-year average annual real growth for each sector during the 10 year duration (FY 2008/09-2017/18)
	2.0	Calculated the standard deviation per sector for the above mentioned duration
	3.0	Computed the coefficient of variation for each sector during the same duration by dividing the sector' standard deviation from its annual average real growth during the specified period
	4.0	Ranked the sectors based on the absolute value of the coefficient of variation for sectoral real growth over the 10 years duration; FY 2008/09-FY 2017/18 (Table 1)

2.2.2 Findings

2.2.2.1 10 Year Duration

Table 1: 6 most volatile key sectors (2008/09-2017/18)*				
Sector	Min Growth	Max Growth	Average Growth	Coefficient of Variation
Tourism	-28.3% (2015/16)	37.7% (2017/18)	2.3%	7.97
Extractive Industries	-4.7% (2015/16)	11.7% (2008/09)	1.0%	4.41
Electricity	-8.1% (2010/11)	6.2% (2015/16)	1.1%	3.65
Manufacturing	-1.0% (2010/11)	5.7% (2013/14)	3.1%	0.71
Construction & Building	3.3% (2011/12)	13.4% (2009/10)	8.3%	0.41
Wholesale and Retail Trade	1.5% (2010/11)	6.1% (2009/10)	4.3%	0.38

Table 2: 6 least volatile key sectors (2008/09-2017/18)*

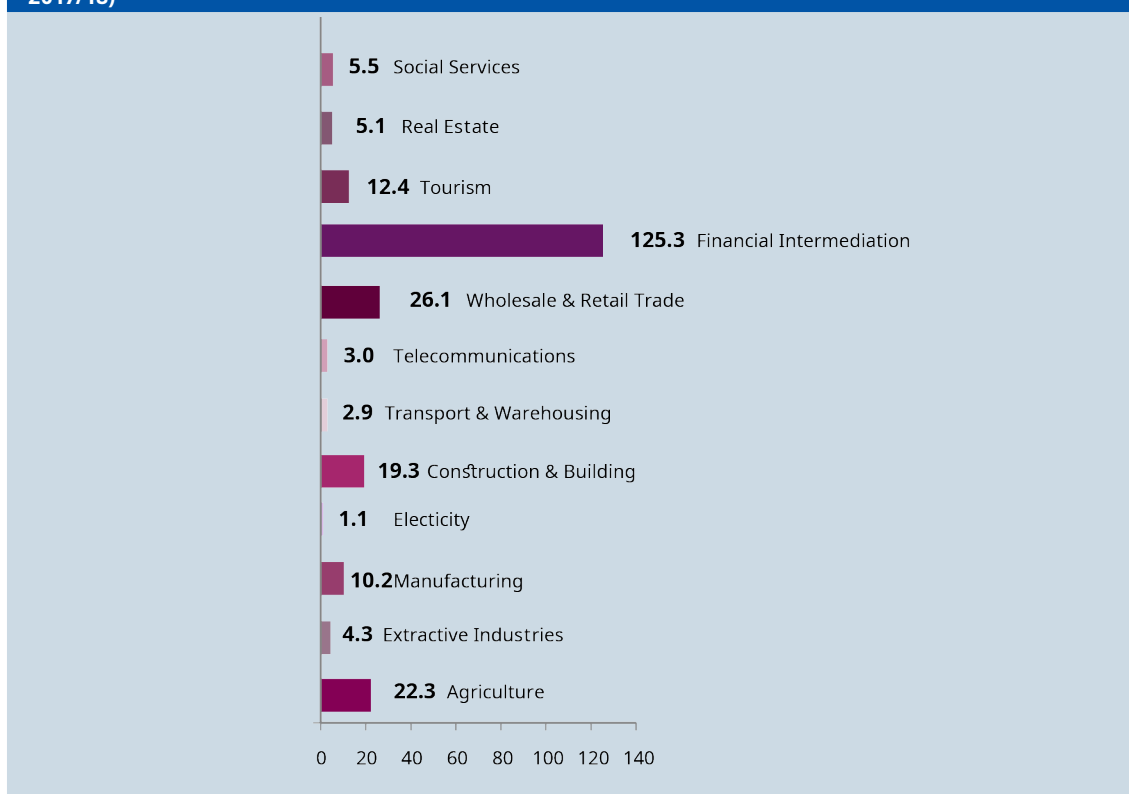
Sector	Min Growth	Max Growth	Average Growth	Coefficient of Variation
Agriculture	2.7% (2010/11)	3.5% (2009/10)	3.1%	0.06
Social Services	2.7% (2010/11)	5.0% (2009/10)	3.8%	0.22
Real Estate	3.2% (2011/12)	6.2% (2013/14)	4.1%	0.23
Financial Intermediation	1.8% (2011/12)	5.7% (2013/14)	3.7%	0.33
Transport and Warehousing	1.7% (2010/11)	7.1% (2009/10)	4.7%	0.35
Telecommunications	5.7% (2014/15)	16.1% (2009/10)	9.9%	0.37

2.3 Identifying sectors' investment efficiency

2.3.1 Value added- methodology	1.0	Calculated the value of cumulative investments per sector between 2008/09 and 2017/18
	2.0	Calculated the cumulative nominal value added per sector between 2008/09 and 2017/18
	3.0	Calculated each sector's value added per 1 EGP of investments
	4.0	harted the results in a column chart (chart 5)

2.3.2 Findings

Chart 5: Investment Efficiency (value added per 1 EGP of investments) 10 Year Average (2008/09-2017/18)



2.4 Identifying sectors with highest potential for employment creation

2.4.1 Sectors' contribution to employment growth- methodology

- 1.0 Calculated the share of total employment for each sector in 2010 and 2017
- 2.0 Calculated the employment growth between 2010 and 2017 for each sector
- 3.0 Calculated each sector's contribution to aggregate employment growth between 2010 and 2017
- 4.0 Charted the results using a 3-dimensional bubble chart (Chart 6)
X axis: employment percentage growth from 2010 to 2017
Y axis: contribution to aggregate employment growth from 2010 to 2017
Size of the bubble: sector's share of aggregate employment in 2017
- 5.0 Calculated net employment creation per sector between 2010 and 2017 by subtracting total employment estimates for the former from the latter
- 6.0 Real Estate was an outlier and was excluded for proper visualization in (chart 7)

Chart 6: Sectoral Employment Growth 2010-2017

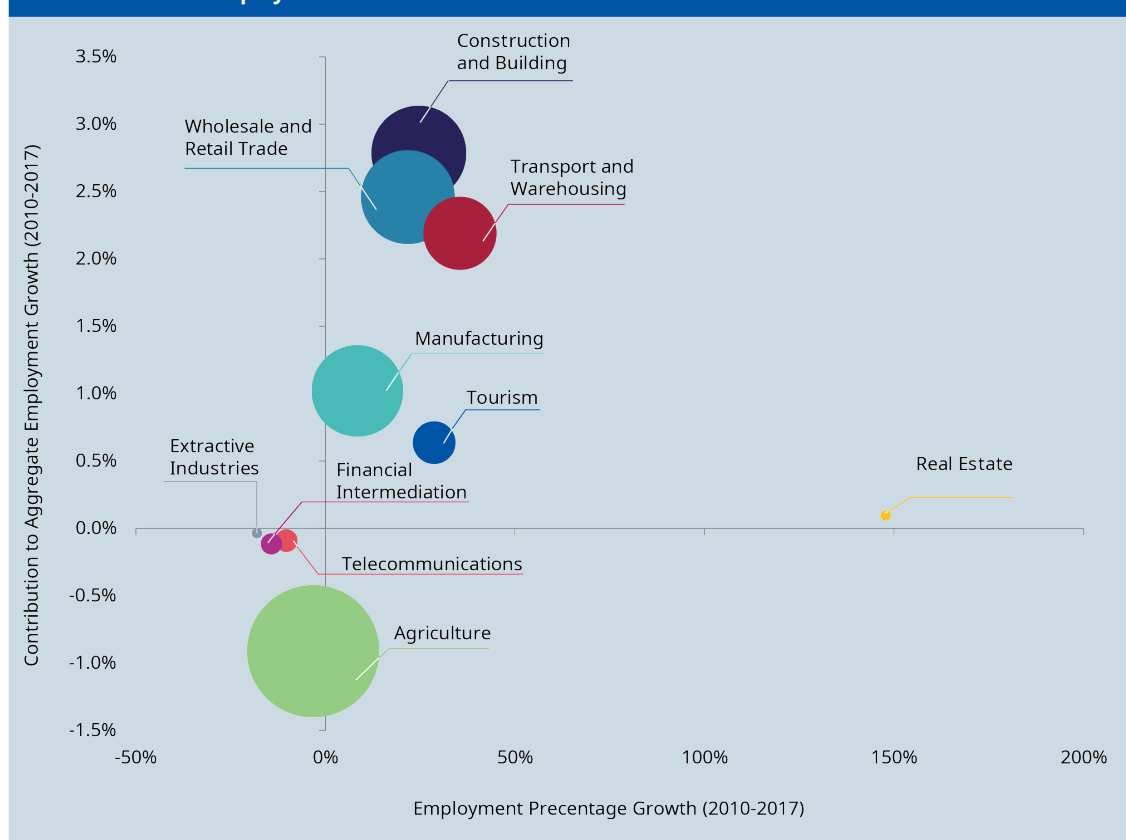
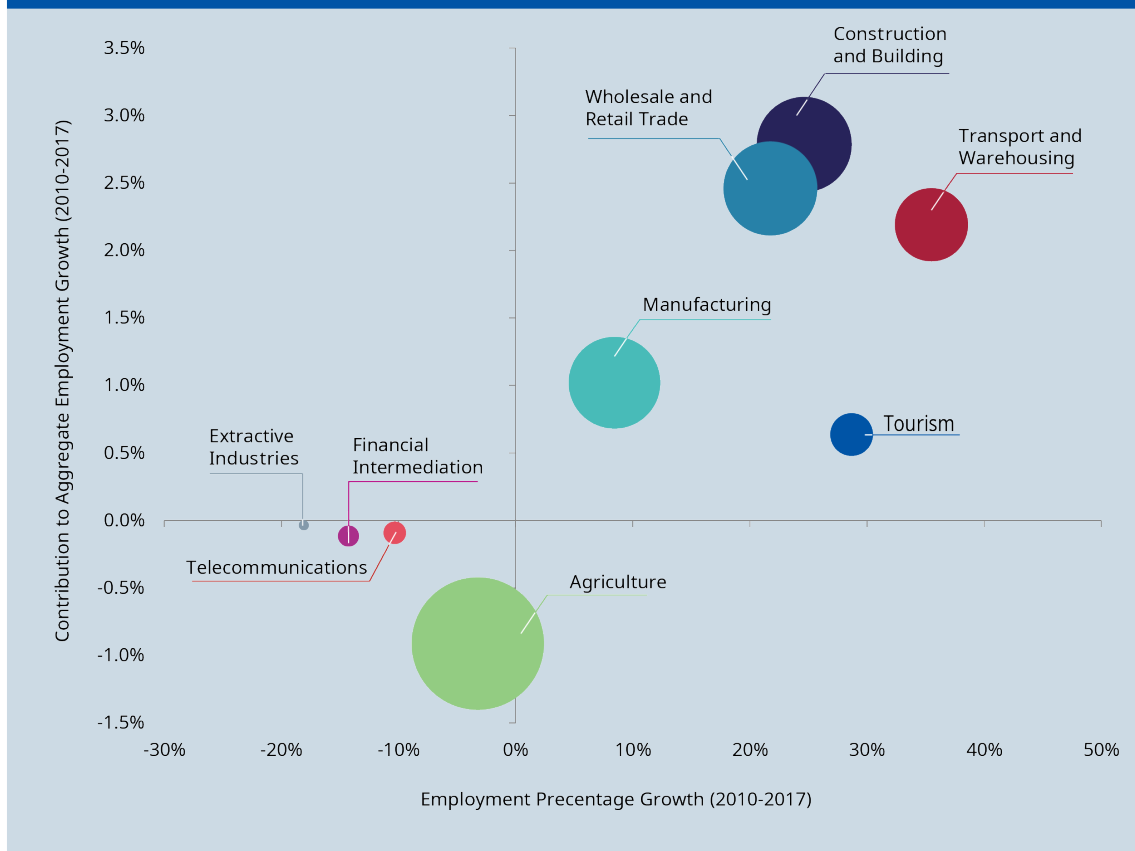


Chart 7: Sectoral Employment Growth 2010-2017



► Between 2010 and 2017, the following 7 sectors contributed positively to employment growth; ranked from highest to lowest:

1. Construction & Building
2. Wholesale & Retail Trade
3. Transportation & Warehousing
4. Manufacturing
5. Social Services
6. Tourism
7. Real Estate

► Between 2010 and 2017, the extractive industries sector had zero contribution to employment growth; whereas 4 sectors contributed negatively to employment growth; ranked lowest to highest:

1. Agriculture
2. Electricity
3. Financial Intermediation
4. Telecommunication

2.5 Identifying labour market gender differences

2.5.1 Female employment in different sectors- methodology	1.0	Compiled estimates of total and female employment per sector in 2010, 2014 and 2017 ⁶
	2.0	Calculated female employment as percentage of total employment for each sector in 2010, 2014 and 2017

2.5.2 Findings

Table 3: Estimates of female employment (as % of total employment) per sector 2010, 2014 and 2017⁷

Sector	2010	2014	2017
Agriculture	31.4%	32.5%	30.5%
Extractive Industries	4.3%	1.7%	2.9%
Manufacturing	7.8%	7.5%	10.1%
Construction & Building	0.6%	0.6%	0.7%
Wholesale & Retail Trade	0.1%	12.8%	15.9%
Transportation & Warehousing	2.1%	1.6%	1.1%
Telecommunications	19.3%	21.3%	21.9%
Financial Intermediation	25.6%	24.2%	26.3%
Real Estate	1.3%	8.2%	22.8%
Tourism	4.0%	5.3%	4.6%
Electricity	8.6%	6.8%	6.5%
Social Services	48.9%	51.2%	55.2%

► The 6 sectors with highest female participation in 2017; ranked highest to lowest:

1. Social Services (55.2%)
2. Agriculture (30.5%)
3. Financial Intermediation (26.3%)
4. Real Estate (22.8%)
5. Telecommunications (21.9%)
6. Wholesale & Retail Trade (15.9%)

► The 6 sectors with lowest female participation; ranked lowest to highest:

1. Construction & Building (0.7%)
2. Transport & Warehousing (1.1%)
3. Extractive Industries (2.9%)

⁶ Estimates by CAPMAS

⁷ Inconsistency has been observed with regards to estimates by CAPMAS

4. Tourism (4.6%)
5. Electricity (6.5%)
6. Manufacturing (10.1%)

2.6 Gender wage differentials in the different sectors

2.6.1 Gender wage differentials in the different sectors methodology	1.0	Compiled data on estimated average male and female weekly wage by sector from 2011 to 2016 (Table 4)
	2.0	Calculated the female wage differential (average weekly female wage as percentage of average weekly male wage) by sector from 2011 to 2016
	3.0	Computed the average female wage differential between 2011 and 2016 excluding extreme values
	4.0	Charted the results in a column chart (Chart 8)

2.6.2 Findings

Table 4: Estimates of Female Average Weekly Wage (2011-2016) in EGP ⁸							
Sector	2011	2012	2013	2014	2015	2016	Average (excluding extreme values) ⁹
Manufacturing	230	258	311	354	372	503	324
Agriculture	250	279	310	437	508	656	384
Wholesale & Retail Trade	411	57	415	459	792	808	519
Construction & Building	382	56	492	609	794	1,009	569
Telecommunications	617	934	997	-	707	730	747
Financial Intermediation	1,421	1,626	1,701	2,097	2,167	2,367	1,898
Transport & Warehousing	531	684	703	712	828	919	732
Real Estate	438	239	381	488	471	556	445
Tourism	266	289	321	373	388	407	343
Extractive Industries	1,074	624	-	1,170	2,123	2,150	1,248
Electricity	774	897	1,115	1,099	1,168	1,154	1,066
Social Services	364	508	551	552	649	850	565

► The highest paying six sectors for females; ranked from highest to lowest, are:

1. Financial Intermediation (1,898)
2. Extractive Industries (1,248)
3. Electricity (1,066)
4. Telecommunications (747)

⁸ Estimates by CAPMAS

⁹ Highest and lowest observations were excluded due to observed high variance and inconsistency

5. Transport & Warehousing (732)

6. Construction & Building (569)

► The lowest paying six sectors for females; ranked from lowest to highest, are:

1. Social Services (283)

2. Manufacturing (324)

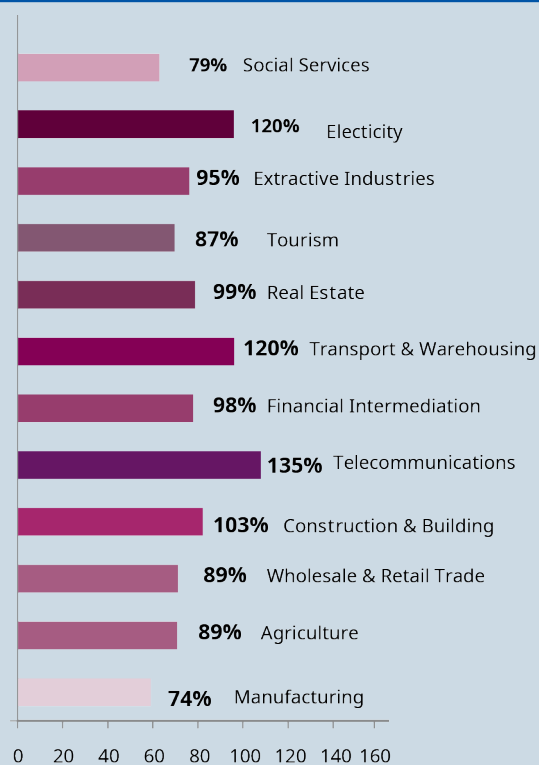
3. Tourism (343)

