Food and Agriculture Organization of the United Nations

World Food Programme

S P E C I A L R E P O R T

FAO/WFP CROP AND FOOD SECURITY ASSESSMENT MISSION TO THE SYRIAN ARAB REPUBLIC

9 October 2018



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WORLD FOOD PROGRAMME
Rome, 2018

Required citation:
FAO. 2018. *Special Report - FAO/WFP crop and food security assessment mission to the Syrian Arab Republic. Rome*. 54 pp.
Licence: CC BY-NC-SA 3.0 IGO.

ISBN 978-92-5-131016-8

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Acronyms and abbreviations

AEZs	Agro-Ecological Zones
AI	Artificial Insemination
ASI	Agricultural Stress Index
bbl/d	Barrels per day
CFSAM	Crop and Food Security Assessment Mission
EIU	Economist Intelligence Unit
ESCWA	Economic and Social Commission for Western Asia
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	Data programme of FAO Statistics Division
FMD	Foot-and-Mouth Disease
GDP	Gross Domestic Product
GFA	General Food Assistance
GOF	General Organization for Feed
GORS	General Organization for Remote Sensing
GOSM	General Organization for Seed Multiplication
GOT	General Organization of Tobacco
ha	hectare
HOBOOB	General Establishment for Cereal Trade and Processing
IDPs	Internally Displaced Persons
IDR	Import Dependency Ratio
IS	Islamic State
kg	Kilogramme
MAAR	Ministry of Agriculture and Agrarian Reform
mm	Millimetre
MoSAL	Ministry of Social Affairs and Labour
MWR	Ministry of Water Resources
mVAM	mobile Vulnerability Analysis and Mapping
NDVI	Normalized Difference Vegetation Index
NGO	Non-Government Organization
rCSI	reduced Coping Strategy Index
SARC	Syrian Arab Red Crescent
SYP	Syrian Pound
t	tonne
TOT	Terms of Trade
UN	United Nations
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UN-OCHA	Office for the Coordination of Humanitarian Assistance
USD	US Dollar
WFP	World Food Programme
XB	Cross Border

Highlights

- **Security** has considerably improved in many parts of the country, which is facilitating the return of IDPs to their respective places of origin.
- **Crop production:** Despite improved access to agricultural land in some areas, production of wheat and barley declined sharply in 2018 compared to the previous year due to erratic weather**.** At 1.2 million tonnes, wheat production was the lowest since 1989 and about 30 percent of the pre-conflict average of 4.1 million tonnes (2002-2011). At 390 000 tonnes, barley production was the lowest since 2008. Large areas of rainfed cereals failed because of an extended dry period early in the season, and irrigated cereal yields were reduced because of unseasonably late heavy rains and high temperatures.
- **Main agricultural constraints:** High production costs, lack of quality inputs and damaged or destroyed infrastructure remain the main constraints. Some progress was made on reconstruction of irrigation infrastructure and improved transport of farm inputs and produce. Given this year's poor cereal harvest, seed is very likely to be in extremely short supply for the coming season (starting from October 2018).
- **Livestock:** Over the past three years, the herd sizes have stabilized albeit at a very low level. The main challenges continue to be high fodder prices and insufficient coverage of veterinary services. Sheep breeders are keen to reduce their flocks in response to high feed costs, although buyers are few.
- **Humanitarian access:** There is a major shift in humanitarian access compared to the previous years. The number of people residing in hard to reach locations declined from 4.1 million in January 2017 to 1.5 million people in July 2018. Similarly, the number of people in formerly besieged areas decreased from 643 800 to none. These locations represent a high human and economic cost, as they were exposed to heavy fighting and widespread destruction.
- **Displacement:** Population displacement continues to be the main driver of food insecurity in the country. Currently there are about 6.2 million internally displaced people, including 1.3 million displacements of people since January 2018, some of them several times. The largest number of IDPs within the country is hosted in Rural Damascus, followed by Idleb and Aleppo.
- **Returns:** About 963 600 IDPs have returned to their places of origin, 58 percent more people compared to 2017. Furthermore, 23 400 refugees also returned to the Syrian Arab Republic from neighbouring countries.
- **Markets and trade:** Market access and trade has considerably improved due to the revival of important trade routes across the country, which had been disrupted since 2013. Access to markets remains severely constrained in Idleb and south Deir-ez-Zor. Furthermore, the war-ravaged infrastructure like silos, milling plants, warehouses and factories has not been rehabilitated throughout the country.
- **Price trends:** Improved security, stability and the re-opening of supply routes have led to reductions in food prices. Since the peak in December 2016, the average price of a WFP equivalent standard food basket has fallen by 40 percent. The difference between the highest and lowest average food prices has dropped by half, indicating better market integration across the Syrian Arab Republic. It must be noted that commodity prices are still extremely high, about seven times higher than the five-year pre-crisis average.
- **Livelihood trends:** Lack of employment, resulting in low purchasing power, is the main economic challenge faced by the majority of households. IDPs reported working multiple jobs and resorting to child labour as commonly employed coping strategies to meet their needs. Women have become the bread winners for many families where men are not present. Given the vast extent of the destruction in both urban and rural areas, major investments will be required to rebuild livelihoods in the coming years.
- **Food consumption and coping:** Despite overall improvements in access for food, about a quarter of the households continue to rely on poor quality and quantity diets. Food security monitoring data show that some 44 percent of households reduced the number of meals consumed and more than 35 percent restricted consumption of adults to prioritize children. The situation is more difficult among IDPs, returnees and households headed by women.
- **Food security trends and assistance needs:** The Mission estimates that 5.5 million Syrians are food insecure and require some form of food assistance. In addition, as many as 500 000 to 800 000 may be food insecure in Idleb.

INTRODUCTION

A joint FAO/WFP Crop and Food Security Mission (CFSAM) visited the Syrian Arab Republic between 25 June and 19 July 2018 to estimate crop production and to assess the overall food security situation.

On arrival in the country, the international members of the CFSAM team spent five days in Damascus prior to going to the field. During that time, they held meetings with the Ministry of Agriculture and Agrarian Reform (MAAR) and a number of other relevant ministries and state bodies of the Government of the Syrian Arab Republic. Following two weeks of data collection in the field in six governorates, the CFSAM team returned to Damascus to be briefed by MAAR officials who had collected further data independently in all governorates, and, most importantly, in governorates that the international team had been unable to visit. This was followed by a second round of meetings with the main technical directorates of MAAR. Prior to departure from the country, the Mission briefed the Minister of Agriculture and Agrarian Reform on its main findings.

ASSESSMENT METHODOLOGY

To ensure an impartial and independent assessment of the country's crop production and food security situation, information provided by Government institutions was critically examined, triangulated and cross-checked with direct field observations where possible and compared with information gathered from other sources. These sources included interviews with the staff of governorate agricultural directorates, farmers, millers, traders, livestock owners, displaced, resident and returnee households, and other key informants, as well as satellite imagery, rainfall records and brief governorate reports produced by small teams of national officers. Focus group discussions were held, with women and men separately, with displaced and resident households in all governorates visited in both rural and urban settings. In addition, wholesale and retail food and livestock markets were visited in various locations. The source of the food price data is WFP price monitoring. To estimate the number of people in need, the CFSAM included a household survey covering 6 012 households across the country. The findings were complemented by data from WFP's Vulnerability Analysis and Mapping (mVAM) collected since January 2018 as well as data and information made available by the Syrian Arab Republic's Food Security Sector.

Like in previous years, a pre-CFSAM study was prepared to widen the information available to the Mission members. This year's study was prepared by the National Agricultural Policy in cooperation with the General Organization for Remote Sensing (GORS). Details are discussed later in the document in the Production section.

Unfortunately, the timing of the 2018 Mission was later in the year than had been the case in previous years, with the result that most of the cereal crop had already been harvested by the time of the Mission's visit. This necessitated an increased emphasis on the triangulation of information from different sources.

Prior to going to the field the Mission held meetings in Damascus with MAAR, the Ministry of Water Resources (MWR), General Establishment for Cereal Trade and Processing (HOBOOB), the Ministry of the Environment and Local Administration, the General Organization for Feed (GOF), General Organization of Remote Sensing (GORS), the Ministry of Internal Trade and Consumer Protection, and the Ministry of Economy.

Representations of international and national organisations in Damascus, such as the UN High Commissioner for Refugees (UNHCR), the UN Population Fund (UNFPA), the UN Office for the Coordination of Humanitarian Affairs (OCHA), the UN Development Programme (UNDP) and Syrian Arab Red Crescent (SARC) were also consulted.

In the field, the Mission visited six of the country's 13 rural governorates: Aleppo, Hasakeh, Hama, Homs, Tartous and Rural Damascus. In these governorates, the Mission held meetings with technical staff of the agriculture directorates, farmers, livestock breeders, traders and households, and visited livestock markets and wholesale farm-produce markets.

Figures for cereal areas planned, planted and harvested were provided by MAAR, and the agricultural directorates in the governorates that the Mission visited corroborated these figures. Yield estimates were also provided by MAAR and the technical staff of the agricultural directorates. These estimates were critically reviewed by the Mission and, where deemed necessary, modified in light of other available information. Much of this additional information emanated from interviews with farmers, and included planting time, seed rates, the availability and use of certified seed and fertilizers, and the availability and reliability of irrigation. Other information included rainfall records and decadal satellite imagery showing rainfall anomalies (from the long-

term average), Normalized Difference Vegetation Index (NDVI), soil moisture stress and Agricultural Stress Index (ASI).

The only standing cereal crops that the Mission saw were in Rural Damascus. However, when possible, the Mission inspected harvested wheat that was still in the field awaiting threshing. This provided an estimate of the size of ear, the weight and number of grains per ear, and the general condition of the grain, particularly with regard to fungal infection, and gave a proxy indication of the reliability or otherwise of farmers' yield estimates.

HOBOOB provided an overview of the amount of grain that it had bought from the different governorates compared with previous years, while farmers and agricultural directorates were able to give an indication of the proportion of grain that had been rejected by HOBOOB on the grounds of inadequate grain size, poor grain quality, or unacceptably high moisture content.

On its return from the field, the Mission met independent teams of MAAR staff who had visited all the rural governorates and reported on their agricultural condition and prospects in accordance with a checklist provided by the Mission. The Mission discussed the teams' findings and impressions critically with each of the teams individually. Later, the Mission discussed its own findings and impressions as well as those of the independent teams with the technical staff of MAAR in order to arrive at credible yield and production estimates for each governorate.

BACKGROUND AND SOCIO-ECONOMIC CONTEXT

General

Conflict in the Syrian Arab Republic, now in its eighth year, and its aftermath, continue to negatively impact the already severe economic and social situation in the country. The conflict in the past year became more localised, with limited reconstruction efforts getting underway. After 6 years to economic contraction, diving to over 20 percent in 2012 and 2013, the GDP growth in 2017 reached 1.9 percent. A stronger GDP growth of 6.2 percent is forecast for 2018 as modest reconstruction efforts continue likely hampered by lack of finances and depleted workforce. The ESCWA estimates the volume of destruction in physical capital and its sectoral distribution reaching over USD 388 billion, while the actual physical cost of destruction to be close to USD 120 billion[1].

Inflation in 2017 (January-May, last information available) eased to an estimated 33 percent, down from over 47 percent in 2016, reflecting relative stabilisation of local currency although supply bottlenecks driven by localised fighting continue to exercise an upward pressures on price levels. The official exchange rate for the USD (US Dollar) against the SYP (Syrian Pound) was set by the Central Bank of the Syrian Arab Republic in June 2017 at SYP 517 per USD[2]. The current official exchange rate is fixed at SYP 434 to the USD. The rate on the parallel market is currently around SYP 440 to the USD. The pre-conflict exchange rate in 2011 was SYP 47 per USD.

The unemployment rate is estimated at about 50 percent (although precise statistics are missing), up from about 10 percent at the beginning of the conflict. At the same time many, civil servants in particular, continue to juggle several jobs to be able to cover high cost of living.

Immediately prior to the crisis, the Syrian Arab Republic used to produce about 380 000 barrels of crude oil and condensates per day, down from a peak of almost 600 000 bbl/d in the mid-1990s (US Energy Information Administration), and oil sales generated some 25 percent of the Syrian Arab Republic's total revenue (EIU). Production slumped dramatically in 2011 and currently remains down to about 30 000 bbl/d. Before the conflict, oil exports provided up to 30 percent of the Government's fiscal revenue. Conflict and sanctions virtually stopped oil exports (apart from some smuggled fuel out of IS- and Kurdish-held areas) although the country's two refineries still retain some processing capacity. However, sanctions prohibit imports of spare parts, constraining economic activity. Syrian Arab Republic continues to rely heavily on external financial support (largely from the Islamic Republic of Iran and the Russian Federation), as well as assistance from humanitarian agencies.

[1] https://www.unescwa.org/news/syrian-experts-discuss-post-conflict-reconstruction-policies-after-political-agreement-syria. A report "Syria, 7 years at war," which assesses the socio-economic impacts of the conflict, is expected to be released in autumn 2018.
[2] http://sana.sy/en/?p=108123

Several years ago, businesses began to adjust to the protracted crisis by moving industrial and trading activity to the relatively safe Government-controlled coastal strip of the country, including an expanded industrial zone outside Tartous. Many large-scale business people also moved their business to neighbouring countries and Egypt. Likewise, farmers with movable assets, such as livestock, also moved to safer areas with their animals. However, in the absence of other employment alternatives, crop farmers remain farming on their fields. Improved security situation since 2017 has increased domestic economic activity including some return of farmers and IDPs to their lands (discussed in the next section), although lack of reliable supplies and interruption of basic infrastructure continue to hamper recovery.

The human toll has been mounting. Since 2011, there has been a massive and continuing exodus of Syrians, mostly to neighbouring countries, seeking to escape the conflict. By mid-September 2018, UNHCR reported 131 000 Syrian refugees in Egypt, 248 000 in Iraq, 671 000 in Jordan, 976 000 million in Lebanon and 3.5 million in Turkey, bringing the total to over 5.6 million. This figure includes only registered refugees; others who left the country and are now living abroad and supporting themselves financially are not included. Estimates of deaths as a result of the conflict vary: the United Nations Envoy to the Syrian Arab Republic estimated in 2016 that some 400 000 have died in the country. Other estimates indicate that over 500 000 people died in the conflict so far.

Within the country, there has been massive population displacement with people fleeing conflict zones and seeking refuge in more secure areas. As of August 2018, there were 6.18 million people displaced by the conflict in the country, a decrease from 7.6 million internally displaced in late 2014 and early 2015. Many of the internally displaced have been repeatedly displaced. At the end of August 2018, it has been estimated that about 987 000 people returned to their home governorates, including 23 400 Syrian refugees from neighbouring countries.

The population of the Syrian Arab Republic before the conflict started in 2011 was about 20.7 million people. Under normal circumstances, and using the country's pre-crisis population growth rate, the Syrian Arab Republic's population by 2018 would have been expected to exceed 23 million. Population estimates for 2018 vary significantly among sources. This report uses UN-OCHA figures from August 2018, which put the total population at 19.95 million people. Regardless of the estimates, the resident population in the country is below what it would have been in the absence of conflict.

The effect of the conflict is visible on the age and sex structure of the Syrian population. Although overall females roughly equal males, there is a significant disproportion of females over males for the active population, and particularly for the 20-34 age groups. One-third of all families report at least one absent member since 2011. IDP households account for one-third of the total households[3].

Around 58 percent of the Syrian population resides in cities, with the urban population growing between 2010 and 2015 at 1.4 percent annually. According to the 2018 Humanitarian Needs Overview, it is estimated that about 13.1 million people (down from 13.5 million in 2015 and 2016) are in need of assistance in terms of either food, shelter, healthcare or meeting other basic needs.

Agriculture

Like all sectors of the Syrian Arab Republic's economy, agriculture has suffered serious setbacks since the beginning of the current crisis in 2011. In 2010, agriculture accounted for 18 percent of the country's GDP and 23 percent of its exports, and it involved 17 percent of its labour force in production. Some 46 percent of Syrians (10 million, including children and others not actually working in agriculture) were rural dwellers and, of those, about 80 percent were sustained by income from agricultural work.

During the last seven years of conflict, the Syrian Arab Republic's population has decreased as a result of emigration and mortality, and the labour force participation rate in all sectors in this reduced population is estimated to have fallen from 43 to 41 percent[4]. Nevertheless, because of the even greater reductions in productivity in other sectors of the economy, MAAR estimates that agriculture now accounts for about 60 percent of the country's GDP, compared with 18 percent in 2010, and the International Labour Organization of the UN estimates that 23 percent of the Syrian Arab Republic's population was engaged in agricultural production at the end of 2017[5]. Clearly, given the difficulty of collecting such data in a continuing conflict situation, these figures should only be regarded as informed approximations.

