

# Syrian Refugee Employment Trends in Jordan and Future Perspectives



West Asia-North Africa Institute, April 2018



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## 1. Executive Summary

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The civil conflict in Syria poses a complex humanitarian challenges to the West Asia-North Africa (WANA) region. Approximately 13.5 million Syrians require humanitarian assistance,<sup>1</sup> while at least 10.3 million have been forcibly displaced with several million<sup>2</sup> having fled across the borders into neighbouring states. Jordan, the focus of this report, has repeatedly played host to large numbers of displaced people. The current UNHCR statistic – 660,000 registered Syrian refugees – is deemed an underestimation by the government, which sets the number closer 1.4 million.<sup>3</sup>

Since 2016, Jordan has provided limited worker rights to Syrian refugees in five sectors including agriculture, construction, manufacturing, food and beverage services and wholesale and retail trade. The opening of designated occupations within these five sectors was a landmark decision, which promised to smooth Syrian refugee integration into the formal economy. Despite the myriad of efforts to facilitate this process, the capacity of the Jordanian economy to absorb such a large number of new workers is limited, and unemployment and underemployment of the Syrian population remains a concern.

This report provides an overview of Syrian refugee employment trends within Jordan and seeks to answer key questions related to the size and configuration of the Syrian labour force, the degree to which Syrians are employed in their preferred sector, the impact of unemployment and sector transfer on skills erosion, the ability of the Jordanian labour market to absorb Syrian workers, the vocational and tertiary education resources available in Jordan, and the industrial investment and skills gaps that will need to be filled in a post-conflict Syria. The main findings are discussed as follows:

- A quantitative study of 501 Syrian refugees that was conducted across Amman, Irbid, Mafraq, and Zarqa in August 2017 found an overall employment rate of approximately 54 per cent.<sup>4</sup> Thirty per cent of respondents indicated being employed at the time of the survey, and an additional 24 per cent indicated being unemployed at the time of the survey.<sup>5</sup> The construction (36 per cent), food and beverage (20 per cent), services (10.5 per cent), manufacturing (ten per cent), and wholesale and retail trade (9.7 per cent) sectors collectively accounted for 86 per cent of employment while in Jordan.
- A larger proportion of Syrians appear to be active in the labour market in Jordan than previously in pre-conflict Syria. Forty-nine per cent of survey respondents indicated being

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<sup>1</sup> United Nations Office for the Coordination of Humanitarian Affairs, <http://www.unocha.org/syrian-arab-republic/syria-country-profile/about-crisis>

<sup>2</sup> United Nations, <http://www.un.org/en/sections/issues-depth/refugees/index.html>

<sup>3</sup> Jordan Ministry of Planning and International Cooperation (MOPIC), *Jordan Response Plan for the Syria Crisis 2015*, Report of the Jordan Response Platform, 2014

<sup>4</sup> The labour force participation rate — or economic activity rate — is the labour force divided by the working age population. The labour force includes both the employed population and the population that is defined as unemployed or looking for work.

<sup>5</sup> It is possible that the overall employment rate is overstated as a result of fact that the sample was skewed towards a younger demographic in order to maximise the amount of information collected on employment trends.

currently or previously employed in Jordan, while only 43 per cent indicated having been employed in Syria prior to displacement. The major sectors of employment for those who worked in pre-conflict Syria were agriculture (23 per cent), construction (19.4 per cent), food and beverage services (10.1 per cent), craft occupations (11.5 per cent), and private business (8.8 per cent). Overall, the education levels of survey respondents were surprisingly low: 69 per cent of respondents reported having completed primary school; 15 per cent reported having completed secondary school, and four per cent reported having completed a university degree.

- For the surveyed population, both the provision of professional training and formalisation through work permits appear to be severely limited: 80 per cent of survey respondents indicated having received no training for their current or previous occupation, and 77 per cent indicated not having processed a work permit.
- Despite the fact that a larger share of the population appears to be active in the labour market in Jordan than in pre-conflict Syria, only a small proportion of survey respondents — approximately 34 per cent — expressed an increase in motivation to work since arriving in Jordan. Only 15 per cent of survey respondents demonstrated a willingness to work in any sector in a post-conflict Syria, and only 26 per cent expressed the belief that they would be able to return to their sector of employment with no disadvantage.
- A follow-up in-depth interview-based survey that was conducted in October 2017 suggested that increases in motivation to find work since arriving in Jordan may largely be the result of heightened financial need. The lack of confidence to re-enter their sector more likely reflects the view that opportunities in post-conflict Syria will be limited than it reflects the fear that skills erosion will impede re-integration in the labour market.
- Skills alignment is an on-going concern for long-term capacity development, but comparisons of pre-displacement and post-displacement sectorial distribution suggest that a decent level of Syrian workers – approximately 57 per cent – are working in their pre-conflict sector of employment. The construction sector is characterised by the highest degree of alignment, while the agriculture sector appears to have experienced the lowest degree of alignment.
- Skills atrophy and human capital loss from unemployment, underemployment and sector transfer remain a concern, although comparisons of labour force participation rates, wages, per capita output levels, and returns to education between pre-conflict Syria and present-day Jordan suggest that at the aggregate level the cost of displacement in human capital loss terms has been relatively small.
- Projections of the size of the Syrian refugee labour force in Jordan vary considerably depending on the estimate of the size of the Syrian population in Jordan. Based on UNHCR's November 2017 655,056 figure, we project that the Syrian refugee labour

market in Jordan consists of approximately 159,300 workers. Applying the same calculation to the Government of Jordan's 2015 census figure of 1.3 million, we project that the Syrian refugee labour market in Jordan consists of approximately 315,900 workers.<sup>6</sup>

- Datasets provided by the Government of Jordan's Department of Statistics (DoS) and Ministry Planning and International Cooperation (MOPIC) suggest that the ability of the Jordanian economy to absorb such a large number of new workers is limited. The Department of Statistics projects net annual job creation at approximately 50,000. In recent years, job creation in the wholesale and retail trade, hotels and restaurants, and manufacturing sectors has outperformed expectations, while job creation in the agriculture and construction sectors has underperformed. An economic model that was produced by the Sydney-based Institute for Economics and Peace (IEP) in partnership with the WANA Institute suggests that increasing the number of jobs created on an annual basis would require a large amount of stimulus investment.
- Interviews with sub-sector and company representatives across the paper and packaging, wood and furniture, chemical and cosmetics, pharmaceuticals, textile and garment, food processing, and engineering and electronics sectors revealed a wide variety of training requirements and programmes for entry-level factory workers. A large number of interviewees noted skills gaps and lack of training centres within their industry.
- Technical and vocational education programmes in Jordan are available through the Ministry of Education and the Ministry of Labour as well as certain private vendors. Various international and non-government organisations have also implemented programmes that are tailored specifically to their target population. Course offerings cover a range of subjects including business administration, engineering, hospitality, tourism, carpentry, masonry, mechanics, electronics, and IT. Since 2011, refugee enrolment in community colleges has steadily increased while overall enrolment has decreased.
- The Syrian economy has been devastated as a result of more than six years of conflict. The World Bank estimates that the cumulative loss in GDP over the past six years has been close to USD 226 billion, and the cost of reconstruction could total USD 200 and 350 billion.<sup>7</sup> Analysts have highlighted the need for a holistic approach to the reconstruction effort that targets supply chains and markets as well as infrastructure and industry. Potential industrial sub-sectors where Syria could develop a competitive advantage may include the chemical and processed foods sectors, as well as the automotive, engineering and electronics, plastic and rubber, textile and garment, and wood and furniture sectors.<sup>8</sup>

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<sup>6</sup> It is possible that the overall employment rate and these resultant figures are overstated as a result of fact that the sample was skewed towards a younger demographic in order to maximise the amount of information collected on employment trends.

<sup>7</sup> Berti, Benedetta, 'Is Reconstruction Syria's Next Battleground,' The Carnegie Endowment for International Peace, <http://carnegieendowment.org/sada/72998>

<sup>8</sup> Bustos & Ali Yildirim, 'Syria's Manufacturing Sector: Pre-War Industrial Potential,' Lebanese Center for Policy Studies, August 2017, <http://www.lcps-lebanon.org/publication.php?id=311>

## 2. Research Methodology and Limitations

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The research presented in this report drew on the following methodology:

- Desk research conducted in both English and Arabic,
- Interviews with vocational and technical training and education (TVET) entities,
- Interviews with private sector company sub-sector representatives,
- A quantitative survey of 501 Syrian refugees and a follow-up qualitative survey of 14 Syrian refugees implemented by the market research firm IPSOS,
- A review of the occupational projection model against actual trends to assess job creation at the sectorial level, and
- Examination of other data sets including the UNHCR occupational data to assess the feasibility of matching refugee skillsets with high growth sectors.

The data that was analysed in order to draw the conclusions discussed in this report included the following:

- Investment, trade and labour market-related literature,
- Data from semi-structured interviews involving government officials, sector representatives, and private business owners,
- Occupational breakdown of Syrian refugees,
- Sizes of potential sectors of participation,
- Projected growth per sector and number of jobs created, and
- Levels of investment needed to generate employment, which was based on an economic forecasting model.

Although the WANA Institute approached all questions considered in this report in as deliberate a manner as possible, in certain cases data was unavailable or out-dated. Based on this, the following research limitations should be highlighted:

- The sample size of 501 participants for the survey that was carried to out to assess Syrian refugee employment trends was limited. When disaggregated by gender, age, or sector of employment the sample, the sample size is even smaller. The high costs associated with administering such a study limited our ability to survey a larger section of the population.
- Much of the required data for this analysis is not collected by, or made available from the government. In some cases, proxies were relied upon; in other cases, historical data was adjusted and used;
- The occupational division of registered Syrian refugees, where available, relies on self-declaration by individuals and does not take into account possible deskilling;
- The findings rely exclusively on formal employment figures due to the difficulty of calculating rates and sectorial division of informal employment;



- Limitations in Jordan's job projection model prevented a reliable calculation and elaboration of a viable sectorial distribution for Syrian employment opportunities. This projections model may have overstated overall job creation;
- The economic model that was developed by the Institute for Economics and Peace (IEP) used a baseline annual job creation figure of 20,000 as opposed to the Department of Statistics' 50,000 figure. As a result, the model may have overstated the amount of investment that is necessary to create large numbers of jobs.

### 3. Syrian Refugee Employment Trends in Jordan

A wide range of international organisations, non-governmental organisations and government bodies have sought to provide statistics on Syrian refugee employment in Jordan. The International Labour Organisation (ILO) in conjunction with the Ministry of Labour routinely issue reports on the number of work permits that have been granted to Syrian refugees. In 2015, the ILO and the Norwegian think tank FAFO published a sweeping report entitled ‘The Impact of Syrian Refugees on the Jordanian Labour Market’ that measured Syrian refugee employment trends across key sectors.<sup>9</sup> Since that time, certain NGOs have undertaken similar research initiatives, albeit on a smaller, more targeted scale.

The following section presents the results of a quantitative survey that was conducted in August 2017 across Amman, Irbid, Mafrqa, and Zarqa. The survey sought to provide a snapshot of Syrian refugee employment trends and expectations in line with the Government of Jordan census figures. A follow-up qualitative survey of selected respondents was later conducted in order to gain a more nuanced view of the expectations and motivations behind Syrian refugees’ future plans. The statistics and assumptions derived through these two surveys provide the basis on which Syrian refugee labour market in Jordan is analysed.

#### 3.1 IPSOS Quantitative Survey Key Findings

The survey, which was conducted by the market research firm IPSOS, consisted of a sample size of 501 participants, 56 per cent of whom were female and 44 per cent of participants were male. The age breakdown of participants was purposefully skewed towards the younger end of the population, with 61 per cent of the sample below the age of 35. This sampling strategy was undertaken in order to maximise the information collected on those youth and young adults who will be in a position to contribute to a post-conflict Syria. The geographic distribution of survey participants was designed to be in line with census figures: approximately 37 per cent of respondents were based in Amman; 30 per cent in Irbid, 18 per cent in Mafrqa, and 15 per cent in Zarqa.

**Table 1: Age & gender breakdown of sample**

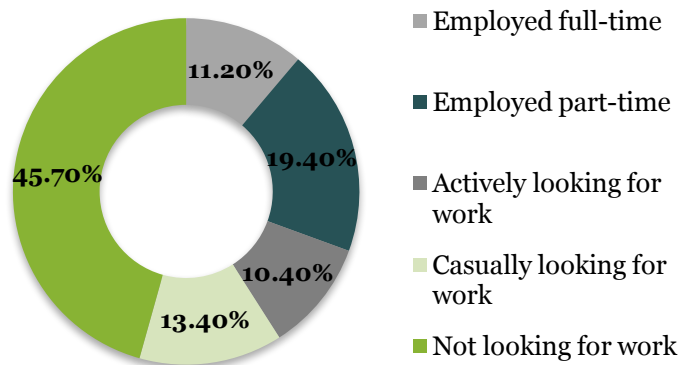
Age	Number	Per Cent
<b>18-24</b>	<b>139</b>	<b>28%</b>
Male	65	
Female	74	
<b>25-34</b>	<b>168</b>	<b>33%</b>
Male	64	
Female	104	
<b>35-44</b>	<b>113</b>	<b>22%</b>
Male	54	
Female	59	
<b>45-54</b>	<b>69</b>	<b>13%</b>
Male	33	
Female	36	
<b>55-64</b>	<b>12</b>	<b>2%</b>
Male	5	
Female	7	

<sup>9</sup> Stave and Hillesund, ‘The Impact of Syrian Refugees on the Jordanian Labour Market, 2015, [http://www.ilo.org/beirut/publications/WCMS\\_364162/lang--en/index.htm](http://www.ilo.org/beirut/publications/WCMS_364162/lang--en/index.htm)

### 3.1.1 Employment Status & Work History in Jordan

The survey data on the employment rate of Syrian refugees is broadly in line with estimates based on other data sets. Approximately 30 per cent of respondents reported being employed at the time of the survey, with 11 per cent indicating full-time employment and 19 per cent indicating part-time employment. Approximately 24 per cent of respondents reported being unemployed, with 10.4 per cent reporting that they were actively looking for work, and 13.4 per cent indicating that they were casually looking for work. Based on these figures, we project an overall labour force participation rate of 54 per cent.<sup>10</sup> However, it should be noted that this figure might be overstated given the fact that the sample was intentionally skewed towards a younger population, who is by nature more likely to participate in the work force.

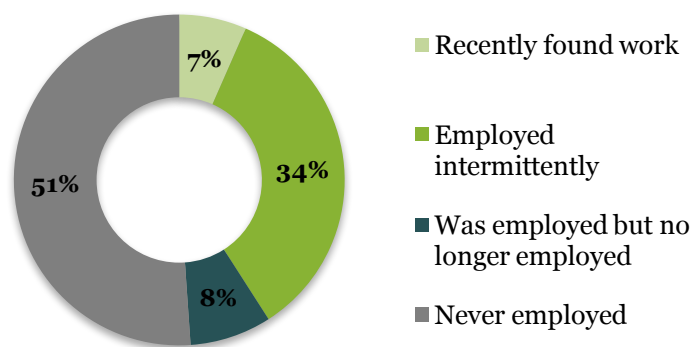
**Figure 1: Employment status**



Source: WANA-IPSOS survey, August 2017

In terms of employment history, 49 per cent of respondents indicated either current or previous employment since arriving in Jordan, with 7 per cent of respondents reporting that they had recently found work, 34 per cent reporting that they had been employed intermittently, and 8 per cent reporting that they had been but were no longer employed. Fifty-one per cent of survey respondents reported that they had not been employed since arriving in Jordan.

**Figure 2: Work history in Jordan**



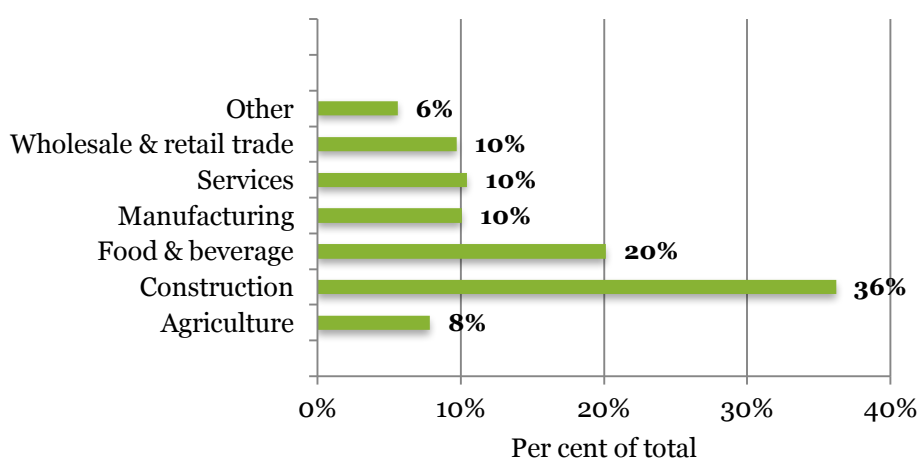
Source: WANA-IPSOS survey, August 2017

<sup>10</sup> For a definition of labour force participation or economic activity rate, see footnote 4.

### 3.1.2 Sectorial Distribution

Approximately 36 per cent of individuals who are currently employed full-time, part-time, or have been previously employed, reported employment in the construction sector; 20 per cent reported employment in the food and beverage sector; 10.5 per cent reported employment in the services sector; 10 per cent reported employment in the manufacturing sector; 9.7 per cent reported employment in the wholesale and retail trade sector, and 7.8 per cent reported employment in the agriculture sector. Of the 245 respondents who indicated previous or current employment approximately 23 reported more than one sector of employment since arriving to Jordan.

**Figure 3: Sector(s) of employment in Jordan**

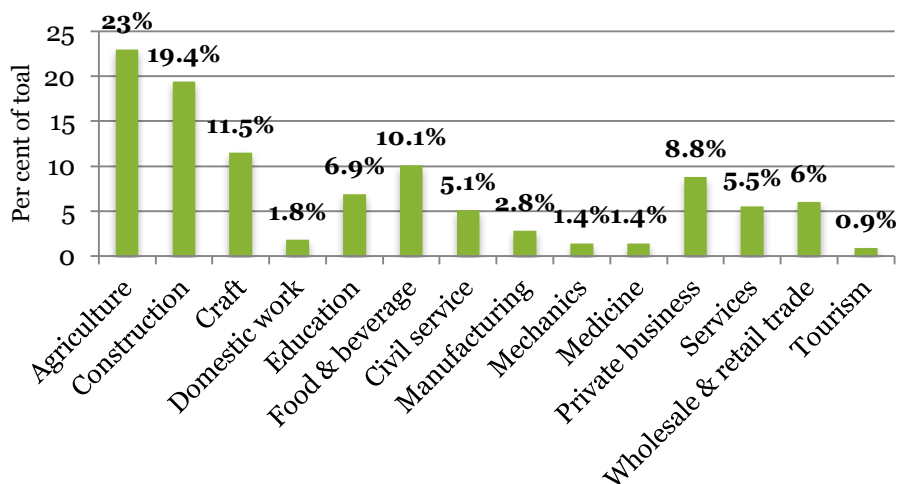


Source: WANA-IPSOS survey, August 2017

### 3.1.3 Previous Sector of Employment

Two hundred seventeen individuals - approximately 43 per cent of the sample - indicated having been previously employed in Syria. Of this figure, 23 reported having been employed in agriculture, 19.4 in construction, 11.5 in a craft occupation, 10.1 in the food and beverage sector, 8.8 in private business, and 6.9 in the education sector. The remaining 13.4 per cent were spread across domestic work, civil service, manufacturing, mechanics, medicine, and tourism sectors.