4. Agriculture (384)

5. Real Estate (445)

6. Wholesale & Retail Trade (519)

Chart 8: Average Female Wage (% of average male wage) 2011-2016



► Females; on average, get paid higher than males in four sectors; ranked highest to lowest:

1. Telecommunications (135%)

2. Transport & Warehousing (120%)

3. Electricity (120%)

4. Construction & Building (103%)

► Females; on average, get paid lower than males in eight sectors; ranked lowest to highest:

1. Manufacturing (74%)

2. Social Services (79%)

3. Tourism (87%)

4. Agriculture (89%)
5. Wholesale & Retail Trade (89%)
6. Extractive Industries (95%)
7. Financial Intermediation (98%)
8. Real Estate (99%)

2.7 Working hours gender differentials in different sectors

2.7.1 working hours gender differentials in different sectors methodology	1.0	Compiled data on estimated average working hours per week by sector from 2011 to 2016 (Table 5)
	2.0	Computed the average female weekly working hours ¹⁰ for the period 2011-2016
	4.0	Computed the average female weekly working hours; as a percentage of average male working hours, from 2011-2016
	5.0	Charted the results in a column chart (Chart 9)

2.7.2 Findings

Table 5: Estimates of Female Average Weekly Working Hours (2011-2016)							
Sector	2011	2012	2013	2014	2015	2016	Average Excluding Zeros
Manufacturing	57	57	58	60	56	57	58
Agriculture	62	59	60	60	61	64	61
Wholesale & Retail Trade	58	56	54	55	56	56	56
Construction & Building	52	56	55	62	56	56	56
Telecommunication	62	70	59	-	49	53	59
Financial intermediation	54	60	56	65	58	53	58
Transport & Warehousing	58	56	54	59	57	54	56
Real Estate	53	60	60	57	57	49	56
Tourism	57	60	57	56	60	59	58
Extractive Industries	53	-	-	62	49	57	55
Electricity	52	52	44	55	48	54	51
Social Services	55	54	56	61	55	54	56

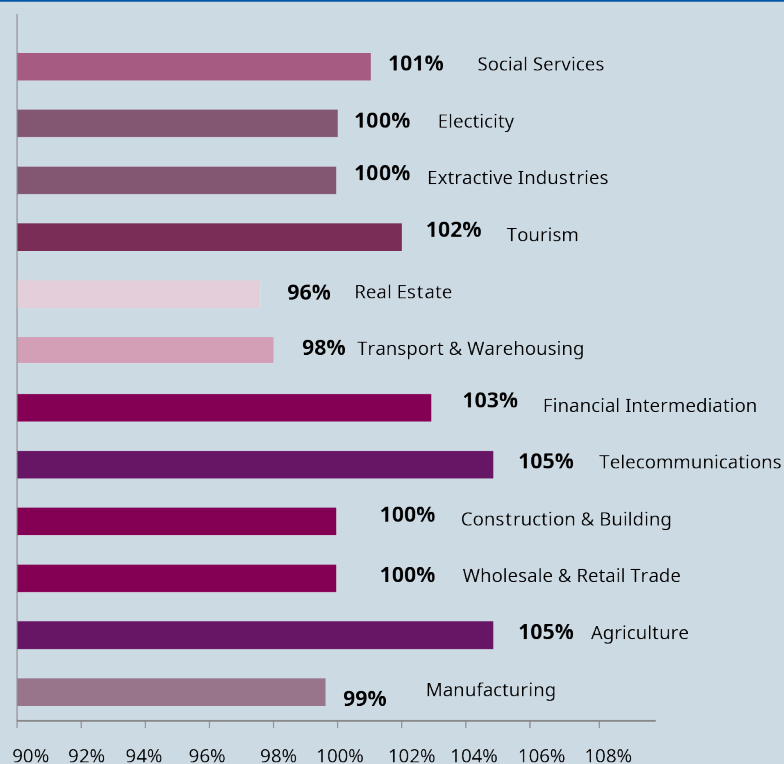
► Sectors ranked by average weekly female working hours; from highest to lowest:

1. Agriculture (61)
2. Telecommunications (59)

¹⁰ Excluding zeros (N/A data)

3. Tourism (58)
4. Financial Intermediation (58)
5. Manufacturing (58)
6. Transport & Warehousing (56)
7. Construction & Building (56)
8. Real Estate (56)
9. Wholesale & Retail Trade (56)
10. Social Services (56)
11. Extractive Industries (55)
12. Electricity (51)

Chart 9: Average Female Working Hours (% of male working hours), 2011-2016



► Sectors were females; on average, work at least as much as men; ranked highest to lowest:

1. Agriculture (105%)
2. Telecommunications (105%)
3. Financial Intermediation (103%)
4. Tourism (102%)
5. Social Services (101%)
6. Wholesale & Retail Trade (100%)
7. Construction & Building (100%)

8. Extractive Industries (100%)

9. Electricity (100%)

► Sectors were females; on average, work less than men, ranked lowest to highest:

1. Real Estate (96%)

2. Transport & Warehousing (98%)

3. Manufacturing (99%)

2.8 Wage/hour gender coefficient in different sectors

2.8.1 Wage/hour gender coefficient in different sectors methodology

1.0

Calculated the wage/hour gender coefficient; defined as female wage per hour divided by male wage per hour, per sector

2.8.2 Findings

Chart 10: Average Female Working Hours (% of male working hours), 2011-2016



► Females are on average, relatively better or equally compensated than males (coefficient greater than or equal 1) in five sectors; listed from highest to lowest:

1. Telecommunications (1.28)
2. Transport & Warehousing (1.23)
3. Electricity (1.20)
4. Real Estate (1.03)
5. Construction & Building (1.02)

► Females are compensated on average, relatively lower than males (coefficient less than 1 in seven sectors; listed from lowest to highest:

1. Extractive Industries (0.96)
2. Financial Intermediation (0.95)
3. Wholesale & Retail Trade (0.89)
4. Tourism (0.86)
5. Agriculture (0.84)
6. Social Services (0.78)
7. Manufacturing (0.74)

2.9 Identifying labour market youth employment differences

2.9.1 Identifying labour market youth employment differences methodology	1.0	Gathered sectoral data from Panel Survey of Young People in Egypt (SYPE) 2014 on youth employment aged (15-29) in 2014
	2.0	Charted the results in pie chart (Chart 11)

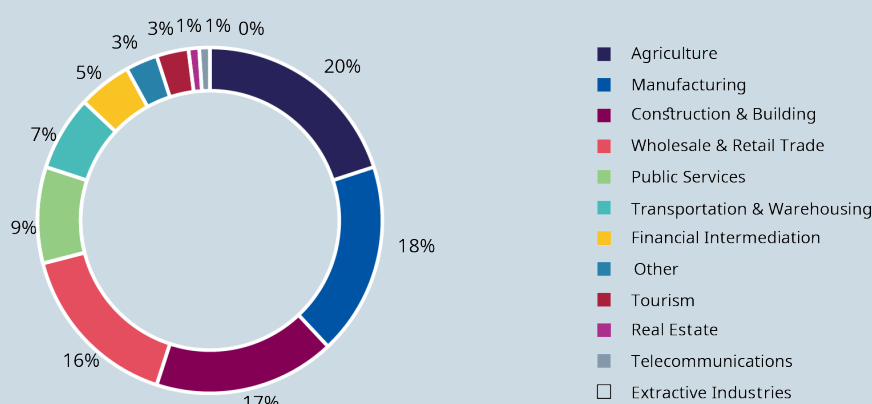
2.9.2 Findings & limitations

► The following combinations of sectors were grouped into one category:

1. Wholesale & Retail Trade with Tourism
2. Manufacturing with Extractive Industries
3. Transportation & Warehousing and Telecommunication
4. Real Estate and Financial Intermediation Findings

To counter for this limitation, Dcode EFC assumed the sectoral share in youth employment to be the same as sectoral share in total employment (as seen in Chart 9).

Chart 11: Youth Aged 15-29 Employment Across Economic Sector in 2014



2.10 Assigning scores for sectors across the different criteria

2.10.1 Assigning scores for sectors across the different criteria methodology

- 1.0** The distribution for each criterion was divided into 5 quintiles
- 2.0** Each sector was assigned a score; between 1 and 5, based on which quintile it falls in (example: sectors falling in the highest quintile are assigned a score of 5 and sectors falling in the lowest quintile are assigned a score of 1)

2.10.2 Findings

2.10.2.1 Growth Potential

2.10.2.1.1 Contribution to economic growth

Sector	10 Year Average Contribution	Score
Electricity	0.00%	1
Extractive Industries	0.02%	1
Tourism	0.05%	1
Financial Intermediation	0.09%	1
Transport and Warehousing	0.24%	2
Social Services	0.26%	2
Telecommunications	0.36%	3
Real Estate	0.43%	3
Construction and Building	0.56%	4
Manufacturing	0.56%	4

Sector	10 Year Average Contribution	Score
Agriculture	0.58%	4
Wholesale and Retail Trade	0.76%	5

2.10.2.1.2 Coefficient of variation

Sector	10 Year Average Growth	Score
Agriculture	0.06	5
Social Services	0.22	5
Real Estate	0.23	5
Financial Intermediation	0.33	5
Transport and Warehousing	0.35	5
Telecommunications	0.37	5
Wholesale and Retail Trade	0.38	5
Construction and Building	0.41	5
Manufacturing	0.71	5
Electricity	3.65	3
Extractive Industries	4.41	3
Tourism	7.97	1

2.10.2.2 Investment Efficiency

Sector	10 Year Average Growth	Score
Electricity	1.1	1
Transport & Warehousing	2.9	1
Telecommunication	3.0	1
Extractive Industries	4.3	1
Real Estate	5.1	1
Social Services	5.5	1
Manufacturing	10.2	1
Tourism	12.4	1
Construction & Building	19.3	1
Agriculture	22.3	1
Wholesale & Retail Trade	26.1	2
Financial Intermediation	125.3	5

2.10.2.3 Employment

2.10.2.3.1 Contribution to total employment

Sector	Contribution to Employment Growth (2010-2017)	Score
Agriculture	-0.91%	1
Electricity	-0.26%	1
Financial Intermediation	-0.12%	2
Telecommunications	-0.09%	2
Extractive Industries	-0.04%	2
Real Estate	0.10%	2
Tourism	0.64%	3
Social Services	0.70%	3
Manufacturing	1.02%	3
Transportation & Warehousing	2.19%	5
Wholesale & Retail Trade	2.46%	5
Construction & Building	2.79%	5

2.10.2.4 Gender

2.10.2.4.1 Female Share in total employment

Sector	Female employment % total employment	Score
Social Services	55.17%	5
Agriculture	30.50%	3
Financial Intermediation	26.33%	3
Real Estate	22.84%	3
Telecommunications	21.86%	2
Wholesale & Retail Trade	15.94%	2
Manufacturing	10.14%	1
Electricity	6.53%	1
Tourism	4.61%	1
Extractive Industries	2.86%	1
Transportation & Warehousing	1.05%	1
Construction & Building	0.70%	1

2.10.2.4.2 Wage/hour gender coefficient

Sector	Female wage per hour divided by male wage per hour	Score
Telecommunications	1.28	5
Transport & Warehousing	1.23	5
Electricity	1.20	5
Real Estate	1.03	3

Sector	Female wage per hour divided by male wage per hour	Score
Construction & Building	1.02	3
Extractive Industries	0.96	2
Financial Intermediation	0.95	2
Wholesale & Retail Trade	0.89	2
Tourism	0.86	2
Agriculture	0.84	1
Social Services	0.78	1
Manufacturing	0.74	1

2.10.2.5 Youth

Sector	% of Total Youth Employment	Score
Agriculture	19.7	5
Manufacturing	18.4	5
Construction & Building	16.7	5
Wholesale & Retail Trade	16.4	5
Public Services	9.2	3
Transportation & Warehousing	6.7	3
Financial Intermediation	4.5	2
Tourism	3.3	1
Other	3.1	1
Real Estate	0.9	1
Telecommunications	0.7	1
Extractive Industries	0.4	1

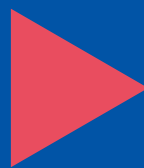
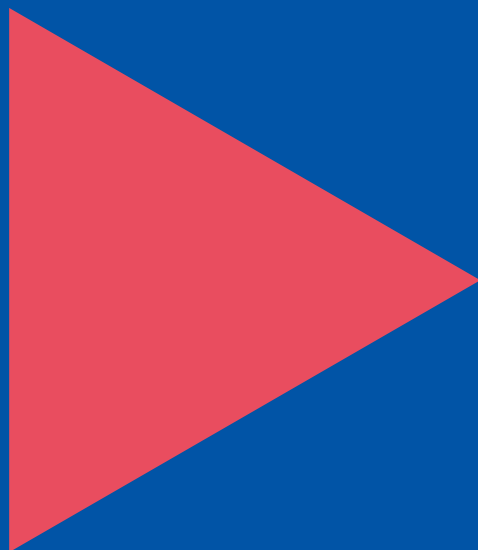
2.11 Cross-mapping of sectors across weighted criteria

Weights	25%	15%	5%	10%	25%	5%	15%		
Sectors	Contribution to Growth	Growth Volatility	Investment Efficiency	Contribution to Employment	Female Share in Total Employment	Wage per Hour Gender Coefficient	Youth Employment	Weighted average score	Overall Ranking
Wholesale & Retail Trade	5	5	2	5	2	2	5	3.95	1
Agriculture	4	5	1	1	3	1	5	3.45	2
Construction & Building	4	5	1	5	1	3	5	3.45	3
Social Services	2	5	1	3	5	1	3	3.35	4
Manufacturing	4	5	1	3	1	1	5	3.15	5
Real Estate	3	5	1	2	3	3	1	2.80	6
Transport & Warehousing	2	5	1	5	1	5	3	2.75	7
Telecommunications	3	5	1	2	2	5	1	2.65	8
Financial Intermediation	1	5	5	2	3	2	2	2.60	9
Electricity	1	3	1	1	1	5	1	1.50	10
Extractive Industries	1	3	1	2	1	2	1	1.45	11
Tourism	1	1	1	3	1	2	1	1.25	12

Sectors' Overall Ranking

Sector	Overall Ranking
Wholesale & Retail Trade	1
Agriculture	2
Construction & Building	3
Social Services	4
Manufacturing	5
Real Estate	6
Transport & Warehousing	7
Telecommunications	8
Financial Intermediation	9
Electricity	10
Extractive Industries	11
Tourism	12

As can be seen from the table, the three highest-ranking sectors are (1) wholesale and retail trade, (2) agriculture, and (3) construction and building. From the three highest sectors, agriculture and thus agri-business is of most relevance to the aim of the project. In 2017/18, the agriculture sector's share of GDP reached 16.6%. Between 2008/09 and 2017/18, its share of real GDP averaged at 18.2%. The sector also held the highest average annual contribution to real growth after the wholesale and retail trade sector during the same period. In addition, among all sectors, agricultural is the least volatile in terms of growth, therefore resilient to economic downturns. The sector grew at an average rate of 3.1% between 2008/09 and 2017/18, with a minimum growth of 2.7% in 2010/11 and a maximum growth of 3.5% in 2009/10. The agricultural sector employs 25% of Egypt's total workforce (in 2017) and is ranked as the first among all other sectors. Furthermore, the sector is the second highest in female employment participation (30.5% in 2017) after the social services sector (55.2%). Due attention is to be paid to both primary agriculture as well as downstream processing industries for a comprehensive view of Egyptian development needs.



**Analyzing
subsectors and
identifying value
chains**



Analyzing subsectors and identifying value chains

3.1 Introduction

1. The objective of the second stage of this study is to further explore the sectors that ranked highest in terms of their relevance to the aims of the project – i.e. agriculture and agribusiness – and to identify 2 sub-sectors within them. Following steps based on the methodology agreed with the ILO ¹¹ were taken towards the second stage of the study:
2. Identifying an initial list of sub-sectors: The list has been developed through a desktop review of all relevant secondary sources, most notable being Government's sector priorities set in national strategies, sectorial strategies developed and/or implemented by the Ministry of Trade and Industry (MoTI) and relevant studies conducted by development partners and other actors. Setting qualitative criteria relevant to the aim of the project. These are:
 - a. Existing linkages with lead firms¹²
 - b. Backward linkages to rural areas/governorates
 - c. Government priority
 - d. Clustered (Firms are in proximity of each other)
 - e. Existence of strong association/institution
 - f. Identified and intervened in by another project/programme
3. Assigning equal weights to the criteria, and applying a ranking to selected sub-sectors.

3.2 Identifying potential subsectors:

3.2.1 Literature review

Studies/publications conducted over the past six years by various authors, which specifically addressed sub-sectors from a value-chain approach, with particular focus on those addressing selection of sub-sectors were reviewed to arrive at a potential list of sub-sectors. Several studies, from those reviewed, which focused on supporting priority value-chains in the Egyptian economy, were either commissioned by the Government or by development partners as part of their developmental projects and programmes in supporting the government in their economic reform. Prior to the setting of Egypt's vision 2030: Sustainable Development Strategy (SDS), the Government used Booz and Co to conduct a number of sectorial strategies commissioned by the Industrial Modernization Center (IMC). Relevant among them were: "Egypt Industrial Development Strategy: Sector Prioritization and Development Policies" (2008), "Egypt Economy Recovery Plan: Agriculture and Agribusiness Sector Analysis and Initiatives" (2008, and updated 2014), and "Egypt Economy Recovery Plan: Textiles" (2014). The focus of these studies was to identify the priority sectors for Egypt's industrial development, with Agribusiness and Textiles emerging as sectors with potential for economic recovery and upliftment. The "Egypt Industrial Development Strategy: Sector Prioritization and Development Policies" has

¹¹ It is to be noted that the methodology adopted throughout the assignment was developed based on best practices models used by a number of Development Partners (USAID, GIZ, UNIDO), and Dcode EFC's experience (where the expert works), and in a way that addresses the existing limitations of the availability of data on subsectors, and limitations of time to conduct the assignment.