[3] Needs and Population Monitoring: Demographic Overview, the Syrian Arab Republic Household Population Survey, npm-syria.org

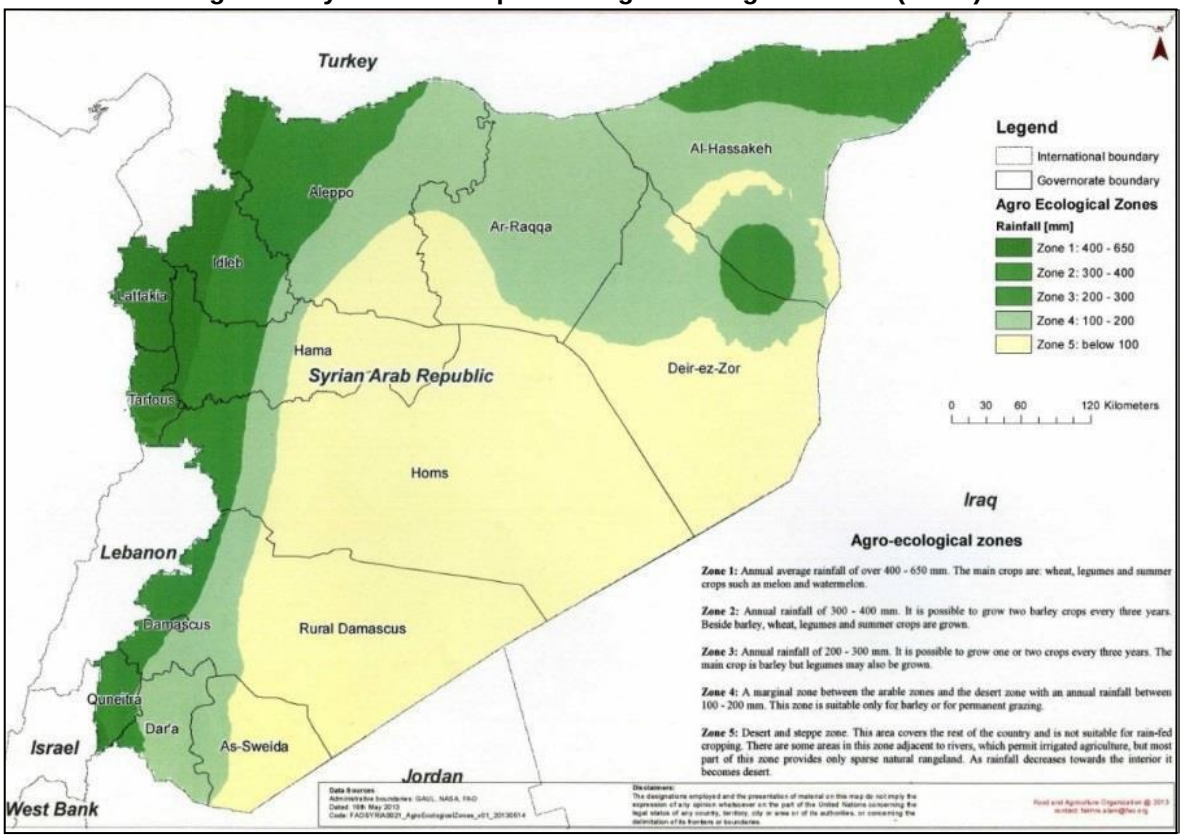
[4] https://www.ceicdata.com

[5] https://data.worldbank.org

The country is divided into the following five Agro-Ecological Zones (AEZs) based on the level of annual precipitation received, as shown in Figure 1:

- Zone I covers some 2.7 million hectares and has an average annual rainfall of 400-650 mm.
- Zone II covers about 2.5 million hectares and has an average annual rainfall of 300-400 mm.
- Zone III covers about 1.3 million hectares and has an average annual rainfall of approximately 200-300 mm.
- Zone IV is agriculturally marginal, with a total area of around 1.8 million hectares and an average annual rainfall of 100-200 mm.
- Zone V is the Badia or steppe; it has a total area of approximately 8.3 million hectares and an average annual rainfall of less than 100 mm.

Figure 1: Syrian Arab Republic - Agro-Ecological Zones (AEZs)



Source: FAO.

From the 1960s until the mid-2000s the state also played a vital role in the production of strategic crops such as wheat, sugar beet, cotton and tobacco, and livestock products, including milk, meat, poultry and eggs, these being produced on a small number of large state-owned and state-run farms. (This production role should not be confused with the State's involvement in the management of irrigation schemes for private producers). Strategic crops were also produced by private farms according to agricultural plan. Over the years, however, the State withdrew gradually from its productive role, as is shown in Table 1. The table suggests that the proportion of state farmland actually cultivated, which was already less than half by 1970, declined further during the 30-year period 1970-2000. By 2004/05, the State had relinquished its management of most of its farms and had allocated parcels of ex-state-farm land to the workers for their use according to a set of social and technical criteria. However, the legal title to the land of the ex-state farms remains with the State.

Table 1: Syrian Arab Republic - Land under state farms, 1970 and 2000 (hectares)

Year	Total	Cultivated
1970	138 000	64 132
2000	68 146	21 011

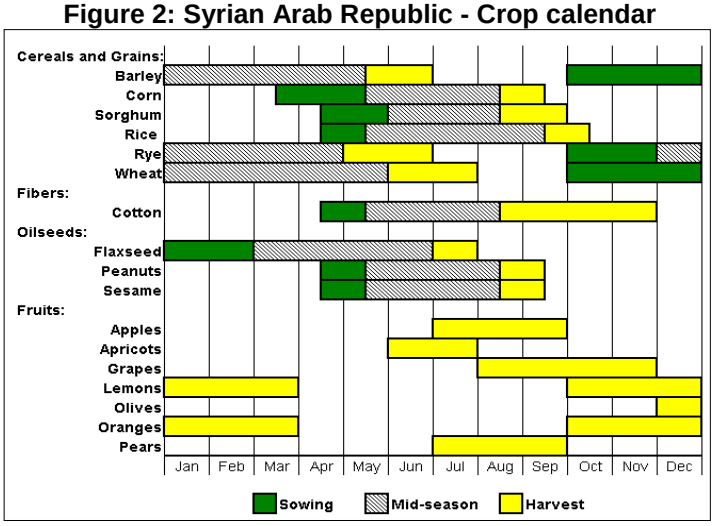
Source: Syrian Agriculture at the Crossroads FAO Agricultural Policy and Economic Development Series No. 8, 2003.

Prior to 2011, the country was a significant exporter of agricultural produce, including cotton, sugar, tomatoes, potatoes, oranges, apples, olive oil, sheep, cattle, poultry meat and hens' eggs. In 2010, for instance, the Syrian Arab Republic exported 627 000 tonnes of tomatoes, more than 100 000 tonnes of potatoes, and more

than 150 000 tonnes of refined sugar. Permanent crops (olives, fruit trees, etc.) accounted for about 5.7 percent of the country's agricultural land.

Figure 2 shows the calendar for the main crops. Animal production used to contribute about 35-40 percent to the country's total agricultural production and provide about 20 percent employment in rural areas. Mutton exports alone generated foreign currency estimated at approximately USD 450 million per year, and in 2010 the country exported 871 000 sheep (FAOSTAT). The poultry sector, which employed, directly and indirectly, more than 1 million workers, was also an important foreign income earner with significant exports of meat, eggs and day-old chicks. In 2010, 76 000 tonnes of hens' eggs were exported (FAOSTAT).

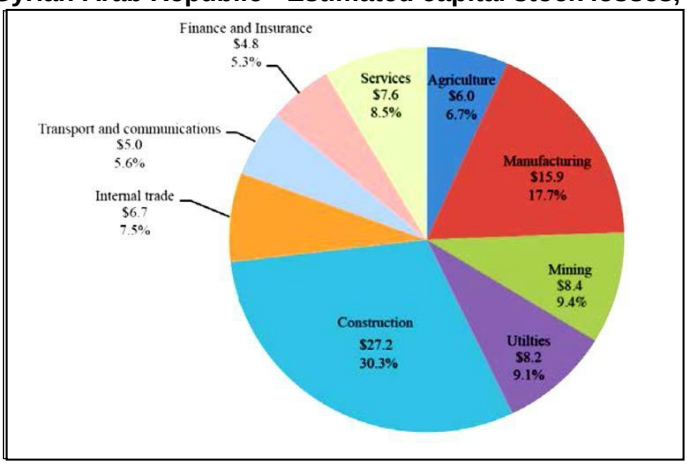
Figure 2: Syrian Arab Republic - Crop calendar



Source: FAO in Emergencies:
http://www.fao.org/emergencies/resources/documents/resources-detail/en/c/176035/

The current crisis has devastated the previously flourishing agricultural sector by the loss of cultivated land, the movement of farmers away from insecure areas, the destruction of farm machinery and irrigation structures, shortages and high costs of farm inputs and fuel, a severely damaged infrastructure and compromised power supplies. The situation has been further aggravated by international sanctions on imports and exports. The damage is difficult to quantify under the present circumstances, but already by 2013 MAAR estimated that the annual revenue lost as a result of the virtual extinction of agricultural exports due to the crisis was SYP 72 billion (about USD 0.73 billion at the exchange rate prevailing in June 2013). More recently, ESCWA (2016) estimated the loss of capital stock in agriculture between 2011 and 2015 at USD 6 billion, or 6.7 percent of the country's total capital stock losses over that period (Figure 3).

Figure 3: Syrian Arab Republic - Estimated capital stock losses, 2011-2015



Source: ESCWA, 2016.

MAAR used to operate 1 516 agricultural extension service units across the country, but anecdotal evidence suggests that now, as a result of the crisis, only about 30 percent of these remain active.

Farmers continue to struggle with lower or, in many cases, no subsidies, which increases their perceived cost of production. Pre-crisis, there were three types of funds available: the agricultural-production subsidies fund,

the export-subsidies fund, and the climate change effect compensation fund. The agricultural-production subsidies fund before the crisis amounted to SYP 10 million. The export-subsidies fund has stopped, but tax and customs exemptions for registered exporters (of products that are allowed to be exported) are still in place. Before the crisis, the Government extended credit to farmers at favourable rates with generous repayment periods. This credit system is no longer available, further hindering agricultural investment.

During the last year however, there has been some improvement in the level of security in several parts of the country, particularly in Aleppo, Raqqa, Hama, Homs, Rural Damascus and Deir-ez-Zor. Some internally displaced farmers are now beginning to return to their land from secure Government-held areas to which they had moved in response to the threat of conflict; MAAR estimates that the total number of returnees, including farm-family members, is about 800 000, but UNFPA puts the figure at closer to 500 000. Several major roads have been secured, allowing for safer transport of inputs to farms and of produce from farms to markets. It should be noted, however, that farm inputs are not readily available and those that are available are often prohibitively expensive, and that the delivery of produce to market does not necessarily mean a profit for the producer since the purchasing power of the consumer is limited.

CEREAL PRODUCTION

Cereal area, 2017/18

At 1 097 million hectares, the area planted to wheat in 2017/18 (Table 2) was about 6 percent less than in 2016/17. Of this area only 59 percent (642 000 ha) was harvested as a result of poor rainfall distribution, unseasonably high temperatures and localised hailstorms (see section on Weather). This represents only 64 percent of last year's harvested area. The decision not to harvest is usually made on the basis of the farmer's calculation that the cost outweighs the profit to be expected from harvesting. Unharvested areas are either completely abandoned where there has been total crop failure, or, where there is sufficient vegetative growth, either grazed by livestock or cut to be sold as hay.

There was an increase in the area planted to wheat under irrigation in Aleppo, Idleb and Al Ghab, but elsewhere there was either little change or a reduction in area. Deir-ez-Zor especially registered a very significant reduction from 65 000 to 25 000 hectares as a result of limited water availability. In the rainfed sector, Aleppo registered an increase in planted area, while Dara'a, Raqqa and Hasakeh all registered significant reductions.

As might be expected, irrigated areas fared better than rainfed areas in terms of the proportion harvested, although both areas were significantly smaller than those planted to wheat in 2016/17. Ninety-two percent of the irrigated wheat crop was harvested, in stark contrast to only 38 percent of the rainfed crop.

Table 2: Syrian Arab Republic - Wheat areas ('000 hectares) by governorate, 2016/17 and 2017/18

Governorate	Irrigated				Rainfed				Total			
	Planted		Harvested		Planted		Harvested		Planted		Harvested	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Rural Damascus	6	7	6	7	3	1	1.8	0.2	9	8	8	7
Dara'a	6	6	6	6	61	49	31	17	67	55	37	23
Sweida	0.2	0.2	0.2	0.2	29	27	20	11	30	27	21	11
Quneitra	0.2	0.2	0.2	0.2	0.5	1	0.4	0.5	0.7	1	0.6	0.7
Homs	8	8	8	8	26	26	23	20	34	34	31	28
Hama	14	14	11	7	8	10	6	3	22	23	17	11
Al Ghab	40	47	40	47	2.5	3	1.8	3	42	49	42	49
Tartous	3	4	3	4	7	8	5	8	10	11	8	11
Lattakia	0	0	0	0	3	3	2	3	2.6	3	2	3
Idleb	21	25	21	13	43	44	30	28	64	68	51	41
Aleppo	99	109	99	92	147	165	90	148	246	274	189	240
Raqqa	92	80	92	80	42	25	40	0	134	105	132	80
Hasakeh	103	92	103	92	341	321	294	20	444	413	397	112
Deir-ez-Zor	65	25	65	25	0	0	0		65	25	65	25
Total	**457**	**416**	**455**	**381**	**712**	**681**	**545**	**261**	**1 170**	**1 097**	**1 001**	**642**

Source: CFSAM 2017 and central and governorate-level MAAR.
Note: Totals computed from unrounded data.

At 1 186 million hectares (Table 3), the area planted to barley in 2017/18 (both irrigated and rainfed) was 7 percent more than in 2016/17. In the irrigated sector the increase was 19 percent, but this is by comparison with the relatively small area of 62 000 hectares under irrigated barley in 2016/17. The losses in barley, which is a more drought-tolerant crop, were less than those suffered by wheat. Ninety-six percent of the irrigated crop was harvested, and 63 percent of the rainfed crop was harvested. Compared with 2016/17, this year's harvested area, at 772 000 hectares, was marginally higher than last year's 766 000 hectares.

Table 3: Syrian Arab Republic - Barley areas ('000 hectares) by governorate, 2016/17 and 2017/18

Governorate	Irrigated				Rainfed				Total			
	Planted		Harvested		Planted		Harvested		Planted		Harvested	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Rural Damascus	1	1	1	1	9	8	3	5	10	9	4	6
Dara'a					19	21	12	4	19	21	12	3.8
Sweida					15	17	12	4	15	17	12	4
Quneitra					0.3	0.6	0.3	0.5	0.3	1	0.3	0.5
Homs	0.4	0.4	0.4	0.4	36	36	21	4	36	37	21	4
Hama	7	6	6	3	76	69	49	26	82	75	55	29
Al Ghab		5		5	6	0.8	6	0.8	6	5	6	5
Tartous	0.03	0.03	0.03	0.03	0.5	0.5	0.4	0.5	0.5	1	0.4	1
Lattakia					0.3	0.3	0.2		0.3	0	0.2	0
Idleb						68		28		68		28
Aleppo	1.7	10	1.5	10	302	313	201	202	304	322	203	211
Raqqa	20	25	18	25	180	150	90	0	200	175	108	25
Hasakeh	13	17	13	17	400	427	315	427	413	444	328	444
Deir-ez-Zor	19	10	19	10		0			19	10	19	10
Total	**62**	**74**	**58**	**71**	**1 043**	**1 113**	**708**	**701**	**1 105**	**1 186**	**766**	**772**

Source: CFSAM 2017 and central and governorate-level MAAR.
Note: Totals computed from unrounded data.