**Figure 4: Sector prior to displacement**

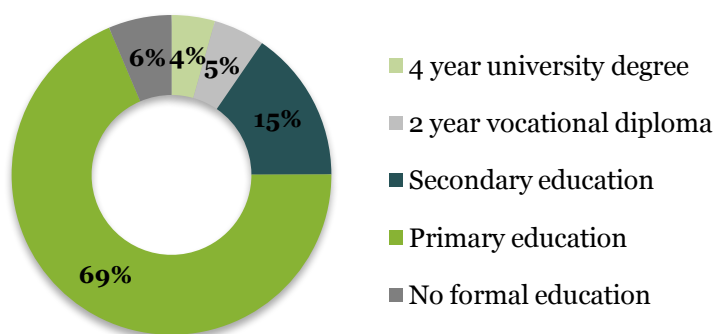


Source: WANA-IPSOS survey, August 2017

### 3.1.4 Education Levels

Of the surveyed population, an overwhelming 69 per cent of individuals reported only having a primary education. Fifteen per cent reported having completed secondary school; five per cent reported have completed a two-year vocational diploma, and four per cent reported having completed a four-year university degree. Six per cent of respondents indicated having obtained no formal education.

**Figure 5: Education levels of survey respondents**

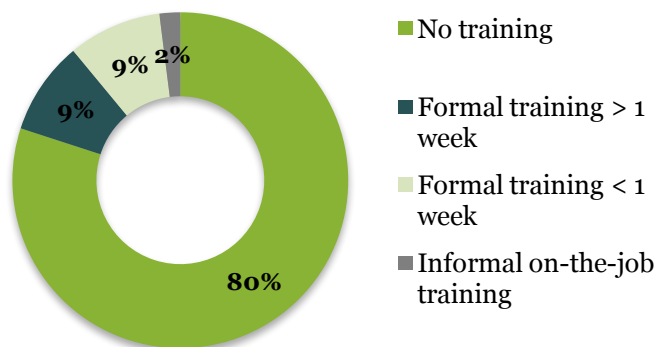


Source: WANA-IPSOS survey, August 2017

### 3.1.5 Professional Training

A small proportion of individuals indicated having received occupational training while in Jordan. Of the 245 individuals who indicated having been previously or currently employed, 80 per cent indicated not having received training, and 20 per cent indicated having received some form of training. Of the 20 per cent who received training, 45 per cent indicated having participated in formal training with a duration of more than one week; ten per cent indicated having participated in formal training with a duration of less than one week, and 45 per cent indicated having benefited from informal, on-the-job mentoring.

**Figure 6: Training received in Jordan**

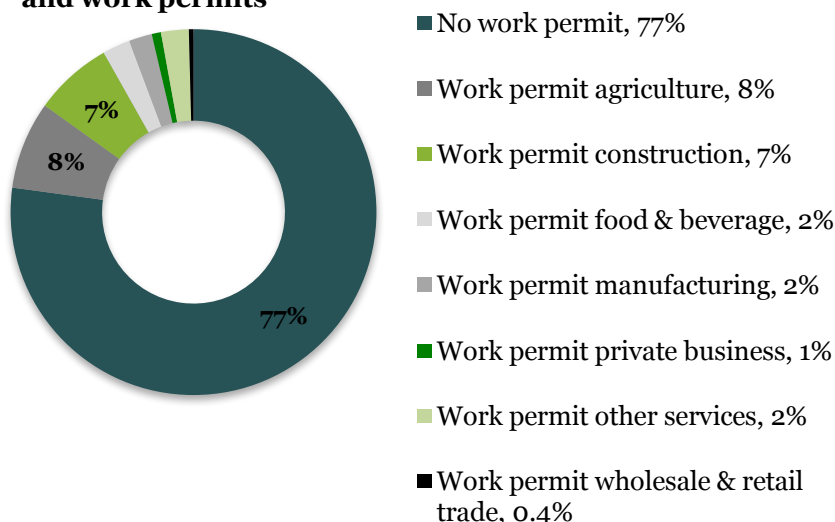


Source: WANA-IPSOS survey, August 2017

### 3.1.6 Work Permits

Of the 245 individuals who indicated having been previously or currently employed, 77 per cent indicated not having obtained a work permit. The remaining 23 per cent indicated having obtained a work permit. Eight per cent of currently or previously employed individuals indicated having obtained a work permit in the agriculture sector; seven per cent reported a work permit in the construction sector; and the remaining eight per cent reported a work permit across the food and beverage, manufacturing, private business, other services, and wholesale and retail trade sectors.

**Figure 7: Previously or currently employed population and work permits**

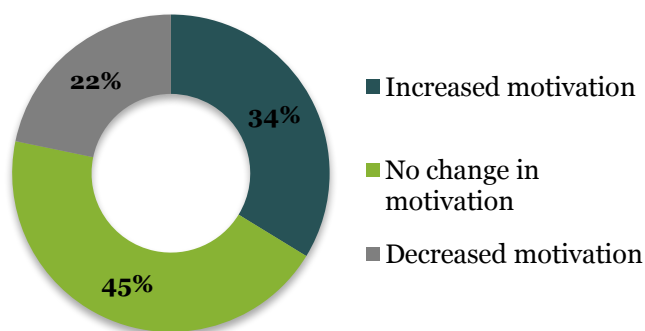


Source: WANA-IPSOS survey, August 2017

### 3.1.7 Motivation to Find Work in Jordan

A majority of survey respondents indicated the desire to find work in Jordan, with 34 per cent reporting that their motivation had increased since arriving to Jordan and 45 per cent indicating that their motivation had remained the same. Twenty-two per cent of survey respondents indicated that their motivation to find work had decreased. Younger respondents appeared more likely to report having increased motivation to find work than older respondents, and there was no significant difference across genders.

**Figure 8: Motivation to work since arriving in Jordan**

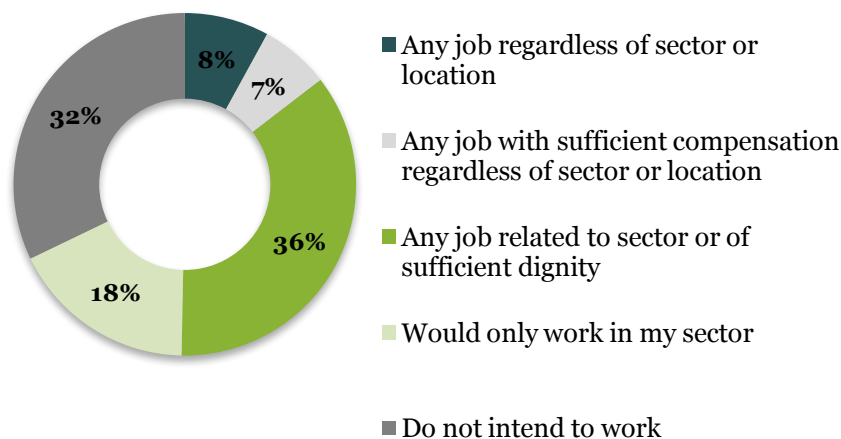


Source: WANA-IPSOS survey, August 2017

### 3.1.8 Intention to Work in Post-Conflict Syria

All survey respondents were asked if they planned to work in a post-conflict Syria. Thirty-two per cent of participants (161 individuals) responded that they did not intend to work in a post-conflict Syria. Fifty-four per cent suggested that they would only work in certain conditions, with 18 per cent (88 individuals) stating that they would only work in their sector, and 36 per cent (179 individuals) stating that they would only work in their sector or in a job that was of ‘sufficient dignity.’ Fifteen per cent expressed a firm commitment to work in a post-conflict Syria as well as a willingness to change sectors, with seven per cent (33 individuals) stating that they would take any job that provided sufficient compensation regardless of the sector or location and eight per cent (40 individuals) stating that they would take any job regardless of the sector or location.

**Figure 9: Intention to work in post-conflict Syria**

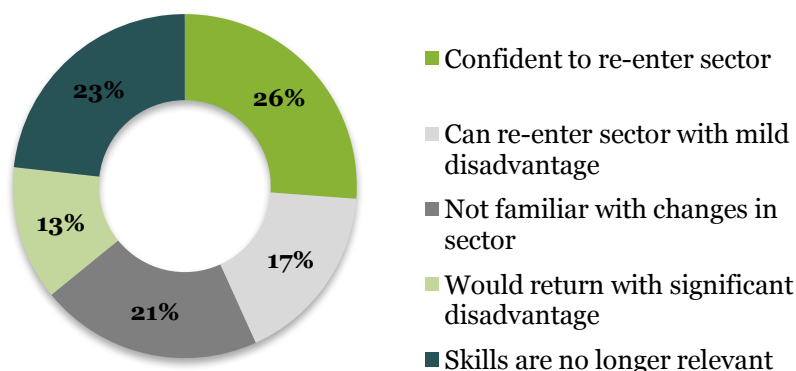


Source: WANA-IPSOS survey, August 2017

### 3.1.9 Confidence to Re-Enter Sector

Approximately 67 per cent of survey respondents indicated plans to work in a post-conflict Syria. Of this group 26 per cent (89 individuals) stated that they were confident they could re-enter their sector; 17 per cent (58 individuals) stated that they believed they could re-enter their sector with only a mild disadvantage; 21 per cent (71 individuals) stated that they were not familiar of the changes that may have taken place in their sector; 13 per cent (43 individuals) stated that they believed they would return to their sector with a significant disadvantage; 23 per cent (79 individuals) stated that they believed their skills were no longer relevant.

**Figure 10: Confidence to re-enter sector in post-conflict Syria**



Source: WANA-IPSOS survey, August 2017



## 3.2 IPSOS Qualitative Survey Key Findings

While the quantitative survey allows for certain conclusions related to skills alignment and future plans, it was less instructive on questions related to respondents' concerns, motivations, and level of contentment with current or previous employment. For this reason, a follow-up qualitative survey was conducted with 14 respondents in order to gain a more nuanced understanding of their expectations for employment in Jordan, their confidence to re-enter their sector in Syria, and their willingness to work in reconstruction and industry in a post-conflict scenario.

### 3.2.1 Motivation Towards Finding Work in Jordan

Three survey respondents who had noted a decrease in motivation to find work since arriving in Jordan were consulted for follow-up interviews. The first respondent was an artist who had worked as a trash collector in a programme managed by the ILO. The second respondent complained that she had been unable to find employment outside of the home, adding that she preferred to find work through an organisation that was understanding of her situation. The third respondent described having tried to start a home-based confectionary business, which she was forced to abandon. Two respondents who were consulted after having indicated an increase in motivation to find work in Jordan stressed the need to provide financial support to their families.

### 3.2.2 Confidence to Re-Enter Sector

Three respondents who had indicated plans to enter a new profession and two participants who had expressed doubts about their ability to return to their pre-displacement sector of employment were consulted on their motivations, concerns and future plans. One respondent, who previously held an administrative job in the Jordan-Syria free zone, indicated working in a bakery, a field in which it would be difficult to continue in a post-conflict Syria. The second respondent, who had previously worked in agriculture, expressed the need to work in an occupation that is less physically demanding. The third respondent, who had worked in tourism, believed that this field would not be available in a post-conflict context. Two respondents who believed they would return to their sector at a significant disadvantage did not attribute their anticipated difficulties to skills erosion per se. One stated that she could not return to the physical demands of agricultural work, and the other stressed that the capital required to start-up a supermarket, as he had done in pre-conflict Syria, would be out of reach.

### 3.2.3 Feelings Towards Jobs in Construction & Industry in Post-Conflict Context

Four survey respondents were consulted on their feelings towards working in construction or industrial manufacturing in a post-conflict Syria. Both respondents who had demonstrated a desire to retrain in order to obtain a more prestigious job, noted that they were working outside of their chosen occupation. The first respondent, who indicated having worked in various jobs, including: a mall, a spice factory, a plastic factory, and a meat processing factory, stressed that the high cost of living in Jordan prevented him from pursuing further education.

The second respondent expressed interest in pursuing courses that would help her to become a teacher upon return to Syria.

Two survey respondents who had expressed a willingness to retrain in order to find work in a post-conflict Syria, stressed their desire to obtain skills to work in manufacturing as opposed to construction. The first indicated that he would need additional training in order to work in the shoe manufacturing industry, which he described as more specialised in Syria than in Jordan. The second expressed the desire to receive mechanical training in heating and cooling systems in order to be able to start a business upon return to Syria.

Throughout these follow-up interviews, a few trends remained constant across almost all of the respondents consulted. Several respondents noted having worked outside of their preferred occupation, in some cases in multiple jobs across various industries. Safety, security, and the ability to provide financial resources to their families were recurrent concerns. Respondents also indicated the inability to continue their professional training given their current circumstances and noted appreciation for the support provided by international and local organisations.

### 3.3 Skills Alignment

Skills alignment is a lingering concern for long-term capacity development. Although the five sectors that were opened to Syrian refugee labour inclusion in 2016 are, on the whole, well-aligned with the sectors of employment that were dominant prior to displacement, a significant number of Syrians appear to be working in occupations in which they have no prior experience. The following section provides an overview of the proportion of Syrian workers who have found employment in their preferred sector.

Of the 501 survey respondents, approximately 43 per cent (217 individuals) indicated having been employed in Syria prior to displacement. Of this group, 71 per cent (155 individuals) indicated being currently or previously employed in Jordan, primarily in the construction (39.6 per cent), food and beverage (22 per cent), manufacturing (11 per cent), other services (11.4 per cent), and wholesale and retail trade sector (10.6 per cent) (see Figure 3). As discussed in Section 3.1.3, the agriculture (23 per cent), construction (19.4 per cent), craft (11.5 per cent), food and beverage (10.1 per cent), and private business sectors (8.8 per cent) accounted for nearly 73 per cent of employment of prior to displacement.

Comparisons of the pre-displacement and post-displacement sectorial distribution indicate a degree of misalignment between previous and current occupations. The sector for which there is the greatest alignment is construction, where 83 per cent of survey respondents who previously worked in construction are employed in the same sector. The food and beverage sector also demonstrates some degree of alignment, with 56 per cent of survey respondents prior to displacement having been employed in the same sector. The agriculture sector demonstrates the lowest degree of alignment, with only 27 per cent of survey respondents who worked in this sector prior to displacement indicating employment in the same sector in Jordan.

A very small proportion of Syrian refugees in Jordan were employed in the manufacturing sector prior to displacement. According to UNHCR occupational datasets, only 1.3 per cent of registered refugees indicated having been employed in this sector prior to displacement. Our survey response falls in line with this figure, with 2.8 per cent of respondents who were employed in the manufacturing sector prior to displacement. Of the four survey respondents who previously worked in this sector, two indicated having found employment in the same sector in Jordan, for a sector alignment of 50 per cent.

**Table 2: Sector alignment**

Sector	Previously Working	Currently Working	Alignment
Agriculture	33	9	27%
Construction	41	34	83%
Food & Beverage	16	9	56%
Manufacturing	4	2	50%

Source: WANA-IPSOS survey, August 2017

### 3.4 Human Capital Loss Amongst Syrian Refugees

Inevitably, there is a cost for those individuals who are forced to work outside of their preferred sector of employment. A change in sector and occupation may mean atrophy or erosion of a skillset that was developed over the course of many years. Unemployment and underemployment may also threaten skillsets cultivated with the support of significant time and financial investments. The conflict, which is now in its seventh year, has had a negative impact on human capital development, both for Syrians who have remained in Syria and for those who have sought refuge in neighbouring countries. Many of those who remained in Syria have had their central livelihood disrupted, while Syrians who have sought refuge in Jordan may have lost access to traditional networks, may have been forced to work outside of their preferred sector, or may have faced unemployment.

The topic of human capital loss amongst Syrians who have remained in Syria, as well as those who have sought refuge in Lebanon, Turkey, and Europe is a complex issue that will occupy the attention of economists, historians, policy makers, and practitioners for a long time to come. As the focus of this report is Syrians who have been displaced to Jordan, this section addresses only that population.

For the purposes of this report, we draw on as the concept of ‘opportunity cost’ as the primary framework for considering the cost that has been incurred to human capital development as a result of the six-year conflict in Syria. In microeconomic theory, opportunity cost is the benefit that a person could have received but forewent in order to pursue an alternative course of action.<sup>11</sup> ‘Opportunity cost’ may be quantified based on a combination of the value of output foregone and income foregone. In this report, we stop

<sup>11</sup> Baumol & Blinder, *Microeconomics: Principles and Policy*, 1998, pg. 4.

short of assigning a financial value to the human capital loss that has been sustained amongst Syrian refugees in Jordan and instead provide some preliminary data in combination with a methodological discussion of how the issue could be approached in future research.

In the present context, various factors including the estimated level of unemployment and underemployment of Syrian refugees in Jordan, the proportion of Syrians who are working outside of their preferred sector, income and output differentials between Jordan and Syria, and the differences between the returns to education in the two countries provide the basis for considering human capital loss amongst this population in Jordan.

### 3.4.1 Unemployment, Underemployment & Skills Erosion

As discussed in Section 3.1.1, according to the quantitative survey conducted in August 2017, approximately 24 per cent of respondents reported being unemployed at the time of the survey, while an additional 19.4 per cent indicated only being employed part-time, and 45.7 per cent reported that they were not seeking employment (see Section 3.1.1, Figure 1). Approximately 57 per cent of respondents who reported employment in agriculture, construction, manufacturing and services indicated that they had worked in the same sector in pre-conflict Syria.

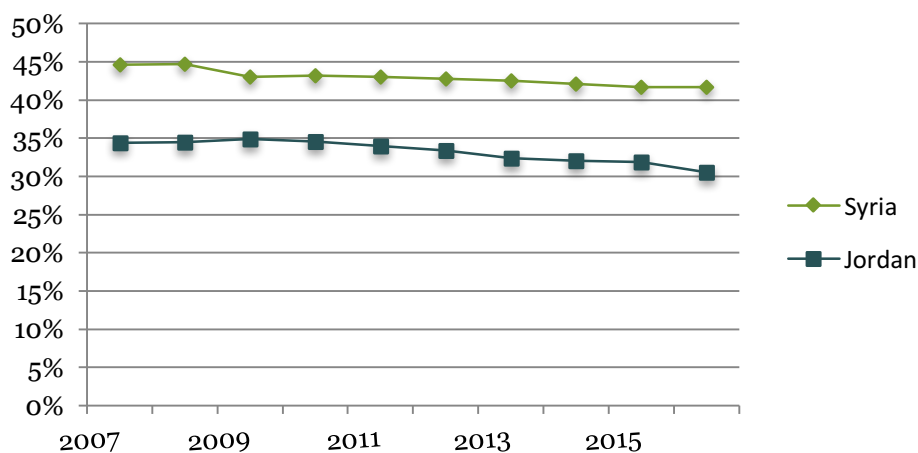
The relatively high rates of unemployment and underemployment may be a concern for long-term skills development, but skills alignment between previous and present employment appears to be decent. Moreover, data from the quantitative survey suggests that skills erosion is a small concern for the surveyed population: a majority of respondents — approximately 57 per cent — ranked it as the least of their concerns behind their children's future, lack of money for household needs, and lack of autonomy.