¹² Lead firms drive the chain in terms of value addition and distribution,

verified, assessed the progress of the sectorial strategies of MoTI¹³ related to *Food Products, Textiles and Wearing Apparel, Leather, Publishing, Printing, Chemicals and Chemical Products, Basic Chemicals, Pharmaceuticals, Ceramics, Cutting, Shaping and Finishing of Stone, Packaging, Machinery and Equipment, Engines and Turbines, Oven and Furnaces, Domestic Appliances, Medical and Optical Instruments, Motor Vehicles, Furniture, and Jewelry*. This assessment formed the basis for the subsequent studies conducted between 2012- 2014 (i.e. Agriculture & Agribusiness, and Textiles & RMG).

In 2014, Booz and Co, commissioned by the Egyptian government, and with assistance from the UAE, conducted more extensive assessments of agriculture and agribusiness and textiles, as the two sectors with great potential for the Egyptian economy recovery. The investment plan set out in the agriculture and agribusiness study focused on serving more than one subsector through creating *strategically located collection points and storage facilities, investing in marine and fresh water fish farms, developing agro-industrial parks, developing tomato paste processing facilities, and developing olive oil processing facilities*. Food and food processing were considered as underdeveloped and carrying potential for exports and the economy in general, given the backward linkage to agriculture, which dominated economic activity in the country. The main sub-sectors/value chains considered important in developing the agribusiness sector were fruits and vegetables, dairy (cheese, milk and yoghurt), tomato processing, aquaculture, frozen and processed poultry, poultry feed, and olive oil. The identification of these sub-sectors/value-chains were based on a synthesis of the Central Agency for Public Mobilization and Statistics (CAPMAS) production and wage data with cited profit margins for different sub-sectors, and consultations with stakeholders. Same exercise was conducted for textiles, and the focus was on attracting investments in the sub-sectors of *fabric processing, and the manufacturing of readymade garment (RMG) and home textile*.

In 2015, the Government launched the "Sustainable Development Strategy: Egypt's Vision 2030" on the sidelines of the Egypt Economic Development Conference (EEDC) in Sharm el Sheikh. The strategy accounts for the priorities, principles and requirements of the 2014 Constitution and draws on lessons learned from the outstanding plans and studies prepared and implemented before it at the local and international levels. It is consistent with the UN Sustainable Development Goals (SDG) adopted in September 2015 and with the African Agenda 2063.

The main idea of the Vision is to ensure that by 2030, the Egyptian economy is a balanced, knowledge-based, competitive, diversified, market economy, characterized by a stable macroeconomic environment, capable of achieving sustainable inclusive growth. It envisages Egypt as an active global player responding to international developments, maximizing value add, generating decent and productive jobs, and a real GDP per capita reaching high-middle income countries level. The Vision itself contains no specific references to improving female labour force outcomes or to reducing regional economic inequalities – though these are reflected in the MoTI Strategy for 2016-20 (see below). It does however aim to bring the youth unemployment rate below 10%, through a faster pace of job creation particularly amongst SMEs.

The strategy has three dimensions:

1. FDI promotion for specific industrial projects with high technological content and human investment potential;
2. The enlarging of the scope of free trade agreements to include the South American Free Trade Area (Mercosur), and the Eurasian Economic Union in addition to the existing agreements with Arab Countries, the partnership agreement with the E.U., the EFTA and the agreement with Turkey.

13 MoTI, through the IMC, has commissioned different consulting firms starting 2004 to conduct sectorial strategies.

3. Achieving structural transformation in exports composition and market structure by shifting towards higher value-added exports and leveraging competitive advantage while expanding in technological industries.

Despite the fact that the strategy does not specify certain sectors, it recognizes the importance of the non-oil manufacturing sector as one of the key engines for the economic boom, and was the initial base for the MoTI's sectorial strategies.

On November 10, 2016 the Minister of Trade and Industry Dr. Tarek Kabil announced his ministry's trade and industry strategy for 2020. The MoTI strategy supports Vision 2030 and proposes measures for achieving the 2020 objectives and thus 2030 goals. The strategy includes ambitious goals that can be linked to related sectorial strategies and development initiatives such as Automotive, Engineering, Textile and Clothing, Chemicals, Building Materials strategies; along with thematic strategies such as resource efficiency, innovation, MSMEs, entrepreneurship development strategy and the Technical & Vocational Education & Training (TVET) development strategies. The strategy was based on specific studies conducted on potential sectors for exports (since the Ministry holds the mandate for both industry and trade), which was supported by the Trade and Domestic Market Enhancement Programme (TEDMP) financed by the European Union. The selected 5 sectors of focus were considered a first wave, with other sectors to follow, according to their study "The Situation Analysis Report for the Trade & Industry in Egypt" in 2017.

The initial selection of sectors was based on the study conducted by Dcode Economic and Financial Consulting for the SEED USAID project ¹⁴, with MoTI as the beneficiary in 2016. The study, which applied the same methodology as the present study, aimed to select seven value-chains for the SEED Project's intended interventions. The selected value-chains were: automotive parts and accessories, contract furniture, dairy products, fisheries, plastics, readymade garments, and waste management. In November 2016, MoTI has launched its National Trade and Industry Strategy, which supports the Government's 2030 strategy and proposes a number of measures for achieving the 2020 objectives and thus 2030 goals. The strategy's approach in developing industry focused on having targeted interventions tailored to the industrial sectors that have strong domestic and export growth prospects (automotive components, construction and building materials, chemicals, engineering products and ready-made garments (RMG) and textiles. The MoTI plan was to introduce another 15 sectors (5 in each "wave") that should be targeted approximately every 6-9 months. MoTI commenced with developing sectorial strategies for the "first wave", with support from the Trade and Domestic Market Enhancement Programme (TDMEP) funded by the EU, and in collaboration with the Federation of Egyptian Industry (FEI) and the respective chambers associated with the Federation. The strategies that were finalized, in 2018, are: chemicals, building materials, and Handicrafts. The ones that are in the process are: textiles & RMG, and food processing (MoTI replaced engineering product strategy with food processing s in the 'first wave' sectors, because of its importance and the readiness of the Chamber of Food Industries-CFI).

The food processing strategy was based on a previous export strategy that was conducted through the Industrial Modernization Centre in 2018. Relying on quantitative and qualitative analysis, including consultations with the relevant stakeholders, specific sub-sectors/value-chains were identified.

¹⁴ USAID's Strengthening Entrepreneurship and Enterprise Development (SEED) project offers technical support to business service providers, entrepreneurs, and micro, small, and medium enterprises (MSMEs) to help develop new business ideas, strengthen essential business development services, introduce new financial tools and enhance financial literacy and management. SEED also focuses on improving access to essential financing, information, and technology reducing bureaucratic procedures, addressing policies that impact ease of doing business and expanding and improving public one-stop shops responsible for business registration and licensing.

Implementing Partner: AECOM

Life of Project: November 1, 2015 to October 31, 2019

Total USAID Funding: \$22.9 million

Bilateral Agreement: Trade and Investment Promotion in Egypt (TIPE)

Although the quantitative analysis identified the potential of certain sub-sectors, they were re-ranked based on the consultations with the stakeholders and priorities set by the Chamber of Food Industries (CFI). The quantitative analysis resulted in the identification of: Pastries, Processed Tomato, Juices (Fruits and Vegetables), Frozen fruits and vegetables, Chocolate, and Cheese. However, as mentioned, these were re-ranked (After review from the Chamber's members) to include: Processed Tomato, Dried Onion, Processed Fish, and Frozen Vegetables.

It is to be noted that most studies that had substantial information and data focused on the traditional sectors: agriculture, textiles, tourism, food processing, and furniture. This comes as no surprise given that these sectors are entrenched in the Egyptian economy and have relative availability of data.

3.2.2 Identifying programmes/projects with a focus on value chains

Several developmental programmes and projects, funded by different development partners, focused on addressing constraints in the value chains of specific sectors/sub-sectors in Egypt. Most of them have conducted 'pre-implementation' research in order to identify the sectors/sub-sectors with a potential. This section in the report presents a qualitative analysis of the key programmes/projects, in order to highlight the common sectors and sub-sectors between them. Focusing an intervention on a previously assisted sub-sector would have a multiplier effect either through addressing the gaps in such projects and/or through complementing the interventions of those projects. Below is a summary table, listing available information on selected projects, indicating the value chains in focus. It is to be noted that selected value chains are usually based on assessments (qualitative and/or quantitative) depending on the aim of the project.

Programme/Project	Development Partner	Executing Agency/ Partner Institutions	Budget	Selected Value Chains	Start-End Date
Egypt Enterprise Development Project	DFTAD (CIDA)	El Mobadara	USD 4,950,000	Artichokes	23-05-2008 — 31-12-2014
Pro-poor Horticulture Value Chains in Upper Egypt Program (Salasel)- Joint Program	UNDP (Lead Agency) UNIDO UN WOMEN ILO	Egyptian Ministries of Trade and Industry, Investment, International Cooperation, and Foreign Affairs	Total: USD 7,499,704 UNDP: USD 3,246,561 UNIDO: USD 2,521,455 ILO: USD 1,005,800 UN WOMEN: USD 725,888	Okra	January 2010 — June 2013

Programme/Project	Development Partner	Executing Agency/ Partner Institutions	Budget	Selected Value Chains	Start-End Date
Value Chain Development Program	IMC	FEI, specialized Technology centers, Investors associations in industrial areas	NA	Textiles value chains: readymade garments (accessories, terry towels and shirts). Chemical value chains: Plastic and detergents Engineering value chains: automotive feeding industries, white goods and metal forming. Food & agro business value chains: confectionery, olive and dairy products.	July 2014 - Ongoing
Upgrading the Medicinal and Aromatic Plant Value Chain – Access to Export Markets (EMAP)	UNIDO	MTI/IMC	USD 2,870,000	Medicinal and Aromatic Plants	2011-2016 (Originally was planned to 2014, but got 2 extensions)
EPALM: Updating Date Palm Value Chain in Egypt	UNIDO (Lead Agency) UN WOMEN	MTI; MoAIR, SFD, National Council for Women	USD 10,000,000	Date palm	Initiation phase (Did not materialize)
Upper Egypt Development Program	World Bank (Lead Agency)	Ministry of Local Development (Local Economic Development Units)	USD 500,000,000 Two components (local governorate support in Qena and Sohag + Value chain development)	Tourism, Furniture, Textiles and RMG, Agribusiness (Palm, onions, tomatoes, poultry, dairy), Waste Management, Aluminum and solar panels, Mining, Handicrafts.	2016-2021 (Delays in the project start, made the clusters support start in 2018)
Arab Women Enterprise Fund (AWEF)	DFID & Islamic Development Bank	DAI, Market Share, e4e	GBP 20,000,000	Citrus and tomato, readymade garments and food retail	2015-ongoing
Milk Collection Centers	DANONE	CARE	EUR 1,327,000	Dairy products	
Strengthening Entrepreneurship and Enterprise Development (SEED)	USAID	MTI	USD \$22.9 million	Dairy, Plastics, Fisheries, RMG, and Automotive	2015-2017

Programme/Project	Development Partner	Executing Agency/ Partner Institutions	Budget	Selected Value Chains	Start-End Date
Feed the Future Egypt Food Security and Agribusiness Support	USAID	Culturing New Frontiers in Agriculture (as part of the Volunteers for Economic Growth Alliance)	USD 23,000,000	Fruits and vegetables value chains	1-07-2015—30-6-2020
Green Trade Initiative (GTI)	UNIDO (Funded by Italian Debt for Development Swap program)	Ministry of Trade and Industry Ministry of Transportation Ministry of Agriculture	USD 9,000,000	Artichoke, green bean, lettuce, pepper, pomegranate, strawberry, table grape and tomato	2013-2016
Promotion of Small and Medium Enterprises (PSME)	German Federal Ministry for Economic Cooperation and Development (BMZ) and GIZ	Ministry of Trade and Industry (MTI)	NA	Electrical equipment, plastics and rubber products and food products	2015-2018
Workforce Improvement and Skills Enhancement program (WISE)	USAID	Management Training Cooperation	USD 22,100,000	Readymade garments, Tourism, Furniture, Food processing Crosscutting; renewable energy Logistics	01-11-2015 to 31-10-2019
Advance Marketing and Agribusiness Logistics (AMAL) program	USAID/ HEIA	ACDIVOCA	USD 11,472,120	Horticulture	04-02-2015 to 3-02-2018

All the identified programmes/projects focused on private sector development through direct value chain interventions. Some of the programs offered firm level support while others solely worked through intermediaries with interventions varying from policy level interventions, financial support or non-financial business development services. Some of the identified programs were geographically focused; with cluster approach, such as the World Bank's Upper Egypt Development Program, which is working with only two Governorates (Qena and Sohag).

Majority of the programmes intervened in either agriculture and/or agribusiness, which further confirm the importance of this sector to the Egyptian economy and global competitiveness. This was primarily because their objectives related to employment generation, poverty reduction, income generation, and/or gender and improving economic structures of the country at national as well as governorates levels. In fact, agriculture and agro-industry have been at the centre of extensive donor support to Egypt over the last 20 years, and continue to be the focus for many upcoming development projects (e.g. a planned Japan International Cooperation Agency- JICA supported project

on agribusiness, that will focus on one crop among tomato, onions, oranges, and strawberries). Thus, most projects were implemented/to be implemented in a context of extensive prior interventions and parallel institutional support to the agricultural and agro-industry sector in Egypt, due to its significance to the socio-economic development of the country. This is further substantiated from the meetings conducted with stakeholders (Government, development partners, and experts) as part of the preparation for the current project by ILO staff. The stakeholders and experts interviews were designed for the purpose of verifying the information gathered from reviewing the programmes/projects with focus on value chains and identifying the potential value chains from a qualitative approach as well as the possible intermediaries with a potential for cooperation. The identification of the subsectors and value chains were based on the interviewee experience in the area in addition to other rational justifications supporting their choice (e.g. import substitution, gender, export potential, capital intensity etc.).

There was general agreement on the identification of potential intermediaries (e.g. NGOs) that the level of institutional representation to any of the suggested value chains was very low, if at all present. Quasi-governmental institutions were mentioned in several instances as a way to reach any sub-sector or value chain (e.g. Chambers, IMC, and Export Councils). Having certain entity/official act as a "Champion" to change (with strong links with the different players across the value chains) was seen by some experts as a requirement for the success of any endeavor. All examples mentioned were private sector investors who have a vested interest in upgrading their backward and forward linkages, which is the methodology adopted in the ILO project (links with lead firms).

3.2.3 Potential Sub-sectors/value-chains and selection criteria

Agriculture remains of fundamental importance to development of the Egyptian economy. The sector employs 25% of the Egyptian workforce and supports livelihood of almost 50% of the population, while contributing 16.6% to GDP (CAPMAS 2017). Therefore, due attention is to be paid to both to primary agriculture as well as downstream processing industries for a comprehensive view of Egyptian development needs. Given the limitations of time and budget, selecting right potential subsectors within agriculture and agribusiness is important. This selection largely depends on availability of data, and more importantly, the intervention approach that is adopted by the given project. In this context, this study takes into consideration the following elements in any given value-chain for the intervention to succeed:

a. Existing linkages with Lead Firms

Rationale for the criteria/Assumption: Having a relatively organized industrial sector would guarantee sustainability.

b. Backward linkages to rural areas/governorates

Rationale for the criteria/Assumption: Interventions in the value-chain, especially with farmers in rural areas will upgrade their produce.

c. Government priority

Rationale for the criteria/Assumption: Recognition of the importance of certain subsectors by the government would facilitate the implementation of interventions.

d. Clustered

Rationale for the criteria/Assumption: Concentration of certain crops' farms within the same geographical location would assist in effective targeting of interventions.

e. Existence of strong association/institution

Rationale for the criteria/Assumption: Private sector's collective associations would have interest in upgrading and organizing the value-chain of selection.

f. Identified and intervened in by another project/programme

Rationale for the criteria/Assumption: Building on existing projects or those about to come to an end would facilitate quick results.