Factors affecting yields

Weather

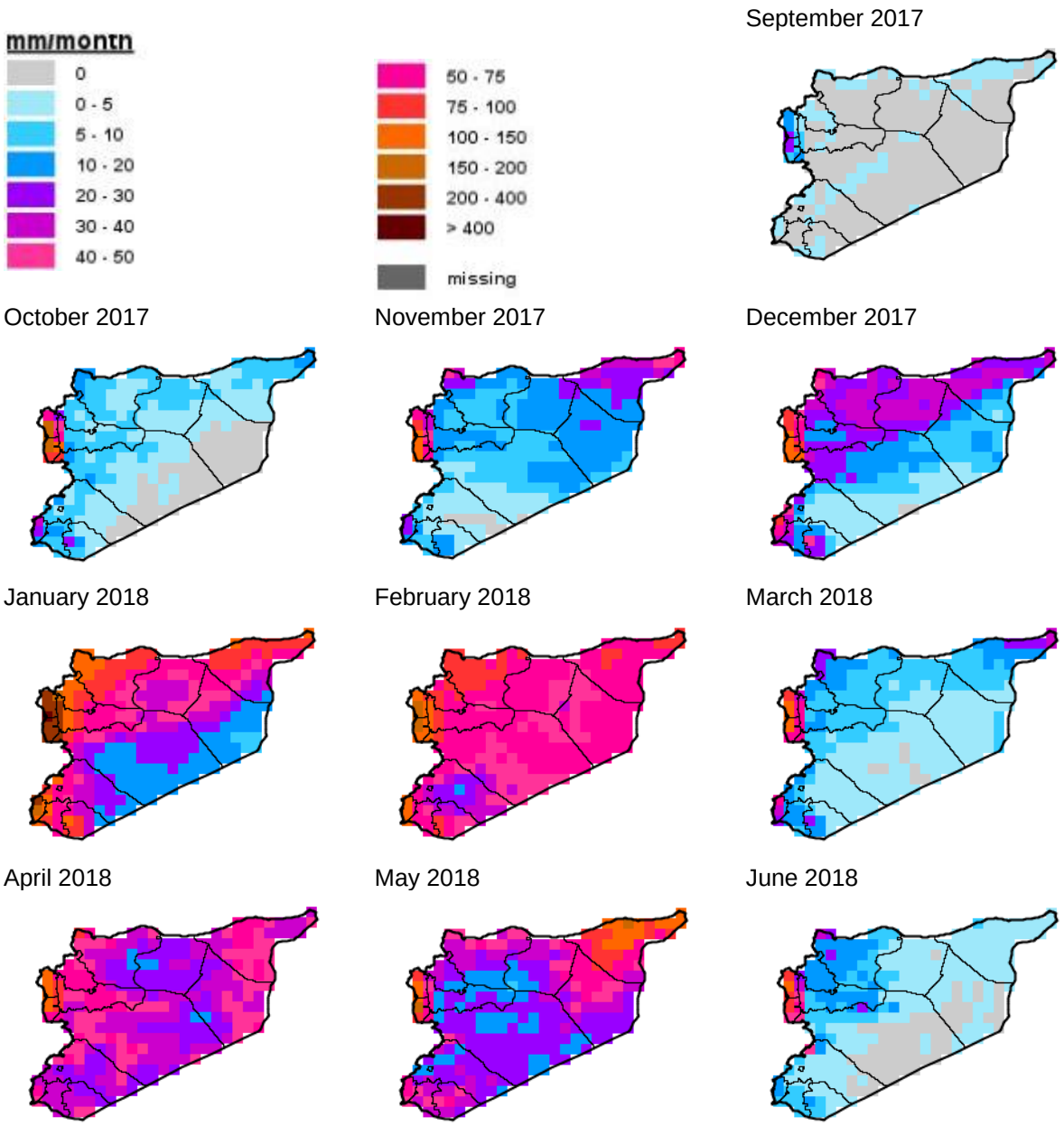
The weather during the 2017/18 cereal cropping season was described by farmers in several areas, and especially in Hasakeh which normally provides about 45 percent of the country's wheat, either as the worst in living memory or at least as bad as that of 1972/73[6]. Although total rainfall amounts over the whole season were, in many areas, close to the long-term average, the temporal distribution was not conducive to good cereal production.

There was a generally late start to the rains, most pronounced in the east of the country, which delayed planting for as much as two months. When the rains eventually arrived they initially looked promising, but a prolonged dry spell then set in which desiccated much of the rainfed crop at the critical time of heading and flowering. The irrigated crops were largely unaffected by the dry spell except insomuch as irrigation water was limited. However, unseasonably heavy rainfall followed in late April and May, and into June in the west of the country. This was accompanied by unusually high temperatures and localized hailstorms, all of which tended to damage the irrigated crop through lodging, infection by mould, and poor grain development. As a consequence of this, HOBOOB this year rejected a larger proportion of proffered grain than usual because of small grain size, low grain weight and high moisture content.

Figure 4 shows the indicative monthly rainfall over the main cereal-cropping season, and Figure 5 shows the monthly differences between the 2017/18 rainfall and the long-term average. Figure 6 shows the agricultural stress index (ASI) across the country in the middle dekad of each month from September 2017 to June 2018. The ASI is an index based on the integration of the Vegetation Health Index (VHI) in two dimensions that are critical in the assessment of a drought event in agriculture: temporal and spatial. The first step of the ASI calculation is a temporal averaging of the VHI, assessing the intensity and duration of dry periods occurring during the crop cycle at pixel level. The second step determines the spatial extent of drought events by calculating the percentage of pixels in arable areas with a VHI value below 35 percent. Finally, each administrative area is classified according to its percentage of affected area.

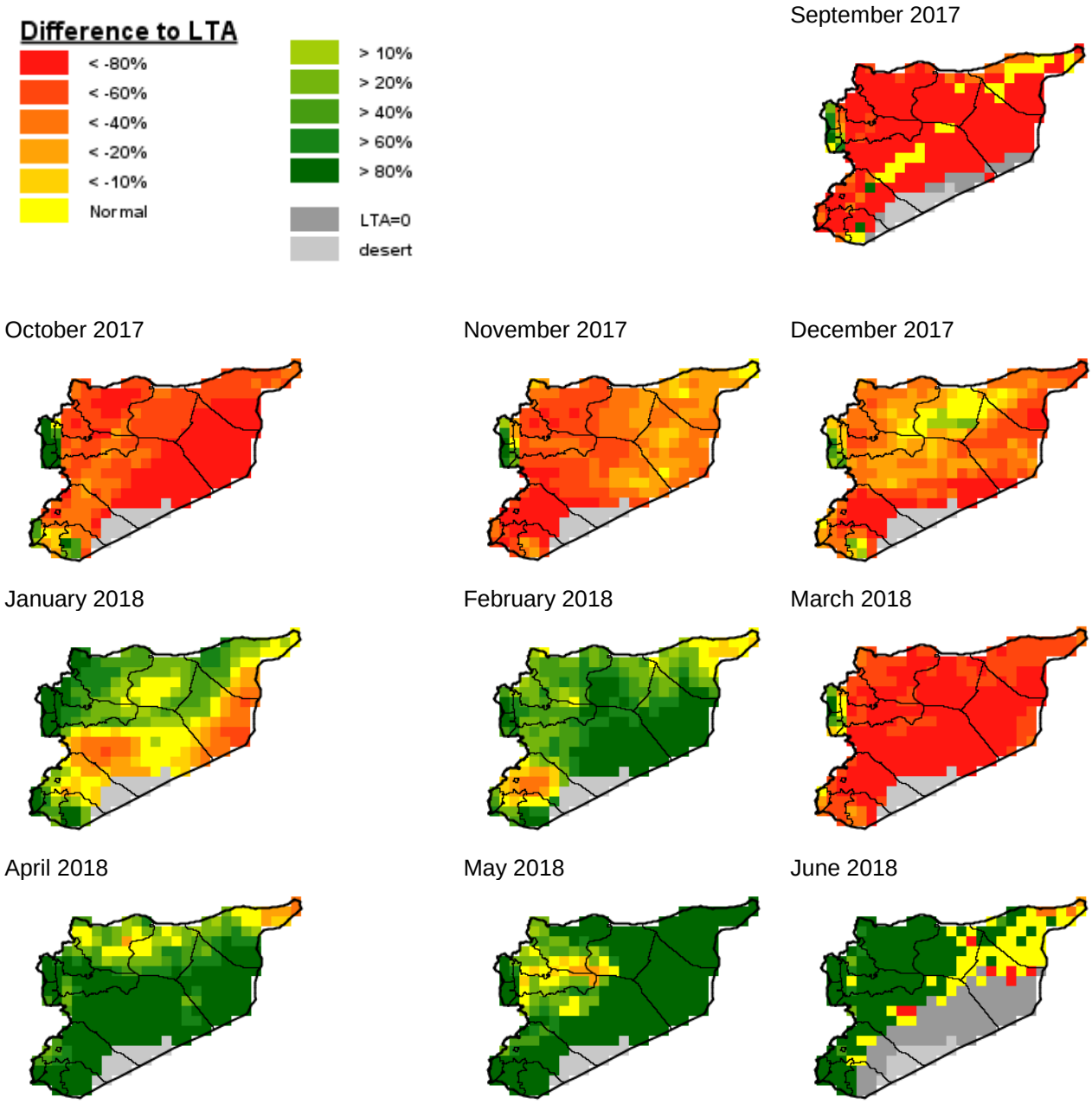
[6] As the GIEWS Earth Observation system goes back only to 1984, the Mission was unable to make comparisons with 1972/73 season.

Figure 4: Syrian Arab Republic - Indicative monthly rainfall, September 2017-June 2018



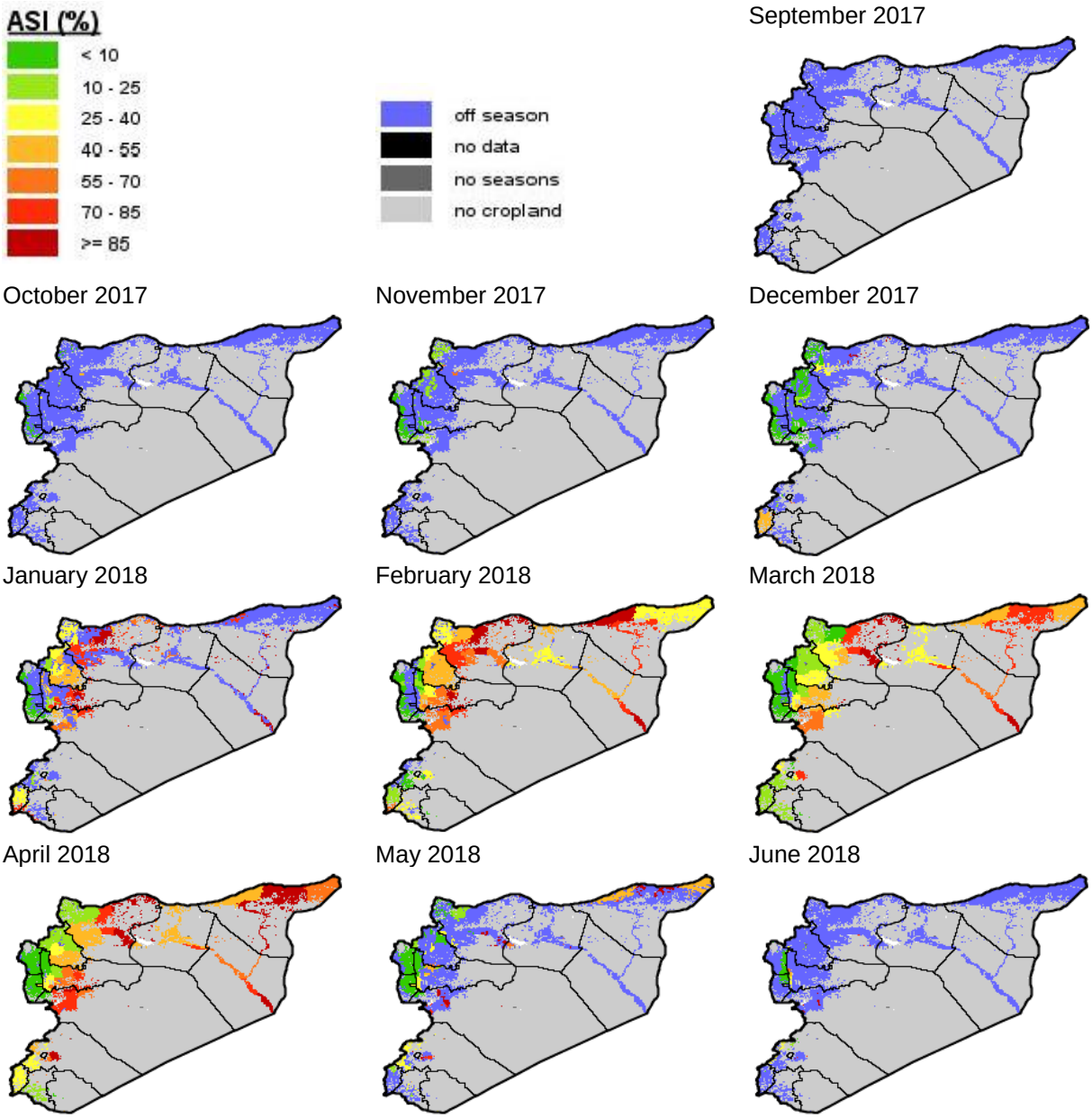
Source: FAO Earth Observation for Crop Monitoring.
http://www.fao.org/giews/earthobservation/index.jsp?lang=en

Figure 5: Syrian Arab Republic - Difference between 2017/18 monthly rainfall and Long Term Average



Source: FAO Earth Observation for Crop Monitoring.
http://www.fao.org/giews/earthobservation/index.jsp?lang=en

Figure 6: Syrian Arab Republic - Agricultural Stress Index (ASI) during middle dekad of each month, September 2017-June 2018



Source: FAO Earth Observation for Crop Monitoring.
http://www.fao.org/giews/earthobservation/index.jsp?lang=en

Irrigation

Before 2011, approximately 1.5 million hectares of agricultural land were normally irrigated, of which 550 000 hectares were accounted for by state-administered irrigation schemes. The main irrigated crops were wheat, cotton, potatoes, sugar beet, vegetables and citrus. With the recent decline or elimination of the cultivation of some of these crops as a result of conflict, the destruction of irrigation structures, the unpredictability of electricity outages and the relatively high cost of fuel, the area under irrigation has diminished substantially. The principal crops using irrigation water now are wheat and vegetables. According to the MWR, 1.6 million hectares of the country's 4.6 million hectares of farmland are irrigable. Of this, the public irrigation area amounts to 488 000 hectares, with the remainder accounted for by private farmers. About 45 percent of the public irrigation network is located in the Euphrates valley, with the remaining 55 percent located in the Orontes valley, in Dar'a Governorate and along the coast. The MWR estimates that less than 500 000 hectares were irrigated in 2017/18, of which about 300 000 hectares were irrigated from the public network.

According to the MWR, the country's current annual water requirement, including agricultural, industrial and domestic use, is about 12.9 billion cubic metres (= 12.9 km^3), of which between 86 and 89 percent is used for agriculture. By contrast, it was estimated in 2003 (FAO Aquastat Country Profile) that the country used 16.7 billion cubic meters annually and that 88 percent was used for agricultural purposes. It seems likely, with the decline in irrigated crop production since 2011, that the proportion of water used for agriculture is now considerably less than the quoted 86 - 89 percent and that these figures continue to be assumed from pre-crisis estimates. However, despite the reduction in irrigated area, the country's water deficit is thought to stand at about 10 percent. Reasons for this deficit include climate change, which has seen the lowering of water levels in reservoirs and rivers, inefficient irrigation practices, and inequitable shares of water from international rivers, especially the Euphrates. The most notable river that flows entirely within the Syrian Arab Republic's territory is the Barada River, which flows through Damascus, but for many years, its level has mostly been low. Other major rivers are shared with neighbouring countries - the Euphrates with Turkey and Iraq, the Tigris with Turkey, the Orontes with Lebanon and Turkey, and the Yarmouk with Jordan. According to a 1989 agreement between Iraq and the Syrian Arab Republic, the Syrian Arab Republic was granted 42 percent of the Euphrates inflow from Turkey, which at that time averaged about 500 cubic metres per second. Since then, Turkey has constructed several dams upstream with the result that over the past five years the inflow to the Syrian Arab Republic has averaged less than 300 cubic metres per second and is often reduced to a mere trickle. The average figure of less than 300 cubic metres per second masks some much lower flows in dry years, considering that in 2017 the flow was almost 400 cubic metres per second.

Although rainfall during the critical period of cereal development was very poor, the heavy rains that fell during May and June raised the level of reservoirs for use in the coming season. In Hasakeh, for instance, which has ten reservoirs, eight of which are operational; the governorate's agricultural directorate calculates that the late rains replenished the reservoirs to the tune of about 50 million cubic metres.