An initial comparison of the labour force participation rate for Syrians displaced to Jordan and the same figure for Syria suggests that a greater proportion of Syrians in Jordan are active in the labour market than in present-day or pre-conflict Syria. Forty-nine per cent of survey respondents indicated that they had either worked previously or were presently employed in Jordan.<sup>12</sup> Only 43.3 per cent of overall survey respondents reported that they had previously worked in Syria, and the most recent labour force participation figure for Syria was last estimated in 2016 at 42 per cent (see Figure 11). The fact that a larger proportion of the Syrian refugee population appears to be active in the labour market in Jordan than was previously active in the labour market in Syria may reflect the more urgent financial needs associated with displacement.

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<sup>12</sup> Previous WANA research based on UNHCR's vulnerability assessment framework data estimated total labour force participation at less than 37 per cent. This new tranche of data provided by the August 2017 WANA-IPSOS survey generates a labour force participation figure that is far greater. The difference here may reflect the fact that UNHCR vulnerability assessment data is skewed towards the most vulnerable portions of the population.

**Figure 11: Labour force participation Syria & Jordan, 2007-2016**



Source: Trading Economics/ Jordan Department of Statistics/ The World Bank

### 3.4.2 Foregone Income & Output

A comparison of pre-conflict Syria average income levels to estimations of current average income level of Syrian refugees based on UNHCR Vulnerability Assessment Framework data, suggests that from an income perspective, employed Syrian refugees might not have foregone so much as a result of displacement to Jordan.<sup>13</sup> However it should be noted that this approach excludes such factors as debt incurred, damage to or loss of property and assets and therefore may not provide a comprehensive view of welfare.

There is a wide variation in figures reported on average monthly income levels in Syria. According to reporting conducted by *The Guardian* and the Euro Money Institutional Investor Company CEIC, between 2010 and 2011 the average monthly income in Syria was approximately USD 300.<sup>14/15</sup> In May 2016, the website Enab Baladi reported that the average monthly Syrian wage had fallen to approximately USD 42 per month as a result of the plummeting exchange rate value of the Syrian pound.<sup>16</sup> In April 2017, *The Jordan Times* reported the average monthly Syrian wage at USD 94.<sup>17</sup>

For Syrians who are employed in Jordan and whose wages were or would have closer to the lower end of the range the reported by the cited news sources, the forgone wages do not appear to be considerable. An analysis of 2016 UNHCR Vulnerability Assessment data by the

<sup>13</sup> However, we must note that this approach does not provide a full picture of financial well being as it does not take into account the financial losses associated with debt or the destruction of property that have been experienced by a large number of refugee households.

<sup>14</sup> Williams, Lauren; 'Things are getting harder in Syria, but this is not Egypt,' *The Guardian*; February 14, 2011; <https://www.theguardian.com/world/2011/feb/14/syria-°-young-°-people-°-unemployment>

<sup>15</sup> CEIC, <https://www.ceicdata.com/en/country/syria>

<sup>16</sup> Enab Baladi English, <http://english.enabbaladi.net/archives/2016/05/syrian-employee-salaries/>

<sup>17</sup> Azzeh, Laila; 'Kingdom's average monthly salary stands at \$637-Report,' *The Jordan Times*; April 7, 2017, <http://www.jordantimes.com/news/local/kingdom%E2%80%99s-average-monthly-salary-stands-637-%E2%80%94-report>

WANA Institute concluded that the median income for employed Syrian refugees was approximately JOD 150, or USD 212. Assuming an average inflation rate of 3.7 per cent between 2010 and 2015, this figure would have been equivalent to JOD 119 (USD 168) according to 2010 price levels.<sup>18</sup> This figure is just slightly below the *Enab Baladi* figure that recorded the average Syrian monthly wage in 2010 at USD 170. However, for Syrians displaced to Jordan who have not found employment or whose monthly earnings were closer to the upper end of the reported salary range, the difference is more significant.

From the output perspective, a comparison of current and pre-crisis Purchasing Power Parity GDP per capita rates across Syria and Jordan, suggests that Syrian refugees who are employed in Jordan do not make significantly smaller contributions to total output than they did in Syria prior to displacement (see Annex Part I, Figure 14). According to World Bank figures, GDP per capita in Syria was approximately USD 4,502, less than half of the corresponding USD 9,473 figure in Jordan. This difference is partly offset by the consideration that the GDP per capita figure for both countries is an average for the entire population. Given that Syrian refugees in Jordan appear to take part in sporadic employment, primarily in low-value added sectors such as agriculture, retail trade, and food and beverage services, their share of total output is probably far below the population-wide average. Thus, from both an income and an output perspective, the human capital loss cost to Syrian refugees who have been displaced to Jordan appears to be limited.

### 3.4.3 Education & Returns to Education

A third approach to the question of human capital loss amongst Syrian refugees who have been displaced to Jordan, considers the average years of education completed within this group alongside an analysis of the average returns to education in Syria.

To date, few economists have sought to measure the returns to education in Syria. The academic paper ‘Labor Force Participation, Employment and Returns to Education in Syria,’ which was published in the early 2000s and presented at the Eighth International Conference on the Economics and Finance of the Middle East and North Africa in 2006, provides some context for the consideration of this question. The authors argued that while the returns to education in Syria at the time of publication were low by international standards, they increased with higher levels of educational attainment.<sup>19</sup>

The quantitative survey of Syrian refugees conducted by IPSOS in August 2017 suggests that the level of educational attainment of Syrian refugees in Jordan may be below that of the general Syrian population. Only 4.4 per cent of the sample population indicated having completed a university degree, while only 15 per cent indicated having completed secondary school. Based on 2010 figures provided by officially recognised sources, the World Bank

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<sup>18</sup> This figure is based on Trading Economics/ Jordan Department of Statistics data.

<sup>19</sup> Huitfeldt & Kabbani; ‘Labor Force Participation, Employment & Returns to Education in Syria,’ [https://www.researchgate.net/publication/228423383\\_Labor\\_Force\\_Participation\\_Employment\\_and\\_Returns\\_to\\_Education\\_in\\_Syria](https://www.researchgate.net/publication/228423383_Labor_Force_Participation_Employment_and_Returns_to_Education_in_Syria)

estimated that in 2010, 2.5 per cent of individuals above the ages of 15 years of age had completed tertiary education,<sup>20</sup> and 18 per cent had completed secondary education.<sup>21</sup>

A comparison of the figures from the August 2017 WANA-IPSOS survey and 2010 World Bank data suggests that a slightly larger proportion of the Syrian population in Jordan has completed tertiary schooling than the overall population in pre-conflict Syria. Based on the same comparison, it appears that a slightly smaller proportion of the 2017 Syrian population in Jordan has completed secondary schooling than the overall population in pre-conflict Syria. If the returns to education are lower in the context of protracted displacement than in the country of origin, then the very small margin of the Syrian population in Jordan with a tertiary education may extract a smaller benefit from educational attainment than they would have in the pre-conflict context. For the section of the Syrian population in Jordan that has completed secondary education, the lost return may also be noted, but is likely smaller.

### 3.5 Estimated Size of Refugee Syrian Refugee Labour Market

If labour market integration is the policy objective, a pertinent question to be answered is the size of the refugee labour market and its composition in terms of skillsets. Arriving at an estimate of the number of employed and employable Syrians in Jordan puts in perspective the degree of the challenge related to job creation while illuminating the areas where placement and workforce development programmes could be reinforced.

#### 3.5.1 Estimated Size of Syrian Labour Market Using UNHCR Figures

As of November 2017, approximately 655,056 Syrian refugees are registered with UNHCR. Forty-five per cent — approximately 295,000 — are between the ages of 18 and 59. If the employment (30 per cent) and unemployment (24 per cent) rates derived from the IPSOS quantitative survey are applied to this figure, we project that the Syrian refugee labour force consists of 159,300 people.<sup>22</sup> While this figure is broadly in line with other estimates previously provided by the Government of Jordan, it should be noted that if the estimated labour force participation figure generated by the August 2017 WANA-IPSOS survey is overstated, the overall size of the Syrian refugee labour force may be slightly smaller than this estimate and the estimate provided in Section 3.5.2.

As discussed previously, of the 501 IPSOS quantitative survey respondents, 43 per cent reported having been employed prior to displacement. If this figure is consistent across the entire population and is applied to the total number of Syrians registered with UNHCR, we

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<sup>20</sup> <https://tradingeconomics.com/syria/barro-lee-percentage-of-population-age-15-with-tertiary-schooling-completed-tertiary-wb-data.html>

<sup>21</sup> <https://tradingeconomics.com/syria/barro-lee-percentage-of-population-age-15-with-secondary-schooling-completed-secondary-wb-data.html>

<sup>22</sup> This figure is the product of the Syrian refugee working age population according to UNHCR registrations (295,000 people) and the estimated labour force participation, or economic activity rate of 54 per cent.

conclude that approximately 126,850 of the Syrians who are currently in Jordan were previously employed in Syria.<sup>23</sup>

UNHCR occupational data estimates that 24.7 per cent of Syrian refugees in Jordan who were employed prior to displacement worked in the agriculture sector, 15.7 per cent worked in construction; 1.3 per cent worked in the manufacturing sector; and 13.9 per cent worked in services (retail trade, hotels, and restaurants) sector. If these figures are applied to the above estimate of the number of skilled Syrians, we estimate that there are approximately 31,332 Syrians with skillsets in agriculture, 19,915 Syrians with skillsets in construction, 1,649 Syrians with skillsets in manufacturing, and 17,632 Syrians with skillsets in services (retail, hospitality, and restaurants) (see Table 3).

**Table 3: Estimated size of Syrian refugee labour force based on UNHCR figures**

Sector	Previous Employment (%) <sup>24</sup>	Number of those Skilled
Agriculture	24.7%	31,332
Construction	15.7%	19,915
Manufacturing	1.3%	1,649
Services (Retail Trade and Hotels & Restaurants)	13.9%	17,632

Source: UNHCR Occupational Data Sets, 2016

### 3.5.2 Estimated Size of Syrian Labour Market Using Government of Jordan (GoJ) Figures

UNHCR's figure is well below that of the Government of Jordan (GoJ), which includes both refugees and migrants for an estimated 1.3 million.<sup>25</sup> If we assume that the GoJ figure is characterised by the same age demographic as the UNHCR figure, with 45 per cent of the population between the ages of 18 and 59, we can assume that there are 585,000 Syrians that are of working age.

If 30 per cent of this population is currently employed, and an additional 24 per cent is in the labour force but currently out of work, we can project that the total size of the Syrian labour force in Jordan (based on GoJ as opposed to UNHCR figures) is 315,900 people.<sup>26</sup>

If we assume that UNHCR occupational data sets accurately reflect the skillsets across the whole population of Syrians (registered and unregistered), and that 43 per cent of the estimated 585,000 working age Syrian refugees in Jordan were employed in Syria prior to displacement, we project that there are approximately 251,550 Syrians in Jordan that were

<sup>23</sup> This figure is the product of the Syrian refugee working age population according to UNHCR registrations (295,000 people) and the proportion of the refugee population that are estimated to have been employed prior to displacement (43 per cent).

<sup>24</sup> 'Providing 200,000 Work Opportunities for Syrian Refugees in Jordan: A Viability Assessment,' WANA Institute, UNHCR Occupational datasets 2016, pg. 50.

<sup>25</sup> *The Jordan Times*, 'Fakhoury gives account of repercussions of regional crises at dialogue session,' Oct 28, 2017, <http://www.jordantimes.com/news/local/fakhoury-gives-account-repercussions-regional-crises-dialogue-session>

<sup>26</sup> This figure is the product of the Syrian refugee working age population according to the GoJ 2015 Census (585,000 people) and the estimated labour force participation, or economic activity rate of 54 per cent.



employed in Syria prior to displacement.<sup>27</sup> Applying UNHCR occupational skillset numbers to this figure, suggests that there are a total of 62,133 Syrians in Jordan with previous experience in agriculture, 37,733 with previous experience in construction, 3,270 with previous experience in manufacturing, and 34,965 with previous experience in services (retail trade, hotels, and restaurants).

**Table 4: Estimated size of Syrian refugee & migrant labour force based on GoJ figures**

<b>Sector</b>	<b>Previous Employment (%)<sup>28</sup></b>	<b>Number of those Skilled</b>
Agriculture	24.7	62,133
Construction	15.7	37,733
Manufacturing	1.3	3,270
Services (Retail Trade, Hotels & Restaurants)	13.9	34,965

Source: UNHCR Occupational Datasets 2016/ Government of Jordan 2015 Census Figures

<sup>27</sup> This figure is the product of the Syrian refugee working age population according to the GoJ 2015 Census (585,000 people) and the proportion of the refugee population that are estimated to have been employed prior to displacement (43 per cent).

<sup>28</sup> Providing 200,000 Work Opportunities for Syrian Refugees in Jordan: A Viability Assessment,' WANA Institute, UNHCR Occupational datasets 2016, pg. 50.

### 3.6 Jordanian Labour Market Absorptive Capacity

If labour market integration is the policy goal, then the question of labour market absorptive capacity must also be considered. Government figures on the labour market suggest that without the Syrian refugee crisis, Jordan's economy would have still been unable to absorb the number of new workers entering the labour force. The Department of Statistics estimates net job creation at 50,000 jobs per year. This coincides with a net new labour market entrant figure of 60,000 per year. Thus, even excluding the Syrian refugee population, the Jordanian economy is unable to absorb the volume of new workers entering the market on a yearly basis (see Annex Part I, Figure 15).

Datasets provided by the Government of Jordan's Department of Statistics as well as the Ministry of Planning and International Cooperation are instructive to this analysis. The following section approaches the question of labour market absorptive capacity from the demand side perspective. The following paragraphs provide a comparison of recent job creation forecasts with actual job creation at the sectorial level.

#### 3.6.1 Demand Side Analysis

Analysis of job creation from the demand side perspective emphasises aggregate demand as the key driver of growth. Within this framework, the number of jobs created during a given period is directly related to current levels of consumption, industrial investment, government spending and net exports.

In 2013, MOPIC in partnership with the Canadian International Development Agency developed a job creation forecasting tool known as the Jordan Occupational Projections Model (JOPMOD). The JOPMOD was based on assumptions about current levels of consumption, investment, government spending, and net exports and estimated that a total of 408,000 jobs would be created in Jordan by 2020, with the bulk of job creation in the services rather than the manufacturing sector.<sup>29</sup> The model projected that by 2020, the agriculture sector would experience a growth rate of 64 per cent, the construction sector 32 per cent, the hotel and restaurant sector 23 per cent, and the manufacturing sector 22 per cent (see Annex Part I, Table 11).<sup>30</sup> According to the model, a total of 27,936 jobs would be created in the manufacturing sector, followed by 24,262 in the construction, and 22,969 in the wholesale and retail trade sector.

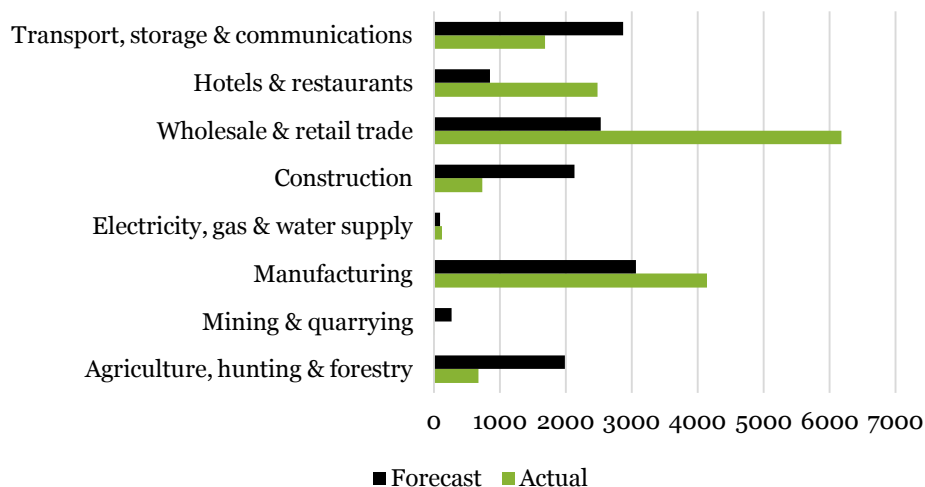
When assessed against Department of Statistics yearly job creation data for 2015, forecasted job creation exceeded actual job creation in the transport, storage, and communications; construction; agriculture, hunting, and forestry; and mining sectors. Actual job creation outstripped forecasts in the hotel and restaurant; wholesale and retail trade, and manufacturing sectors (see Figure 12).

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<sup>29</sup> Abdel Aziz, Mays. ILO-WANA Refugee Labor Inclusion Viability Assessment. 2015.

<sup>30</sup> Conference Board of Canada, Ministry of Planning. Jordan's Occupational Projection System: Outlook to 2020. 2013, <http://inform.gov.jo/en-us/By-Date/Report-Details/ArticleId/14/Jordan-s-Occupational-Projection-System-Outlook-to-2020>

**Figure 12: Job creation 2015**



Source: Jordan’s Occupational Projection System/ Department of Statistics

In 2014, the hotels and restaurants and wholesale and retail trade similarly outperformed expectations, while the manufacturing sector fell in line with predictions, and the construction and agriculture sectors underperformed (see Annex Part I, Figure 16). In 2013, the wholesale and retail trade and manufacturing sectors also demonstrated higher levels of growth rates than expected (See Annex Part I, Figure 17).

The actual job creation rates discussed here suggest disparity across sectors, with the hotel and restaurants, the wholesale and retail trade, and the manufacturing sectors demonstrating greater capacity to absorb new labour market entrants than other sectors, most notably construction and agriculture. Analysts expect an increase in manufacturing jobs growth rates on the back of extensive government support. However, efforts to increase employment in this sector will be directed at Jordanian workers, and whether or not Syrians will be eligible for the benefit packages that are being assembled by the GoJ remains unclear.

Overall, the capacity of the Jordanian economy to absorb between 159,000 and 315,000 new workers is severely limited, and the economy on the whole has performed below expectations. Approaching the issue from a sectorial perspective with appropriate emphasis on those areas of the economy that are experiencing growth, will be essential going forward.

### 3.7 Labour Market Absorption Capacity with Increased Investment

This report draws the clear conclusion that with aggregate demand at its current level, Jordan is unable to create the number of jobs necessary to absorb the estimated 315,000 Syrian workers<sup>31</sup> combined with the estimated 60,000 new market entrants per year. The capacity of the Jordanian economy to create jobs and absorb new workers would change in line with an

<sup>31</sup> This figure is based on the 2015 Census’ estimated size of the Syrian population.

increase in aggregate demand. The following section explores how job creation would be boosted on the back of varying levels of stimulus investment.