The initial list of sub-sectors/value-chains was set according to the review of studies and projects with focus on value chains, in particular, agriculture/agribusiness, which was assessed as the second highest potential macro-economic sector in the Egyptian economy (in the first chapter of the study). The identified sub-sectors/value-chains are (in no particular order):

1. Tomato
2. Palm Dates
3. Artichoke
4. Strawberry
5. Onion
6. Medicinal and Aromatic Plants
7. Okra
8. Dairy Products
9. Poultry
10. Aquaculture

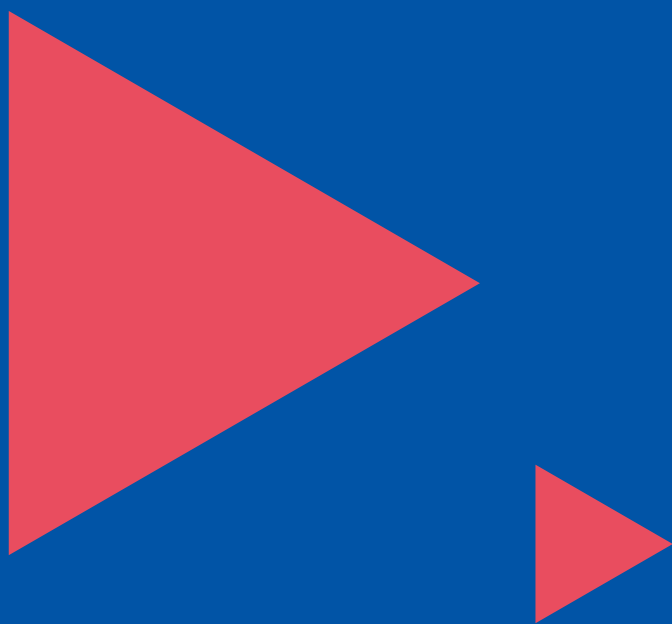
Based on qualitative research, below is the cross-matching table. The identified value chains were given a score of 1 if they satisfied the 6 criteria listed above and 0 for not. It is to be noted that despite the fact that all sub-sectors satisfied all criteria, but with varying degrees, it was decided to use 1 & 0 for simplicity. Scores are given based solely on qualitative judgments, which emanates from the literature review, meetings with stakeholders, and experts (conducted by the ILO in preparation for the project).

Value Chains	Existing linkage with Lead Firms	Rural Backward linkage to rural areas/ governorates	Government Priority	Clustered	Existence of strong association/ institution	Identified and intervened in by another project/ programme	Total	Comments
Tomato	1	1	1	1	0	1	5	Though tomato is ranked high, there are 2 planned projects (UNIDO and JICA) that would be focusing on upgrading the value chain.
Palm Dates	0	1	1	1	0	1	4	Holds a potential, but lacks strong leading firms.
Artichoke	0	1	0	1	0	1	3	Value addition is restricted currently to freezing and packaging
Strawberry	1	1	0	0	0	1	3	Value addition is restricted currently to freezing and packaging
Onion	1	1	0	0	0	1	3	Market is dominated by one lead firms
Medicinal and Aromatic Plants	1	1	1	1	0	1	5	Strong potential for exports
Okra	0	1	0	0	0	1	2	Value addition is restricted currently to freezing and packaging
Dairy Products	1	1	1	1	1	1	6	Highest rank, also the variety of value-added products
Poultry	1	1	0	1	1	1	5	Highly ranked, but heavy involvement from the government
Aquaculture	0	1	1	1	0	1	4	Recent investments in fisheries holds a great potential, has enough support from the government

Based on the above assessment, the ranking of potential sub-sectors is as follows:

Rank	Value Chain	Total Value
1	Dairy Products	6
2	Tomato	5
3	Medicinal and Aromatic Plants	5
4	Poultry	5
5	Palm Dates	4
6	Aquaculture	4
7	Artichoke	3
8	Strawberry	3
9	Onion	3
10	Okra	2

The four highest ranked value chains in the agriculture and agribusiness sectors are; dairy products, tomato, MAP, and poultry, with the last 3 having the same total values. Thus dairy was selected to be of the highest potential. Choosing MAP over the same ranked value chains of tomato and poultry was based on its relatively greater potential for exports, since the other two (tomato and poultry) targeted mainly local market. The following section presents further analysis on the importance of the food processing sector in general, and dairy and MAP in particular.



Overview of Food Processing Sector in Egypt



Overview of food processing sector in Egypt

The Egyptian economic landscape has been marked by turmoil and unrest for the past few years. In pursuit of economic stability, the Egyptian government has therefore applied severe reforms to rebound the economy and alleviate pressure. Reform has been twofold; on both fiscal and monetary fronts, in an attempt to support the faltering economy. One of the more prominent reforms was the currency floatation commanded by the Central Bank of Egypt (CBE) in 2016, which resulted in almost all retail prices skyrocketing. That being said, the decisive action eliminated a toxic parallel foreign exchange currency market and established Egypt on the international scene as a potentially lucrative investment that offered competitive prices on production. Gradually diminishing government supported subsidies on major utilities i.e. fuel, electricity and water has further elevated prices in response to the steadily increasing costs of transportation and production. This has also eliminated a significant portion of the once crippling government deficit, which further cemented Egypt's stability and ability to accommodate Foreign Direct Investment.

As part of IMF placed stipulations for a US\$ 12bn loan, the CBE has managed to raise its Net International Reserves to a period high of US\$ 44bn, with expectations of consistent improvement in the foreseeable future. The CBE has also recently lowered its key interest rate, and is expected to lower it further going forward. This move will inevitably attract more foreign investment, as it creates the suitable condition of lower interest loans alongside the existing cheap currency. The drastic measures undertaken by the Government have contributed to a more stable, steadily improving economy, despite the rough inflationary pressures invoked on prices.

On the industrial front, there have also been intense efforts to solidify sectors in which Egypt holds a high comparative advantage, while trying to seize the favorable economic conditions set by the recent reform. In an initiative pioneered by the Egyptian Union for Investors Association, a recent agreement has been finalized to plant 20,000 to 50,000 acres with Medicinal and/or Aromatic Plants (MAP) starting 2018 to boost production, employment and most crucially, exports. This initiative is projected to relieve heavy imports of raw materials for medicinal purposes, that account for a staggering 70% of medicine prices. With favorable environmental and economic conditions, Egypt has had strong footing in the industry on the global scale, being the 5th largest global exporter of Medicinal and Aromatic Plants, and therefore enjoying an exceptionally high comparative advantage against other exporting states.

The Ministry for Trade and Industry has identified the processed food industry as a profitable investment opportunity in its 2016-2020 Trade and Industry strategy, to guide the economy to balanced and sustained growth as outlined in the overarching policy framework, Vision 2030. Both governmental and non-governmental initiatives have joined efforts to come up with action plans aiming at expanding the existing sector. Increasing foreign investment would serve to elevate penetration rates of the dairy industry, to harness the potential of untapped resources in more remote areas in Egypt that both consume and produce dairy products and could therefore be incorporated within the expanding scope of the field.

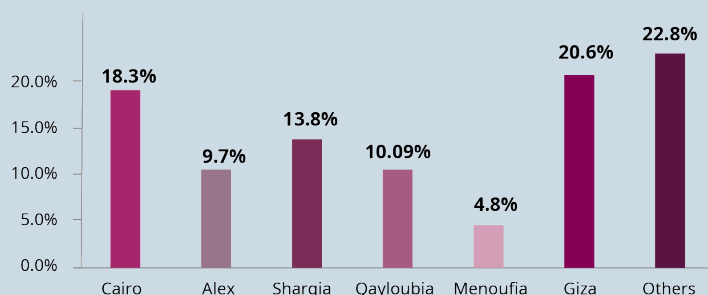
Food processing is one of the highly dynamic sub-sectors in the Egyptian economy, with an average annual growth rate of 12%¹⁵, largely driven by the high population growth rates (2.2%). In 2014, this sector contributed to the annual GDP by 5% and to the manufacturing value-added (MVA) by 11%, which is higher than the average value-added of manufacturing industries (4.17%).¹⁶ The food processing industry also accounts for 56% of total industrial establishments in Egypt, generating

¹⁵ CAPMAS

¹⁶ ECES

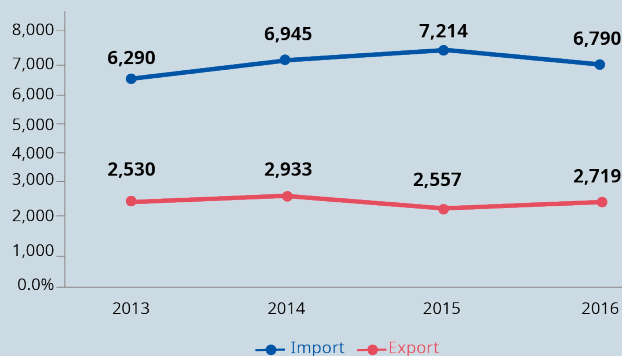
25% of employment in the industrial sector. The latest data about industrial activity in 2014 indicates that a total number of 4,542 private factories are working in the sector employing 173,820 persons. Governorates of Giza and Cairo have the biggest shares in food processing (Chart 1).

Chart 12: Production of Food Processing By Governorate



Food processing in Egypt is considered to be underdeveloped, highly fragmented, and characterized by informality (around 80% of the sector). For example, 79% of the dairy market in Egypt is artisanal, leaving a sizeable processing opportunity untapped.¹⁷ Moreover, the food retail supply chain is highly fragmented among a large number of distributors, wholesalers and retailers. This kind of fragmentation results in poor economies of scale, thus leading to the manufacturing of products of sub-optimal quality and packaging.

Chart 13: Food Processing Imports Vs. Exports (USD Million)

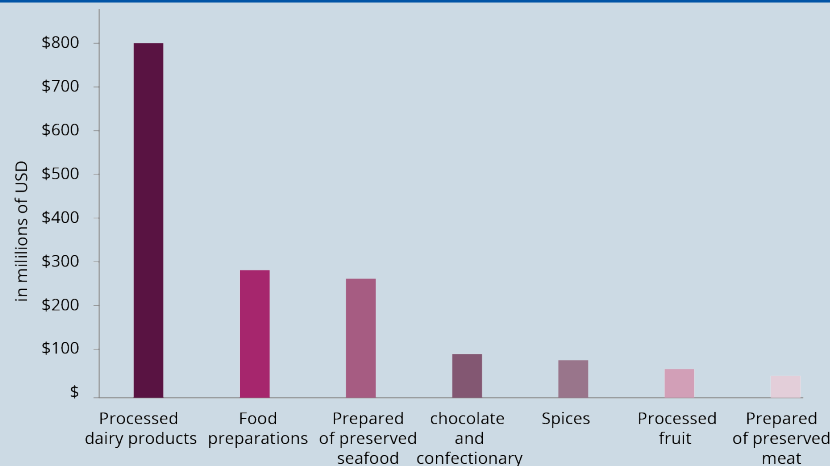


On the trade side, Egypt's also faces a deficit in food processing that reached around US\$ 4 billion in 2016, with exports reaching US\$ 2.7 billion versus imports worth of US\$ 6.7 billion (Chart 13). The top imported products in 2014 (Chart 14) were processed dairy products (powdered milk, butter, whey, and cheese), food preparations (malt extract, protein concentrates, yeasts, and starch) and seafood.¹⁸

¹⁷ Promoting Agricultural Value Chains in the OIC Member Countries. Standing Committee for Economic and Commercial Cooperation of the Organization of Islamic Cooperation (COMCEC), 2015.

¹⁸ Global Agriculture Information Network, 2015.

Chart 14: Top Ingredients Imports(2014)



The Global competitiveness report (2017-2018) ¹⁹ indicated that the key challenges affecting doing business in Egypt in general included inflation and corruption. Adding to these general challenges, the expected further price surges in both imported and local fresh produce and food products as a result of the recent economic reform measures, including the floatation of the Egyptian Pound, and the streamlining of fuel subsidies, will in turn shape demand; directing consumption towards local rather than imported goods, putting more pressure on growers and manufacturers to meet the expected demand in terms of both quantity and quality. However, it is worth mentioning that Egypt's overall ranking in the Global Competitive Index (GCI) has gone up by 15 points to rank the 100 in 2017-2018. ²⁰

4.1 Sub-sector Performance:

The food processing sub-sectors' sales are shown in Chart 15. In 2014, the nutrition/staple sector dominated the sales of all other sectors attaining sales of around EGP 57 billion, followed by the impulse and indulgence products sector at EGP 24 billion, and dried processed food at EGP 11.9 billion (Global Agriculture Information Network, 2015).

Chart 15: Sales of Food Processing Subsectors



¹⁹ World Economic Forum, and Harvard University. 2018. The global competitiveness report. Geneva: World Economic Forum.

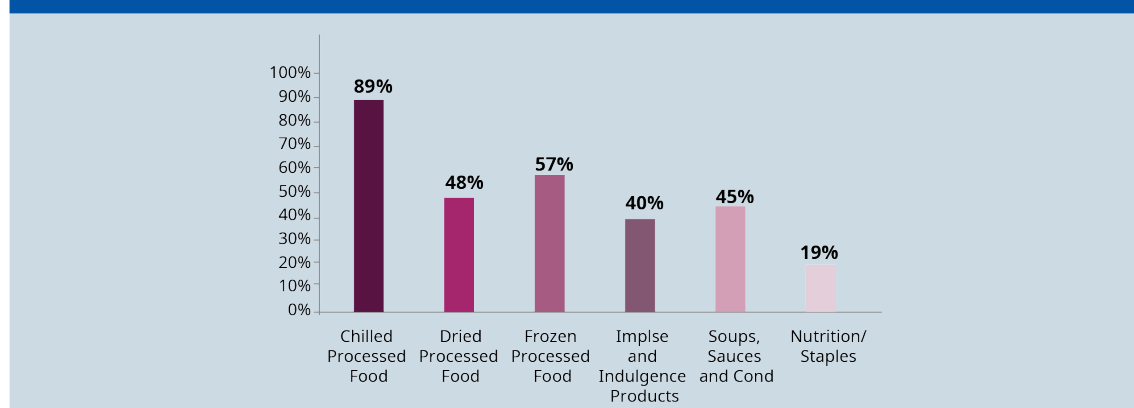
²⁰ The Global Competitiveness Index 2017-2018 presents a framework and a corresponding set of indicators in three principal categories (sub indexes) and twelve policy domains (pillars) for 137 economies.

Source: Global Agriculture Information Network, 2015

In the last five years, the sub-sector with the highest growth was frozen processed food with an average growth rate of 19%, followed by dried processed food (15%). These two sectors benefit from Egypt's middle class that tends to adopt a more "western" lifestyle that exhibits itself in a growing demand for ready-to-eat products. Based on USDA report (2017), it is expected that the dairy and frozen processed food sectors will have the strongest growth potential, followed by soups, sauces and condiments.

With the exception of the chilled processed food, the food processing industry in Egypt is not controlled by few big players. Chart 16 highlights the shares of top food processing companies in Egypt by sub-sectors. In addition to the big enterprises, there is a large number of SMEs working on niche products for regional and local markets. According to a study conducted by the IMC ²¹ on the sector, it is estimated that most of formal companies working in the sector are small medium enterprises (SMEs) focusing on the local market while the large enterprises work on multiple sectors and have the capacity to export.

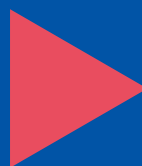
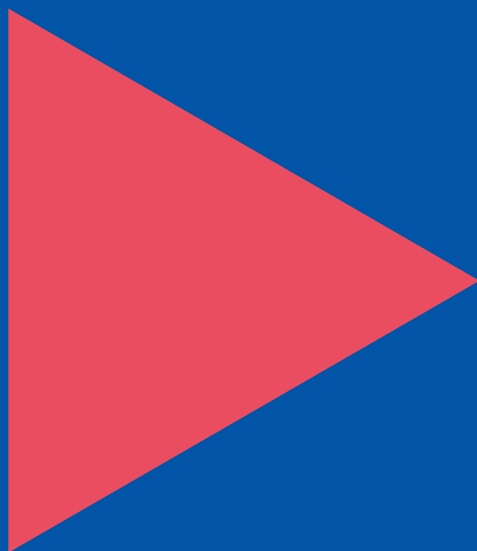
Chart 16 : Market Share of Top Five Companies by Subsector (2014)



Source: USDA, 2017.

Despite the high demand and contribution of food processing sector to the Egyptian economy (in terms of value-added and employment), the inefficiencies present in the value-chain limit the fulfillment of this sector's potential. Problems in the value chain exist in the form of market imperfections and obstacles in the institutional system that limit access to information, financing, technologies, knowledge for companies and inevitably increase business risk. Thus, the project at hand with its components could unleash the sectors' potential in a sustainable matter, by addressing these challenges in particular subsectors/value-chains.

²¹ IMC, 2014



Dairy Sector



Dairy sector

5.1 Introduction

A large number of farmers in Egypt consider dairy cattle as the main source of regular daily income, especially for the landless herders in rural areas. Additionally, milk production is a livestock enterprise in which small scale farmers can successfully involve to improve their livelihoods. Regular milk sales also allow them to move from subsistence to a market based income.

This industry occupies an important place in the Egyptian food supply involving the production of raw milk and its products like drinking milk, butter, cheese and yogurt. Nonetheless, there remains huge potential in the dairy sector in Egypt to be harnessed, especially with relation to the traditional mixed crop livestock systems in the rural areas and the long tradition and culture of milk processing and cheese consumption. In fact, the dairy industry is estimated to have grown over the past decade at an annual average of 3-4%, and there is still considerable scope for growth due to the increasing demand for fresh, refrigerated dairy products.

Popular dairy products include Yogurt, typical and frozen; butter and buttermilk, in addition to the evaporate milk which is similar to condensed milk.

5.2 Value Chain Overview

In Egypt, there exist two main value chains, the traditional (predominantly informal) and the modern (commercial) chain. The former represents about 95% of bovine population (cattle and buffalo). The informal industry concerns a multitude of actors each performing a specialized role at a particular point in the value chain. Main players include: producers, milk collectors, middlemen, processors, milk traders, and customers. Also, the system is characterized by small-herd size of less than 50 heads of animal, and less than 5 feddans of land.

Small family farms with 1-8 cattle constitute the majority of dairy farmers and are the major source of raw milk. Sources indicate that these farms are responsible for about 80%-85% of the milk produced. Most smallholders follow an integrated production system where fodder crops are grown as feed for animals and animal manure is used to enhance soil fertility. Milk is produced mainly as a subsistence activity and surpluses are sold to family members or within the local community".²² Besides, under this system, rural women play a key role in the human work, especially milking and farm milk processing operations.