At present, most irrigated fields are under-irrigated either because water availability is sporadic or because farmers cannot afford to pay for the fuel or power to run their pumps at the frequency required to provide adequate irrigation. For instance, farmers in Hasakeh told the Mission that most of them irrigated only two or three times instead of the requisite five times. In addition, because of the shortage of tillage equipment and the relatively high cost of running it, fields that are flood-irrigated are often very poorly levelled, leading to wet and dry spots, an irregular crop and reduced yields. On the other hand, where irrigation water is readily available and farmers have the wherewithal to apply it at will, the MWR estimates that application rates are usually much higher than is required. Although modern irrigation methods such as drip irrigation are used extensively in the horticultural sector, it appears that very few farmers use modern methods, such as sprinkler or border-strip, for their cereals. Given the country's overall water deficit, a programme of modernization of irrigation methods for field crops should be given very high priority in the coming years. The MWR is also encouraging the formation of water-user associations where these do not already exist, in order to ensure the equitable distribution of irrigation water amongst groups of farmers on secondary and tertiary canals.

The unauthorized drilling of private wells has continued this year, especially in Dar'a, Hasakeh, Homs and Hama governorates. Sometimes this is with the financial assistance of NGOs that, in their wish to help farmers, often overlook the long-term consequences of the over-exploitation of groundwater. In general, however, the pace of unauthorized drilling has reduced, largely because of increased fuel prices and the consequent high cost both of drilling a well and of abstracting water. The Syrian Arab Republic has regulations governing the drilling of wells but under the present circumstances, these are not usually enforced. Unauthorized deep wells are common in many parts of the country, and in many, over-exploitation of the groundwater has resulted in a falling water table and increasing salinity. In extreme cases, such as in parts of Salamiyah District in Hama Governorate, some villages have to import drinking water. Three years ago, in parts of Salamiyah, drinking water could be accessed from 50-metre wells but these are now dry, and the water in the aquifer at 500 meters is too saline for both consumption and irrigation. In coastal areas, an increase in the salinity of groundwater has been attributed not only to excessive abstraction but also to seawater intrusion into aquifers. The MWR also suspects that many vegetable producers in the coastal governorates use the drinking-water network to irrigate the crops in their greenhouses in order to avoid using possibly saline well water or simply to avoid the expense of pumping.

On a positive note, the Government reckons that up to 60 percent of the country's irrigation projects are now under its control. Work has recently started on the rehabilitation of damaged water-treatment plants in Eastern Ghouta and Aleppo, which were designed to irrigate 18 000 and 22 000 hectares respectively with clean water. These works, however, are extremely costly and could take years to complete. In 2017 the Government regained control of the Babili pumping station at the Tishreen Dam on the Euphrates in Aleppo Governorate which had been held by IS, and farmers have benefited from this during the 2017/18 cropping season. A start has also been made during the past year to rehabilitate canals and other irrigation structures, notably in Aleppo Governorate. To the east of Aleppo City, there are now large areas of vegetable production where last year

there were dry un-cropped fields. Deir-ez-Zor has seen some improvement in its irrigation network to the west of the Euphrates, helped by the river levels that are higher this year than last. About 30 privately-owned pumps are again delivering water to canals, each irrigating, on average, about 150 hectares. To the east of the river, however, the situation is worse, owing to the continuing occupation by IS and almost complete destruction of the irrigation network. In the upper Orontes river basin in Homs Governorate, FAO is assisting the Government with repairs to the public irrigation networks. In Hama, the irrigation situation is reported to be better than last year with increased availability of fuel, fewer power outages, and some structural repairs. However, in order to conserve water the governorate had no plan for summer cropping.

Repairs to irrigation canals have been made more difficult by the fact that the factory that used to produce all the flumes required for the country's irrigation networks was damaged during conflict and ceased production. Plans have now been drawn up for the rehabilitation of the flume factory with the intention of improving it to above pre-crisis levels. FAO is also collaborating with the MWR to encourage, through instruction in a number of schools, the re-use of 'grey water' (water already used for domestic washing etc.) for small-scale farming and kitchen gardening.

Inputs

The continuing crisis and the consequent import sanctions imposed on the Syrian Arab Republic have resulted in a substantial reduction in the availability and quality of farm inputs. Prior to the crisis, the Government used to provide inputs to farmers, horticultural producers and livestock owners either free of charge or at highly subsidized prices. With insecurity, a dwindling economy and international import sanctions, the extent to which the Government can fulfil this role has, over the last several years, been severely restricted. The general scarcity of inputs, combined with the low value of the Syrian Pound (SYP) relative to 2011 (discussed earlier under General Background), continues to push up input costs to the farmer in SYP terms, both through Government outlets and, much more acutely, on the open market, to the extent that a large proportion of farmers can no longer afford them. This has resulted not only in lower productivity in recent years but also in farmers' curtailing, or in some cases abandoning, their enterprises for purely economic reasons.

Seed

The General Organization for Seed Multiplication (GOSM) is the Government body responsible for the production and distribution of seed of improved cereal varieties to farmers. Seed of approved crop varieties is produced under contract by selected out-growers, but since 2012 the number of out-growers has fallen dramatically. Before 2012, GOSM used to provide farmers with more than 300 000 tonnes of clean certified seed. In 2012, GOSM was able to purchase some 280 000 tonnes of wheat seed from out-growers, but since then the amounts purchased annually have declined dramatically. With the reduced number of out-growers and the adverse rainfall distribution in 2017/18, GOSM had received only 15 472 tonnes by mid-July but still expected to receive a total of about 25 000 tonnes by the time the harvest was complete in all governorates. Added to the 11 500 tonnes that GOSM already had in store, this gives a total availability of approximately 36 500 tonnes for distribution to farmers for the 2018/19 season. This is less than 10 percent of the seed that would have been required for the 1.8 million hectares that were planned for the 2017/18 season (though 15 percent for the actual planted area) and that will presumably be planned for 2018/19. Importation of seed has been mooted, but, whether or not that is realised, most farmers will have to rely either on purchasing seed of unknown provenance in the market or on using grain saved from their own harvest. Given the poor production this year and the fact that many farmers lost their entire wheat crop, accessing wheat seed for 2018/19 will be a major problem. For the 2017/18 season GOSM sold wheat seed for SYP 175/kg. In the marketplace wheat seed sold for between SYP 170 and 200/kg. Seed in the marketplace is often of unknown provenance and may have a low germination percentage, but if seed is not available through GOSM farmers who can afford it will buy it. With farmers' complaints that GOSM seed is often contaminated, the difference in quality between GOSM seed and marketplace seed may now be quite small.

A further potential yield-limiting factor associated with seed provided by GOSM is the fact that the seed produced by out-growers is of varieties that have not changed for several years. This suggests that there may be a progressive decline in their vigour and in their genetic resistance to pests and diseases, although there is as yet no quantified evidence of this.

GOSM's inability to provide out-growers with adequate amounts of herbicide because of economic sanctions, and the marked reduction in the number of operational screening centres have added hugely to GOSM's difficulty in providing farmers with clean seed. Out of a pre-crisis total of 30 seed-processing units, only two remain functional under GOSM's control, one in Hama and the other in Dar'a. Between them, these two units are capable of screening 100 tonnes of out-grower seed per day. Farmers in receipt of GOSM wheat seed now frequently complain of its contamination with barley and wild oat seed. Partly because of that and partly

because of the unreliability of seed purchased in the market and of harvested grain used as seed, farmers tend to use very high seed rates. GOSM recommends a seed rate of 250 kg/hectare for the popular variety 'Sham 3' under irrigation, but many farmers report using a rate of 400 kg/hectare.

Fertilizers

The use of fertilizers has declined significantly since 2011, with many farmers applying no fertilizer at all to their crops because of low availability and high prices. For instance, in Hama Governorate, the Agricultural Directorate reckons that only 30 percent of farmers apply any urea to their crops, and in Tartous Governorate those farmers who apply urea are thought to apply it at 75 percent of the recommended rate. During the second half of 2016, the fertilizer situation suffered a setback when the country's only functioning fertilizer factory in Homs was attacked and damaged by anti-Government forces, to the extent that it ceased operations. However, repairs started in 2017 and the factory is now once again producing urea and superphosphate. First to be produced was superphosphate, the annual target of 39 000 tonnes being exceeded in the factory's first year of post-damage operation. Urea production came on-stream later in 2017. Very little was, therefore, available for the 2017/18 crop, but more should be available for the coming season. Government prices for fertilizer, which is sold to farmers through the Agricultural Credit Bank, are SYP 195 000 and 165 000 per tonne for urea and superphosphate respectively. Virtually no farmers use potash, which sells for SYP 460 000 per tonne.

Many farmers buy their fertilizer from traders instead of from the Agricultural Credit Bank although the price from traders is higher. The reason for this is that the Agricultural Credit Bank requires immediate payment, which farmers may not be able to afford pre-harvest, while traders usually operate on credit. Some farmers also complain that fertilizers from the Agricultural Credit Bank are of poor quality, but this should be regarded as purely anecdotal since similar complaints are made about fertilizers bought in the market. Farmers' judgements of the poor quality are generally based on low crop productivity but this could be attributed to a number of other causes such as inferior seed, adverse weather conditions or poor husbandry practices.

Fuel

The price of diesel for farm operations is, in principle, subsidized by the Government, but in many parts of the country, subsidized diesel is not available. MAAR estimates that Government-subsidized fuel satisfies only 10-20 percent of the country's agricultural needs. Largely because of the devaluation of the Syrian Pound, the price of Government-subsidized diesel rose slightly from SYP 180/litre in June 2016 to SYP 185/litre in October 2017. Allocations of diesel are limited to 300 litres per month per tractor, an increase of 100 litres compared with last year.

Where Government-subsidized fuel was not available, farmers had to depend on often poorer-quality and usually more expensive fuel for their land preparations for the 2017/18 season. In contrast to the Government price of SYP 185/litre, the price of diesel on the open market was usually between SYP 250 and 300/litre. Some of that diesel may have emanated from IS-controlled areas, but with the expulsion of IS from most of their erstwhile strongholds in the last ten months or so, the country's oil wells are coming increasingly under Government control. Farmers in several areas report that fuel, from either Government or other sources, is now more readily available than it was last year.

Crop protection material

The cost of crop protection remains high, having approximately doubled to its current level between 2016 and 2017. There are many unapproved products on the market, some of which are reportedly ineffectual or, at worst, harmful to the crops that they claim to protect.

Mechanization

Prior to the current crisis, agriculture was highly mechanized. The crisis has resulted in damage and destruction to much of the country's farm machinery, theft of machinery, a shortage of essential replacement parts, inadequate maintenance, and high operating costs resulting from increases in the price of fuel. MAAR estimates that there has been an overall reduction of more than 60 percent in the number of operational tractors since 2011. Some governorates, however, have suffered fewer losses than others; for instance, Rural Damascus had about 11 000 tractors pre-crisis and still has 8 000. Over the past year, the farm-machinery situation has not worsened significantly, apart from continued wear and tear, and the concomitant reduction in efficiency. There are, however, some reports of improvements in the availability of basic spare parts as a result of the re-opening of small machinery workshops in Aleppo and possibly elsewhere. Spare parts made in China have also come increasingly on the market but farmers complain that their quality is generally poor.

In line with the increased costs of machinery maintenance and operation, the cost of hiring machinery for agricultural operations increased significantly in SYP terms since 2011. Over the last year, however, there has been little change, though there is significant variation from location to location. For instance, in Homs the cost of tilling is SYP 35 000/hectare while in Aleppo and Rural Damascus it is SYP 50 000/hectare; in Tartous the cost of tilling is SYP 90 000/hectare, but this includes three rather than two passes. In Hasakeh tilling for rainfed cereals (presumably a single pass) costs SYP 10 000/hectare. The cost of mechanized harvesting varies between SYP 50 000 and SYP 70 000 in the governorates visited by the Mission, while in Hasakeh, mechanized harvesting is generally paid for in kind at a rate of between 6 and 10 percent of the harvest. Farmers who cannot afford mechanized harvesting harvest some or all of their crop manually using either family or hired labour. The cost of threshing in Rural Damascus is said to be SYP 7 000 per hour.

Labour

As might be expected, considering the country's current demographic flux, there is significant local variation in farm labour availability. In general, the cost of basic manual farm labour has changed little in the last 12 months, though there are significant differences from one area to another. Some areas have seen an increase in the number of returning labourers while others remain labour-short. To some extent, there is a balance between labour supply and demand; where farmland is secure labour availability is usually higher than in areas where farmland is insecure and production is limited. This is not always the case though in Hasakeh, where production is usually high (though not this year) farmers report that there has been a significant movement of farm labour out of the governorate across the border to Turkey.

Rates of pay differ depending on the type of work involved. For example, in Homs, labour rates generally vary between SYP 1 200 and SYP 3 500/day, in Aleppo between SYP 200/hour and SYP 1 500/day, in Hama between SYP 300/hour and SYP 2 500/day, and in Rural Damascus up to SYP 3 500/day. In Tartous, manual labourers in horticultural production are paid about SYP 500/hour. In Rural Damascus, the arduous and uncomfortable job of feeding the harvested cereal crop into a mobile thresher is well paid at SYP 700/hour. Differences in rates of pay between men and women are not uncommon but they usually reflect differences in the physical demands of the work. Men, for instance, might be assigned to moving heavy irrigation equipment while women might be assigned to weeding.

Payment may also be in kind or on a piecework basis. In Hasakeh, labourers harvesting wheat manually may be paid 25 percent of the harvest, while in Rural Damascus, they may be paid up to SYP 90 000/hectare. The fact that farmers are often obliged to harvest their crop manually, even if it costs more than mechanized harvesting, reflects the general shortage of farm mechanization.

Pests and diseases

The incidence of crop pests and diseases in 2017/18 was generally low, and similar to that of 2016/17. Sunn pest (*Eurygaster integriceps*) was reported on cereals in parts of Aleppo, Hasakeh and Rural Damascus but outbreaks were relatively small and localized, and all were controlled. There used to be cross-border collaboration between the Syrian Arab Republic and Turkey for the control of Sunn pest but unfortunately this no longer exists. Much of the irrigated cereal crop suffered from mould occasioned by the high temperatures and unusually wet conditions in May and June. Some wheat rust was reported but it was not widespread. American bollworm (*Heliothis armigera*) was reported on cotton in Hasakeh.

Farm access and movement of farmers and produce

Farm access has improved in many areas over the last 12 months, as is testified by MAAR's estimate that 800 000 Syrians, mostly IDPs and including many farm families, have returned to their homes which were in previously insecure locations or in locations that were occupied by opposition forces. This is most evident in Homs, Hama, Aleppo, Raqqa and Deir-ez-Zor. In Hasakeh, farm access has improved slightly but there are still areas that are contested, and in the south of the country, particularly in Sweida, recent military activity has had a significant negative impact on farm access. Despite the improvement in security in several farming areas, much of the Badia remains under-utilized because of security concerns.

Many arterial roads have recently been made more secure making the transport of farm produce to the main markets safer and cheaper. For some years prior to 2018, the cost of transporting grain from Hasakeh to Damascus was exorbitantly high because of both the danger to the transporter and the levies, mostly in kind, imposed by armed anti-Government factions along the way. The result was a large accumulation of grain in Hasakeh. Now, with the expulsion of the armed factions, the road is much safer, though unfortunately with this year's very poor production there is less grain to be transported from Hasakeh to Damascus. Other major

thoroughfares that have benefited from increased security include those connecting centres such as Aleppo, Homs and Hama and, to a lesser extent, Deir-ez-Zor and Raqqa.

Cereal production, 2017/18

Yields

Yields are calculated on the basis of harvested area rather than planted area.

Yields of both rainfed wheat and rainfed barley were particularly low this year. The average rainfed wheat yield, at 0.75 tonnes/hectare, was 66 percent of last year's 1.14 tonnes/hectare, while the average rainfed barley yield, at 0.35 tonnes/hectare, was only 36 percent of last year's 0.96 tonnes/hectare. Lattakia and Quneitra were less affected by the long dry spell suffered by most other governorates and were the only two governorates to register an increase in rainfed wheat yield compared with 2016/17, while Quneitra and Aleppo were the only two governorates to register an increase in rainfed barley yield compared with 2016/17.

This year's average irrigated wheat yield, at 2.63 tonnes/hectare (Table 4), was slightly higher than last year's 2.57 tonnes/hectare, but in terms of production this gain was offset by the very substantial reduction in harvested area (Tables 5 and 7, and Figure 9). The average irrigated barley yield, at 2.04 tonnes/hectare, was also higher than that of 2016/17, but again this had only a minor effect on overall barley production as the proportion of irrigated barley relative to rainfed barley was, as usual, small.