### Jobs Created with Increased Investment

Keynesian macroeconomic theory suggests that when an economy is performing below its potential, a sufficiently large increase in government spending will stimulate aggregate demand and boost economic growth. Based on this theory, we assume that the Jordanian economy's capacity to absorb Syrian labour would increase with additional investment. In order to make a rough prediction of how job creation would be spread across key sectors, we rely on an economic model that uses Vector Auto-Regression (VAR) specifications to estimate the effect an economic stimulus would have on GDP growth and sectorial level job creation.

The model is based on regression analysis measuring the relationship between government spending and economic growth. The coefficient derived from this regression model serves to predict the additional GDP growth that would result with increasing levels of stimulus investment. The implied relationship between GDP growth and job creation is based on Okun's law that states that for every two per cent increase in GDP growth, a country's unemployment rate will be reduced by 1 per cent.

Using 2014 as its base year, the model assumes that a stimulus investment in the form of increased government spending would result in job creation in equal proportion to the six key sectors' (agriculture, construction, manufacturing, services, mining, and transport) previous share of employment. The following sections describe three stimulus package scenarios and their presumed effect on job creation. While the model provides projections with regard to job creation in mining and transport, these sectors are excluded from the following analysis, as few advocates would push for refugee employment in the mining sector, and transport remains a closed sector for Syrian participation.

#### 3.7.1 Scenario One: No Investment

In the baseline scenario, which assumes no additional investment for the purpose of job creation, the model projects that 20,500 jobs will be created annually.<sup>32</sup> In this scenario, GDP growth would continue at a modest rate of 2.6 per cent, and a total of 102,492 jobs would be created by 2020. By 2025, total job creation would reach 225,885. The bulk of jobs would be created in the services sector, followed by manufacturing, construction, and agriculture (see Table 5).

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<sup>32</sup> As noted in the introduction, the baseline scenario of this model understates annual net job creation, which Jordan's Department of Statistics estimates at approximately 50,000 per year. These statistics were not accessible at the time when this model was developed. The WANA Institute in conjunction with IEP may take steps to update the model using more recent DoS figures.

**Table 5 – Scenario one total job creation by 2025**

Sector	Jobs Created by 2020	Jobs Created by 2025
Agriculture	1,790	3,580
Construction	6,141	12,282
Manufacturing	11,016	22,032
Services	74,745	149,490
<b>Total in Selected Sectors</b>	<b>93,692</b>	<b>187,384</b>

Source: IEP/ WANA analysis

### 3.7.2 Scenario Two: Investment of JOD 1.5 billion

In this scenario, an investment of JOD 1.5 billion, which would imply a 40 per cent increase in government spending,<sup>33</sup> would result in a GDP growth rate of 11 per cent. With this level of stimulus investment, approximately 83,500 jobs would be created in the first year following the stimulus. Job creation would total 144,871 by 2020, and 247,331 by 2025. As in all of the discussed scenarios, the services sector would account for a disproportionate share of the number of jobs created, followed by manufacturing, construction, and agriculture (see Table 6).

**Table 6 – Scenario two total job creation by 2025**

Sector	Jobs Created by 2020	Jobs Created by 2025
Agriculture	2,530	4,319
Construction	8,680	14,819
Manufacturing	15,571	26,584
Services	105,650	180,372
<b>Total in Selected Sectors</b>	<b>132,431</b>	<b>226,094</b>

Source: IEP/ WANA Analysis

### 3.7.3 Scenario Three: Investment of JOD 2.5 billion

In this scenario, an investment of JOD 2.5 billion — equivalent to a 65 per cent increase in government spending — would result in a GDP growth rate of 17.8 per cent. In the first year of implementation, this stimulus would lead to the creation of 143,000 jobs. A total of 173,123 jobs would be created by 2020, increasing to 275,563 jobs by 2025. As in other scenarios, the services sector would dominate, followed by manufacturing, construction, and agriculture (see Table 7).

<sup>33</sup> According to the database Trading Economics, Jordan's total government spending in 2014 totaled 3.8 billion JOD.

**Table 7 – Scenario three total job creation by 2025**

<b>Sector</b>	<b>Jobs Created by 2020</b>	<b>Jobs Created by 2025</b>
Agriculture	3,023	4,812
Construction	10,373	16,510
Manufacturing	18,608	29,619
Services	126,253	200,960
<b>Total in Selected Sectors</b>	<b>158,257</b>	<b>251,901</b>

Source: WANA-IEP Analysis

### 3.7.4 Scenario Four: Investment of JOD 3.5 billion

In this scenario, an investment of JOD 3.5 billion — equivalent to a 91 per cent increase in government spending — would result in a GDP growth of 25 per cent. This would create a total of 200,000 jobs in the first year of the stimulus package implementation. A total of 184,082 jobs would be created by 2020, increasing to 277,708 by 2025 (see Table 8).

**Table 8 – Scenario four total job creation by 2025**

<b>Sector</b>	<b>Jobs Created by 2020</b>	<b>Jobs Created by 2025</b>
Agriculture	3,515	5,305
Construction	12,065	18,202
Manufacturing	21,645	32,653
Services	146,857	221,548
<b>Total in Selected Sectors</b>	<b>184,082</b>	<b>277,708</b>

Source: WANA-IEP Analysis

### 3.8 Industrial Sector Training Requirements & Skills Gaps

The training requirements and programmes for entry-level manufacturing jobs vary based on the degree of capital-intensity of the relevant sector and the resources of the given firm. In certain cases, new workers are trained in-house, while in other instances the firm sponsors training at specialised centres. Care and maintenance of factory equipment is a necessity across all sectors, with some firms developing expertise internally and others outsourcing these services when necessary.

In private interviews, Jordan Chamber of Industry officials have asserted that the paper and packaging, wood and furniture, chemical and cosmetics, and textile and garment industrial sub-sectors will lead industrial job creation. A discussion of the training requirements and skills gaps for these, as well as the pharmaceuticals, food processing, and engineering and electronics sub-sectors is provided in the following section. A summary of the nature and duration of the training as well as perceived skills gap for each of the discussed sub-sectors is provided in Table 9.

#### 3.8.1 Paper and Packaging

The interviewed paper and packaging company representative stressed that workers in this sub-sector possess a range of credentials, including secondary education and vocational certificates and diplomas. While hiring was previously based on experience, it has become increasingly important to hold some sort of education credential. Training is conducted at vocational training centres and academies. In some instances, firms with large budgets for training, send workers to specialised vocational centres in Germany. Smaller firms may send workers to local vocational training centres, where the firm manages and oversees the training programme from start-to-finish. Other small firms may provide in-house trainings.

According to the interviewed company representative, it takes a minimum of one year for employees to be fully trained, and in most cases first-year employees work on simple tasks, including cleaning ink, dispensing, and refilling ink in machinery. New employees do not singlehandedly operate machines.

The company representative stressed that Jordanian workers possess artisanal skills needed by the sub-sector, but technical skills related to machine maintenance, parts assembly, and machine dismantling are lacking, and these activities are generally outsourced to companies dedicated to technical repair.

#### 3.8.2 Wood and Furniture

The interviewed company representative described the wood and furniture sub-sector as a machine-intensive industry that requires highly skilled labour, and stressed the need for artisans with skills in drawing, design, product assembly, and machinery operation. The shortage of skilled workers in this field may be due to the lack of dedicated training facilities and vocational licenses specific to the factory work required for the sub-sector.

Workers in this sector become specialised in the furniture associated with certain parts of the house such as kitchens, bedrooms, and living rooms, and it may take as long as two years before employees are able to work autonomously. All training is carried out inside the factory with little or no support from outside training facilities. During their first two years, workers are assigned to smaller tasks within factories.

### 3.8.3 Chemicals and Cosmetics

The chemical and cosmetics sector requires extensive training, given the potential hazards associated with the manufacture of chemical products. Chemical factories rely on highly qualified chemical engineers to play a supervisory role, and university graduates make up 10 to 20 per cent of chemical factory workers. According to the interviewed chemical company representative, the technical learning curve for factory workers in this sector is steep and depends on the motivation of the individual involved. Workers in factories producing products for export also must receive training in international product and safety standards mandated by ISO.

According to the interviewed company representative, vocational centres dedicated to training factory workers in this sector will soon be in operation. This will likely lead to an increase in the number of skilled workers. A Jordan Chamber of Industry report estimated that the creation of one job in the chemicals sector creates approximately three jobs in related upstream and downstream sectors.<sup>34</sup>

### 3.8.4 Pharmaceuticals

The training requirements for factory workers in the pharmaceutical sector are extensive. According to the interviewed pharmaceutical company representative, trainings tend to be conducted in-house, as external training programmes are less effective in equipping workers with the software and machinery skills that are necessary in the industry.

While pharmaceutical companies each produce various products that require different machinery, the general production process entails mixing and filling, which each require one-to-two weeks of in-house training, and secondary packaging, which required approximately one-month of training. In order to ensure product standards, pharmaceutical companies must obtain Jordan Food and Drug Administration (JFDA) certifications, Good Manufacturing Practice (GMP) certifications, and European Conformity (CE) marking. These qualifications require the implementation of certain labour practices, and new employees must also be trained in these practices.

The production line is staffed by a considerably high number of university graduates, who lack skills in operating machines, mixers and printing. The interviewed company representative noted that approximately one in four factory employees hold a university degree, adding that university graduates have the highest rate of turnover and are the most difficult to replace.

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<sup>34</sup> This statistic was provided to the WANA Institute in private interview with a Jordan Chamber of Industry Representative.



### 3.8.5 Textiles and Garments

The training needs for the textile and garments sector are considered as two separate categories: carpets and clothing, as the modes of operation for these sub-sectors vary greatly in terms of labour intensity, machinery and production volume.

#### Textiles and Garments: Carpets

The interviewed company representative stressed that the carpet sub-sector of the textile and garment industry is both human resource- and machine-intensive. Considerable training is required before employees become autonomous, as most new workers enter with little experience or technical skills. The company interviewed for the purposes of this report indicated having had a formal two-year training programme that was later replaced by informal training, which is carried out over a shorter time period and thought to be more cost-effective.

Carpet production factory workers can be categorised into three categories, the first of which consists of unskilled workers who work at prepping and wrapping stations. These workers require approximately two months of training and supervision before becoming autonomous.

The second category consists of weaver's assistants, who require about eight months of training and make up an essential component of the production line. The third category is professional weavers who require nearly four to five years of training in order to be able to operate machinery and oversee production.

The interviewed company representative stressed that the Jordanian labour market faces a shortage of skilled weaving engineers who have expertise in the technical aspects of industrial-scale production; carpet production factories need between one and three weaving engineers. This shortage results from the fact that the profession is not taught in training institutes or universities across the country.

The interviewed company representative also noted the high cost of machinery, which averages around USD 700,000. These machines greatly increase productive capacity, and investment capital tends to be directed toward their purchase. A purchase of one machine facilitates the creation of nearly 30 jobs in the company.

#### Textiles and Garments: Clothing

While machines are an integral component of the carpet manufacturing, clothing manufacturing stands out as a highly labour-intensive sub-sector. Each production line requires 60 employees, split into three sections: front, back, combined. Workers do not become expert tailors as they specialise in one part of a garment. Each section is overseen by a supervisor, to ensure that employees are productive and products are up to standard.

Training in a large-scale garment factory is provided within a three-month trial period in which employees are given a production target that should be completed within in a month. During this period, they participate in training in a vocational training centre with professional trainers. At the end of the three months, supervisors and hiring managers meet to decide

which employees to hire full time. Trainees who have not met the target but would like to continue, may be given a second or third chance provided they demonstrate commitment to working in the factory for the long-term.

Interviews revealed that the firm Classic Fashion now operates the vocational training centre dedicated to clothing under the agreement between the Jordan Chamber of Industry and E-TVET. The GoJ offers JOD 75 to individuals who complete the programme, whose curriculum covers both industrial and communications skills. Classic Fashion has hiring priority over the first 400 individuals that complete this programme. According to the interviewed company representative, their vocational training centre will begin offering vocational diplomas in sewing, and other relevant skills in the clothing sector in early-to-mid 2018.

### 3.8.6 Food Processing

The food processing sector is a capital intensive sector, in which the machinery in one production line in a large firm would cost a total of JOD 2 million. Each production line requires between twelve and fifteen employees.

Despite the relatively high cost of machinery, the training requirements for this sector appear to be less intensive than other sectors. One sector company representative highlighted that new employees tend to be relatively unskilled and do not have specialised vocational credentials. When starting in the factory, new workers are first tasked with elementary work that includes packing, organising, and separating. After one to two days of observing other workers, they become autonomous. Those workers that are tasked with more technical aspects of machine operation generally have one to two years of job experience without any specialised training. Higher-level jobs are taken by more experienced employees who also tend to not have specialised training outside of what they receive within the firm.

The representative of a larger firm within the same sub-sector described a similar system within his company adding that new employees undergo a two-day training course with an experienced trainer in which they become versed in the factory's machinery. This programme requires between one and two hours per day, and within one to two months the new employee is autonomous. In larger companies, machinery, quality control, and research and development centres as well as production labs tend to be populated with university graduates. Similarly, larger firms that develop a wider array of products rely on university graduate engineers and scientists for all stages of production.

### 3.8.7 Engineering and Electronics

According to the interviewed engineering and electricity sector company representative, there are two main types of training in engineering and electronics factories: on the job training (OJT) and independent training programmes. OJT programmes are designed for employees who enter the factory without any special qualification and include a rotational orientation of one week in each department. The second type of training is a type of independent training dedicated to engineering graduates who hope to work in the factory upon successful completion of the programme. In this programme, trainees are given an engineering drawing

assignment to complete in conjunction with the freedom to work on small tasks of their choosing. The flexible structure of this assignment is designed to test the trainee's creativity and ability to apply university knowledge to their work. The programme has a typical duration of two months.

According to the interviewed company representative, the Jordanian labour market is lacking in skills needed to develop the engineering sector, specifically skills related to mechanical and hydraulic maintenance. Operators for overhead cranes, as well as computer numerical control (CNC) machine operators are reportedly hard to find. When there is a need for workers specialised in these fields, factories are often forced to hire freelance specialists by the hour, which poses a significant cost to the business.

### 3.8.8 Conclusions

The training requirements and arrangements vary considerably across the discussed sub-sectors. Paper and packaging, wood and furniture, and food processing company representatives noted a total training duration (or required experience necessary for carrying out advanced assignments) of close to one year, while representatives from other sectors indicated that training programmes were typically shorter, often between two to three months. In some isolated cases, companies outsource worker training to specialised outfits, but in the majority of cases the trend is decidedly towards custom-designed programmes. The need for improved in-house knowledge relating to machine operation, maintenance and repair appears to be a recurrent theme. In addition, several firm representatives complained of the lack of technical training programmes in Jordan dedicated to their sub-sector. Despite the fact that many of the discussed sub-sectors are considered to be human rather than capital intensive, the high costs and relative importance of machines is a resounding theme. An overview of training programmes and skills gaps may be seen in Table 9.

**Table 9: Industrial sub-sector training requirements & skills gaps**

Sector	Training Duration	Description	Skills Gaps
Paper Packing and	1 year	<ul style="list-style-type: none"> <li>- Formal training in academies</li> <li>- Informal on the job training during which they're given simpler tasks such as cleaning and refilling ink.</li> </ul>	Technical skills needed to operate, maintain, and build machinery
Wood Furniture and	2 years	<ul style="list-style-type: none"> <li>- No available training centres</li> <li>- Informal on the job training. During this time, given elementary tasks.</li> </ul>	Artisans that are experts on putting furniture products together, digital drawing, design, machinery
Chemicals & Cosmetics	Varies	<ul style="list-style-type: none"> <li>- No available training centres, but soon will be</li> <li>- On-the-job training that involves teaching international product standards</li> </ul>	Motivated individuals that are willing to work in the industrial sector. Product-wise, Jordan is internationally competitive and is not lacking any particular skills
Pharmaceutical Cosmetics	2 weeks to 1 month	<ul style="list-style-type: none"> <li>- On-the-job training involving hands on teaching.</li> <li>- Not given smaller tasks in this time.</li> </ul>	Skills for operating machinery, mixers and printing
Textiles and Garments: Carpets	2 months	<ul style="list-style-type: none"> <li>- On-the-job training for wrapping and prepping stations. Not high skilled tasks.</li> <li>- Additional training needed for higher level positions such as weaver's assistants (8 months) and weavers (4-5 years)</li> </ul>	Weaving engineers that understand the technicalities of the trade and machinery
Textiles and Garments: Clothing	3 months	<ul style="list-style-type: none"> <li>- Formal training centres in which workers undergo three months of training and teaching</li> </ul>	None
Food Processing	2 days to 2 months	<ul style="list-style-type: none"> <li>- Orientation over two days, then training at production lines that takes 1-2 months</li> <li>- Menial work (packing/organising) takes just 1-2 days to get adjusted</li> </ul>	None
Engineering and Electricity	1 month	<ul style="list-style-type: none"> <li>- Rotational training over several weeks until determining department of best fit</li> </ul>	Need for those capable of operating overhead cranes, CNC programmes, as well as workers that can maintain hydraulic, mechanical and electrical machinery.

Source: WANA Company Interviews, August-November 2017

### 3.9 Vocational Training Resources in Jordan

A wide range of public and private institutions in Jordan have offered technical and vocational education opportunities to Syrian refugees. Some have partnered directly with international organisations and NGOs who have designed custom programmes for specific refugee populations. Others have allowed Syrian refugees direct enrolment in existing programmes. According to data provided by government ministries, Syrians are participating in technical and vocational training programmes in greater numbers, although the status of these programmes may be in decline. Education authorities who were interviewed for the purposes of this report note that with higher levels of funding, the sector could absorb far greater numbers of Syrian refugees. However, the lack of comprehensive mapping of the vocational skillsets that are most desired by employers, has meant that vocational training curricula are not sufficiently in line with market needs.

#### 3.9.1 Vocational Education under the Ministry of Education

The Jordanian education system offers a two-year vocational diploma to students who are unable to continue into a four-year university degree programme. Students typically enter these programmes after having completed two years of secondary school. In 2016, this track accounted for 12 per cent of Jordanian students, according to Ministry of Education data.<sup>35</sup> Courses provide training on industrial education, home economics, hospitality and tourism, and agricultural education.<sup>36</sup>

At present, Syrian refugees account for a miniscule 0.43 per cent (113 Syrian students) of students on the vocational education track in Jordan.<sup>37</sup> This is in part the result of the fact that vocational training programmes are not open to Syrian students as many of the occupations for which the training is provided, are still closed to Syrians. In interviews, Ministry of Education officials noted the relatively high operating costs of vocational education in comparison to four-year arts and science programmes, as the former requires equipment, workshops, teacher trainings, and other materials.