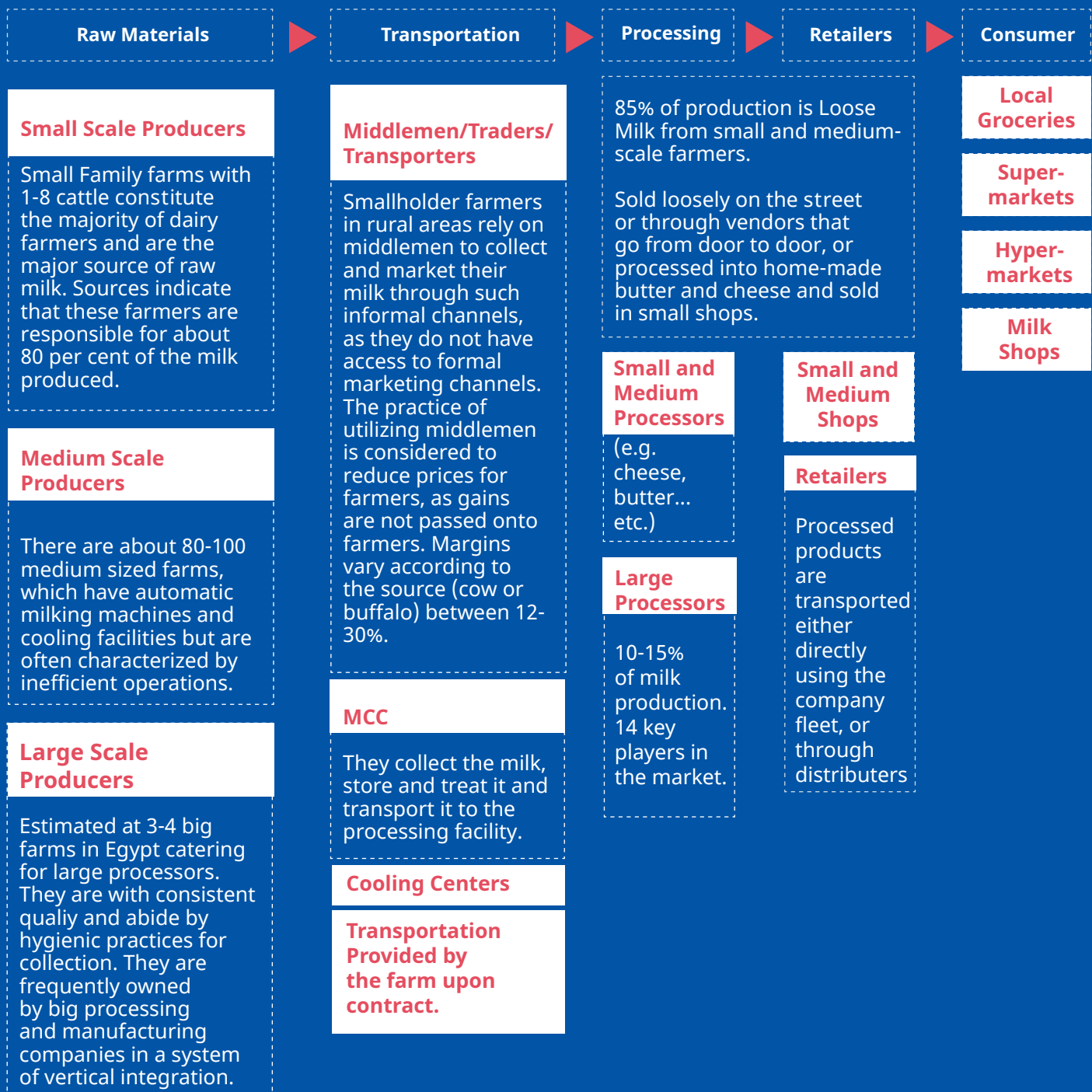
Only about 10-15% of the milk produced in Egypt is processed by the modern commercial sector. Processing is very fragmented and the majority of facilities, including the informal ones, process less than one ton per day. Several of the larger companies import milk powder to increase processing activities.

The main differences between the two dairy value chains (traditional and modern) concern;

- ▶ The legal registration of the unit: the majority of small-scale units of dairy processing or private milk collection centers are not registered and therefore they are not subject to any financial scrutiny or sanitary controls;
- ▶ The scale of the units: the majority of cheese processing units in the traditional sector do not exceed a volume of 1,000 liters/day;

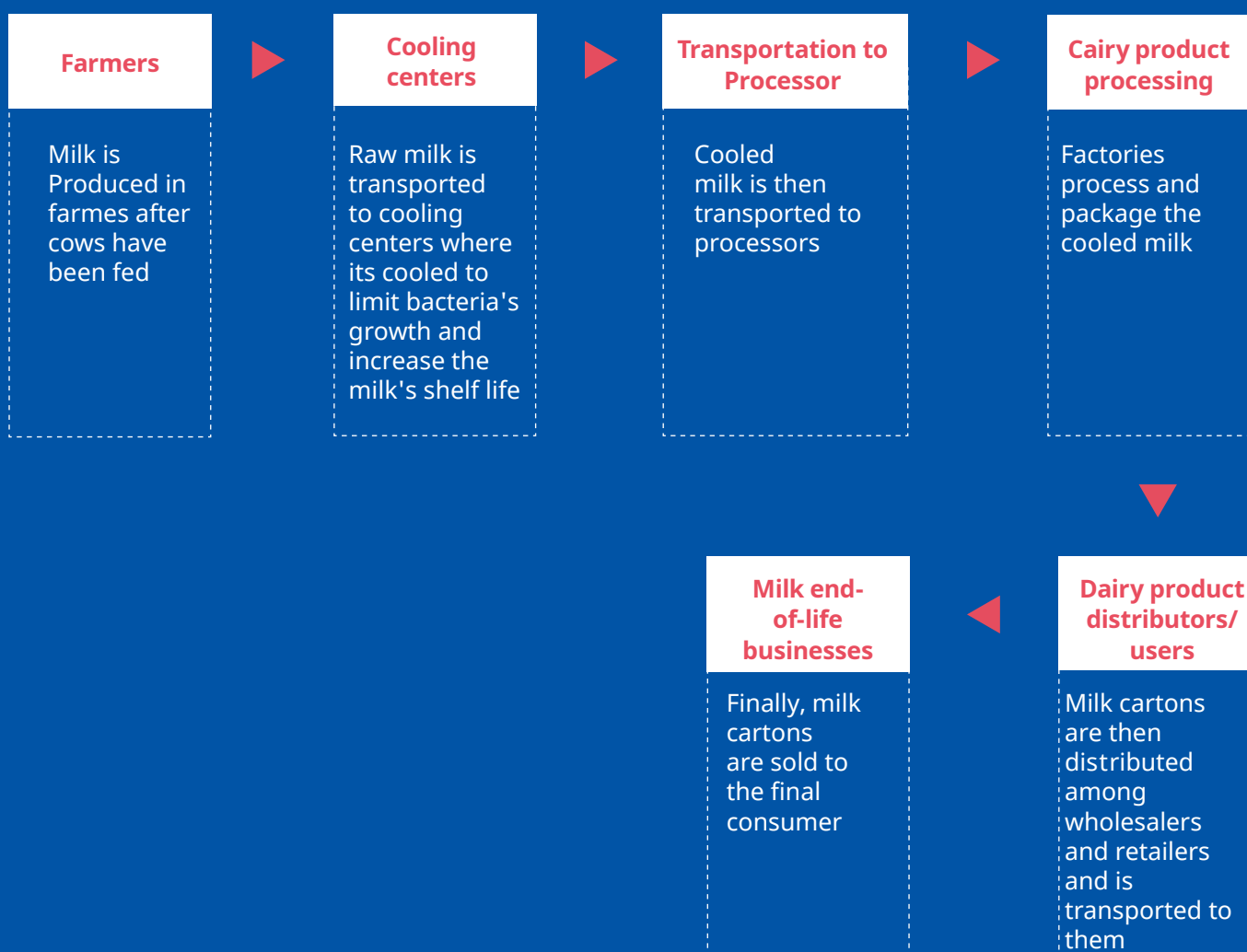
²² Promoting Agricultural Value Chains: In the OIC Member Countries. COMCEC COORDINATION OFFICE October 2015

► Dairy Value-Chain



Sources: Dcode EFC analysis, based on previous meetings and review of secondary sources.

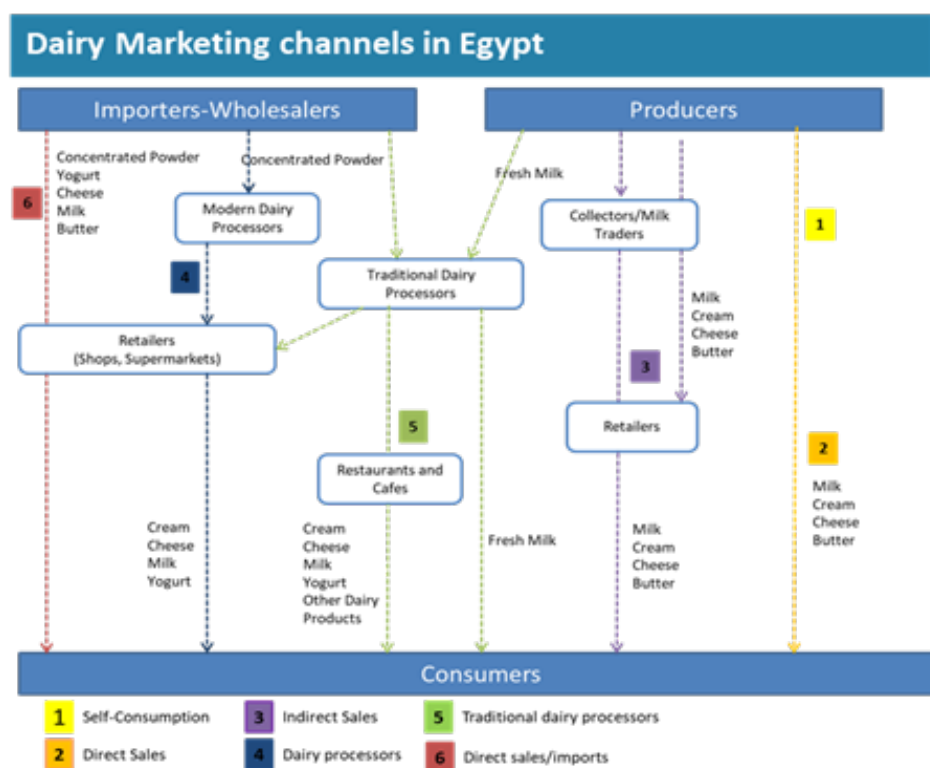
► Large Scale Processors Dairy Value-Chain



- The quality of products in the traditional sector is usually below the required standards.

There are four marketing channels for raw milk production:

1. From farmer to consumer (direct);
2. From farmers to dairy plant (within the same village);
3. From farmers to an intermediary trader (merchant broker), who delivers the milk to the dairy processing plant;
4. From farmer to the milk collection center in the village, which is then transported to the large dairy plants or retail stores.



5.3 Economic Viability

5.3.1 Production and Consumption

Egypt is one of the main milk producers in the Middle East and Africa with a total milk production, both from cows and buffaloes, of about 4.7 million tons in 2016 (FAOSTAT). Other sources of total production data report an average annual production of 6 million tons, with a per capita share of dairy production at an average of 71 kg per year²³ (which is close to half the global average consumption per year and less than the minimum annual consumption of dairy per person of 90 kg per year, as stipulated by the World Health Organization). Low productivity per cow, especially for smallholder farmers, is considered the main reason for the shortage in national production, caused by a lack of

²³ Expanding Horizons in Development: the Rising Role of Egypt's Private Sector. UNDP, 2016.

sufficient and seasonally fluctuating animal feed and the dominance of low yield cow and buffalo varieties. As mentioned above, most milk is produced by family farms, yet large and mega dairy farms breeding thousands of cows complete the national production.

One of the main characteristics of the milk sector in Egypt is the origin of milk. Milk in Egypt originates from both buffalo and cow herds. Until the last decade, buffalo milk production was the main source of fresh milk in rural and urban areas. According to FAO data, milk productivity has been increasing during the period 1961-2010 in both species. In Egypt (consistent with global trends), milk production from cows, has an average growth rate that is higher than milk production from buffalo (as reported by FAO, this is estimated at an average annual increase of 6%). This is consistent with the trends in the market of increasing use of high-yielding Holsteins instead of buffaloes (USDA, 2016). Besides, the cost of production of cow milk is higher than the buffalo milk production due to the higher efficiency of buffalo than cattle under Egyptian conditions.

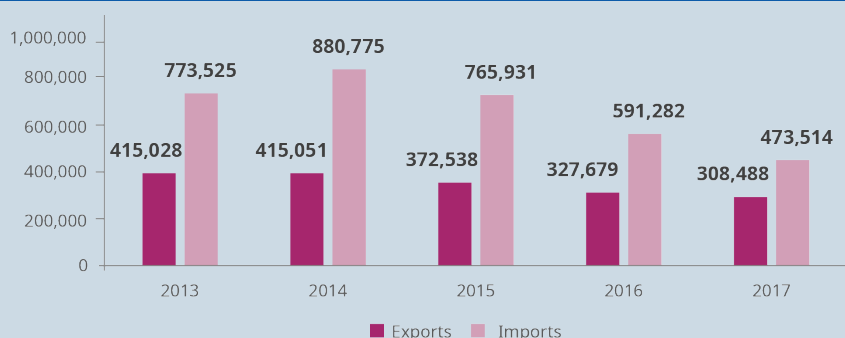
An important aspect of the milk production in Egypt is the seasonality. In fact, peak production is during the winter and during spring, representing 65-75% of annual production. Milk production is associated with the availability of green fodder and is at its maximum between September and May and hits a low from June to August. On the other hand, milk consumption is low during the winter and is at its peak during the summer due to consumption of milk products such as ice cream and yogurt.

5.3.2 International Trade ²⁴

In international trade, dairy products are spread across the following 4-digit HS groups:

- ▶ 0401 milk and cream, not concentrated or sweetened
- ▶ 0402 milk and cream, concentrated or sweetened
- ▶ 0403 butter milk, yogurt, kephir etc, flavored etc. or not
- ▶ 0404 whey & milk products, flavored etc. or not
- ▶ 0405 butter and other fats and oils derived from milk
- ▶ 0406 cheese and curd
- ▶ 0407 Birds ' eggs, in the shell, fresh, preserved or cooked
- ▶ 0408 Birds ' eggs, not in shell & yolks, fresh, dry, etc.
- ▶ 0409 honey, natural
- ▶ 0410 edible products of animal origin

Chart 17: Total Exports and Imports in mn USD (2013-2017)



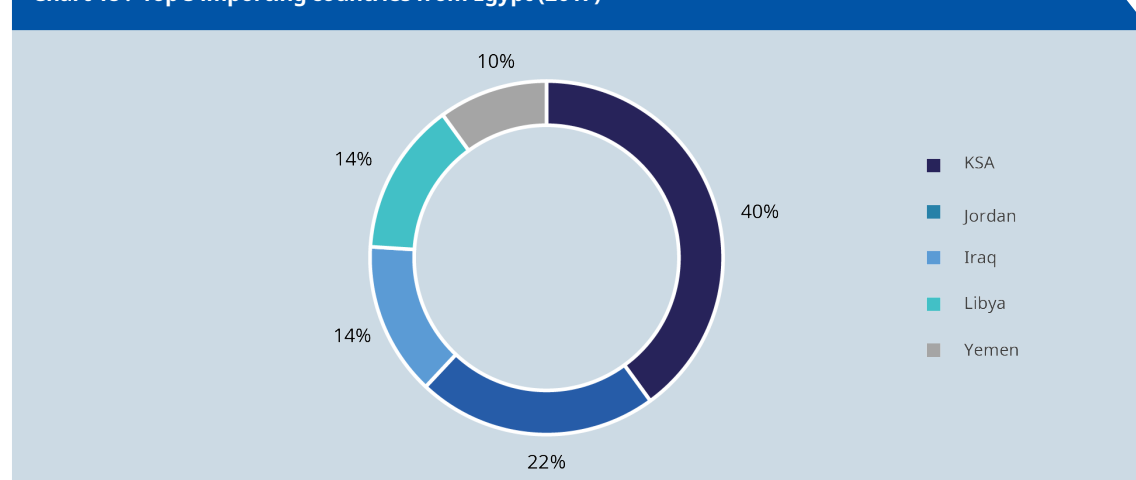
Source: Trademap, 2018.

²⁴ The information in this section have been gathered from the International Trade Center (ITC) available online on: <https://www.trademap.org/>

Egypt's total exports of dairy products in 2017 stood at US\$ 308.5 million, down from USD\$327.7 million in 2016. The main export destinations were Saudi Arabia, Jordan, Iraq, Libya and Yemen which form about 64% of the total Egyptian Dairy exports. The main products exported were cheese and curd (HS code 0406) and milk and cream, concentrated or containing added sugar (HS code 0402).

In 2017, the value of Egypt dairy products imports reached USD 473 million. Main sources were New Zealand (USD 166 million), France (USD 42 million), Germany (USD 36 million) and Netherlands (USD 32 million). The main products imported are milk and cream containing sugar (HS code 0402) and butter (HS code 0405).

Chart 18 : Top 5 importing countries from Egypt (2017)



Source: trademap, 2018.