Table 4: Syrian Arab Republic - Average cereal yields (tonnes/hectare) by governorate, 2016/17 and 2017/18

Governorate	Wheat				Barley			
	Irrigated		Rainfed		Irrigated		Rainfed	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Rural Damascus	2.7	2.9	0.9	0.6	1.0	1.1	0.7	0.6
Dara'a	2.6	2.5	0.8	0.6			0.9	0.7
Sweida	2.0	1.6	0.5	0.5			0.7	0.4
Quneitra	1.5	1.6	0.7	1.0			1.1	1.5
Homs	2.4	2.0	1.3	0.6	1.5	1.75	0.8	0.6
Hama	3.1	1.8	1.6	0.7	2.1	2.5	1.1	0.7
Al Ghab	3.3	2.0	2.2	0.9		1.5	2.8	0.9
Tartous	2.3	2.8	1.3	1.0	1.6	1.5	1.0	0.9
Lattakia			1.5	1.9			1.6	1.2
Idleb	2.6	2.7	0.9	0.8			1.8	0.5
Aleppo	1.8	2.7	1.2	0.8	2.2	2.0	0.7	1.0
Raqqa	3.2	2.8	1.2	0	2.0	2.0	1.0	0
Hasakeh	2.6	3.0	1.2	0.5	2.2	2.4	1.1	0
Deir-ez-Zor	2.3	2.0			1.5	1.8		
Total	**2.57**	**2.63**	**1.14**	**0.75**	**1.65**	**2.04**	**0.96**	**0.35**

Source: CFSAM 2017, central and governorate-level MAAR, farmers and field observation.
Note: Totals and averages computed from unrounded data.

Production

At 1.2 million tonnes, wheat production in 2018 was the lowest since 1989 when 1.02 million tonnes was reported (FAOSTAT). Compared with recent production figures it was only 67 percent of the 1.8 million tonnes of 2017 (Table 5) and 46 percent of the previous nine years' average production of 2.6 million tonnes (Table 7). The main contributors to the low production were the long dry period experienced by most of the country between February and April, which desiccated much of the developing rainfed crop and the unseasonably heavy rains and, in some places, hail in May and June which damaged much of the irrigated crop during the period when it should have been drying out prior to the harvest. The effects of these adverse weather conditions were of course, exacerbated by the continuing poor input and mechanization situation resulting from seven years of conflict and international trade sanctions.

Despite this year's poor harvest, it is likely that not all the wheat produced will stay in the country. Wheat is regarded as a strategic crop and as such may only be exported when the Government deems that supplies are sufficient to meet domestic demand. However, in parts of the country that remain outside Government control, wheat has been crossing the border, especially from Idleb and Aleppo into Turkey, and possibly from Hasakeh into Iraq, where it can be sold for higher prices than those paid within the Syrian Arab Republic.

Barley production was similarly affected by this year's unfavourable weather condition. This year's harvest of 390 000 tonnes was just 50 percent of last year's 777 000 tonnes (Table 6) and 51 percent of the previous nine years' average of 767 000 tonnes (Table 7). It was the lowest production since 2008, when 261 100 tonnes was reported (FAOSTAT).

Table 5: Syrian Arab Republic - Wheat production ('000 tonnes) by governorate, 2016/17 and 2017/18

Governorate	Irrigated		Rainfed		Total	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Rural Damascus	17	20	2	0.1	18	20
Dara'a	16	16	25	10	41	26
Sweida	0.4	0.3	9	5	10	6
Quneitra	0.3	0.4	0.3	0.5	1	1
Homs	19	16	29	12	48	28
Hama	35	13	9	2	44	15
Al Ghab	130	93	4	3	134	96
Tartous	7	11	6	8	14	18
Lattakia		0	4	6	4	6
Idleb	55	34	27	22	82	56
Aleppo	179	250	108	118	287	368
Raqqa	294	224	48	0	342	224
Hasakeh	267	276	353	10	619	286
Deir-ez-Zor	150	50		0	150	50
Total	**1 170**	**1 002**	**623**	**197**	**1 793**	**1 199**

Source: 2017 CFSAM, MAAR and 2018 CFSAM.
Note: Totals computed from unrounded data.

Table 6: Syrian Arab Republic - Barley production ('000 tonnes) by governorate, 2016/17 and 2017/18

Governorate	Irrigated		Rainfed		Total	
	2016/17	2017/18	2016/17	2017/18	2016/17	2017/18
Rural Damascus	1.2	1	2	3	3	4
Dara'a		0	10	3	10	3
Sweida		0	9	2	9	2
Quneitra		0	0.3	0.8	0.3	0.8
Homs	0.5	0.6	17	2	17	3
Hama	12	8	54	18	66	26
Al Ghab		7	16	0.7	16	8
Tartous	0.1	0.04	0.4	0.5	0.4	0.5
Lattakia		0	0.3	0	0.3	0
Idleb		0		14		14
Aleppo	3	19	141	202	144	221
Raqqa	36	50	86	0	122	50
Hasakeh	29	41	347	0	375	41
Deir-ez-Zor	28	18		0	28	18
Total	**96**	**144**	**681**	**245**	**777**	**390**

Source: 2017 CFSAM, MAAR and 2018 CFSAM.
Note: Totals computed from unrounded data.

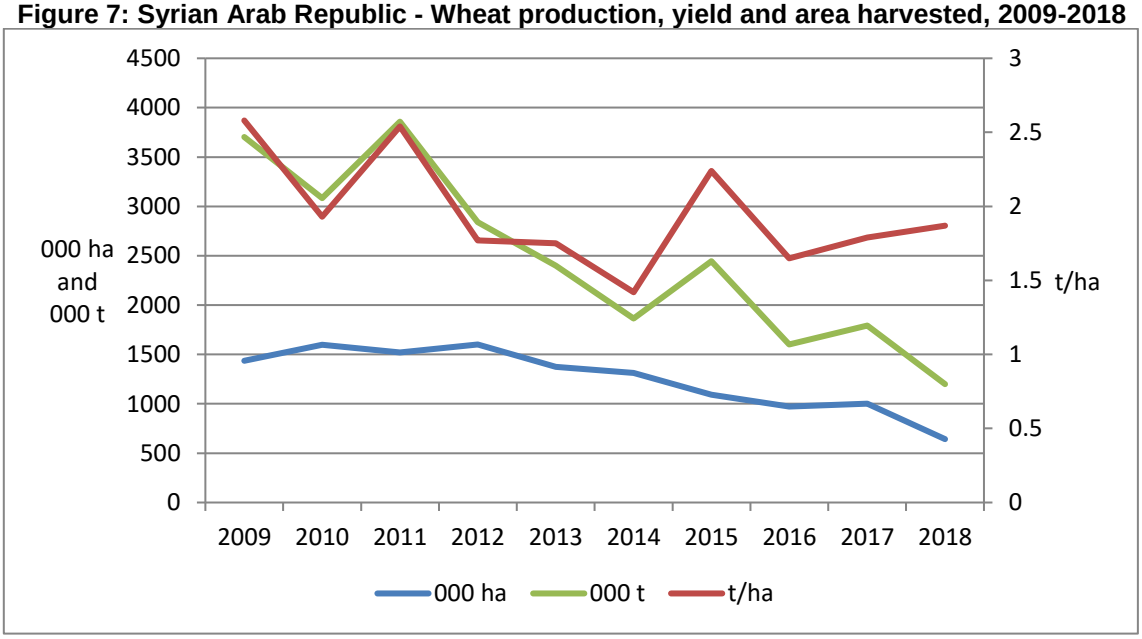
Table 7 and Figures 7 and 8 show the national production parameters for wheat and barley, both irrigated and rainfed combined, for the ten-year period 2009-2018. For wheat there was a clear decline in harvested area following 2012, and for barley a similar decline occurred after 2013. During the ten-year period there was considerable fluctuation in yield. Although wheat yields from the harvested area were not the lowest of the ten-year period (there were five years when they were lower), the severe reduction in harvested area resulted in the lowest production of the period. Barley yields this year were among the lowest of the ten-year period (2010 and 2014 were marginally lower) and this, combined with a low harvested area, resulted in the lowest production of the period.

Table 7: Syrian Arab Republic - National cereal production parameters, 2009-2018

		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Wheat	000 ha	1 437	1 599	1 521	1 601	1 374	1 313	1 092	973	1 001	642
	t/ha	2.58	1.93	2.54	1.77	1.75	1.42	2.24	1.65	1.79	1.87
	000 t	3 702	3 083	3 858	2 840	2 400	1 865	2 445	1 601	1 793	1199
Barley	000 ha	1 290	1 527	1 293	1 133	1 263	1 221	1 081	733	766	772
	t/ha	0.66	0.45	0.52	0.64	0.72	0.49	0.90	0.98	1.01	0.50
	000 t	846	680	667	728	911	600	968	722	777	390

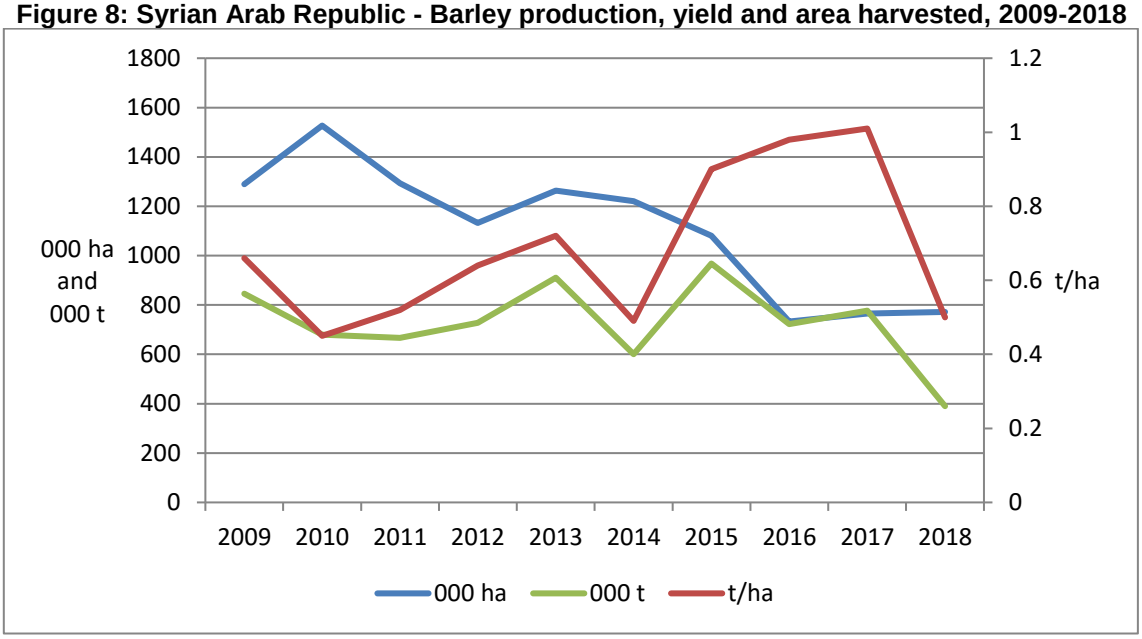
Source: FAOSTAT (2009-2012, 2014) and CFSAMs (2013, 2015-2018).

Figure 7: Syrian Arab Republic - Wheat production, yield and area harvested, 2009-2018



Source: FAOSTAT (2009-2012, 2014) and CFSAMs (2013, 2015-2018).

Figure 8: Syrian Arab Republic - Barley production, yield and area harvested, 2009-2018



Source: FAOSTAT (2009-2014) and CFSAMs (2015-2018).

As mentioned in the "Assessment Methodology", a pre-CFSAM study was prepared by the National Agricultural Policy Centre to widen the information available to the Mission members. This year's study was prepared in cooperation with the General Organization for Remote Sensing (GORS). The box below discusses the details.

Estimation of wheat and barley crop area and yields in Syrian Arab Republic using remote sensing

The pre-CFSAM study estimated crop area and yields for both wheat and barley in the Syrian Arab Republic using high resolution remote sensing images. The satellite images were provided by the European satellite Sentinel-2A, Copernicus programme, European Space Agency, during the cropping period up to 16 April 2018. The images were up to date, in real time (synchronous), repetitively 10-15 days, spatial resolution 10, 20 and 60 m, and 12 different spectral bands. The satellite data were processed using specialized software (Toolbox, Level-2A) for Sentinel-2. The primary processing included radiometric and atmospheric corrections, geographic reference, and spatial correction to make the images compatible with the agricultural application of the study. Wheat and barley differ on satellite images in this spectral signature based on the digital number of each pixel. Results were calibrated by field teams in Hasakeh, Aleppo, Hama, Homs, Rural Damascus, Dara'a, Sweida, Lattakia, Tartous and Quneitra, in total 4 728 points. A database of experimental plots was created, including their physical characteristics and land features, using ArcGIS software. Crop areas were calculated based on the pixel area of Sentitel-2 satellite images with an area of 100 square meters and a spatial resolution of 10 metres. Field visits to estimate yields were carried out in the first decade of May. Three levels of yields were estimated for wheat and barley: high, level and low. Each level was adapted to the characteristics of each governorate, type of production (rainfed or irrigated), and cultivated varieties. In addition to satellite images, the study provided area and yield estimates for the entire country as well as individual governorates.

The study was technically sound and rich in detail. However, weather developments in late April and May, which brought unseasonably late heavy rains, altered the production landscape and significantly lowered the yields, rendering the study of limited use for the actual crop assessment.

OTHER CROPS

Food legumes

The area planned for the production of food legumes in 2017/18 was 291 310 hectares, of which 182 891 hectares, or 63 percent, was achieved. This shows a slight reduction on 2017, mostly for chickpeas, possibly because of economic considerations and possibly because of the unusually dry conditions at the time of planting.

Table 8: Syrian Arab Republic - Legume area ('000 hectares), 2011-2018

Crops	2011	2012	2013	2014	2015	2016	2017	2018
Lentils	140	130	114	111	114	98	123	122
Chickpeas	74	84	76	45	45	69	56	35
Broad beans	17	15	15	20	12	12	19	21
Peas	4	4	3	4	3	3	5	4
Total	**235**	**233**	**208**	**180**	**175**	**182**	**203**	**183**

Source: FAOSTAT for 2011-2014; MAAR for 2015, 2016 and 2018.
Note: Totals computed from unrounded data.

Potatoes

Most potatoes in the Syrian Arab Republic are planted as a summer crop in April and harvested in August. The so called "fall crop" is planted in August and harvested in November. The yield of the spring-planted crop is usually higher than that of the fall crop. Potato production in the country is now down to about two-thirds of its pre-crisis levels, largely because of the reduced availability and high cost of seed potatoes and required inputs. Depending on the availability of funds, GOSM imports between 10 000 and 15 000 tonnes of certified seed potato each year from Europe.

Vegetables

Commercial vegetable production in polytunnels has until recently been very profitable, and hence important, in the coastal governorates of Tartous and Lattakia. Tartous alone is currently estimated to have 136 500 polytunnels, each of 400 m^2 (50 x 8 m), of which 130 800 are thought to be in production.

The principal polytunnel crops are tomato, cucumber, eggplant and capsicum, of which tomato is the most economically important. Production problems are the same in most centres throughout the country and include the high cost of good seed, fertilizers, crop-protection materials, plastic sheeting and fuel. With the high cost of pumping irrigation water from wells, possibly with falling water levels and some saline intrusion in coastal areas, the Ministry of Water Resources suspects that some growers are using the domestic water-supply system to irrigate their crops.

Economic sanctions have taken their toll on vegetable production by severely limiting the availability of required inputs and especially of phytosanitary materials. The reputable ones that do reach the market are expensive, while the cheaper imports from anonymous producers are often ineffectual and occasionally harmful. However, despite the under-use of reliable phytosanitary materials, much of the Syrian Arab Republic's vegetable produce is of reasonably good quality. Apart from soil-borne diseases, most of the commonly occurring diseases in polytunnels are under control. Solar radiation is the major means of sterilizing the soil, but its success rate is said to be only about 60 percent. IPM (integrated pest management) is officially encouraged but its use is, at most, minimal.