#### Community Colleges

There are currently 40 community colleges in Jordan, including 13 public colleges under the supervision of Al Balqa' Applied University and 27 private colleges, spread across the country. Current enrolment for students of all nationalities is estimated at 13,000, and a report by UNESCO estimates that community colleges could enrol over 40,000 students.<sup>38</sup>

Community colleges offer technical training programmes as well as two-year associate's degrees in other subjects, including humanities, science, business administration, and

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<sup>35</sup> Data provided to the WANA Institute by the Ministry of Education

<sup>36</sup> Labour Market: The Case of Vocational Training in Jordan, p. 18, <http://data.unhcr.org/syrianrefugees/download.php?id=10905>

<sup>37</sup> Data provided to the WANA Institute by the Ministry of Education

<sup>38</sup> 'Higher Education in Crisis Situations: Synergising Policies and Promising Practices to Enhance Access, Equity, and Quality in the Arab Region,' March 2017, UNESCO, p 22, <http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Beirut/HIGHEREDUCATION.pdf>

engineering.<sup>39</sup> Existing literature and interviews conducted for the purpose of this report suggest that they face a number of challenges, including lack of funding, a small pool of applicants, and failure to update curricula to meet market needs. Enrolment rates are low and declining: according to the *Jordan Times*, community colleges experienced a 21 per cent decline in enrolment during the 2014-2015 academic year.<sup>40</sup> Interviews with organisations implementing vocational training programmes suggest that Al Quds College, which is the largest in community college in Jordan, may be driving out competitors.

In 2017, approximately 548 Syrian students were enrolled in community colleges, up from 167 in 2011, according to data provided by the Ministry of Higher Education. In interviews, community college officials have expressed willingness to open their institutions to additional numbers of Syrian refugees, but highlight the need for additional funding. Al Quds College, the largest in Jordan, accounts for 79 per cent of Syrian refugee 2017-2018 academic year enrolment.<sup>41</sup>

### Private Institutions

Luminus Education, a private outfit with an expanding presence across the West Asia - North Africa region, owns a range of technical education providers in Jordan, including Al Quds College, which is one of the largest technical colleges in Jordan. Other institutions owned by Luminus include SAE Institute, which is specialised in digital filmmaking, animation, audio engineering, multimedia, game design, and digital journalism. Bell English Language Centres provide interactive language instruction to individuals and companies. Arcana Training Academy provides management and IT training programmes to companies and government organisations.

### 3.9.2 Ministry of Labour's Vocational Training Corporation

The Ministry of Labour operates the Vocational Training Corporation (VTC), which was founded in 1976 to be the main provider of vocational training in Jordan. VTC provides training in the following areas: air conditioning, sanitary installation, food industry, general electricity, car electrics, leather and textile industry, electronics, sales and commercial services, beauty and personal care, traditional crafts, hotel and tourism, automotive technician training, computers and IT, and printing professions.<sup>42</sup>

Over the last several years, refugees have accounted for a growing portion of trainees, through programmes supported by the governments of Denmark and Finland, WFP, and GIZ, among other donors. Programmes for female refugees focus on plumbing, beauty, sewing, and food production. Programmes for male refugees focus on plumbing, mechanics, electricity, barbers,

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<sup>39</sup> Dryden & Harper, 'Higher Education Opportunities Available to Refugees from Syria,' The WANA INSTITUTE

<sup>40</sup> Azzel, Leila, 'Public, Private Community Colleges on 'verge of vanishing' as student numbers drop,' *The Jordan Times*, <http://www.jordantimes.com/news/local/public-private-community-colleges-verge-vanishing'-student-numbers-drop>

<sup>41</sup> Data provided to the WANA Institute by the Ministry of Higher Education

<sup>42</sup> 'Labour Market: The Case of Vocational Training in Jordan,' p 18, <http://data.unhcr.org/syrianrefugees/download.php?id=10905>

hospitality, and food production. To date, approximately 613 Syrian refugees have participated in this programme, with the largest increase in students between 2015 and 2016.

### 3.9.3 National Employment and Training Corporation (NET)

The National Employment and Training Corporation (NET) was established with the primary purpose of training future construction workers and was originally under the purview of a corporation owned by the Jordanian Armed Forces (JAF). JAF played a key role in providing vocational training to individuals from marginalised areas of Jordan, who might later be receptive to recruitment into the military. In recent years, NET came under the partial ownership of VTC and began utilising between 12 and 14 of VTC's training centres. NET offers training courses in the following areas: carpentry and construction, blacksmith work, masonry (stone and brick-building), plaster work, tile-setting, painting and decoration, electricity, central heating technology, plumbing, and air conditioning technology. NET students are provided with a monthly stipend.

**Table 10: Jordan vocational and technical training and education (TVET) course offerings**

Institution	Government of Jordan Overseer	Course Offerings	Degree Programme/ Credential
Community Colleges	Ministry of Education	<ul style="list-style-type: none"> <li>• Humanities</li> <li>• Arts</li> <li>• Science</li> <li>• Business Administration</li> <li>• Engineering</li> </ul>	Diploma
Vocational Education	Ministry of Education	<ul style="list-style-type: none"> <li>• Industrial Education</li> <li>• Home Economics</li> <li>• Hospitality</li> <li>• Tourism</li> <li>• Agricultural Education</li> </ul>	Diploma
Vocational Training Corporation (VTC)	Ministry of Labour	<ul style="list-style-type: none"> <li>• Air Conditioning</li> <li>• Sanitary Installation</li> <li>• Food Industry</li> <li>• General Electricity</li> <li>• Car Electrics</li> <li>• Leather and Textile Industry</li> <li>• Electronics</li> <li>• Sales &amp; Commercial Services</li> <li>• Beauty &amp; Personal Care</li> <li>• Traditional Crafts</li> <li>• Hotels &amp; Tourism</li> <li>• Automotive Technician Training</li> <li>• Computers &amp; IT</li> <li>• Printing Professions</li> </ul>	<ul style="list-style-type: none"> <li>• Certificate in a certain skill, or</li> <li>• Technical diploma in a certain vocation</li> </ul>
National Employment & Training Corporation (NET)	Jordanian Armed Forces/ Ministry of Labour	<ul style="list-style-type: none"> <li>• Carpentry</li> <li>• Construction</li> <li>• Blacksmithing</li> <li>• Masonry (stone &amp; brick-building)</li> <li>• Plaster</li> <li>• Tile-setting</li> <li>• Painting</li> <li>• Decoration</li> <li>• Electricity</li> <li>• Central Heating Technology</li> <li>• Plumbing</li> <li>• Air-Conditioning Installation</li> </ul>	Certificate

### 3.9.4 International and Non-Government Organisation Programmes

In addition to the above-discussed institutions that are overseen by the Ministries of Education and Labour, several international organisations in addition to the above-mentioned Luminus Education began offering vocational training programmes to Syrian refugees. The International Labour Organisation, the World Food Programme, GIZ, and the Norwegian Refugee Council have all developed programmes, which are specifically designed for their target populations.



### 3.9.5 Youth Outside of the Formal Education System

Many Syrian youth have had their education interrupted as a result of conflict and displacement to neighbouring countries. For those individuals who have sought refuge in Jordan, technical and vocational education can provide a bridge to the labour market. According to the NGO REACH, only 62 per cent of school-aged children in Jordan attended school in 2015.<sup>43</sup> Prior to the conflict, approximately 20 per cent of Syrian students enjoyed access to tertiary education, compared to only 13 per cent of Jordan-based Syrian students in 2016.<sup>44</sup>

Alternative education facilities operated by international organisations and NGOs such as UNICEF's Makani centres and a drop-out programme administered by Questscope have partially addressed this gap. Questscope allows students who complete its non-formal education programme to prepare for the *Tanjibi* high school exam or to transition into NET or VTC programmes. Yet the bulk of these alternative education facilities do not provide a direct pathway to technical and vocational education, and a majority of refugee youth have not utilised their services.

For refugees who are outside of the formal Jordanian school system, the Vocational Training Corporation lacks a standardised procedure for assessing qualifications for admission. In order to gain admission to community colleges, students must score a minimum of 50 per cent on the *Tanjibi* high school exam, however no formal criteria have been established for vocational education tracks under the Ministry of Education.

### 3.10 Post Conflict Syria Industrial Needs

The Syrian economy has been devastated as a result of more than six years of conflict. Prior to the war, the Assad Government had taken initial steps to liberalise the economy, although many of these reforms led to heightened inequalities rather than broad-based economic growth.

Jumpstarting production in a post-conflict Syria will require investment in infrastructure and industry on a massive scale. Analysts have warned that the reconstruction should not be limited to large-scale infrastructure and industry projects but also focus on the regeneration of supply chains and business networks.

Nonetheless, stimulating certain sub-sectors within agriculture and industry will be important. The Lebanese Center for Policy Studies has emphasised the manufacture of medium complexity products within the food processing, chemicals and cosmetics, engineering and electronics, plastic and rubber, textiles and clothing, and wood and furniture sub-sectors.<sup>45</sup> The following sections discuss the context of Syria's pre-war economy, the impact of the war,

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<sup>43</sup> REACH, 'Access to Education for Syrian Refugee Children and Youth in Jordan Host Communities,' March 2015, [https://reliefweb.int/sites/reliefweb.int/files/resources/REACH\\_JENA\\_HC\\_March2015\\_.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/REACH_JENA_HC_March2015_.pdf)

<sup>44</sup> WANA Institute forthcoming report on higher education

<sup>45</sup> Bustos & Ali Yildirim, 'Syria's Manufacturing Sector: Pre-War Industrial Potential,' Lebanese Center for Policy Studies, August 2017, <http://www.lcps-lebanon.org/publication.php?id=311>

and post-conflict reconstruction needs, while highlighting potential industrial sub-sectors and products, where a post-conflict industry could focus its efforts.

### 3.10.1 Syria's Pre-War Economy

Prior to the conflict, Syria was categorised as a middle-income country with a gross domestic product of USD 59.15 billion in 2010.<sup>46</sup> Between 2000 and 2010, the country maintained an average real growth rate of 4.3 per cent, which was almost entirely the result of growth in non-oil sectors,<sup>47</sup> and an average inflation rate of 4.9 per cent.<sup>48</sup> Over the same period, the Government of Syria undertook a series of reforms to liberalise the economy that included slashing lending interest rates, allowing for private banking, reducing subsidies, establishing the Damascus Stock Exchange,<sup>49</sup> phasing out energy subsidies, and streamlining the tax regime.<sup>50</sup> The Assad Government also took steps to open the country to external trade, which included lowering tariffs, loosening other import restrictions, seeking World Trade Organisation membership, and signing a free trade agreement with Turkey (2007).<sup>51</sup> While initially viewed as promising, this reform agenda brought disproportionate benefits to the financial, real estate and large-scale tourism sectors with little benefit to the agriculture sector, which had been a pillar of the centralised economy.<sup>52</sup> This led to increasing rates of poverty<sup>53</sup> accompanied by high levels of urbanisation.

In pre-conflict Syria major industries included tourism, natural gas, crude oil, energy, phosphate mines, and agriculture. According to the World Bank approximately 17 per cent of the population (33 per cent of the adult male population) was employed in industry, which was primarily energy-related.<sup>54</sup> As in Jordan, a disproportionate share of the population was employed in public services. In 2010, the labour force was approximately 5.5 million people, 30 per cent of which were employed in the public sector.<sup>55</sup> In the years prior to the escalation of violence, agriculture accounted for a declining share of employment, falling from 33 per cent in 2000 to 13 per cent in 2011,<sup>56</sup> in part as a result of a series of droughts between 2006

<sup>46</sup> Trading Economics, <https://tradingeconomics.com/syria/gdp>

<sup>47</sup> World Bank Group, 'The Toll of War: Economic and Social Consequences of the Conflict in Syria,' July 10, 2017, <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

<sup>48</sup> Ibid.

<sup>49</sup> CIA World Fact Book, <https://www.cia.gov/library/publications/the-world-factbook/geos/sy.html>

<sup>50</sup> Gobat & Kostial; 'IMF Working Paper: Syria's Conflict Economy,' The International Monetary Forum, June 2017, <https://www.imf.org/external/pubs/ft/wp/2016/wp16123.pdf>

<sup>51</sup> Ibid.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid.

<sup>54</sup> Polk, William, 'Understanding Syria from Pre-Civil War to Post Assad,' The Atlantic Monthly, <https://www.theatlantic.com/international/archive/2013/12/understanding-syria-from-pre-civil-war-to-post-assad/281989/>

<sup>55</sup> US Department of State Country Background Notes, 2010

<sup>56</sup> World Bank Group, <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=SY>

and 2009.<sup>57</sup> This coincided with a shift towards more efficient cropping with higher quality seed and a marginal increase in agricultural land.<sup>58</sup>

Pre-war exports were in line with the country's overall economic structure. In 2010, exports were equivalent to 20 per cent of GDP, with petroleum products accounting for approximately 50 per cent, followed by fruits (4 per cent), vegetables (3.9 per cent), cotton (3.3 per cent), and plastics (3.3 per cent) (see Annex Part I, Table 15). Syria benefited from a small textile and apparel sector, many of whose Aleppo-based factories have relocated to Egypt.<sup>59</sup> Agricultural and petroleum-related industrial products therefore constituted the bulk of Syrian exports, with non-petroleum industrial products representing just a fraction of the total.

### 3.10.2 The War's Impact on Industry

The war has taken an enormous toll on Syria's infrastructure, industry and overall productive capacity. According to the World Bank, the cumulative loss in GDP over the past six years has been around USD 226 billion, and total reconstruction costs are estimated between USD 200 and 350 billion.<sup>60</sup> As of early 2017, 7 per cent of the housing stock has been destroyed, and 20 per cent has been partially damaged.<sup>61</sup> Aleppo, which previously served as the country's industrial centre, has seen 70 per cent of its buildings damaged. Many manufacturers have moved operations to Turkey, Egypt, and Jordan, and as of 2014, others have moved to two new industrial zones in Syria's Northwestern Latakia province. Interviews with banking officials have indicated that loans supporting factory relocation is a growing area of business within the financial sector.<sup>62</sup>

The agriculture sector has also suffered tremendously, contracting as much as 41 per cent with farm output severely disrupted, according to the London-based think tank Chatham House.<sup>63</sup> Irrigation systems have been damaged, and the sector has experienced shortages of labour and other product inputs.<sup>64</sup> For two decades prior to the conflict, Syria was a net producer of wheat, but production is estimated to have fallen by 55 per cent. Likewise, the livestock sector, which previously accounted for 40 per cent of total agricultural production, has also

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<sup>57</sup> World Bank Group, 'The Toll of War: Economic and Social Consequences of the Conflict in Syria,' July 10, 2017, <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

<sup>58</sup> CIA World Fact Book, <https://www.cia.gov/library/publications/the-world-factbook/geos/sy.html>

<sup>59</sup> World Bank Group, 'The Toll of War: Economic and Social Consequences of the Conflict in Syria,' July 10, 2017, <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

<sup>60</sup> Berti, Benedetta, 'Is Reconstruction Syria's Next Battleground,' The Carnegie Endowment for International Peace, <http://carnegieendowment.org/sada/72998>

<sup>61</sup> World Bank Group, 'The Toll of War: Economic and Social Consequences of the Conflict in Syria,' July 10, 2017, <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

<sup>62</sup> Ibid.

<sup>63</sup> Butter, David, 'Syria's Economy: Picking Up the Pieces,' Chatham House, June 2015, [https://www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20150623SyriaEconomyButter.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20150623SyriaEconomyButter.pdf)

<sup>64</sup> World Bank Group, 'The Toll of War: Economic and Social Consequences of the Conflict in Syria,' July 10, 2017, <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

contracted: the Food and Agriculture Organisation estimates that cattle numbers have been reduced by 30 per cent, sheep and goat numbers by 40 per cent, and poultry by 60 per cent.<sup>65</sup>

The World Bank carried out a satellite observation pilot study in partnership with the European Space Agency to assess the consequences armed conflict has had on agricultural production in Syria from 2011-2016. Using a vegetation index that measured three areas and their irrigation schemes near Dara'a, Aleppo, and Ar Raqqa, they were able to draw some initial conclusions on how the productive capacity of the Syrian agriculture sector compares to Turkey and Jordan. The key findings showed that agricultural production capacity in Syria has been hindered by a significant decline in land utilisation, cropping intensity, and crop yields. Cultivated land has decreased by about 64 per cent in the Syrian Al Eis irrigation scheme, and since 2011 agricultural productivity has decreased by 36 per cent in winter and 47 per cent in summer.<sup>66</sup> As a result of damage to irrigation schemes, many farmers have turned to the production of rain-fed crops including barley, coriander, and other herbs, and the availability of farm labour varies greatly across regions as a result of varying security and employment opportunity conditions.<sup>67</sup>

The World Bank estimates that in 2015, 52.8 per cent (6.1 million people) of the population were economically inactive. Of the remaining 5.5 million people, approximately 52.9 per cent (2.9 million) were unemployed. The services sector accounted for the largest share of employment (41 per cent, 1.1 million people), followed by the trade and tourism sector (19 per cent, 500,000 people), and the construction sector (16 per cent, 400,000) (see Annex Part I, Figure 26). Agriculture accounted for approximately 16 per cent of the employed population (400,000 people), and industry accounted for a mere 1 per cent (20,000 people).<sup>68</sup>

### 3.10.3 Post-Conflict Reconstruction Needs & Potential Industrial Sectors

According to the International Monetary Fund (IMF), it may take Syria as long as 20 years to attain its pre-war GDP.<sup>69</sup> The war has taken an enormous toll not just on physical, industrial, and agricultural infrastructure, but also on jobs, supply chains and business networks.<sup>70</sup> During the first four years after the onset of the conflict, approximately 538,000 jobs were destroyed annually, according to the World Bank.<sup>71</sup> Development assistance advocates are

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<sup>65</sup> 'Syria's Oil and Gas Industry - A Sector Profile,' The Syria Report, <http://www.syria-report.coma/library/reports-surveys/syrias-oil-and-gas-industry-sector-profile>

<sup>66</sup> Klaasse, Annemarie, and Eva Haas, 'Satellite Earth Observation to assess the consequences of armed conflict on agricultural sector in Syria,' compiled by ESA, Earth Observation for Sustainable Development, October 06, 2017, [http://eo4idi.eu/sites/default/files/content/attachments/eo4sd\\_20171006\\_conference\\_syria\\_demonstration\\_case.pdf](http://eo4idi.eu/sites/default/files/content/attachments/eo4sd_20171006_conference_syria_demonstration_case.pdf)

<sup>67</sup> World Bank Group, 'The Toll of War: Economic and Social Consequences of the Conflict in Syria,' July 10, 2017, <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

<sup>68</sup> Ibid.