Top 5 partners (X)	2017
KSA	80,745
Jordan	43,668
Iraq	27,965
Libya	27,137
Yemen	19,413
Total	198,928
%	64%

5.3.3 Main Products

Currently, there exist a wide range of dairy products including pasteurized milk and Ultra-Heat Treatment (UHT) milk packages, in addition to traditional products of all the types of cheese, butter and ghee, yoghurt, ice cream, and food products mixed with milk (chocolate, candy and biscuits). The following is a brief regarding the main products produced in Egypt:

5.3.3.1 Milk

Packaged milk accounts for a 30% share of overall sales of milk, whilst loose milk constitutes a 70%²⁵share. Variation of farm gate price is linked to the quality of the milk (bacterial count), the financial

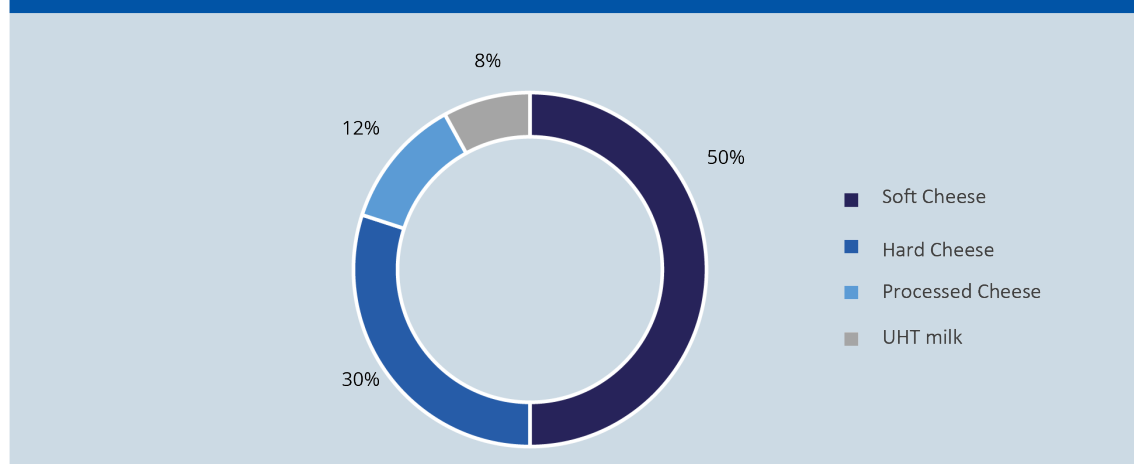
²⁵ Drinking Milk Products in Egypt. Euromonitor International, March 2015.

arrangement between the customer and seller, and transportation costs. In areas where livestock breeding is difficult due to scarcity of fodder, farmers get a better price for their milk.

5.3.3.2 Cheese

Within the dairy sub-sector, cheese is the largest segment, following milk. Egypt is the largest cheese producer in the Middle East producing 700,000 tons per year ²⁶. About 50% of milk produced in Egypt is used for cheese making. Cheese is essential to the traditional Egyptian diet, with per capita consumption standing at 5.6 kg per year, higher than the world's average of 4.6 kg per annum. The total soft white cheese market is growing due to an increase in supply and the number of manufacturers, as well as consumers economizing by shifting away from more expensive food items. Estimated number of cheese processing enterprises exceeds 4000 enterprises, but the number of the CFI's registered dairy product member companies, as of the 11th of March 2018, was 477, while IDA's registered dairy products establishments were estimated at 394, as of the 30th of April 2018. The number of white cheese factories in 2015 reached 1147, with capacity to process 0.58 million tons of milk and produce 0.16 million tons of white cheese. This allows Egypt to export dairy products (mainly cheese) to more than 70 countries through 192 Egyptian companies. Overall, annual growth of local cheese consumption in Egypt is estimated at 3-4%.

Chart 19: Average Production in Egypt in Tons (2015-2016)

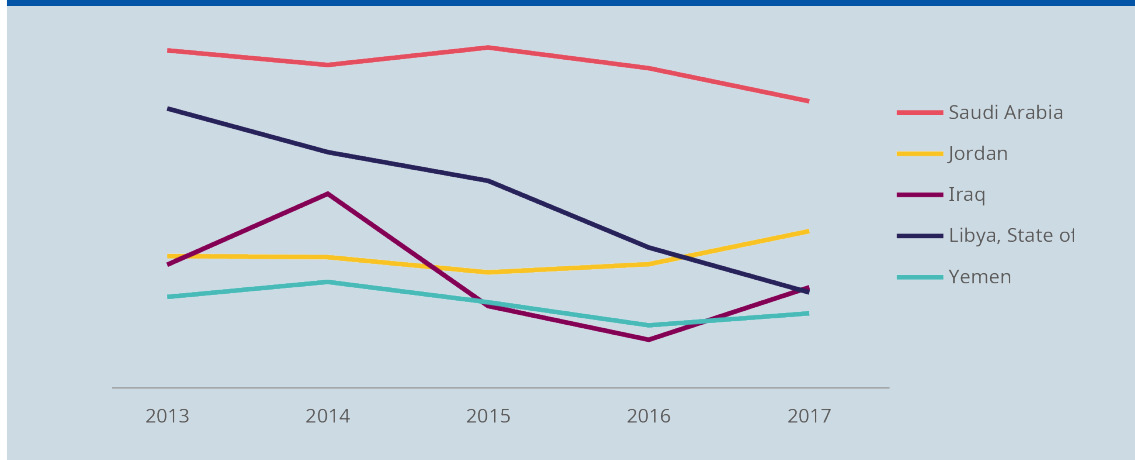


Source: IDF world report.

Egypt is a major cheese exporter, being the 19th worldwide (exporting value reaching US\$ 273.5 million in 2017). Egyptian exports of cheese and curd (HS 0406) represent almost 1% of global exports within the sector. There is an increasing demand for Egyptian white cheese in Arab countries (Saudi Arabia, Bahrain, Iraq, Libya, Jordan, and Yemen) as per the chart below, as well as in some European markets (Italy, Austria, Hungary, Norway).

²⁶ IDF World Dairy situation report, 2016.

Chart 20: Top 5 importers of Cheese and Curd(0406) from Egypt (2013-2017)



Source: Trademap, 2018.

5.3.4 Market Structure

The total investment in the dairy industry in 2016 was estimated at around EGP 5 billion. The local dairy industry is relatively fragmented consisting of around 300 companies, that are mostly small scale ²⁷ and more than 4,000 dairy labs. Fourteen of these companies are members of the Dairy Industry Development Association and 7-8 can be regarded as important players. ²⁸ Over the past few years, the market has evolved from being dominated by local players to a mix of local, regional and international players. One of the key players in the field of dairy production is Juhayna Food Industries, which dominates the drinking milk market with a 46%-market share. Juhayna have scaled up production to meet the increasing demand and increase the revenue significantly. The company has two factories and owns 68% share of the plain milk market. The company also controls 34% of the traditional yogurt market and 53% of the drinkable yogurt market. Besides, Arabian Food Industry (Domty) leads the cheese market with a market share of 10% in 2017.²⁹ The scale of commercial production of dairy products is still small compared to European standards and there is a clear lack of technology and knowledge. ³⁰ Studies have shown that both private and public factories have idle capacity, even though large imports of powdered milk mainly attributed to the seasonality in raw materials are used as a substitute for fresh milk.

²⁷ Egypt: Food, Agriculture and Agrobusiness The Embassy of Denmark in Cairo 2014

²⁸ Promoting Agricultural Value Chains: In the OIC Member Countries. COMCEC COORDINATION OFFICE October 2015

²⁹ Chamber of Food Industries, 2017.

³⁰ Promoting Agricultural Value Chains: In the OIC Member Countries. COMCEC COORDINATION OFFICE October 2015

Furthermore, there are currently more than 700 municipal dairy plants, in addition to a large number of unlicensed plants, most of which are located in rural areas close to farms. In terms of geographical distribution, Dakahleya governorate has the highest number of plants, followed by Fayoum and Damietta³¹.

Barriers to entry to the Egyptian dairy market are low for small enterprises, since there is no regulatory supervision for new informal market entrants, leading to health risks. However with the introduction of the Food Safety Authority in 2017 as the single authority controlling and regulating food flow at all stages, this should recede. Currently, only large companies have the capacity to supply products for mass consumption since local dairy production does not benefit from subsidies or any other form of special governmental assistance.

5.4 Institutional structure and support

5.4.1 Government

Dairy companies are required to label their products with the product-specific Egyptian standard. They are required to indicate whether the product is produced from fresh milk or powdered milk or both. The labeling law requires processors to indicate the percentage of powdered milk in the mixture, calculated on the basis of its weight after restoration. This law applies to pasteurized milk, UHT milk, ice cream, cheese and yoghurt. In order to address hygiene related issues in the dairy sector, in the year 2001, the Government of Egypt also issued a decree to pasteurize all locally produced milk.

The Ministry of Trade and Industry plays a pivotal role in organizing the industry. The recent, ongoing, food processing strategy is commissioned through the ministry to provide a roadmap for the relevant stakeholders. Beside the MoTI, the Ministry of Agriculture plays also an important role in supporting this industry, especially through the existing public sector research bodies under it. A number of public research institutes are tasked with the objective of conducting research to address these needs and maximize economic return (e.g. the Agriculture Research Center, The Animal Production Research Institute, and The National Research Centre Food and Dairy Technology Department).³² More recently, the Egyptian Ministry of Agriculture and Land Reclamation (MALR) announced that it plans to increase annual milk production to 9.5 million tons by 2030, produced largely by the small farmers who own 80% of the dairy producing livestock in Egypt.

5.4.2 International and Private Sector Support

The Egyptian dairy sector has received support from various development cooperation over the years, presented briefly below:

5.4.2.1 LACTIMED^{33, 34}

In 2014, Egypt saw the launch of its first dairy cluster in Beheira and Alexandria governorates as part of LACTIMED project. LACTIMED aims to foster the production and distribution of innovative dairy products by enhancing the local value chain within the cluster. The European Union-financed project was organized by ANIMA investments network in five Mediterranean countries with a total cost of EUR 4.35 million. Egyptian partners included the General Authority for Investments (GAFI), the Arab Academy for Science, Technology, and Maritime Transport (AAST) and the German Arab Chamber of

³¹ Alary V., Corniaux C., Aboulnaga A. & Salah Galal (eds.), 2016

³² Promoting Agricultural Value Chains: In the OIC Member Countries. COMCEC COORDINATION OFFICE October 2015

³³ <http://english.ahram.org.eg/NewsContent/3/12/91980/Business/Economy/LACTIMED-launches-first-dairy-cluster-in-Egypt.aspx>

³⁴ http://www.lactimed.eu/sites/default/files/kcfinder/files/LAC_Brochure_Laureats_Concours_EN_Final.pdf

Industry and Commerce (GACIC). This project allowed for industrial integration and development of Egyptian dairy products to eventually export products.

This initiative, which focused on a strategic sector that embraces clear-cut socio-economic, cultural and touristic challenges, was introduced in the Beqaa and Baalbeck-Hermel (Lebanon), Thessaly (Greece), Sicily (Italy), El-Beheira (Egypt) and Bizerte and Béja (Tunisia) regions. Fifty projects saw the light of the day; 38 applicants were preselected and benefitted from a two-month coaching phase to develop their business plans and to present their project to an international jury during a pitching session. The aim of this competition, which was open to MSMEs, professional associations, federations and research centres, was to promote innovation and create value for typical Mediterranean dairy products, to develop producers and entrepreneurs' potential through effective coaching, and to encourage exchanges between producers, support bodies and national financial players. At the end of this phase, ten of the preselected applicants were awarded a trophy and EUR 10,000 financial support to launch their innovative projects. Agritourism, technical, scientific and ecological innovations and the SMEs from the pilot regions proved their enthusiasm and their pioneering spirit.

5.4.2.2 CARE and Danone ³⁵

Danone entered Egypt in 2005 as it saw major growth potential in the country where the demand for dairy products was on the rise. Initial analysis of the dairy value chain conducted by CARE Egypt showed reduced milk productivity and quality, price fixing by wholesale traders, and imbalance in the profits gained by the different contributors in the dairy value chain.

In order to address these issues, Danone and CARE Egypt initiated a pilot project (2011-2016), with the aim of improving both the quality and quantity of milk production. CARE Egypt started by studying a model that had been previously tested, but had proven unsuccessful: Milk Collection Centers (MCC) where the milk collected from small farmers or independent milk collectors is collected, weighted, analyzed, validated and stocked before being transported to the nearest Danone factory. This project's budget for the period 2011-2016 totaled EUR 1.6 million.

The main challenges in the dairy market included unfair pricing, milk corruption, and poor management of agricultural cooperatives. Danone and CARE decided to collaborate to create a new model to instill the required structure and values. The first phase took place from 2010 to 2013 and aimed at setting up six MCCs (three in Beni Suef and three in Nubareya) as the hub of services for farmers, and field partners for Danone/CARE. The project started by setting up one MCC in Nubareya and equipping it with two refrigerated milk tanks with a total capacity of 3 tons and a practical milk lab to test the levels of acidity, fat, protein, caseation, anti-biotic and water in the milk, to ensure its high quality with the right percentage of fat and protein and total absence of antibiotic and water.

While the project has focused on working with small dairy producers, central to this effort has also been to improve the institutional capacity and governance structures of agriculture cooperatives (in cooperation with the Agricultural Cooperative in Halabeya, in Beni Suef governorate and the Ashrat Aalaf Cooperative affiliated to West Nubareya Reclamation project). CARE selected agricultural cooperatives to partner with based on a set of criteria that included a predisposition to operate with good governance, good working performance and good reputation in the community. A series of workshops attended by stakeholders from cooperatives, civil society, grassroots' NGOs, government bodies and relevant farmers were held to build the capacities of the local NGO and the MCC board members in issues of good governance, gender sensitivity, agro-business, and general management; and provide technical acumen and veterinary knowledge such as proper cow hygiene, balanced nutrition, and good milking practices. In order to help MCCs further their business growth, CARE has placed emphasis on two key aspects of dairy production; namely consistency and quality of product. Below is a summary of the outcome of the project, as reported by CARE in their annual report of 2015.

³⁵ Expanding Horizons in Development: the Rising Role of Egypt's Private Sector. UNDP, 2016.

Location	Month	# of Farmers	Total Amt of Milk Produced	Total Amt Delivered to Danone	Total Revenue	Total Operation Cost	Profit (LE)
Beni Suef	March	77	113,480	99,730	307,730	280,872	26,858
	April	95	167,197	165,905	471,175	426,119	45,056
	May	95	207,874	201,514	574,142	533,419	40,723
	June	77	182,643	179,450	502,460	472,513	29,947
Sub-Total			770,994	730,159	2,128,046	1,968,407	159,839
Nubariya	March	80	58,240	58,240	134,992	118,450	16,542
	April	40	52,100	52,000	148,791	127,225	21,566
	May	33	44,530	44,430	150,898	109,942	40,956
	June	33	54,570	54,570	152,796	127,740	25,056
Sub-Total			330,886	224,540	898,352	795,306	103,046
Total			1,101,880	954,699	3,026,398	2,763,713	

Agricultural Exports and Rural Income Program

Through the Dairy and Livestock components of the USAID-funded Agricultural Exports and Rural Income (AERI) program, ACDI/VOCA ³⁶ helped strengthen the sector nationwide by improving access to resources, information and markets. The project ended in 2007 and applied a variety of technical and business improvement strategies that focused interventions on two key actors in the value chain: small-scale producers and value-adding processors. The strategy addressed the lack of economies of scale among buffalo and cow producers and the lack of technical knowledge among processors. To strengthen the competitiveness of the sector as a whole, the project also integrated direct training to key support service providers such as veterinarians and feed suppliers, encouraged the development of business development skills for all its beneficiaries, and addressed constraints in the overall business environment such as limited access to finance. The project provided a combination of training, technical assistance, marketing linkages, and study tours to over 7,000 livestock smallholders. Also, in order to solidify future collaborative efforts between smallholders and other powerful stakeholders, ACDI/VOCA sponsored three regional workshops and a cumulative national conference in September 2017. The conference was attended by over 800 people, including 650 smallholders and processors, as well as 150 local and international industry experts.

The project impact was important: over the course of the 4-year, US\$ 8.4 million project, AERI assisted over 45,000 smallholder farmers. As a result, buffalo milk production increased by 63% and cow milk production by 153%, also increasing the average selling price of animals and net incomes by over 20%. The socioeconomic impact assessment of the project also revealed that benefits to participating smallholders included increased access to resources and opportunities, awareness about animal nutrition and health, access to veterinary services, new value-added dairy products, and improved access to markets. The project also empowered women since in Egypt it is customary for women to tend to cows and buffalo while men tend to the fields and thus the majority of AERI's beneficiaries were women. AERI improved the financial well-being of these women by arming them with the skills

³⁶ ACDI/VOCA is an economic development organization that fosters broad-based economic growth, raises living standards, and creates vibrant communities. Based in Washington, D.C., ACDI/VOCA has worked in 147 countries since 1963. Its expertise is in catalyzing investment, climate smart agriculture, empowerment & resilience, institutional strengthening, and market systems.

and knowledge to earn a higher income from their milk production activities and by helping them take advantage of new business opportunities such as the production of value-added dairy products.

5.4.3 NGOs and Quasi-governmental organizations

Egyptian Milk Producers Association (EMPA) ³⁷: The association has 110 members who work in livestock farms and dairy farms. They provide technical support services, exchange of experience and information in cooperation with specialized bodies to raise the level of performance farms.

The Food Export Council (FEC) ³⁸: is established by the Ministry of Trade and Industry. The food export council is the link between private sector exporters and the GoE. The council aims at improving the legislative and business environment for Egypt's processed food industry, by improving the competitive advantage of the sector, and to strengthening the industry's positive image in the world market place.