According to the Ministry of External Trade, vegetables are not allowed to be exported for the foreseeable future. A ban on vegetable exports is triggered when the requirements of the country as a whole are considered to exceed availability. On a macro-economic level this appears sound, but from the grower's and trader's perspective it can be counter-productive. The cost of vegetable production is relatively high, transport costs remain high, and large-scale vegetable production is locally concentrated. This results in large volumes of vegetables being brought to the closest wholesale market, for example Tartous for Tartous-produced vegetables, where, because of competition from other growers and the low purchasing power of consumers, they are often sold for less than the cost of production. Waste can consequently be high, although traders do try to minimize it by selling off their stock at gradually diminishing prices throughout the day. Some vegetables, such as tomatoes that are showing signs of deterioration, may be sold off at rock-bottom prices for pulping. When growers and traders had the option of exporting their produce across the border to Lebanon, this eased the surplus congestion in the Syrian Arab Republic's wholesale markets and was usually profitable for both. Lack of profitability obviously discourages growers, and last year it was estimated that 4 000 polytunnels in Tartous alone had been abandoned because of negative economic return. So far, however, most growers continue producing in anticipation of the removal of the export ban and the development of a more profitable environment. Moreover, despite the ban, it appears that some traders do manage to export small quantities of vegetables to Lebanon.

Fruit trees

Fruit production, like that of other crops, has suffered from input shortages and high production costs, as well as problems of insecurity such as prolonged lack of harvesting and pruning, and the destruction of trees. A recent survey carried out by MAAR concluded that 30 million fruit trees had been destroyed.

Prior to the crisis, olive production used to employ an estimated 100 000 Syrian families. The Syrian Arab Republic produced close to 1 million tonnes of olives per year (approximately 200 000 tonnes of olive oil), making it the world's fourth largest producer. Production of olives declined steeply after 2011. For example, Rural Damascus, which used to produce 50 000 tonnes pre-2011, has produced only about 30 000 tonnes annually for the last few years. However, olive production in general now appears to be reviving. MAAR estimates that olive production in 2017 was 850 000 tonnes, approximately 50 000 tonnes more than was produced in 2016. Idleb is the largest producer of olives, but Aleppo has the largest number of olive trees at 23 million, most of which are in the north of the governorate in areas that are still out of Government control. Tartous has 11 million olive trees. This year Homs has produced 104 000 olive seedlings for distribution, an increase of 44 000 on last year's 104 000. Olive production in general is said to be good this year as a result of favourable amounts of rain, rainfall distribution being less critical for olives than for cereals. Production in Aleppo, for instance, is reported to be twice as good as last year.

Citrus production appears to have been less affected by the crisis than olive production, possibly because most citrus is produced in the very secure coastal governorates of Tartous and Lattakia. Prior to the crisis, the Syrian Arab Republic produced about 1 million tonnes of citrus per year and this level has been maintained within the normally expected range until now. Nevertheless, because of the shortages and high costs of fertilizers and pesticides, the high cost of fuel leading to difficulties in irrigation, reduced mechanization options, transportation problems, and a shortage of proper storage facilities, most farmers experience minimal economic returns.

Other significant fruits include apples, grapes and cherries, particularly in Rural Damascus, Tartous, Sweida and Lattakia. All were reported to have suffered somewhat this year as a result of the heavy late rains, hail and high temperatures at the beginning of summer.

Prior to 2011, replacement saplings of trees of all kinds were produced at a rate of about 20 million per year. By 2017, this figure had fallen to 1.7 million but by mid-2018 it had recovered slightly to an annual rate of 1.9 million. Some 2.2 million saplings are expected to be produced in 2019.

Herbs

In the years immediately after the beginning of the current crisis, many farmers turned to cumin and coriander as relatively drought-tolerant and high-value rainfed crops that required few inputs. In years of well-distributed rainfall the returns were satisfactory, but this year, with its long dry spell followed by heavy rains late in the season, the crops have performed very poorly, with many farmers experiencing complete crop loss.

Industrial crops

Sugar beet

In 2011 the Syrian Arab Republic produced 1.8 million tonnes of sugar beet from 26 000 hectares (FAOSTAT). By 2015 the country's production had fallen to 29 000 tonnes produced from 860 hectares (MAAR), all in Al Ghab, Hama Governorate. This represented just eight days of work for the only remaining functional sugar beet factory, which has a capacity of 3 600 tonnes per day. Rebel factions destroyed other sugar beet factories in Aleppo, Deir-ez-Zor and Raqqa, but there are plans for the restoration of the Aleppo factory. In 2016, there was a further reduction in area down to 252 hectares on land where contracts had already been drawn up between MAAR and producers. Since the production from such a small area would not justify operating the factory, the produce was used as fodder. By 2018, only 144 hectares were sown to sugar beet, again solely for fodder.

Up to the 1980's farmers used to grow sugar beet under a simple contract with the Government. Subsequently, production was allocated to MAAR and processing to the Ministry of Industry and farmers were obliged to obtain credit from the Agricultural Cooperative Bank. In addition to the other consequences of the ongoing crisis, such as shortages of fuel and farm machinery, the Agricultural Cooperative Bank stopped providing credit to farmers soon after 2011, thus reducing even further the attractiveness of growing the crop.

Cotton

The Syrian Arab Republic's traditional cotton-producing governorates are Raqqa, Hasakeh, Deir-ez-Zor and Aleppo, with small amounts also coming from Hama and Homs. At its height in the early 1960's, the area under cotton covered more than 250 000 hectares, but largely due to shortages of irrigation water and increasing labour costs the area had fallen to 125 000 hectares by 2011. With the present crisis and the resulting shortages of seed, crop-protection materials and credit, and damage to irrigation systems and ginneries, the area under cotton experienced further dramatic reductions. In 2016, 16 000 hectares were harvested, but the bulk of this (12 000 hectares) was in IS-controlled Raqqa Governorate. Since then, cotton production appears to be experiencing the tentative beginnings of a revival. In Hama this year 641 hectares are under cotton, compared with last year's 40 hectares, while farmers in Aleppo and Deir-ez-Zor have expressed an interest in increasing production.

In Hasakeh, where cotton used to be an important crop, yields are expected to be between 3.5 and 4.5 tonnes/hectare. Seed is obtained from Turkey; the harvested seed cotton is sold to the Kurdish authority for between SYP 80 and 364/kg depending on quality. The Kurdish authority gins it and then sells it to the Government of the Syrian Arab Republic for SYP 364/kg. All these prices are in line with those used by the Government.

There are three operational ginneries in Government-controlled areas and all of them are in Hama governorate. Ginneries in Deir-ez-Zor, Raqqa and Hasakeh were damaged and are not currently operational. Producers in Deir-ez-Zor, where the area is expanding and yields this year are said to be good, must, therefore, transport their seed cotton to Hama for ginning.

Tobacco

Until 2013, the Syrian Arab Republic grew about 11 000 hectares of tobacco each year (FAOSTAT). This figure fell to just over 2 750 hectares by 2015 (MAAR), most of which was in Lattakia Governorate. According to MAAR, the area has recovered rapidly since then to a total of more than 7 000 hectares. Production in Tartous has expanded enormously to 5 000 hectares, of which 4 500 hectares are rainfed and the remaining 500 hectares are irrigated, Aleppo, Al Ghab, Homs and Hama also report production, and further production is planned in Sweida. The sharp increase in production has followed a similar increase in the price offered to producers by the General Organization of Tobacco (GOT). In 2016, the GOT offered producers SYP 400-500/kg; now it offers SYP 2 700/kg. The produce is processed in two factories, one in Damascus and one in Lattakia. In order to avoid the expansion of tobacco production onto land that is more suited to producing food crops, the GOT imposes strict regulations on where tobacco may be grown, which is usually in mountainous areas or in areas of low rainfall. Farmers must apply to the GOT for a licence to grow tobacco, and the GOT provides a package of seed and fertilizer to licence-holders. Part of this year's crop was damaged by the late heavy rains. Yields of between 1 and 1.5 tonnes/hectare are expected.

POST-HARVEST AND OTHER PROBLEMS

The transport of farm produce remains problematic but less so than last year. Many main roads that were insecure last year, or that had road blocks where exorbitant levies were imposed by armed groups, are now secure, thereby eliminating the considerable accumulation of wheat in Hasakeh that had built up in recent years because of the difficulty of transporting it to Damascus and other urban centres. However, the cost of transport remains high. For instance, transport of farm produce from Homs to Damascus or to Government-held areas in Aleppo costs between SYP 10 000 and 15 000/tonne. For transport from Homs to rebel-held areas in Aleppo the cost is between SYP 40 000 and 50 000/tonne. Transport of apples for 60 km from Rural Damascus to Damascus city costs SYP 5 000/tonne. The cost to transport small amounts of produce (about 1 tonne) from Qamishli to Aleppo or Damascus is SYP 40 000/tonne; larger consignments transported in refrigerated trucks are much cheaper per tonne at SYP 10 000/tonne.

Prior to the crisis, the country had 144 grain-collection centres where the Government purchased grain from farmers at controlled prices. Many of these were damaged, destroyed or occupied by opposition forces, so that by 2017 only 29 remained operational and under Government control. This year that number has increased to 35. Some of these are open-air, but with careful stacking, protection from rain, regular fumigation and good management, HOBOOB reckons that grain losses at the collection points are less than 1 percent.

During the crisis, warehouses and siloes have frequently been targeted by opposition groups. According to HOBOOB, the Government had 36 siloes in 2010, with a grain-storage capacity of 7 million tonnes. Last year, only six were under Government control, but this year that figure has risen to nine.

HOBOOB claims that farmers are paid for their wheat within two days of delivery. This may have been the case pre-2011, and still is in many areas, but some farmers in Aleppo complained that they had been left waiting for payment for several weeks. In Hasakeh, traders buy wheat for SYP 160/kg. Although this is SYP 15 lower than the SYP 175 offered by HOBOOB, some farmers prefer to sell to traders because traders will collect the grain and pay on the spot.

High transport costs and low consumer purchasing power can lead to bottlenecks in the marketing of fruits and vegetables, which can result in wastage, especially at peak harvest time for perishable items such as tomatoes. The problem is further exacerbated by the current ban on the export of fruits and vegetables. The number of operational cold stores for the collection of perishable fruits and vegetables available to the Government has been reduced to only 10 percent of its pre-crisis level. Rent of private cold storage facilities has increased substantially compared to the pre-crisis levels, reflecting the shortage of cold storage facilities as well as difficulties in ensuring they run properly given frequent electricity shortages and high fuel prices.

LIVESTOCK

Livestock numbers

After a very significant reduction soon after 2011, livestock numbers appear to have stabilized at a low level over the past four years. The last comprehensive agricultural census, conducted in 2010, put the main livestock species of the country at 18 million sheep, 2.3 million goats, 1.1 million cattle, 7 million buffaloes and 26.2 million poultry. After several years of conflict, it is difficult to assess livestock numbers with any degree of accuracy. Approximate estimates can be obtained by extrapolation from the number of vaccines administered, the amount of routine drugs provided, the volume of trade at livestock markets, abattoir records, and anecdotal evidence. However, given the current limitations of the veterinary services and the damage to the supply chains, estimates based on the activities of the veterinary services are likely to be under-estimates. According to MAAR, sheep numbers fell by 45 percent, goat numbers by 30 percent, cattle numbers by 40 percent, and poultry numbers by 55 percent during the first three years of the crisis. These figures were adjusted in 2015, 2016 and 2017 (Table 9), based on veterinary, market, breeder and anecdotal information. Between governorates, reported livestock numbers are constantly fluctuating, partly as a result of IDP movement and partly owing to the difficulty of measurement. Some governorates report increases while others report reductions. For instance, Tartous now reports cattle numbers of 28 000 compared with last year's 37 000, while Raqqa and Aleppo report increased cattle numbers. Homs reports an increase in sheep numbers from 878 000 last year to 1.145 million this year, while Hasakeh and Rural Damascus report reductions. On balance, however, overall numbers in the first half of 2018 are thought to be not dissimilar to those of 2017[7] (Table 9), but they could decline towards the end of the year as breeders try to reduce their stock, by either sale or slaughter, in response to the current shortage and high price of feed.

Table 9: Syrian Arab Republic - Livestock numbers (millions), 2011-2017

	2010 census	2015 estimates	2016 estimates	2017 estimates
Sheep	18	10.8	10.5	9.8
Goats	2.3	1.4	1.4	1.6
Cattle	1.1	0.77	0.75	0.65
Poultry (chickens)	26.2	13.1	10.5	11.5

Source: FAOSTAT: 2011 figures and CFSAM estimates: 2015-2017.

Sheep are the most important animal species in the country, both numerically and in terms of consumer preference.

A programme of importation of in-calf Holstein Friesian heifers from Europe is currently under way with an immediate target of 12 000. The long-term target is 30 000. By mid-2018, 4 465 cows had been shipped from Germany, of which 404 were rejected and 25 died in transit. Of the remainder, 2 126 were sold to breeders in Quneitra, Homs, Lattakia, Aleppo and Sweida at a 30-percent discount with favourable loan-repayment terms. The remaining 1 910 went to the General Organization for Cattle for multiplication. Live births are reported with a 90-percent success rate, and further imports are anticipated from Austria in the near future.

[7] Any attempt at further refinement of the 2017 figures would only give a spurious impression of accuracy, which cannot be achieved under the present circumstances.

Animal nutrition

In early July, most of the animals seen by the Mission in several livestock markets appeared well fed. This year's failure of large areas of cereal crops during the prolonged dry spell increased the availability of grazing, especially for sheep and goats, early in the year. However, the failure of much of the barley crop may soon have adverse repercussions on the price of barley and on the price of feed generally. Feed prices are already considered to be high. Depending on location, farmers may pay between SYP 70 and 100/kg for straw and between SYP 125 and 150/kg for barley on the open market. The General Organization of Feed (GOF) currently sells barley for SYP 130/kg, an increase of SYP 20/kg on last year's SYP 110/kg. At the beginning of July GOF had a total of 250 000 tonnes of feed, all locally produced and held in all governorates except Raqqa, Idleb and Deir-ez-Zor. These stocks, which represent less than 20 percent of the country's annual requirement, comprise barley, maize, cotton seedcake and concentrates. Blended concentrates cost about SYP 215/kg. GOF expects to import barley and possibly other feed grains this year, but at the time of the Mission, the amount had not yet been decided. In 2016, the GOF imported 20 000 tonnes of barley and 20 000 tonnes of maize from Russia. GOF's factories used to produce 250 000 tonnes of concentrates annually for cattle, but this is now down to 100 000 tonnes as a result of damage to two factories in Damascus and one in Aleppo. Two of these factories are now being rehabilitated, one in Damascus and one in Aleppo. Pre-2011, GOF had 121 feed distribution centres; 80 of these were damaged, of which 15 have already been rehabilitated and three are in the process of being rehabilitated. The amount of feed that registered livestock breeders can purchase from GOF depends on the number of animals they own. In Homs, for instance, cattle and sheep are eligible for 75 kg and 10 kg of wheat bran per head every two months at a subsidized cost of SYP 65/kg. Feed prices usually rise during the winter months and, with this year's poor barley harvest, they are expected to reach higher-than-usual levels.

Animal production

With the high price of feed, most sheep breeders are attempting to reduce their stock as they consider that they will be unable to afford to feed them. Potential buyers are, of course, faced with the same dilemma with the result that livestock prices have fallen and continue to fall. With breeder-to-breeder sales falling, an increasing number of marketed sheep are sold for slaughter. Typical sheep prices per kilogramme live weight in July (before Eid al Adha) were SYP 1 650 (Hama), 1 400 (Aleppo) and 1 400 (Hasakeh), down from SYP 2 000, 2 000 and 1 700, respectively at the same time last year. Typical goat prices per kilogramme live weight fell from SYP 1 400 (Homs) and 1 300 (Hasakeh) to 1 200 and 1 075 respectively over the same period. Sheep prices usually peak during the period running up to Eid al Adha and then fall off sharply after the festival, so the prospects for breeders after August are not good. For example, last year at Al Milaha livestock market in Homs Governorate, the average live-weight price of sheep fell from SYP 2 000/kg before Eid al Adha to SYP 1 300 shortly afterwards.

Half a million semen straws were distributed to breeders throughout the country during the last year. This included a programme of artificial insemination (AI) of Awassi sheep, which resulted in a success rate of only 45 percent, although the rate of twinning was high. In contrast, the success rate of natural insemination is about 95 percent. In Hama, breeders complained of high abortion rates among ewes.

The production costs of cows' milk and dairy products have increased in line with increased feed prices and high transport costs. The programme of importing in-calf Holstein-Friesian heifers, mentioned above, aims to re-build the country's dairy industry. Cattle-breeding stations in Homs, Hama and Aleppo are being restored, and AI is being used. However, the number of technicians qualified to administer AI is greatly reduced. In Aleppo, about 65 000 cows used to be artificially inseminated each year by 64 qualified technicians. Now there are only 26 qualified technicians and the number of artificial inseminations fell last year to 1 400. AI in Aleppo is currently reported to have a success rate of 85 percent. In Raqqa, the fertility of cattle is reportedly low, possibly because of poor management and a general shortage of feed over the last few years while the governorate was occupied by IS.