<sup>69</sup> Karasapan, Omer, 'Rebuilding or redefining Syria,' the Brookings Institution, <https://www.brookings.edu/blog/future-development/2017/02/13/rebuilding-or-redefining-syria/>

<sup>70</sup> World Bank Group, 'The Toll of War: Economic and Social Consequences of the Conflict in Syria,' July 10, 2017, <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

<sup>71</sup> Gotev, Georgi, 'World Bank: More than reconstruction, post-conflict Syria will need development aid,' Euroactiv, September 2017, <https://www.euractiv.com/section/development-policy/news/world-bank-more-than-reconstruction-post-conflict-syria-will-need-development-aid/>

increasingly calling for small-scale projects that seek to rebuild markets, trust and social networks. In an interview with the news site Euroactiv.com, the World Bank's Regional Director for the Middle East, Saroj Jumar Jha warned against a reconstruction effort that is solely focused on physical infrastructure and called for a 'bottom-up approach' by which Syria is transformed into a 'development space' that empowers local actors.<sup>72</sup>

Whether or not development actors will be able to successfully implement such an approach remains to be seen. However, in parallel, a certain proportion of post-war industrial investment will be oriented towards the energy sector that prior to the war accounted for a good deal of the country's industrial output. A paper published in August 2017 by the Lebanese Center for Policy Studies, tracks the complexity of Syria's industrial products and highlights a number of industrial sub-sectors where Syrian industry could focus efforts. According to this research, over the period between 1995 and 2009, the diversity of industrial goods produced in Syria improved, as Syrian industry produced textile, agricultural, chemical, and certain machinery and electronic products. However, overall product complexity remained relatively low, with the majority of industrial and agricultural products characteristically less sophisticated than products produced in countries with higher levels of economic complexity.<sup>73</sup>

The Lebanese Center for Policy Studies argues that a post-war Syria could gradually move towards producing more complex products, specifically within the chemical and processed foods sectors as well as the automotive, engineering and electronics, plastic and rubber, textiles and garments, and wood and furniture sectors. The knowledge around less complex products in the same sectors that has accumulated based on Syria's 2009 industrial structure could serve as a springboard for the production of more sophisticated products.

The target sub-sectors might include prepared meats, fish, and other prepared products within the food processing sector; paints, oils, and chemical fertilisers within the chemical and cosmetics sector; machinery for agriculture processing and industry within the electronics and engineering sector; men's clothing within the textile sector, and lighting and bedding-related products within the wood and furniture sector. A summary of target sectors and products is provided in Annex Part I, Tables 16 and 17.<sup>74</sup> If Syria's post-conflict industry follows this recommended path, resources will need to be channelled to support skillsets and materials in these sub-sectors.

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<sup>72</sup> Ibid.

<sup>73</sup> Bustos & Ali Yildirim, 'Syria's Manufacturing Sector: Pre-War Industrial Potential,' Lebanese Center for Policy Studies, August 2017, <http://www.lcps-lebanon.org/publication.php?id=311>

<sup>74</sup> Ibid.

## 4. Conclusions & Recommendations

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A fundamental question that has underpinned the myriad of efforts by the Government of Jordan (GoJ), international and non-government organisations, and donors, is the question of the size of the Syrian refugee labour force. The figures discussed in this report — approximately 159,000 based on the UNHCR figure and 316,000 based on the 2015 Census — fall broadly in line with estimates previously made by the Ministry of Labour and the International Labour Organisation (ILO).

Then there is the question of whether the Jordanian economy can absorb such a large number of new workers. The country's slow GDP growth rate, which has not exceeded 3 per cent since January 2015, combined with Department of Statistics annual jobs growth numbers that fall well below the number of new market entrants, preclude any possibility that the job market could create a commensurate number of new opportunities. As demonstrated by the economic model described in Section 3.7, stimulus investment in the form of increased government spending would speed up job creation, although the increase in spending that would be necessary to achieve the promised 200,000 would be inordinate.

Much of the impetus that fuelled this particular research initiative came on the back of concerns related to long-term human capital loss amongst the Syrian refugee population in Jordan. However, when approached from the ground up the degree of skills atrophy resulting from unemployment seems to be less acute than originally conceived. If the trends identified within the quantitative survey are applicable to the larger population, then it appears that a larger proportion of Syrians are employed in Jordan than were originally employed prior to displacement: approximately 49 per cent of survey respondents indicated being currently or previously employed in Jordan compared to only 43 per cent who indicated having been employed in pre-conflict Syria. Part of this disparity may reflect the proportion of the population that has, over the past six years, become working age. However, a portion of the population has also joined the workforce out of financial necessity.

While wage levels and returns to education in the context of displacement are inevitably lower than they would have been prior to the conflict, the difference does not appear to be significant. Likewise, although an overwhelming majority of survey respondents expressed doubts whether they would return to their sector in a post-conflict Syria, follow-up interviews revealed that this lack of confidence points to low expectations of future employment options rather than fears of loss of competitiveness.

For those individuals who were employed prior to and post-displacement, the alignment of previous and current skillsets has been an issue of concern. Individuals who were previously employed in the construction sector, appear to have the highest chances of finding work in the same sector in Jordan. Individuals who previously worked in agriculture, appear to have the lowest chance of aligning past and previous skillsets, while the rate of alignment for Syrians working in the food and beverage sector, is moderate. The manufacturing sector also demonstrates a moderate level of alignment, although still relatively few Syrians have found employment in this sector in Jordan.

Despite the widespread effort by the Government of Jordan to bolster the manufacturing sector, a range of company representatives highlight skills gaps and the lack of local training facilities to prepare workers for employment within key sub-sectors. The technical and vocational education track in Jordan could address these deficiencies, but any intervention along these lines will require a well-thought out collaboration between industry leaders, education providers, and government.

As discussed in Section 3.10, the Lebanese Center for Policy Studies has highlighted the food processing, chemicals and cosmetics, engineering and electronics, plastic and rubber, textiles and garments, and wood and furniture sub-sectors as areas where a post-conflict Syria could develop a competitive advantage. Prior to the conflict, Syrian industry had a notable presence within these target sub-sectors, and presumably some of this knowledge could be applied to future development. If these areas are deemed strategic, then technical and vocational education providers and industry leaders have the unique opportunity to simultaneously strengthen the manufacturing knowledge base in Jordan and prepare those Syrians who are employed in these sectors for a post-conflict Syria.

To what degree will Syrians who are currently employed in Jordan be prepared to contribute to a reconstruction effort? If a large proportion of jobs relate to infrastructure and industrial development, then the match between existing skillsets and future needs may be optimal for the construction sector (approximately 40 per cent of survey respondents who reported previous or current employment indicated having worked in the construction sector), but lacking for industry. The steps that have been taken to increase Syrian participation in manufacturing will inevitably improve the base of future industry workers, but additional efforts are needed to improve the skillsets for key sub-sectors.

## 4.1 Recommendations

Based on the above analysis, we highlight the following recommendations.

### **1. Support the development of programmes that subsidise the training and employment of Syrian refugees in the manufacturing sector.**

As demonstrated by UNHCR occupational datasets and the August 2017 WANA-IPSOS survey, the number of Syrian refugees who previously worked in manufacturing, is strikingly low. UNHCR occupational datasets that were made available in 2016, indicated that only 1.3 per cent of registered Syrian refugees had been previously employed in manufacturing. This figure is broadly in line with the August 2017 WANA-IPSOS survey that suggests that only 2.8 per cent of Syrians were previously employed in manufacturing. Various efforts are underway to place, and in some cases subsidise, Syrian refugee employment in Jordan's manufacturing sector. When feasible, these programmes could be complemented by training arrangements that provide skills relevant to the above-listed target industrial sectors for a post-conflict Syria — food processing, chemicals and cosmetics, engineering and electronics, plastic and rubber, textiles and garments, and wood and furniture.

**2. Consider a ‘cluster’ model to advance technical training platforms for the manufacturing sector.**

Several private sector company representatives who were interviewed for this research, noted the lack of vocational training centres dedicated to their sub-sector whilst expressing a preference for in-house, custom training programmes. Given these trends, actors looking to support the competitiveness of Jordan’s manufacturing sector might consider supporting entities that work in close coordination with industry to develop custom training programmes across sectors. By pooling resources and expertise and employing a curriculum solely driven by industry, such training facilities could promote best practices across manufacturing sub-sectors.

**3. Commission research to improve stakeholders’ understanding of Syrian refugee employment trends within the food and beverage, and wholesale and retail trade sectors.**

The August 2017 survey that was conducted for the purposes of this report, indicated that a significant proportion of Syrians have found employment in the food and beverage (22 per cent), and wholesale and retail trade sectors (10.6 per cent). This trend falls in line with previous employment data as well as Department of Statistics jobs growth numbers: UNHCR 2016 occupational datasets have indicated that a significant proportion (13.9 per cent) of registered Syrian refugees have reported experience in retail trade, hotel and restaurant-related services, and that the same sectors experienced greater than expected jobs growth during the 2015 and 2014 periods. It is therefore not surprising that these sectors have absorbed large numbers of Syrian workers. More research is necessary to understand the skillsets utilised in these sectors and how they could be applied to a post-conflict Syria.

**4. Position and prepare Jordan’s technical and vocational training facilities to accommodate refugees in larger numbers.**

There are a number of changes that could be implemented in order to help existing technical and vocational training providers accommodate Syrian refugees in larger numbers.

At present, most institutions that provide technical and vocational training, lack standardised procedures and requirements for Syrian refugee applications. All of these institutions — community colleges, the Vocational Training Corporation (VTC), and the National Employment Training Corporation (NET) — could adapt entry requirements and create institutionalised bridge programmes to facilitate increased access for Syrian refugees. To support such an initiative, NGOs could provide catch-up programmes to help Syrian students who have been outside of the formal education system or who can otherwise not meet the entry requirements.

In order to improve financial access to technical vocational education, aid organisations and NGOs could establish stipend funds similar to those available to refugees in university education programmes.



## 5. Annex Part I: Charts & Tables

### 5.1 Skills Alignment

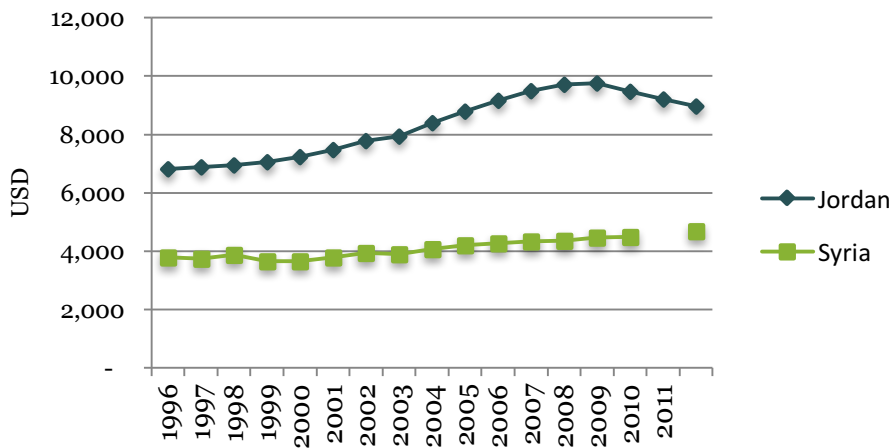
**Figure 13 : UNHCR refugee occupations in Syria**



Source: UNHCR Occupational Data 2016

### 5.2 Human Capital Loss

**Figure 14 : GDP per capita PPP, Jordan & Syria, 1996-2012**



Source: Trading Economics/ The World Bank

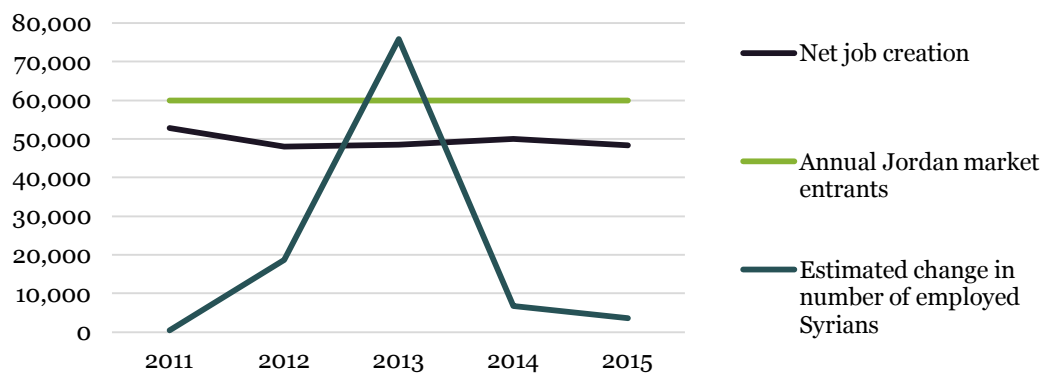
### 5.3 Jordan Labour Market Growth Expectations

**Table 11 – Jordan occupational projection model 2013-2020 forecast**

Sector	Total Jobs by 2020	Jobs Created Between 2013 and 2020	Per Growth Cent
Agriculture, Hunting & Forestry	42,245	16,473	64%
Mining & Quarrying	12,603	2,209	21%
Manufacturing	151,431	27,936	22%
Electricity, Gas & Water Supply	13,357	895	7%
Construction	100,167	24,262	32%
Wholesale & Retail Trade, Repair of Motor Vehicles	219,005	22,969	12%
Hotels & Restaurants	37,423	6,939	23%
Transport, Storage & Communications	138,584	22,972	20%

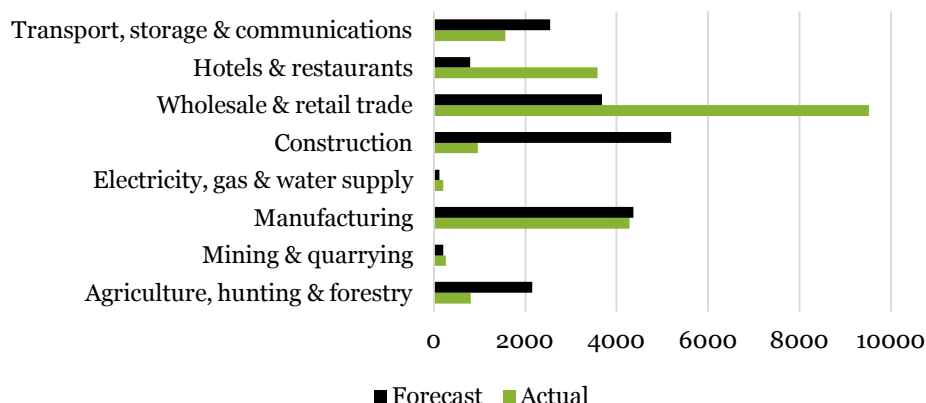
Source: Jordan Occupational Projection Model

**Figure 15: Jordan labour market, 2011-2015**



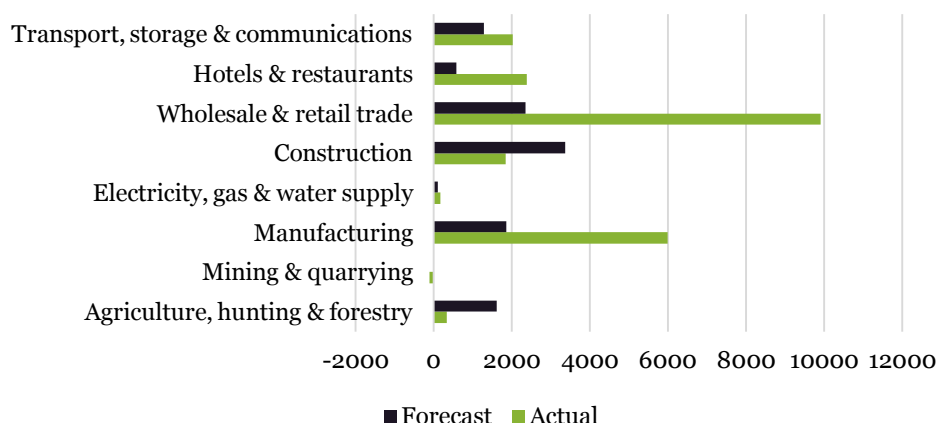
Source: Jordan Department of Statistics (DoS)

**Figure 16: Job creation 2014**



Source: Jordan Department of Statistics (DoS)

**Figure 17: Job creation 2013**



Source: Jordan Department of Statistics (DoS)

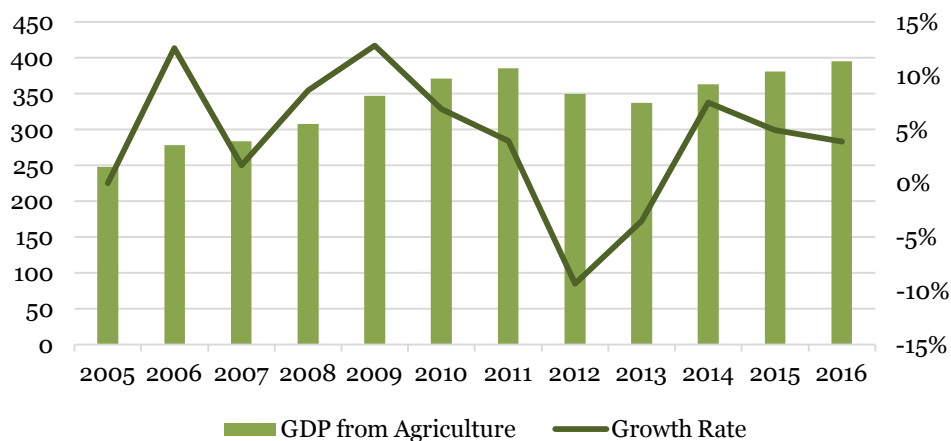
### Strategic Sector Growth Rates

#### Agriculture

Jordan GDP from agriculture has been consistently volatile since 2005. Since a peak in 2014, growth rates have been on a slight downward trend. The fact that agriculture sector growth has fallen below expectations may be the result of the border closures with Syria and Iraq, with the latter accounting for 70 per cent of fruit and vegetable sector exports. The recent re-opening of the Karameh-Treibel may allow for a recovery in exports, which would lead to

jobs growth in this sector.<sup>75</sup> An increase in jobs growth in this sector would allow for Syrian refugee labour integration in line with pre-existing skillsets.

**Figure 18: Jordan GDP from agriculture (JOD millions)**



Source: Trading Economics/ Jordan Department of Statistics

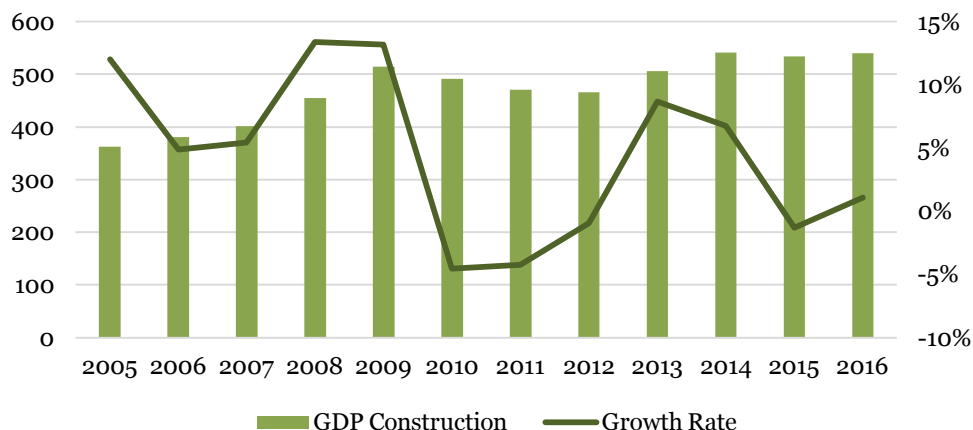
### Construction

GDP from construction in Jordan exceeds that of agriculture by nearly USD 100 million. The construction sector had recently been under-performing, with a slight increase in growth rate observable at the end of 2016. Whether the growth rate will continue to increase, remains unclear. However, a high rate of Syrian refugee employment in this sector suggests that there may have been more growth than was reflected by official numbers, and thus increased labour demand, or foreign worker replacement. If Jordan is successful in capturing a role in the reconstruction of Syria and Iraq, the sector’s growth rate will improve.<sup>76</sup>

The construction sector has historically employed a large number of foreign workers. An agreement between the Ministry of Labour and the Jordan Chamber of Industry requires that the manufacturing sector decreases the level of foreign workers by 25 per cent annually for the next four years. Under this agreement, the construction sector is required to decrease the level of foreign workers by only 10 per cent annually. At present, this agreement does not include Syrians.