To accomplish its objectives, the FEC provides services to match political decisions and business interests, including hosting events in Egypt as well as participating in conferences, workshops, and fairs abroad to have a hand-on experience on the requirements of exports all over the world.

The Federation of Egyptian Industries (FEI): (FEI) is one of the country's largest employers' associations, with 20 industrial chambers as members, representing over 60,000 industrial enterprises out of which more than 90% belong to the private sector; accounting for more than 7 million workers and 20% of the national economy. The federation has recently announced the launch of a new food strategy by the end of 2018 inclose cooperation with the Ministry of Trade and Industry to reach the target of 8% industrial growth by 2020.

5.5 Constraints facing the Dairy sector³⁹

Process	Problem
Milk	- Inconsistent supply (quality and quantity) of milk to the industries, - Issues with animal feeding and care (high costs and low quality); - Unorganized farmer community: Some of the farmers are organized in the Egyptian Milk Producers Association, but most of them are unorganized and are considered to be the weakest link in the value chain. The absence of producer organizations for milk collection, cooling and transport facilities has been recognized as one of the main challenges for ensuring quality along the chain; - Seasonality in production; - Lack of veterinary services and poor genetic improvement leading to low productivity and low reproductive efficiency.
Transportation	- Inadequate infrastructure: proper transportation of milk also requires an interconnected cold chain to maintain its quality. However, cold storage facilities are inaccessible and a large proportion of milk is lost; - Poor logistics such as cold store chains and refrigerated transport systems, combined with a lack of knowledge of the hygienic handling of raw milk from farm to factory, and consequently milk quality spoilage. - High cost of equipment and transportation.

³⁷ <http://www.empaeg.com>

³⁸ <http://www.feceg.com/aboutus.php>

³⁹ This is a compilation of the constraints facing the sector in general obtained by Dcode EFC from previous interviews with stakeholders

Process	Problem
Processing	- Poor quality of milk, due to the lack of milk quality testing methods and equipment, which has impacted on the quality of dairy products and hence the competitiveness of enterprises and the industry as a whole; - Prevalence of traditional production and marketing channels; - Difficulty of access to finance; - Highly fragmented sector without specialization making it more difficult to implement food safety regulations; - Lack of reliable market information (inefficient marketing channels); - Low level of innovation within the sector and lack of product development.
Wholesale and Retail	- Role of middlemen which hinder the supply chain, smallholders have to rely on middlemen to market their products. Middlemen always have a monopolistic approach and can exploit farmers by paying low prices, executing binding sales contracts and not passing on gains when prices are seasonally high in response to lower supply;
Consumers	- Lack of consumer health awareness;

5.6 Possible interventions

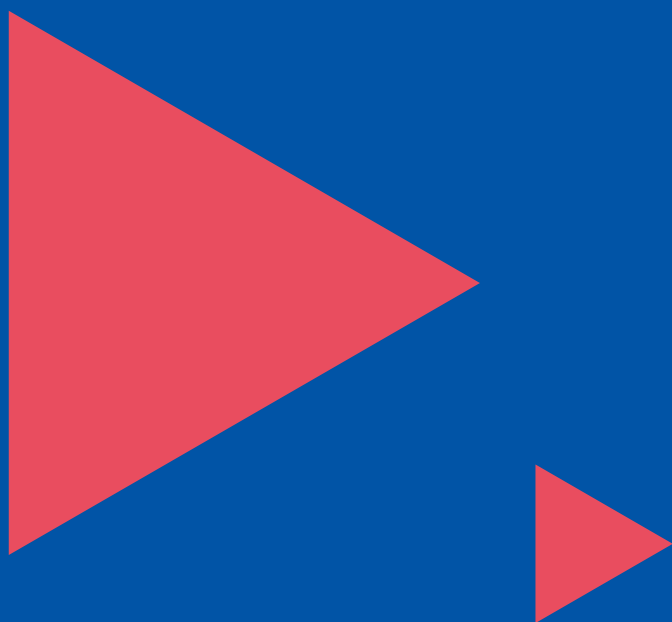
1. Assist in strengthening local governance institutions and other bodies;
2. Strengthen existing institutions that offer specialized skills for improved competitiveness;
3. Establish one-stop shop for dissemination of public information on products and markets in order to raise consumer awareness about the different products;
4. Provide support in export oriented activities through the relevant associations;
5. Improve access to finance to enterprises by establishing links with financial institutions (specifically microfinance);
6. Develop and implement marketing, branding and promotional campaigns to maintain Egyptian share of the Arabian market and promote Egyptian cheese abroad (to new markets such as Europe and North America) and increase its competitiveness;
7. Develop new packaging options for artisanal products;
8. Develop R&D institutions and strengthen the link between the industry and labs/research centers;
9. Strengthen focus on quality control and food safety regulations;
10. Provide support in the establishment of advanced and modern dairy farms with appropriate hygiene measures in order to increase animal productivity;
11. Provide trainings to farmers and milk producers regarding hygiene and the latest technologies available which translates into increased and enhanced productivity;
12. Facilitate cooperation between different bodies in order to improve production quality, reduce costs, improve veterinary services, stabilizing raw material prices (fodders and fertilizers), packaging facilities and to assist them in finding assured market outlets through contracting with retailers and exporters; and improve the distribution channels;
13. Encourage the establishment of milk producer groups and village-based associations in order to link smallholders to transparent market channels.

5.7 Summary: Dairy value chain as a potential subsector for generating jobs and incomes in Egypt's rural economy

The table below highlights the importance of the dairy value chain as a potential candidate for program intervention.

Potential for local sales	The local market has been continuously growing over the years due to higher demand and consumption in Egypt.
Import substitution and export potential	The export potential may be limited due to high local consumption of loose milk and cheese. World trade grew 17% 2016-2017 (size of trade was of USD 85 billion in 2017). Nonetheless, Egypt remains one of the main top 20 exporters of cheese in the world and one of the main producers in the Middle East and Africa.
Potential for favourable employment outcomes	The sector in general is labour intensive and with the increasing supply there's a bigger potential of employment growth. The sector also employs a large number of rural women who play a key role in livestock services and care-related work, especially milking and on farm milk processing operations.
Role of SMEs, barriers to entry and integration opportunities	The sector is characterized by a large number of MSMEs, especially in the rural areas. However, these MSMEs operate informally. In fact, barriers to entry to the Egyptian dairy market are low for small enterprises since there are no legislative barriers for new market entrants. There is also high potential for MSME to develop and grow within the value chain through forward and backward interventions. The dairy industry is crucial for the development of rural areas since "48% of households holding dairy heads depend mainly in their daily living expenses on the income generated from the sale of milk products surplus"⁴⁰. In fact, milk production has provided approximately one third of the total agricultural gross income.
Enabling institutional setup	Agri-food cooperatives and associations in the rural, more remote villages are not adequately equipped to push through the initiatives introduced by relevant entities. That being said, the dairy industry and corresponding sectors do prove to be potentially lucrative; growing interest in this potential value is the main drive behind the multiple CSR projects -for development of the industry- that are well under way. Large private sector companies are thus interested in supporting initiatives provided that they are sustainable, well organized, and championed by an entity with enough leverage and trust (i.e. Chamber of Food Industries)

⁴⁰ USDA Foreign Agricultural Service, Retail Foods, 2016 Annual



**Aromatic and
Medicinal Plants**



Aromatic and medicinal plants

6.1 Definition

Medicinal and Aromatic Plants (MAP) are classified into four groups according to their usage:

1. Raw materials in the form of extracted essential oils;
2. Spices where the non-leafy parts of the plant are utilized;
3. Herbs for seasoning from the flower part of the plant
4. Other uses like cosmetics and botanical pesticides.

Worldwide, it is estimated that up to 70,000 species are used, while in Africa it is estimated to be over 5,000 species which are used for medicinal purposes. In international trade, MAP products fall under different Harmonized System (HS) chapters (chapters 06, 07, 08, 09, 12, 13, 15, 18, 21, 33 and 40).

Egypt is mostly known for producing and exporting specific MAP product groups outlined in the table below:

HS Code	Description
0709	Other vegetables, fresh or chilled.
0713	Dried leguminous vegetables, shelled, whether or not skinned or split
0714	Manioc, arrowroot, salep, Jerusalem artichokes, sweet potatoes and similar roots and tubers with high starch or inulin content, fresh, chilled, frozen or dried, whether or not sliced or in the form of pellets; sago pith.
0906	Cinnamon and cinnamon-tree flowers.
0909	Seeds of anise, badian, fennel, coriander, cumin or caraway; juniper berries.
0910	Ginger, saffron, turmeric (curcuma), thyme, bay leaves, curry and other spices.
1207	Other oil seeds and oleaginous fruits, whether or not broken.
1211	Plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered.
1404	Vegetable products not elsewhere specified or included.

Egypt is considered an important producer of MAP. The total cultivated area represented 0.9% of the total cultivated area in FY 2015/16, and the local production is normally focused on herbs, spices, and essential oils. The main producers for coriander, cumin, caraway, basil, and anise are generally concentrated in Assuit, Beni-Suef, Fayoum, Giza, and Minya governorates.

Processing includes extraction of essential oils and even the production of medicinal preparations, but this depends on the equipment used and the technology of the facility. In Egypt, most of the local production is concentrated on herbs, spices, and essential oils.

Despite being an old industry, the MAP sector suffers from low quality and safety standards, which limits its export potential. In 2017, total exports of the sector were US\$ 57.4 million, down from US\$ 59.5 million in 2016. Most of the Egyptian exports are directed to the European market and the United States. The rest is exported to other markets including Arab Gulf countries, Asia, and Australia.

The value chain overview in the following section is based on qualitative research, including a broad literature review of secondary data analysis and recommendations by UNIDO in 2011⁴¹, to understand the MAP value chain, the key actors, and key constraints in tapping the potential of this subsector

6.2 Value chain Overview

The secondary research revealed that MAP production is labour intensive; employing approximately 2% of the total number of agricultural workers in Egypt ⁴², with significant female participation. The value chain comprises of different actors-suppliers, growers, pre-processors, local traders, and exporters, in addition to different supporting institutions and initiatives such as the Ministry of Agriculture and Land Reclamation and the Agricultural Export Council, among others.

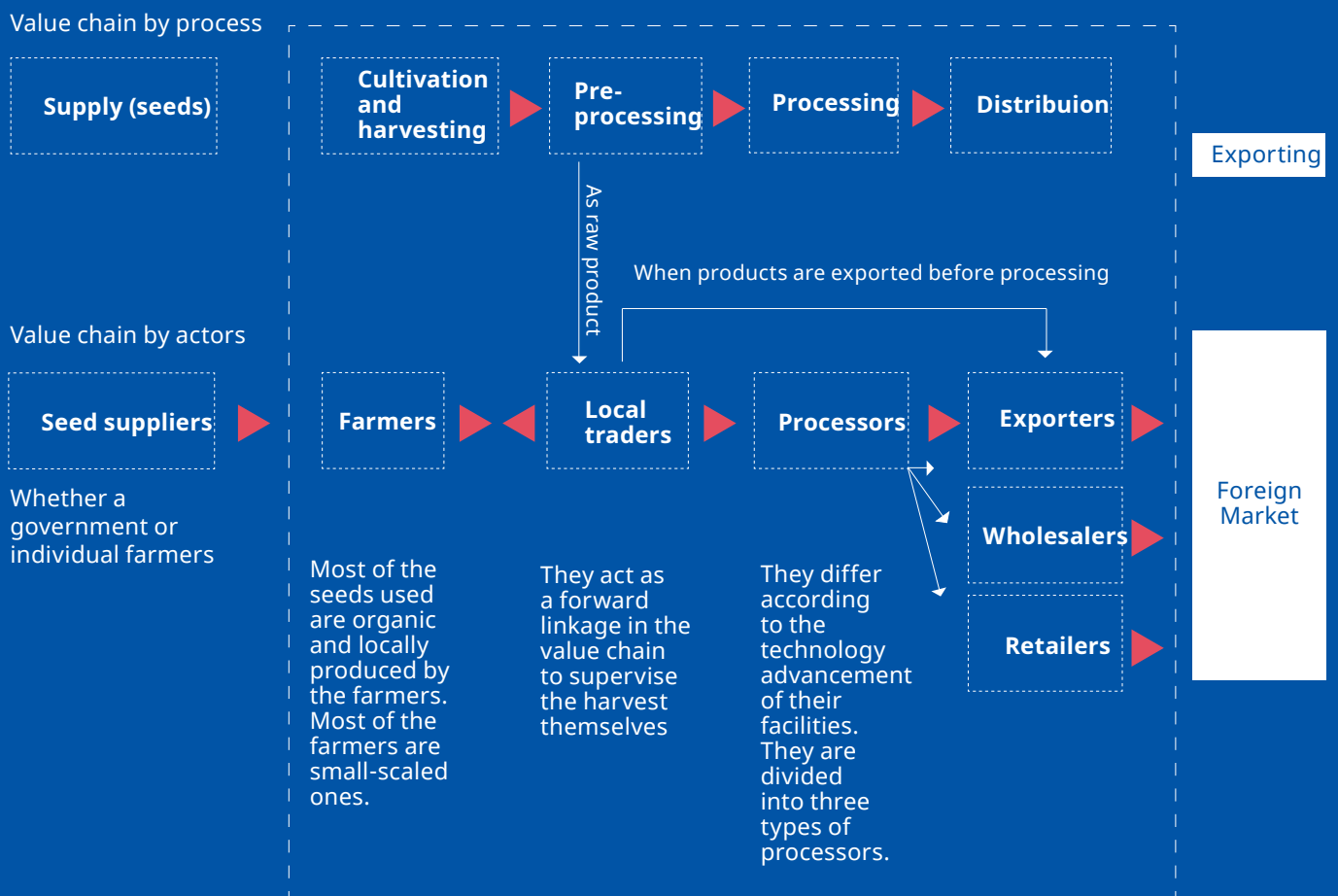
The MAP value chain in Egypt, governed mainly by market forces, is poorly organized and lacks cooperation among the actors across the value chain. This is exacerbated by fragmented and scattered land ownership which impedes technology penetration, especially at the lower links of the value chain. To mitigate this, growers/producers often establish a single entity facilitated by local traders to collaborate production and distribution. Because of the lack of competition between seed suppliers, seed varieties are limited and do not support optimum production. Most of the growers use their own seeds instead. Although the producers/growers are aware of the international standards and qualifications such as the EU regulations, they still generally use poor hygienic post-harvest techniques that affect products' safety. The majority also uses traditional irrigation systems which are inefficient in terms of production and time consumed in comparison with new advanced irrigation techniques.

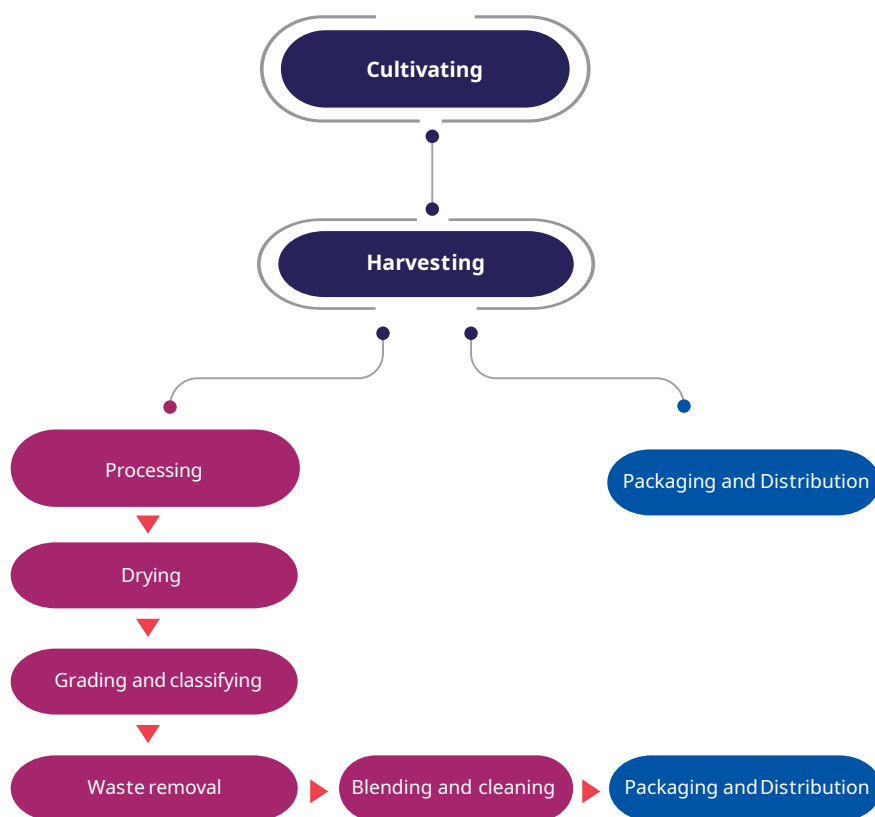
The value chain has two main channels through which the product is delivered to the final consumer, depending on who leads the value chain. The first channel is led by the local traders who act and work on both sides-with the exporters on one hand and the growers on the other hand. They give the growers technical assistance to manage product quality and delivery; they even sometimes supervise the harvesting process themselves. In some instances, the local traders also act as pre-processors and extract oils out of the plants.

After the stage of harvesting, the plants are either directly sent for packaging and distribution, or enter the processing stage.

41 UNIDO/ETRAE (2011). "Value Chain Mapping Report: Upgrading Egyptian Medicinal and Aromatic Plants Value

42 CBI (2013). "Export Value Chain Analysis Egypt Agriculture – Herbs and Spices". The Dutch Centre for the Promotion of Imports from Developing Countries (CBI).