In dry areas, watering of all ruminant livestock may be problematic, sometimes necessitating the purchase and transport of water by tanker, which adds further to the cost of production.

For decades, most of the country's poultry was raised in intensive production units, but with the conflict-related closure of more than half of the country's units, there has been an increase in the number of backyard poultry for household consumption and for sale locally. At the same time, FAO and other organizations are assisting with the re-establishment of poultry units. However, the high cost of poultry feed, most of which must be imported, acts as a disincentive for producers; chickens imported/smuggled from neighbouring countries, where the cost of production is lower, are often cheaper than the locally produced ones.

Fisheries, both coastal and inland, are now of local importance only since a lot of equipment has been lost or damaged through civil conflict and many fish farms have been abandoned. In Hama Governorate, for example, there used to be 187 licensed and 312 unlicensed fish farms producing an average of 7 100 tonnes of fish annually. Only 40 remain operational, with an annual production of 250 tonnes. In Aleppo Governorate, fishing is now confined to Lake Assad. In the past, it was estimated that fisheries accounted for only 0.38 percent of the country's agricultural GDP but it seems likely that that figure is now even less. From the point of view of protein supply, the sector could contribute significantly to general nutrition.

Animal health

Livestock health is generally good and there have been no significant outbreaks of disease, apart from isolated instances amongst poultry units in some parts of the country. This year's vaccination programme is reported by MAAR to have provided 70 percent of the country's requirement, but this masks shortfalls in several governorates and may be an over-estimate nationally. On one hand, Tartous Governorate reported 100 percent coverage for FMD, lumpy skin disease and brucellosis. On the other hand, in Hama Governorate, although 67 percent of livestock were vaccinated against brucella, enterotoxemia and sheep pox, the coverage of FMD was only 50 percent and for pasteurella only 20 percent. In Raqqa Governorate, the overall vaccination rate was reported to be between 40 and 50 percent. There have been shortcomings too in the coverage of Newcastle disease for poultry with outbreaks reported from several parts of the country. Many of these outbreaks have been attributed to the proliferation of small, inexperienced household poultry enterprises as opposed to larger well-managed commercial units.

Several vaccines are still produced in the Syrian Arab Republic but some need to be imported. Five million doses of FMD vaccine were imported during the last year. Some breeders complain that Syrian-produced vaccines are less effective than imported ones.

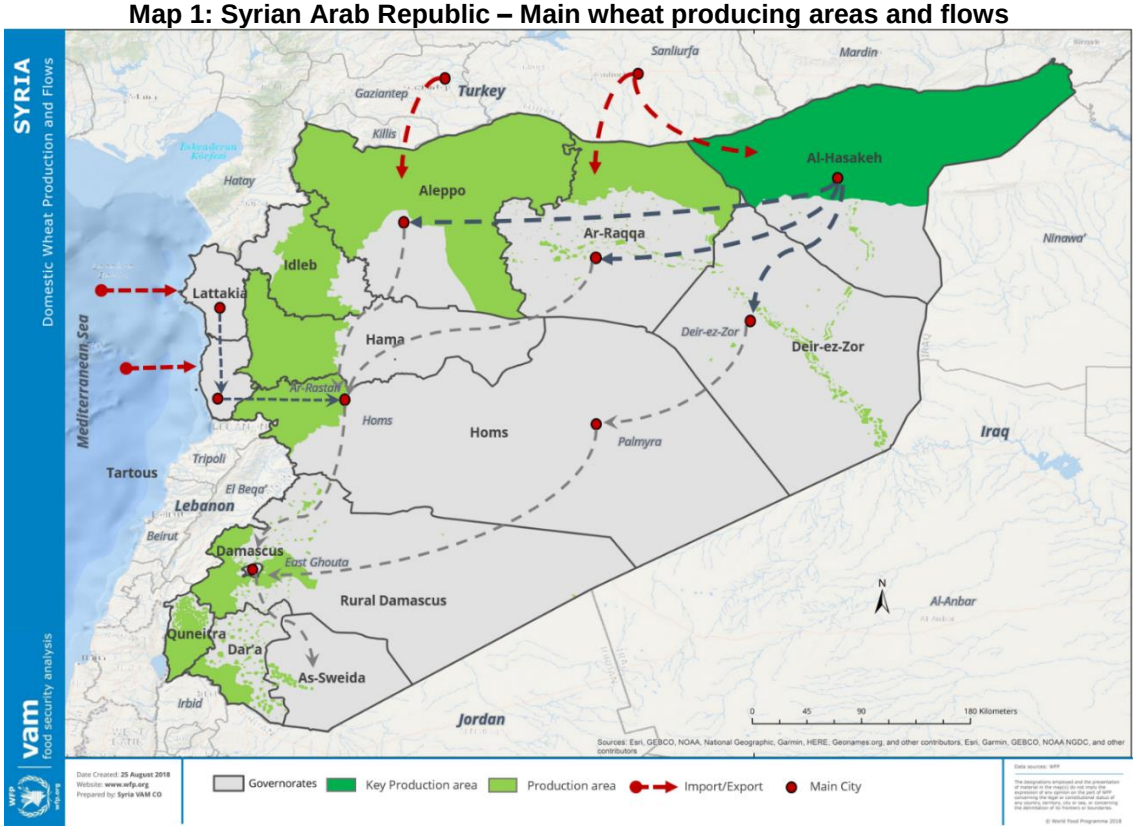
LOCAL FOOD MARKET CONDITIONS

Food Market

As discussed in the background section, the Syrian Arab Republic has historically been a strong agrarian-based economy. Much of the country's agricultural cropland lies in the north east, north and central parts of the country, including notably the governorates of Hasakeh, Raqqa, Aleppo, Hama, Deir-ez-Zor, Homs, and Rural Damascus. Agriculture in the eastern governorates of Lattakia, Tartous and Idleb is known to largely centre on citrus fruits, apples, olives and vegetable cultivation.

While the Syrian Arab Republic cultivates a number of agriculture products namely barely, cotton, tobacco, sugar beet, lentils, chickpeas, fava beans, peas, vegetables, citrus fruits, olives and herbs, its main crop is wheat. Up to 45 percent of wheat grain is cultivated in Hasakeh, with Raqqa, Aleppo, Deir-ez-Zor, Hama and Homs contributing much of the remaining 50-60 percent. Some wheat is also cultivated in Rural Damascus and the southern governorates of Dar'a and Quneitra. As a result, much of the wheat trade flow goes from the northeast and northern parts to the west and south pars of the country (Map 1).

Map 1: Syrian Arab Republic – Main wheat producing areas and flows



Source: WFP.

Over the past year, accessibility has greatly improved across much of the Syrian Arab Republic. By November 2017, ISIL was pushed-out of Raqqa and most of Deir-ez-Zor, opening-up important trade routes across the country, which had been disrupted since 2013. Government advances in East Ghouta, Ar-Rastan, Dar'a and Quneitra in the first two-quarters of 2018 have further improved trade routes by consolidating an important north-south trade corridor within the Syrian Arab Republic, hereby improving trade from surplus to deficit areas across the country. Trade with Jordan is also expected to resume in the coming months as the Dar'a border crossing is expected to re-open.

While trade across the country is improving, key constraints to trade remain. Accessibility is still an issue especially in recently re-captured areas. Idleb and south Deir-ez-Zor remain inaccessible from within the Syrian Arab Republic. Infrastructure across the country, especially irrigation systems, grain silos, milling plants, factories and warehouses has been heavily damaged or destroyed.

Informal figures place the number of damaged cement silos (averaging 100 000 tonnes capacity each) at 26 out of 32 available silos and 94 metal silos (averaging from 10 000 to 30 000 tonnes capacity) damaged out of 99 available metal silos. As a result, storage capacity, which was around 3.5 million tonnes before the conflict, is currently estimated at no more than 450 000 tonnes and about 80 percent of wheat stocks are currently stored in open spaces. The Syrian Arab Republic's milling capacity has also been affected. The Syrian Arab Republic's milling capacity was around 3.8 million tonnes per year before the crisis, it was estimated at 2.8 million tonnes per year in 2015 and with limited investment, it remains unchanged.

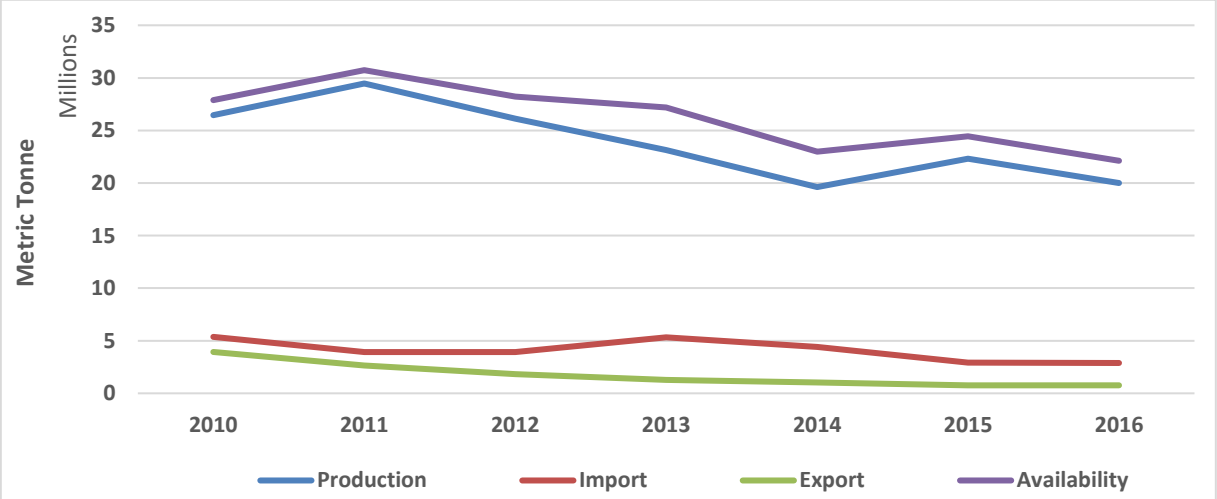
In addition to a high number of displaced families who have been forced off their land due to the conflict, erratic weather patterns in 2017/18 have also heavily affected domestic supplies this year and seed availability for the upcoming season. Traders across the Syrian Arab Republic are reporting low consumer liquidity and high prices as the key issues affecting the sector's low demand, the main constraint to increasing trade levels. Traders' limited capital and the Syrian Arab Republic's exchange rate volatility are also affecting traders' ability to purchase goods as they now tend to buy smaller volumes than prior to the conflict in order to limit their exposure to risk.

Wheat production in the country declined considerably from the pre-conflict levels. As a result, the Syrian Arab Republic has been importing wheat to meet its national requirements. In 2017, the Government of the Syrian Arab Republic struck a deal with the Russian Federation for the importation of 1 million tonnes of wheat per year over the subsequent three years (2017-2019). However, due to the lower than expected harvest this year an extra 0.5 million tonnes are to be provided by the Russian Federation.

Even before the conflict, the Syrian Arab Republic heavily depended on markets for its food security. Already in 2010 over 50 percent of Syrians were living in urban areas making markets essential in providing Syrians with their food needs. The conflict, the resulting international bans and the more frequent erratic weather patterns experienced by the Syrian Arab Republic over the last 50 years, have meant that ever more Syrians are depending on markets to purchase their food. A national food security assessment conducted in 2017 by the Syrian Arab Republic's Central Bureau of Statistics and WFP (FSA 2017) found that 80 percent of Syrians reported to be depending on markets for their main source of food. With reduced domestic agricultural production, imports are becoming a more important food source.

The Syrian Arab Republic's food balance sheet (Figure 9) shows that domestic agriculture production as well as agriculture imports and exports all saw significant reductions during the conflict period compared to pre-conflict. In fact, by 2016 agriculture production had fallen by 28.5 percent compared to pre-conflict (average of 2010 and 2011). Imports had fallen by 38 percent over the same period and exports had fallen by 76.9 percent. It is estimated that overall food availability in the Syrian Arab Republic had decreased by 24.5 percent in 2016 compared to pre-crisis times. Yet imports remained relatively strong compared to national requirements contrary to exports, which saw a huge drop in volumes traded. In 2010, the Import Dependency Ratio (IDR), the extent of dependency on importation in relation to domestic consumption, represented 19.3 percent. The IDR dropped to 12.8 percent in 2011, 13.9 percent in 2012 after which increasing to 19.6 percent in 2013 and then to 19.2 percent in 2014. Even though falling to 11.9 percent in 2015, the IDR increased to 13 percent in 2016 and it is expected to have increased further in 2017. Hereby highlighting the functionality, resilience and importance of the food trade sector in the country vis-à-vis complementing the country's food security needs.

Figure 9: Syrian Arab Republic - Food balance sheet covering total agriculture production, including imports and exports for 2010 until 2016



Source: the Syrian Arab Republic's Ministry of Agriculture and Agrarian Reform.

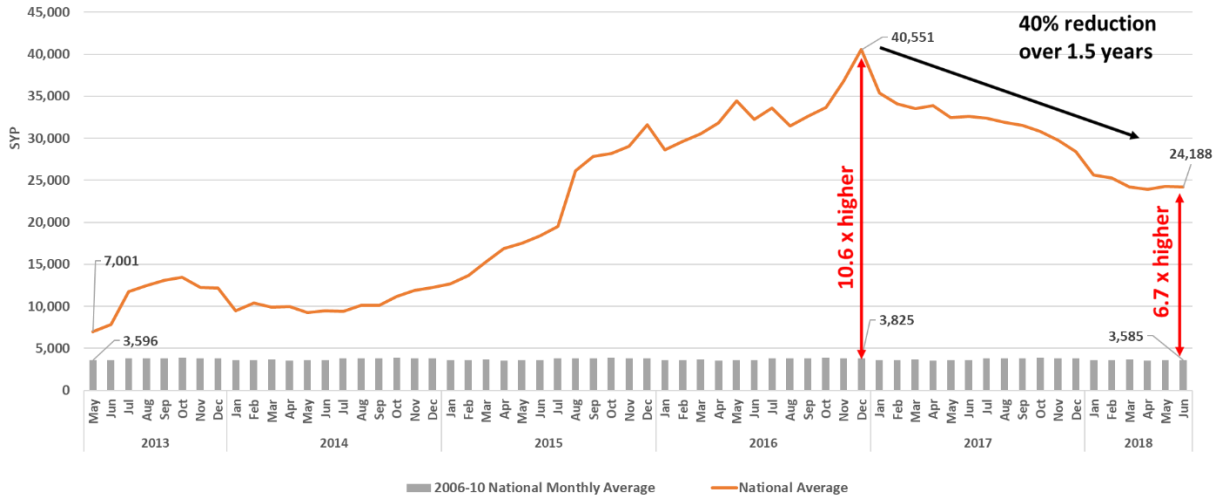
Food Prices

Food prices have drastically increased in the Syrian Arab Republic as a result of the conflict. The main causes of the price increase has been reduced local production, limited access and the devaluation of the national currency. The weakening exchange (discussed in the Background section) has had a direct effect on the price of imported goods such as rice, cooking oil and imported wheat as well as a knock-on effect on the price of local goods such as vegetables and local pulses.

However, since January 2017 food prices across the Syrian Arab Republic have been easing. Figure 10 clearly illustrates this falling trend. The chart uses WFP's referential food basket[8] for a five-member household to monitor food prices over time. The national average covers 41 different markets located in both urban and rural areas of each of the Syrian Arab Republic's 14 governorates.

[8] The cost of a standard food basket of dry goods providing 1,930 kcal a day for a family of five during a month. The basket includes 37 kg of bread, 19 kg rice, 19 kg lentils, 5 kg of sugar, and 7 kg of vegetable oil.

Figure 10: Syrian Arab Republic - National 2006-2010 food basket monthly average prices compared to crisis period national average and Damascus prices



Source: WFP.

Figure 10 shows the initial rapid increase in the national average price of a WFP referential food basket in 2013 followed by a slight decrease in food prices in early 2014 and by a much steeper increase in 2015 and 2016, peaking in December 2016 with the fighting in East Aleppo. Since December 2016, national average prices of WFP's referential food basket have been steadily falling.

Figure 10 also illustrates the five-year (2006-2010) pre-crisis national average price of a standard WFP food basket supporting a five-member household for one month. The national average food basket price peaked in December 2016 at SYP 40 551, when the price was 10.6 times higher than the pre-crisis average for December. By June 2018, the national average food basket price averaged SYP 24 188, representing a 40 percent reduction over one-and-a-half-years. However, even though prices seem to have decreased, they nevertheless remain extremely high compared to pre-crisis levels. In June 2018, the national average food basket price was 6.7 times higher than the five-year pre-crisis national average for June.