<sup>75</sup> Namrouqa, Hana. “Kingdom’s fruit and vegetable exports ‘steadily increase’ to Iraq”. October 16 2017. The Jordan Times. <https://www.jordantimes.com/news/local/kingdom%E2%80%99s-fruit-and-vegetable-exports-steadily-increase%E2%80%99-iraq>  
 “Mafrq will be hub for Syria, Iraq rebuilding”. The Jordan Times. October 10, 2017. <http://www.jordantimes.com/news/local/mafraq-will-be-hub-syria-iraq-rebuilding%E2%80%99>

**Figure 19: Jordan GDP from construction (JOD millions)**

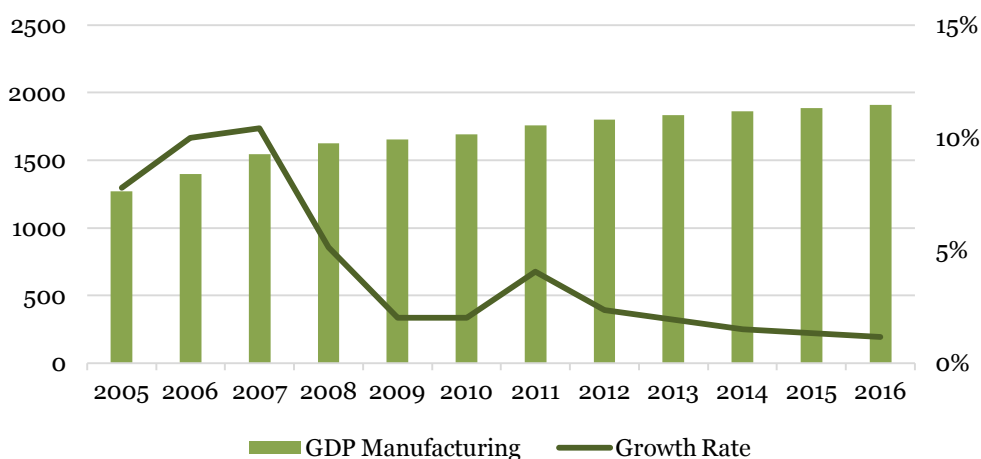


Source: Trading Economics/ Jordan Department of Statistics

### Manufacturing

Jordan GDP from manufacturing produces a higher volume of output than the construction and agriculture sectors combined. Recently, this sector’s growth rate has suffered a slowdown and currently hovers at around 1 per cent. Nonetheless, this sector is a key component of Jordan’s long-term development strategy and plans to expand industrial zones along with efforts to increase Jordanian employment in this sector continue to be put in place.

**Figure 20: Jordan GDP from manufacturing (JOD millions)**



Source: Trading Economics/ Jordan Department of Statistics

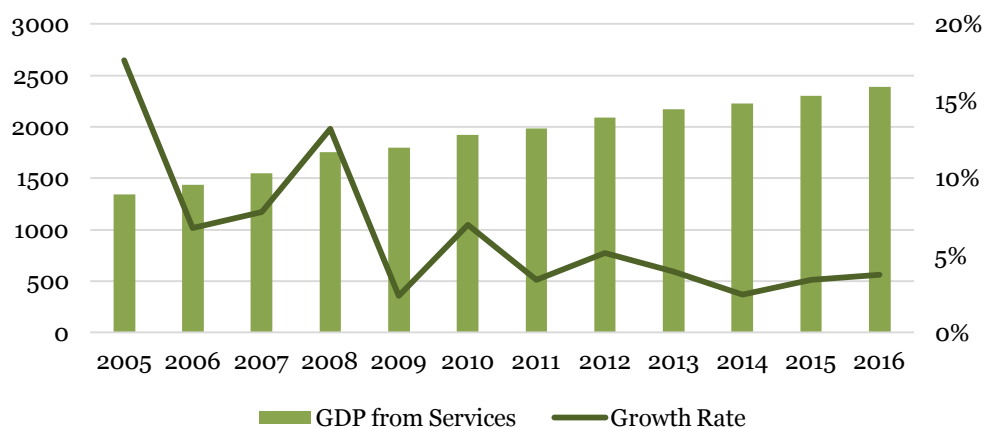
A recent agreement between the Ministry of Labour, the Ministry of Industry and Trade, the Jordan Chamber of Industry and the Employment-Technical and Vocational Education and Training Fund (E-TVET), stipulates that there will be annual decreases in foreign

employment at a rate of 25 per cent over four years in all industrial sectors, except construction.<sup>77</sup> The government has gathered JOD 33 million in funding to incentivise Jordanian replacement of foreign workers in the manufacturing and industrial sectors. This funding will be applied to subsidies that cover 50 per cent of Jordanian employee salaries. Jordanian workers will also be provided with JOD 25 in transport allowance, JOD 25 for social security costs, and health insurance packages that are equivalent to 3 per cent of one year’s salary. This programme will continue for five years, and a total of 16,000 Jordanians are expected to be hired to replace foreign workers.

### Services

The volume produced by the services sector, which includes hotel and restaurant activity, far exceeds GDP from manufacturing. Sector growth rates at the end of 2016 reached nearly 5 per cent, a rate that exceeds the national GDP average. This reflects the service sector’s relatively high performance, in spite of slow overall GDP growth.

**Figure 21: Jordan GDP from services (JOD millions)**



Source: Trading Economics/ Jordan Department of Statistics

<sup>77</sup> Agreement between the Ministries of Labour and Industry and Trade, and Jordan Chamber of Industry.” Ministry of Labour News. September 18, 2017. <http://www.mol.gov.jo/DetailsPage/detailsAR/NewsDetailsAr.aspx?ID=267>

## 5.4 Sector-level Employment Trends

The total local Jordanian workforce in 2016 numbered 1,406,640 according to the National Center for Human Resource Development. Of these, 1,177,245 were males and 229,359 were females. The employment distribution of Jordanians by sector is provided in Table 11.

**Table 12 – Jordanian employment by sector, 2016**

Sector	Per Cent Distribution	Number of Employees
Agriculture	1.9%	27,626
Construction	6.1%	85,805
Manufacturing	9.7%	136,444
Hotels and Restaurants	2.9%	40,793
Total Employment	100%	1,406,640

Source: Jordan Department of Statistics

Non-Jordanian employment is considerably high in each of these sectors. We can only refer to work permits for an official count of foreign employees, suggesting that these figures are highly understated and that non-Jordanian employment in these sectors is likely much higher than the official figures.

Agriculture work permits outweigh local employment by nearly four times, showing a high rate of foreign employment in this sector. It has been suggested that work permits in agriculture do not necessarily reflect actual occupation as many receive permits in this sector in order to work informally in a closed occupation.

The total foreign employment in Jordan is, according to work permits issued, 353,344 workers. Government estimates conclude that there are actually nearly 1.4 million foreign workers, meaning that 1 million of these workers do not have permits.<sup>78</sup> Considering a high rate of undocumented workers, we are unable to properly estimate the levels of foreign employment in each of these sectors. The permit percentage breakdown may be able to provide some insight into which sectors employ foreign workers.

<sup>78</sup> 'Million illegal guest workers in Jordan – ministry,' *The Jordan Times*, February 5, 2017 , <http://www.jordantimes.com/news/local/million-illegal-guest-workers-jordan-%E2%80%94-ministry>

**Table 13 – Foreign employment (work permits) by sector, 2016**

Sector	Per Cent Distribution	Number of Employees
Agriculture	30.5%	107,934
Construction	6.1%	21,606
Manufacturing	24.6%	87,065
Hotels and Restaurants	5.5%	19,614
Total Employment	100%	353,344

Source: Jordan Department of Statistics

### 5.5 Note on Economic Model Methodology & Limitations

This does not include the Syrian refugee population, reflecting the labour market's inability to absorb job demand. The following chart depicts job creation in Jordan using Department of Statistics data, which assumed a net job creation rate (jobs created – jobs lost) that averaged about 50,000 jobs per year. The estimated change in number of employed Syrians came from multiplying an average employment rate extrapolated from UNHCR VAF data, with the number of UNHCR registered working age refugee entrants. This likely understates the number of refugees entering the labour market in this time as it does not include unregistered refugees, reflecting the limited capacity of the labour market to include refugees and Jordanians.

### 5.6 Vocational Education Resources in Jordan

**Table 14: Syrian students enrolled in community colleges in Jordan, 2017-2018 academic year<sup>79</sup>**

Institution	Type of Institution	Number of Syrian refugee students in 2017-2018 school year
Irbid College	Public	6
Al Husson College	Public	1
Salt College for Humanities	Public	2
Princess Alia College	Public	1
Technical Engineering College	Public	6
Zarqa College	Public	2
Karak College	Public	6
Maan College	Public	3
Amman Training College	Private	11
Princess Thrut College	Private	6
Arabic Society College	Private	42
Hateen College	Private	4
Khawarzmi College	Private	4
Al Qudisiya College	Private	4

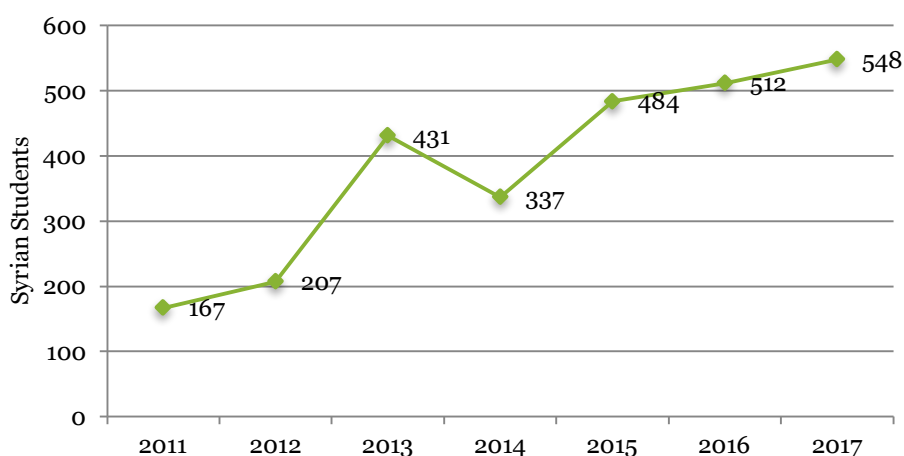
<sup>79</sup> Data provided to the author by the Ministry of Higher Education



Al Quds College (Irbid branch)	Private	116
Al Quds College (Central branch)	Private	319
Toledo Ahaliya College	Private	13
Gharnata al Ahaliya College	Private	1
Jordanian College for Science and Technology	Private	1
<b>TOTAL</b>		<b>548</b>

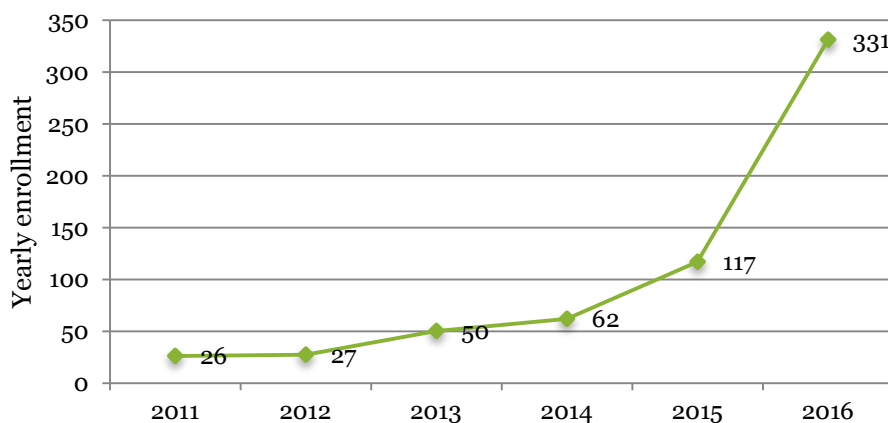
Source: Data provided by Ministry of Higher Education

**Figure 22: Syrian students enrolled in community colleges, 2011-2017**



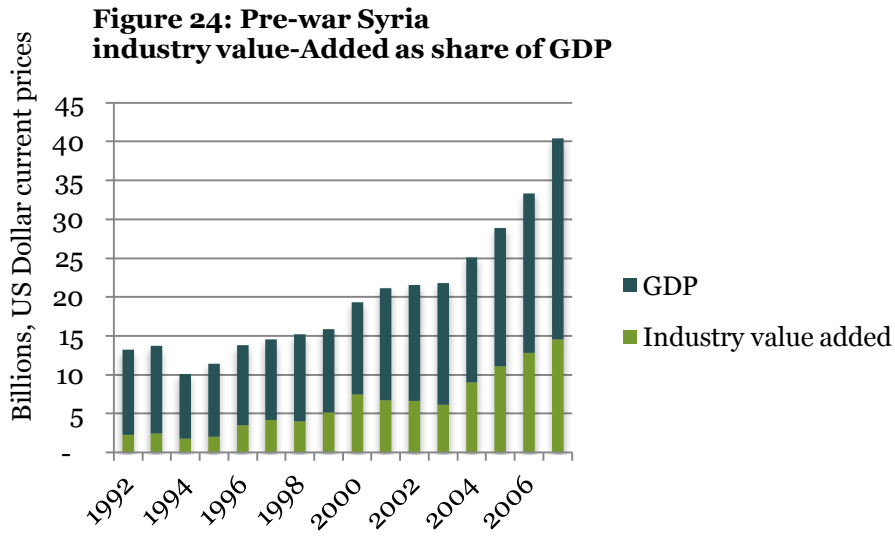
Source: Data provided by Ministry of Higher Education

**Figure 23: Vocational training corporation Syrian refugee enrollment, 2011-2016**

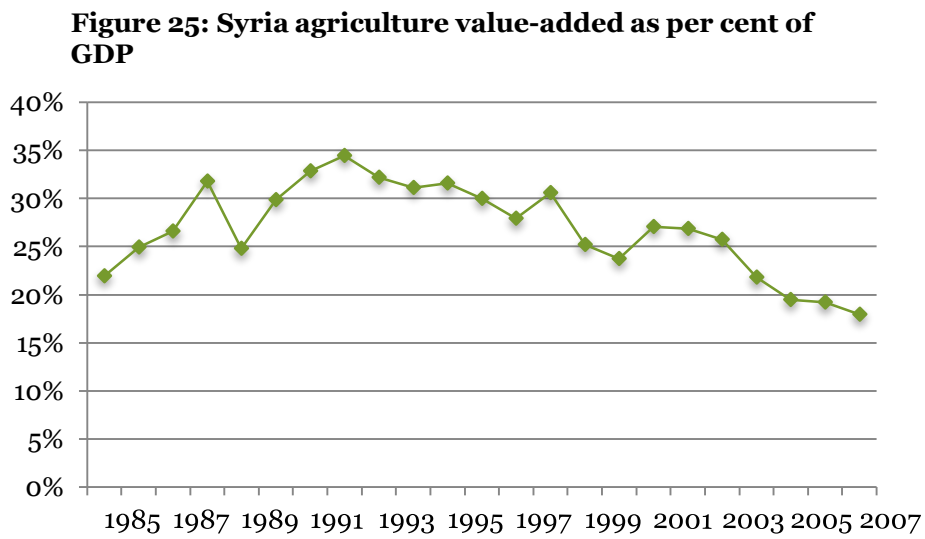


Source: Data provided by Ministry of Higher Education

### 5.7 Syria Post-Conflict Industrial Needs



Source: Trading Economics/ The World Bank



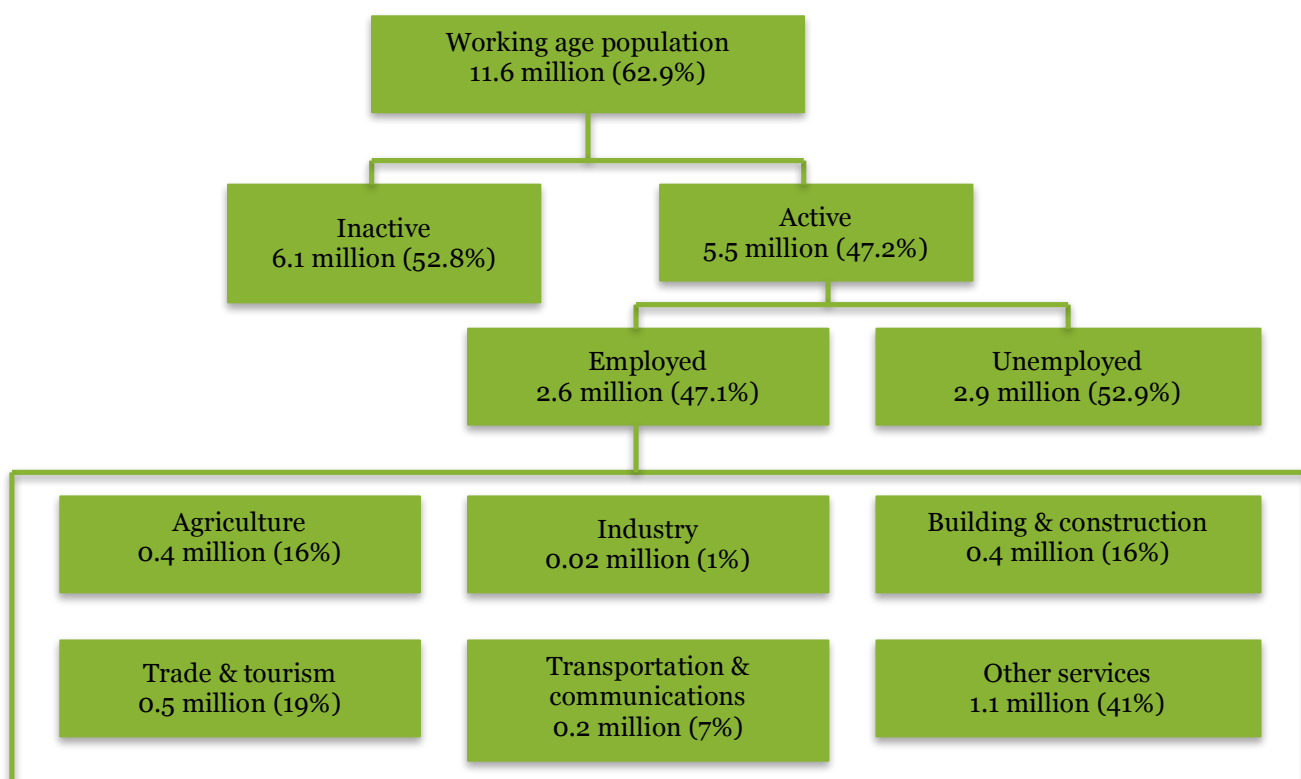
Source: Trading Economics/ The World Bank