The processing stage of the value chain includes: drying the plant, grading and classifying the yield according to the usage, removing waste, blending and cleaning, packaging and storing. Here lies the problem of poor storage or drying methods. Post-harvest problems include poor drying and handling processes that can adversely affect the yield, the drying can be un-hygienic whether on the sides of the roads or even in special facilities that are still primitive.⁴³ The companies engaged in the processing stage are few, almost around 150.⁴⁴ With the 10 large companies in Cairo and Alexandria being export oriented, most of the companies engaged in MAP production are MSMEs.

The second channel is led by large processors/exporters, they are divided into three groups: those who have large facilities for all the processing phases of production, those who have facilities for screening and packaging only, and those who only purchase the final products from local traders with no control over the quality of the final product. The level of specialization of exporters is very low as they work with a variety of products⁴⁵. Exporters usually work with organic and clean pesticide free products to try and eliminate the problem of quality. Processors/exporters sometimes also engage in contract farming schemes with small scale farmers to have more control on all the steps along the value chain.

43 Gad, Nadia, M. R. Abdel-Moez, and Hala Kandil. "Influence of cobalt and mycorrhizae mediated phosphorus on some higher plants growth and yield." *J. Basic. Appl. Sci. Res* 2.11 (2012): 11942-11951.

44 CBI (2013). "Export Value Chain Analysis Egypt Agriculture – Herbs and Spices". The Dutch Centre for the Promotion of Imports from Developing Countries (CBI).

45 UNIDO/ETRA (2011). "Value Chain Mapping Report: Upgrading Egyptian Medicinal and Aromatic Plants Value Chain – Access to Export Markets". United Nations Industrial Development Organization (UNIDO).

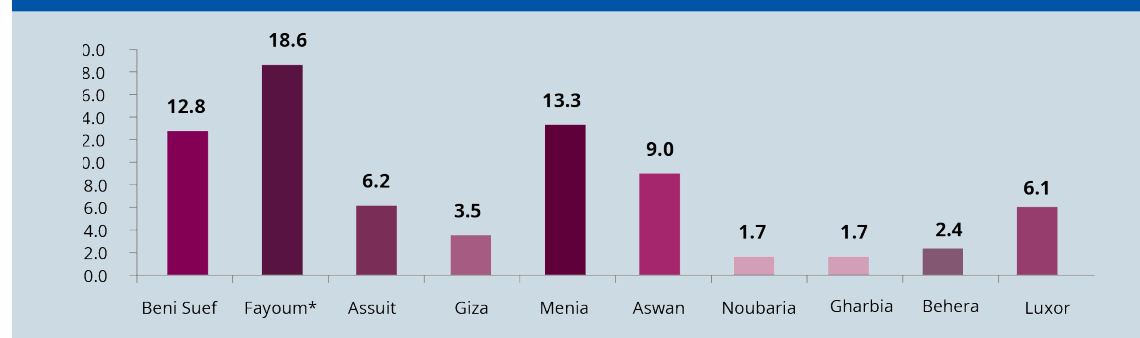
The value chain, in general, is characterized by the somevertical integration and almost no horizontal one; the latter is primarily due to incomplete information among the different market players. For small scale farmers, prices are often announced by local traders with little negotiation, while the large scale companies have a better access of information and market knowledge.

6.3 Economic Viability

6.3.1 Production

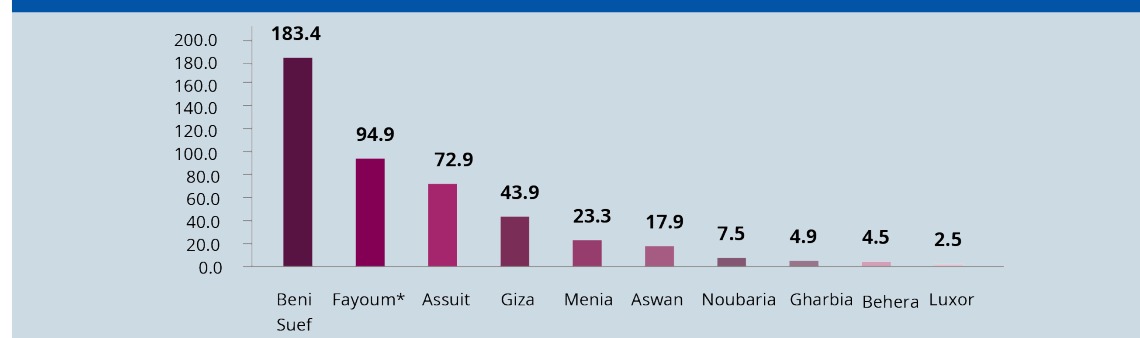
The cultivated MAP area represents 0.9% of the total cultivated area in Egypt and has reduced in recent years due to several reasons including the fluctuation of prices and the high percentage of crop wastage. It is concentrated mainly in Upper Egypt. Beni-Suef governorate is the largest producer, with total production reaching almost 183,000 tons in 2016, followed by Fayoum which is the richest governorate in terms of associations and cultivated area and a production of 95,000 tons in 2016.

Chart 21: Egypt's MAP production by governorate in 2015/16 (thousand tons)



Source: CAPMAS

Chart 22: Egypt's MAP cultivated area by governorate in 2015/16 (thousand feddans)



Source: CAPMAS

6.3.2 Employment and Seasonality

The percentage share of agricultural employment in total employment reached 24.7% in 2017. Most of the workers in the sector are seasonal, with 1 permanent worker to 5 seasonal ones during peak seasons. According to the Skills for Trade and Economic Diversification (STED) survey conducted for the Egyptian food processing sector in 2014, large exporting enterprises tend to hire a larger number of employees than small scale companies. In fact 65% of exporting companies employ 50 workers

or more⁴⁶. Skilled labour plays a vital role in the development of the sector and processed food in general. The Food Technology Center and the former Industrial Training Center- that is under the supervision of the new MSMEs agency- are the main service providers for trainings to ensure that workers in the field have knowledge and training in the latest technology in storage and oil extraction.

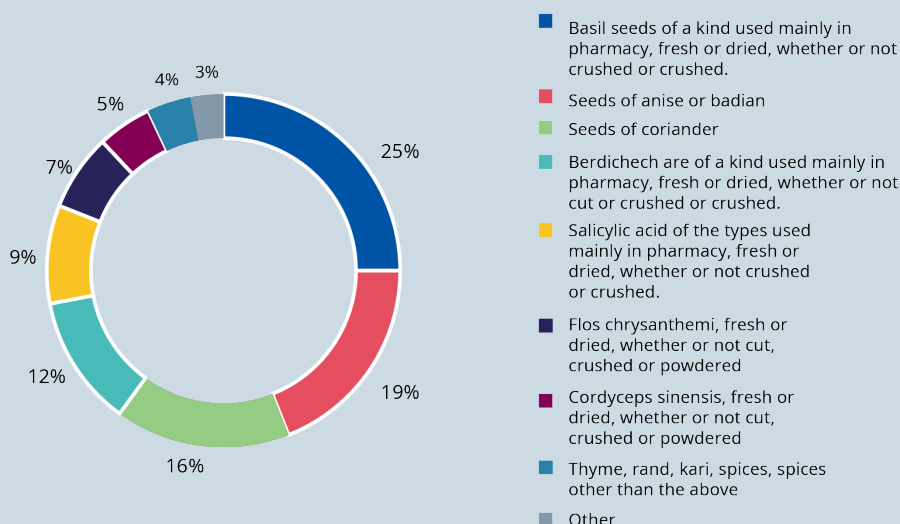
There is a significant shortage of skilled labour, especially food safety and hygiene followed by marketing and managing the distribution channels and most large exporting companies (more than 50% of employers⁴⁷ according to the survey) face difficulty in finding skilled workers

In Egypt, women in the agricultural sector, and in MAP specifically, represent about 40% of the workforce in large companies and are primarily employed as seasonal workers⁴⁸.

6.3.3 Quality

Seven (out of 10) of large exporting companies, with large number of employees, obtained quality certificates. Small scale companies however lacked information on certification, limiting their opportunities to compete in the international market and penetrate new markets. Companies located in industrial zones and urban areas are more likely to have a quality certificate than those located in rural areas. Usually companies with unstable and indirect exporting strategy are more likely to neglect certification, unlike regular exporting companies⁴⁹. Large exporting companies test their products in the laboratories of the Ministry of Agriculture to ensure required standards.

Top 10 MAP products exported by Egypt in 2017 (10-digit HS classification)



⁴⁶ STED Survey, Egyptian food processing sector, 2014.

⁴⁷ STED Survey, Egyptian food processing sector, 2014.

⁴⁸ WB Database, 2018.

⁴⁹ STED Survey, Egyptian food processing sector, 2014.

6.3.4 International Trade

Egypt's total MAP exports recorded US\$ 57.4 million in 2017, compared to almost US\$ 59.5 million in 2016. Most companies export directly and only a small percentage export through an intermediary. Companies in industrial zones and urban areas tend to export directly unlike those located in rural areas. In 2017, total MAP imports recorded USD 39.1 million, compared to USD 43.5 million in 2016.

Trade policy plays a vital role in integration into global value chains and attracting investors. Exporters in any sector benefit from trade agreements, and it gives companies the incentive to increase their productivity and expand their exports in different markets. Although Egypt has been a part of many multilateral and bilateral agreements, Egyptian exporting companies have to meet the technical standards of the importing countries that act as a non-tariff measure on imports.

6.3.5 Main Products

Representing 5.8% of global exports, Egypt is the 5th largest exporter of plants and parts of plants primarily used in perfumery, pharmacy or for insecticidal or similar purposes (HS 1211). Globally, there has been an 8% fall in value imported. Value exported dropped even more to reach 11%. The demand however remains high despite the drop in trade volume. Egypt could therefore benefit from the 3% difference in demand by expanding its production and increasing exports. The high revealed comparative advantage (>30) value of the Egyptian industry signifies a lucrative investment opportunity to boost Egyptian production to meet a gap in the global values of import and export.

Egypt is the 8th largest global producer of juniper berries – anise, badian, fennel, and coriander. etc. - (HS 0909) with around 2.5% share in world exports. There has been a major growth in imports for Egypt's major trade partners. Algeria and Bangladesh, which they both represent almost 33% of the total Egyptian exports for Juniper seeds, have grown by 14% and 32% respectively in terms of quantity imported. Egyptian exports have grown by 14% over the past 5 years, while world imports have only grown by 6%. It is important to consider the possibility that Egypt may be expanding too rapidly and may therefore create an excess of supply with no match in demand.

Egypt holds 1.2% of exports of dried and shelled leguminous beans (HS 0713), ranking 14th worldwide. Egypt has experienced a growth in quantity exported by 5%. World quantity of imports has grown by an average of 8% annually over the past 5 years. With a growing global demand for dried beans, Egypt has an opportunity for further expansion, due to the devaluation of the Egyptian pound which has made Egyptian products more attractive in the global market and provided a boost for expansion.

6.4 Institutional structure and Support

6.4.1 Government

6.4.1.1 Ministry of Agriculture and Land Reclamation (MALR)

There are a lot of government institutions responsible for the growth of agricultural and food processing sectors. The Ministry of Agriculture has the biggest role, ranging from the seeds to testing and quality assurance of the products, inspection, and accreditation. The Ministry also acts as a technical service provider for farmers and growers.

6.4.1.2 Ministry of Trade and Industry

The Ministry of Trade and Industry plays a major role in the development and production of processed food. It is the umbrella for several affiliates concerned with exporting and local production, such as the Egyptian Organization for Standardization and Quality, the Egyptian Accreditation Council, etc. The

Ministry is also responsible for incentivizing exporters through subsidies, industrial and trade policy directions and trade agreements that directly affect exporters of all kinds.

6.4.1.3 Egyptian Organization for Standardization and Quality (EOS)

The Egyptian Organization for Standardization and Quality (EOS) is a MoTI affiliate responsible quality control in Egypt and alignment with the WTO standards. It is responsible for formulating the food safety standards for the Egyptian market. In this context, the authority is also responsible for certain types of certifications, training and awareness for the newly issued standards. It acts as a focal point for influencing policy directions and addressing problems related to quality and standards. With 1,600 Egyptian food standards, the EOS harmonizes the Egyptian standards with the relevant international ones.

6.4.1.4 The Egyptian Accreditation Council (EGAC)

EAGC is a national body under the auspices of MoTI responsible for inspecting laboratories and accrediting certificate providers. It also provides accreditation for government entities such as the General Authority for Export and Import Control (GOEIC) which received the ISO 9001/2000 certification in 2008. While inspection may not be mandatory, exporters tend to apply for certification and accreditation to meet international standards.

6.4.1.5 Food Export Council

The Council is governed by a board of private sector companies under the umbrella of all export councils in different industries, and they report to MoTI. Private companies usually apply for membership to receive export subsidies.

6.4.2 Other Entities

6.4.2.1 The Federation of Egyptian Industries (FEI)

The Federation acts as the employers' association including 20 industrial chambers as members accounting for more than 20% of the national economy, and represents 90% of the private sector. The pharmaceutical chamber inside of the federation is responsible for assisting in strategizing sector development plan that serves the private sector companies within the chamber.

6.4.2.2 Egyptian Union for Investors Associations

The union has undertaken several initiatives including the latest project to invest 50,000 feddans for MAP production in Upper Egypt (Luxor), which was recently approved by the cabinet. The project aims at increasing exports and substituting raw material imports that represent almost 70% of medicines price.

6.4.2.3 Research centers

There are numerous research centers in Egypt, such as the Academy of Scientific Research and Technology (ASRT) and the Egyptian Bio-Dynamic Association and Research Center (EBDA), which have conducted studies on MAP production and innovation. EBDA cooperates with different international organizations to promote and enhance organic agriculture.

6.4.2.4 International Organizations

There have been several initiatives ranging from identifying priority sectors and value chain analysis, to strategies for development in the processed food sector by international organizations such as the Food and Agriculture Organization (FAO), and the United Nations Industrial Development Organization (UNIDO) in Egypt.

6.4.2.4.1 UNIDO

The Egyptian Traceability Centre for Agro-Industrial Exports (e-Trace) established to promote new technologies in Egyptian agriculture and agro-industries was among UNIDO's several initiatives in MAP and food sector in general.

In 2011, UNIDO conducted a survey study to analyze the MAP value chain using a random sample at the different levels of production, and players including service providers; in addition to in-depth consultation with various engaged stakeholders. The objective of the study was to analyze the value chain and identify gaps and potential for intervention through an action plan which emphasized the importance of development of the sector. It also aimed at directing the attention for building agricultural production clusters.

6.4.2.4.2 FAO

In 2015, FAO conducted a study to identify the gender gaps in the agricultural sector, especially in MAP and carry out a rapid assessment for producer organizations to identify the needed capacity development. These objectives were met along with an action plan to improve the overall performance of the Egyptian MAP value chain, with special consideration to women and youth.

6.5 Constraints facing the MAP value chain

Process	Problem
Cultivation	- Land fragmentation which limits technology penetration, economies of scale and consequently the yield - Most of the producers/growers use their own seeds, due to the limited availability, which sometimes leads to sub-optimal production - Prices of inputs are imposed on farmers by traders leaving little space for negotiation - The use of primitive irrigation techniques by small farmers is inefficient in terms of production and time consumed
Post harvesting & Processing	- Most small farmers have poor facilities, if at all, for post-harvesting operations, and usually use solar drying on the sides of the roads - Lack of horizontal linkages which weakens the value chain - Lack of modern technology leads to loss in production
Distribution and marketing	- Limited access to foreign markets especially small growers - Lack of information across the different links of the value chain - Sub-standard safety of the Egyptian products which diminishes their competitiveness in the international markets - Annual fluctuations in cultivated area and yield limits sustainable export agreements
Enabling environment	- Most small farmers do not have proper access to finance to equip their facilities with more advanced technologies - Few service providers and research institutes in this field - Lack of technical assistance provided for small farmers - Monopoly of prices by large companies who can export. In most cases they contract with certain farmers or traders who do not have leverage to set the prices. This puts small-scale farmers at a disadvantage due to their inability to negotiate and reach fair prices. Lack of promotion and proper branding of Egyptian products, thus limiting their ability to penetrate markets at higher prices.

6.6 Possible interventions

1. Upgrade the supply chain in terms of linkages, productivity, quality and compliance to traceability requirements
2. Provide business development support to enterprises along the supply chain
3. Set a functioning National Quality Scheme (NQS) for the MAP sector
4. Assist in trade promotion, through branding, and trade fairs
5. Provide financial instruments for upgrading machineries
6. Link farmers directly to lead firms

6.7 Summary: MAP value chain as a potential subsector

The table below highlights the importance of the MAP value chain as a candidate for potential program intervention.

Import substitution and export potential	Addressing some of the constraints related to quality assurance and food safety along with creating sustainable backward linkages can help in tapping export opportunities for Egypt's MAP products. The EMAP (funded by UNIDO) project's evaluation had demonstrated that there is also potential for import substitution, along with expanding Egypt's share in world MAP trade.
Potential for favourable employment outcomes	The sector in general is labour intensive with significant participation of women. There is potential for improving the supply of labour in the sector through specialized trainings.
Role of SMEs, barriers to entry and integration opportunities	In terms of the size of companies, most of the sector's production is concentrated in small-scaled companies (85%) while the rest (15%) is distributed among medium and large ones. There is a high potential for growth by developing the horizontal linkages within the value chain. Most of the small companies/farmers are located in low-income governorates in Upper Egypt.
Enabling institutional setup	Both public and private sectors; private organizations, governmental as well as non-governmental bodies, are channeling their joint expertise to reach a cohesive action plan for the development of the MAP sector.

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