**Table 15: Syria exports, 2010**

Syrian Exports 2010	Volume (US Dollars)	Per Cent of Total
Mineral Fuels, Oils, Distillation Products	5,660,000,000	50%
Edible Fruits, etc.	451,140,000	4.0%
Edible Vegetables	438,390,000	3.9%
Cotton	369,040,000	3.3%
Plastics, Articles Thereof	369,010,000	3.3%
Soaps, Lubricants, etc.	365,320,000	3.2%
Dairy Products, Eggs, Honey, etc.	282,090,000	2.5%
Articles of Apparel, Knit of Crocheted	243,360,000	2.1%
Sugars & Sugar Confectionary	239,680,000	2.1%
Live Animals	219,510,000	1.90%

Source: Trading Economics/UN COMTRADE database

**Figure 26: Structure of the working-age Syrian population 2015<sup>80</sup>**



Source: The World Bank

<sup>80</sup> 'The Toll of War: Economic and Social Consequences of the Conflict in Syria,' The World Bank, July 2017, p. 71, <http://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

**Table 16: Lebanese Center for Policy Studies recommended target sectors**

<b>Agriculture &amp; Food Processing</b>
<ul style="list-style-type: none"> <li>• Misc. edible preparations</li> <li>• Preparations of cereal, flour, starch or milk</li> <li>• Beverages, spirits and vinegar</li> <li>• Preparations of meat, fish, crustaceans</li> <li>• Preparations of vegetables, fruits and nuts</li> </ul>
<b>Chemicals &amp; Cosmetics</b>
<ul style="list-style-type: none"> <li>• Oils and resinolds, perfumes, cosmetics</li> <li>• Misc. chemical products</li> <li>• Putty, inks, dyes, ointments</li> <li>• Fertilisers</li> </ul>
<b>Engineering &amp; Electronics</b>
<ul style="list-style-type: none"> <li>• Machinery and mechanical appliances, computers, boilers, nuclear reactors</li> <li>• Electrical machinery</li> <li>• Vehicles other than rail, tramway</li> </ul>
<b>Plastic &amp; Rubber</b>
<ul style="list-style-type: none"> <li>• Rubbers and articles thereof</li> <li>• Plastic and articles thereof</li> </ul>
<b>Textiles &amp; Garments</b>
<ul style="list-style-type: none"> <li>• Articles of apparel and clothing accessories not knitted/crocheted</li> <li>• Articles of apparel and clothing accessories knitted/crocheted</li> <li>• Cotton, yarns &amp; woven fabrics</li> <li>• Wadding, felt, non-wovens, special yarns, etc.</li> <li>• Impregnated, coated, covered, laminated textile products</li> </ul>
<b>Wood &amp; Furniture</b>
<ul style="list-style-type: none"> <li>• Furniture, bedding, lighting, prefabricated buildings</li> </ul>

**Table 17: Lebanese Center for Policy Studies recommended products**

<b>Agriculture &amp; Food Processing</b>
<ul style="list-style-type: none"> <li>• Sausages</li> <li>• Sauces and seasoning</li> <li>• Beer</li> <li>• Fruit, nuts and edible plants preserved with sugar</li> <li>• Malt extract</li> <li>• Pasta</li> <li>• Prepared or preserved fish</li> <li>• Tobacco, raw</li> </ul>
<b>Automotive</b>
<ul style="list-style-type: none"> <li>• Parts and accessories of motor vehicles</li> <li>• Trailers and semi-trailers</li> </ul>
<b>Construction Materials</b>
<ul style="list-style-type: none"> <li>• Prefabricated buildings</li> <li>• Refractory cements, mortars</li> <li>• Baths, shower baths, sinks, washbasins, bidets, lavatory pans, seats and covers</li> </ul>
<b>Chemicals &amp; Cosmetics</b>
<ul style="list-style-type: none"> <li>• Paints and varnishes, aqueous</li> <li>• Essential oils</li> <li>• Beauty or makeup preparations</li> <li>• Mineral or chemical fertilisers, mixed</li> <li>• Mineral or chemical fertilisers, nitrogenous</li> <li>• Dental hygiene products</li> </ul>

<ul style="list-style-type: none"> <li>• Industrial monocarboxylic fatty acids; acid oils from refining; industrial fatty alcohols</li> <li>• Organic composite solvents and thinners</li> <li>• Ethyl alcohol &gt; 80% by volume</li> </ul>
<b>Engineering &amp; Electronics</b>
<ul style="list-style-type: none"> <li>• Shaving products</li> <li>• Machinery, plant or laboratory equipment involving a change of temperature such as heating, cooking, roasting</li> <li>• Electrical Boards and panels for protecting electrical circuits</li> <li>• Lamps and light fittings</li> <li>• Milking and dairy machines</li> <li>• Agricultural, forestry machinery for soil preparation</li> <li>• Machinery for working earth, stone, and other mineral substances</li> <li>• Centrifuges</li> <li>• Slide fasteners and parts thereof</li> <li>• Machinery for washing, cleaning or drying fabrics</li> <li>• Electrical transformers</li> <li>• Machines for cleaning, sorting or grading seed; machinery used in the milling industry or for the working of cereals or dried leguminous vegetables</li> </ul>
<b>Plastic &amp; Rubber</b>
<ul style="list-style-type: none"> <li>• Plates, sheets, strip, rods and profile shapes, of vulcanised rubber</li> <li>• New pneumatic tires, of rubber</li> <li>• Retreaded or used pneumatic tires of rubber</li> </ul>
<b>Textiles &amp; Garments</b>
<ul style="list-style-type: none"> <li>• Active wear</li> <li>• Wadding of textile materials</li> <li>• Men's shirts</li> <li>• Men's shirts, not knit</li> <li>• Men's overcoats, not knit</li> <li>• Woven fabrics of cotton of &gt; 85% weighing &lt; 200 g/m<sup>2</sup></li> <li>• Brassieres and parts thereof, not knit</li> <li>• Textile fabric for card clothing, technical use</li> </ul>
<b>Wood &amp; Furniture</b>
<ul style="list-style-type: none"> <li>• Lamps and light fittings</li> <li>• Mattress supports, articles of bedding</li> </ul>

## 6. Annex Part II:

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### 6.1 IPSOS Quantitative Survey Questionnaire

#### 1) Profile of interviewee

Please select the answer(s), which best describes you. **Single Response**

a. **Age**

21-30

31-40

41-50

51-59

b. **Gender** **Single Response**

Male

Female

c. **Region of origin in Syria/Last Residence in Syria** **Single Response**

Urban

Rural

Coastal Region

Central Region

Northeast Region

Southern Region

d. **Current governorate/city of residence** **Single Response**

Amman, West

Amman, East

Irbid

Mafraq

Zarqa

d\_2. **Marital Status** **Single Response**

**Single**

**Engaged**

**Married**

**Divorced**

**Widowed**

**Separated**

a. **Employment status prior to displacement** **Single Response**

I was employed prior to leaving Syria

I was never employed

b. Profession/sector prior to displacement (you may provide multiple responses)

- Agriculture
- Construction
- Craft
- Domestic Work
- Education
- Food & Beverage
- Government & Civil Service
- Manufacturing
- Mechanics
- Medicine
- Private Business
- Security
- Trade
- Other

c. Formal Education **Single Response**

Please indicate level of education completed.

- 4 Year University  (Arts /Science )
- 2 Year Vocational Diploma  Specify: \_\_\_\_\_
- Secondary Education  (Arts / Science )
- Primary Education
- No Formal Education

## 2. Current Employment Situation

Please select the answer(s), which best describes you.

a. I am (select best answer):

- Employed full time  (Single Response)
- Employed part time
- Actively looking for work  (Single Response)
- Casually looking for work
- Not looking to work

b. Please describe your work history since coming to Jordan: (you may provide multiple responses)

- Was employed but am now not employed
- I have been employed intermittently
- I recently found work
- I've never been employed  (skip to question 3a.)

c. (Note to researcher: skip this question if respondent has never been employed in Jordan)

Please indicate your sector(s) of current or most recent work in Jordan: (you may provide multiple responses)

- Agriculture
- Manufacturing
- Construction
- Food & Beverage
- Wholesale & Retail Trade
- Other  please specify: \_\_\_\_\_

d. On-the-Job Training:

(Note to researcher, skip this question if respondent has never been employed in Jordan)

If currently employed or previously employed, have you received training from your employer? **Single Response**

- Yes
- No  (skip to question 2e.)

If yes, please indicate the type of training:

- Formal training which lasted more than 1 week
- Formal training which lasted less than 1 week
- Informal on-the-job mentoring

e. Work Permits

(Note to Researcher: skip this question, if interviewee has never been employed in Jordan)

Do you currently hold a work permit? **Single Response**

- Yes
- No  (Skip to question 3a)

If yes, when was your work permit granted? (Single Response)

- Prior to 2016
- 2016
- 2017

(Note to researcher: ask this question only if respondent has a work permit)

For what sector(s) is your work permit? (Single Response)

- Agriculture
- Manufacturing
- Construction
- Food & Beverage
- Wholesale & Retail Trade
- Other  please specify: \_\_\_\_\_

(Note to researcher: ask this question only if respondent has a work permit)

Do you plan to renew your work permit? (Single Response)

- Yes
- No

### 3. Expectations for Employment in Jordan



Regardless of my current employment status, please indicate to what extent you agree with the following statement 'I am motivated to find work.'

a. (Note to researcher: this question should be asked to all respondents) Single Response

- Completely agree
- Somewhat agree
- Completely disagree
- Not applicable/ not looking for work

b. Since living in Amman my level of motivation towards finding a job has (Single Response)

- Increased
- Stayed the same
- Decreased

c. I do not want to work because (Single Response)

- There are no jobs for Syrian refugees
- I do not know the process to work legally
- I am worried about being caught

d. (Note to researcher: this question should be asked to all respondents)

While I am in Jordan (select best answer): Single Response

- I would take any job, regardless of the location or sector
- I would take any job, regardless of the location or sector, as long as it was well paid
- I would take a job if it was related to my sector *or sufficient dignity*
- I would only work in my sector
- I do not intend to work

e. (Note to researcher: this question should be asked to all respondents)

My largest concern relating to the employment situation is (rank in order from 1-5 where 1 represents your biggest concern and 5 represents your smallest concern)

- Loss of autonomy/dependence on humanitarian support (Circle number: 1 2 3 4 5)
- Idleness (Circle number: 1 2 3 4 5)
- What the situation means for my children's future (Circle number: 1 2 3 4 5)
- Lack of money for household necessities (Circle number: 1 2 3 4 5)
- Interruption to my career / loss of my skills/ long term consequences of being absent from workforce (Circle number: 1 2 3 4 5)

#### 4. Future Plans

Please select the answer(s), which best describes you. Questions 4a through 4c should be asked of all respondents, regardless of their current employment status.

a. If I return to Syria (select best answer) Single Response

- I would take any job, regardless of the location or sector
- I would take any job, regardless of the location or sector, as long as it was well paid
- I would take a job if it was related to my sector *or sufficient dignity*
- I would only work in my sector

I do not intend to work  (skip to question 5a)

b. (Note to researcher: this question should only be asked to respondents who intend to work in a post-conflict Syria)

Confidence to re-enter sector in Syria (select best answer) **Single Response**

I have absorbed/integrated all changes in my sector into my current skill set. I think I can return to my sector with no disadvantage

Not much has changed. I think I can reenter my sector/return to work with only a mild disadvantage

I am not familiar with recent changes so I would return with the skills I possessed at the time I exited the sector, with some disadvantage

The industry has changed and I am now lacking in confidence. If I returned, it would be with a significant disadvantage

My industry has changed so much my skills are no longer relevant and I could just as easily enter a new profession

c. (Note to researcher: this question should only be asked to respondents who intend to work in a post-conflict Syria)

In a return scenario, if the main jobs will be in reconstruction and industry (select best answer; **single answer**)

I would take any job regardless of the sector

I intend to return to my sector

I would retrain to get new skills to participate in any job

I would retrain to get new skills in a prestigious job

I will wait and see

## 5. Other Views & Perceptions

Please answer the following question, only if you are female or a single male. If you are male and married proceed to question 5b.

a. It believe it's ok for Syrian women to work in (select best answers; **you may provide multiple responses**):

Any job, regardless of the location or sector

Any job, regardless of the location or sector, as long as it was well paid

Any job, regardless of the location or sector, as long as it did not interfere with household responsibilities

Only if the job is gender segregated or there are safeguards

Only if it is work in my/her sector

Not at all

Please answer the following question, only if you are male and married; females and single males should skip to 5c:

b. It would be okay for my wife to work in (select best answers) **you may provide multiple responses**:

- Any job, regardless of the location or sector
- Any job, regardless of the location or sector, as long as it was well paid
- Any job, regardless of the location or sector, as long as it did not interfere with household responsibilities
- Only if the job is gender segregated or there are safeguards
- Only if it is work in her sector
- Not at all

Please answer the following question.

c. If you know other Syrians who have left Jordan for Europe, please provide a brief description of your perception of these individuals. Of those you know, most are ... (select all that apply—you may provide multiple responses)

- Male
- Young
- Have Money
- Have Skills
- Have Family/friends in Europe already

## 6.2 IPSOS Qualitative Survey Questionnaire

### EXPECTATIONS FOR EMPLOYMENT IN JORDAN: 3B

- You mentioned that since living in Amman, your level of motivation towards finding a job has increased/decreased. Why? Please explain your answer.
- What changed? (Ask respondents to define reasons and explain their answer)

#### For those who answered Increased

- What factors facilitated the increase in motivation – why are those factors important? Tell me more.
- What factors would cause you to think otherwise? Is there anything that might affect the way you are feeling now? What factors?

#### For those who answered decreased

- What factors could cause you to be more motivated to find a job? Tell me more.
- How do these factors affect you? How and why are they important?

### CONFIDENCE TO RENTER SECTOR IN SYRIA: 4B

#### 1. You've noted that if you re-enter the work sector in Syria:

You would be with a significant disadvantage as the industry has changed. Can you tell me more?

- How has the industry changed?
- How does that affect you?
- Why do you think you would be with a significant disadvantage?
- You also mentioned that you are lacking confidence as the industry changed so much. Can you elaborate? Why do you feel that?
- Do you believe that there is anything that can make you regain your confidence in the industry? Tell me more.

**You mentioned that as the industry has changed so much, your skills are no longer relevant and you could easily enter a new profession. Can you tell me more?**

- How has the industry changed?
- How does that affect you?
- In what way do you believe your skills are no longer relevant?
- Why do you say that you could easily enter a new profession? What makes you say that?

**4C You've noted that in a return Scenario, if the main jobs will be in reconstruction and industry:**

**You would retrain to get new skills to participate in any job.**

- Why do you say so? Would you please elaborate.
- What kind of training would you participate in? Any other?
- Do you believe that you will be able to get the right training to work in this sector?
- What kind of skill/s are you looking to acquire?
- Have you previously worked in reconstruction and industry?

**You would retrain to get new skills to participate in a prestigious job**

- Why do you say prestigious job and not any job? Can you tell me more.
- What kind of training would you participate in? Any other?
- What kind of skill/s are you looking to acquire to participate in a prestigious job?
- Do you think you will be able to acquire these skills in your time in Jordan? How so?

### 6.3 Company & Sub-Sector Interviews

**Table: Company & Sub-Sector Interview**

Name	Organisation	Position	Date
Adnan Abu Al-Ragheb	Jordan Chamber of Industry	Chairman of the Board of Directors / Paper & Packing Sector Representative	September 2017
Eng. Saad Kamal Estatieh	Jordan Chamber of Industry	Member of Board of Directors / Wood & Furniture Sector Representative	September 2017
Dr. Bassam Al Bittar	Jordan Chamber of Industry	Second Deputy Chairman of Board of Directors / Chemicals & Cosmetics Sector Representative	September 2017
Hasan Allobani	Arab Weavers Union	Admin and Financial Manager	October 2017
Anonymous	Undisclosed food processing company	Engineer/Management	October 2017
Anonymous	Undisclosed food processing company	HR Admin	October 2017
Hani AlShantawi	Magma Engineering Industries	General Manager	October 2017
Mohammed AlNin	Durra Food Industries	Company Owner	October 2017
Ali AlMigdad	Durra Food Industries	Purchasing Manager	October 2017
Mohammad Malkawi	Nature Echo Pharmaceuticals	Creative Director	October 2017
Wasan Fayez Hmeidat	Classic Fashion	Admin	October 2017
Majd AlTal	Classic Fashion	Admin	October 2017

#### Company & Sub-Sector Interview Questionnaire

- 1) How would you describe the recent performance of your sector? Do you believe that your sector is growing? Do you expect your sector to experience growth in the near future?
- 2) Can you describe the kinds of investments that are being made in your sector today (e.g. machines, human resources training, marketing, etc.)?
- 3) Would you describe your sector as more human resource intensive or more capital intensive?
- 4) If your company was to receive additional equity investment capital, how would you invest this capital?
- 5) Could you provide a ball park figure of the amount of investment required to created one job in your company (or sector)?
- 6) Can you describe the ratio of highly skilled workers (university graduates) to less highly-skilled workers (vocational degree, or secondary school graduates) in your company?

7) Does your company, or do other companies in your sector, provide training to employees? Can you describe this training?

8) If your company was to hire additional workers to work on the floor of your factory, how long would it take to train these workers? What kind of training would these workers receive?

9) What do you see as the major skills gaps in your industry?

#### 6.4 Vocational Education Interviews

<b>Name</b>	<b>Position</b>	<b>Institution</b>
Dr. Ahed El Wadhadni	Secretary General	Ministry of Higher Education
Ayman Muqableh	Dean	Al Quds Community College
Ali Ghezawi	Minister	Ministry of Labour
Mohammed Al Qudah	Director of Policy and International Cooperation	Ministry of Labour
Issam Othman	Advisor on Skills Development	GIZ Amman Office
Mohammed Okour	Secretary General	Ministry of Education
Raed Sawalha	Technical & Vocational Education Team	Norwegian Refugee Council
Ahmed Talafeeh	Technical & Vocational Education Team	Norwegian Refugee Council
Mahmoud Deesi	Director of Curriculum Development	Vocational Training Corporation
Mohammad Qada	Technical Education Division	Ministry of Education
Lama al Majali	Programme Policy Officer	World Food Programme
Hani Kheifat	Director General	Vocational Training Corporation
Mohammed Soub	Director of Technical Affaires & Employment	National Employment and Training Corporation
Hamdan Yacoub	Director of Syrian Refugee Affairs	Ministry of Labour
Jacob Arts	Syrian Refugee Education Coordinator	EU Delegation to Jordan
Abdullah Zoobi	President	Balqa Applied University



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