Reasons for the dramatic increase in prices between 2013 and 2016 are widely regarded to be related to disrupted trade routes, reduced number of traders, high rates of inflation and a volatile and heavily devalued national currency, which affected the price, and volume of imports. While improved security within the country, greater political stability and the re-opening of supply routes are largely thought to have led to the recent recovery of trade flows across the country and to the recent reduction in prices since early 2017.

Food basket prices vary considerably by governorate in the Syrian Arab Republic. Figure 11 shows how WFP's referential food basket prices is much lower in western governorates of the Syrian Arab Republic and Hasakeh than elsewhere, however, all governorates have all experienced consistently falling food basket prices since early 2017, with some governorates having seen greater decreases than others.

Figure 11: Arab Syrian Republic - National 2006-2010 food basket monthly average prices compared to crisis period national average and Damascus prices

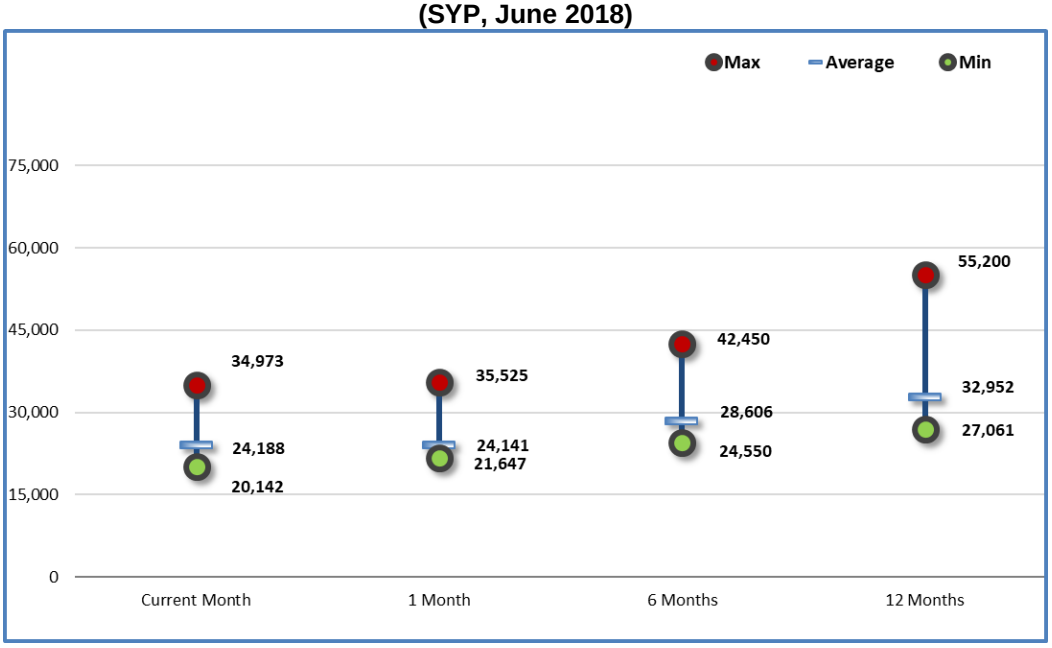
Governorate	Price June 2018	Price 1 month change	Price 6 months changes	Price 12 months changes
Aleppo	SYP 22,543	-3%	-23%	-24%
Damascus	SYP 23,389	-1%	-14%	-21%
Dar'a	SYP 23,036	0%	-17%	-17%
Dar'a XB*	SYP 26,974	3%	12%	0%
Deir-ez-Zor	SYP 34,973	-2%	-18%	-37%
Hama	SYP 22,203	-1%	-20%	-30%
Al-Hasakeh	SYP 20,142	-7%	-18%	-26%
Homs	SYP 22,925	-1%	-18%	-23%
Lattakia	SYP 22,956	2%	-7%	-24%
Ar-Raqqa	SYP 23,913	-2%	-29%	-44%
Rural Damascus	SYP 23,587	-1%	-11%	-20%
As-Sweida	SYP 23,025	2%	-13%	-30%
Tartous	SYP 23,285	2%	-7%	-26%
Quneitra	SYP 23,801	-4%	-16%	-15%
Quneitra XB*	SYP 25,869	8%	-2%	-11%
Idleb XB*	SYP 24,381	0%	-18%	-32%
Average	SYP 24,188	0%	-15%	-27%

Source: WFP.

The general trend seems to be that heavy reductions in food prices occur once active fighting ends. For example, three months after the siege was lifted in Deir-ez-Zor the governorate saw the average price of the referential food basket fall by 57 percent compared to the siege period. Moreover, with recent fighting in southern Deir-ez-Zor, food prices rose again by 22 percent over just one month (April to May 2018).

Not only are food prices falling across all governorates, the mean average food basket price by governorate are also falling (reduced by around 27 percent year-on-year), hereby showing price convergence over time. Extremes in food basket prices of around SYP 50 000 between the highest and lowest reported average food basket price by governorate are no longer the norm. Extremes in food basket prices have fallen by 27 percent over the last 12 months and the gap between highest and lowest average food basket price by governorate has fallen by 52.7 percent (Figure 11).

Figure 12: Syrian Arab Republic - Min. vs. Max. National Average Cost of Food Basket (SYP, June 2018)



Source: WFP.

This downward trend on food prices has taken hold in the Syrian Arab Republic since January 2017 and has been persisting ever since. With important trade routes re-opening like the one connecting Homs with

Damascus through East Ghouta, and the one connecting Homs with Hama through Ar-Rastan, and the expected future re-opening of the Dar'a border crossing between the Syrian Arab Republic and Jordan, the downward trend on food prices will likely continue over the coming months.

Prices of cereals and agricultural commodities

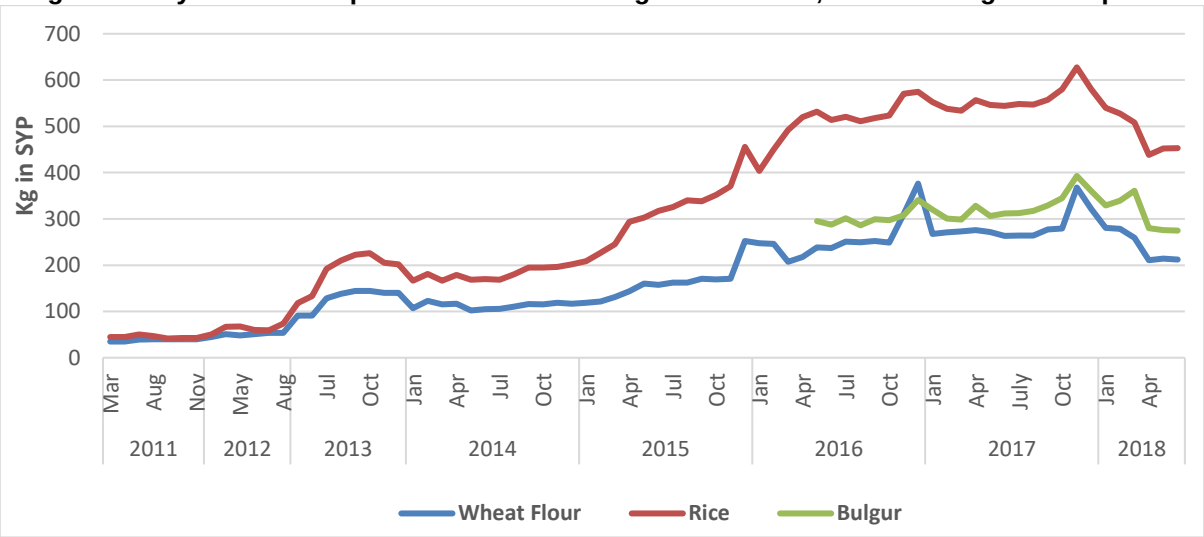
In line with the general price increase experienced across the Syrian Arab Republic during the conflict, the national average price of cereals have also seen dramatic increases of over 1 000 percent. Wheat flour was reported to cost SYP 35/kg in March 2011, by December 2016 it was at SYP 376/kg an increase of 10.8 times higher than in March 2011. Rice also saw an increase from SYP 45/kg in March 2011 to SYP 627 in November 2017, 13.9 times higher than the March 2011.

However, since their peaks both the price of wheat flour and rice have started to fall. Since its peak in December 2016, the price of wheat flour has fallen by 44 percent and is currently at SYP 212/kg, nevertheless still 6.1 times higher than in March 2011. Rice has fallen by 28 percent since its peak in November 2017 and currently is at SYP 453/kg, 10.1 times higher than the price in March 2011.

A distinct reduction in the price of bulgur is observed from its peak price of SYP 393/kg in November 2017. Bulgur prices were recorded at SYP 275/kg in June 2018, representing a reduction of 30 percent over the space of seven months.

While prices are reducing, they still remain very high for many Syrians. As a result, limited household purchasing power remains a key driver of food insecurity. The wholesale wheat grain prices on local markets averaged USD 437/tonne. In comparison, the wholesale price of wheat on international markets was USD 220/tonne in June 2018, around half the price of wholesale wheat in the Syrian Arab Republic.

Figure 13: Syrian Arab Republic - National average wheat flour, rice and bulgur retail prices

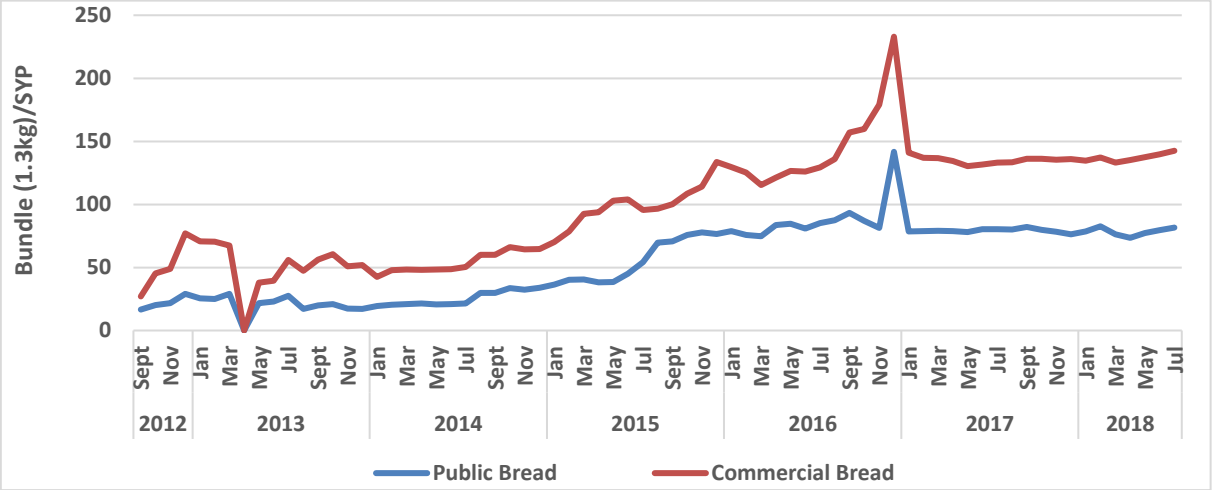


Source: WFP.

Bread

Bread is a strategic commodity in the Syrian Arab Republic which the Government subsidises through the sale of subsidized wheat flour to selected bakeries belonging to the public sector which have to sell the bread at a government regulated fixed price, currently set at SYP 50 per bundle (1.3 kg). This is known as public bread. Commercial bread instead is produced by private bakeries and is sold in shops. Commercial bread tends to be of higher quality and its price is not fixed. Figure 16 shows the national average retail price of public and commercial bread over time. Similar to other commodities the price of bread has increased throughout the conflict years peaking in December 2016 coinciding with the peak fighting in East Aleppo.

Figure 14: Syrian Arab Republic - National average price of public and commercial bread



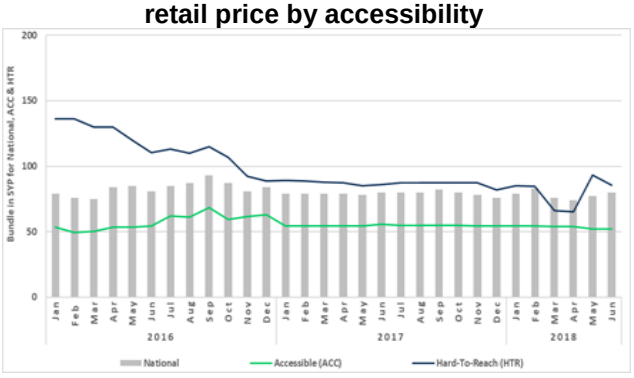
Source: WFP.

Ten governorates reported a public bread price of SYP 50/bundle (1.3 kg), the lowest price in the Syrian Arab Republic and which is the fixed price for Government-subsidized bread.

The price of public bread, like for other commodities, varies by the area's level of accessibility. With accessible areas having the cheapest prices (on average SYP 52/bundle) followed by hard-to-reach areas (on average SYP 86/bundle), see Figure 15.

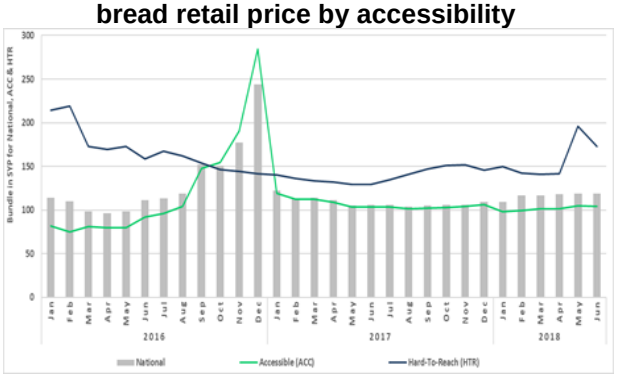
Even though higher than public bread prices, commercial bread prices also vary by accessibility with accessible areas showing the lowest prices followed by hard-to-reach-areas (Figure 16). Hereby, confirming better food networks and more competition in more accessible areas of the Syrian Arab Republic.

Figure 15: Syrian Arab Republic - Public bread retail price by accessibility



Source: WFP.

Figure 16: Syrian Arab Republic - Commercial bread retail price by accessibility

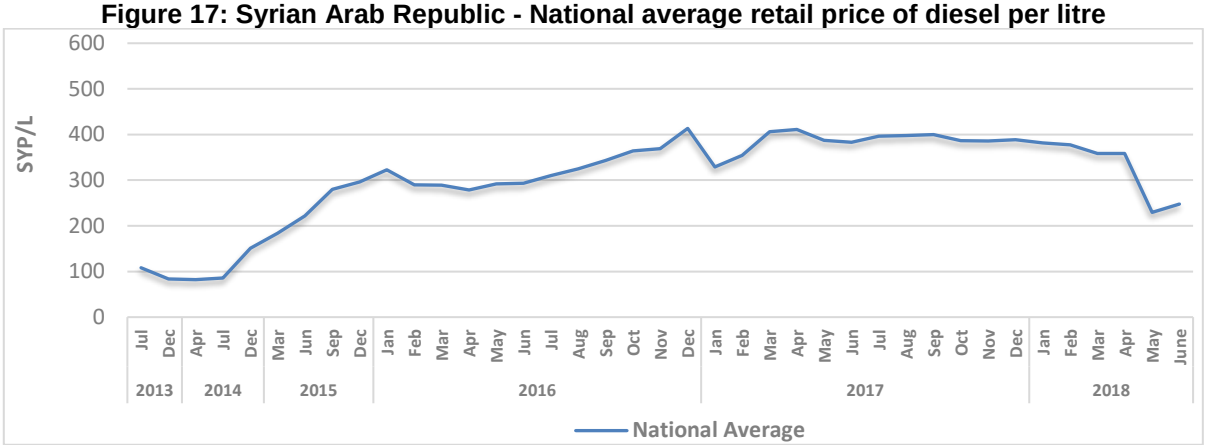


Source: WFP.

Diesel and gas prices

The national average diesel price, key for understanding transport costs, has consistently been increasing throughout the initial years of the conflict. Between July 2013 and December 2016, the retail price of 1 litre of diesel increased by 383 percent before stabilizing in 2017. The national average price has started decreasing since Raqqa and Deir-ez-Zor were reclaimed from ISIL in end October 2017. Since the start of 2018, the national average diesel retail price has been falling more consistently. This period saw a fall of 35 percent on the price of diesel (Figure 17).

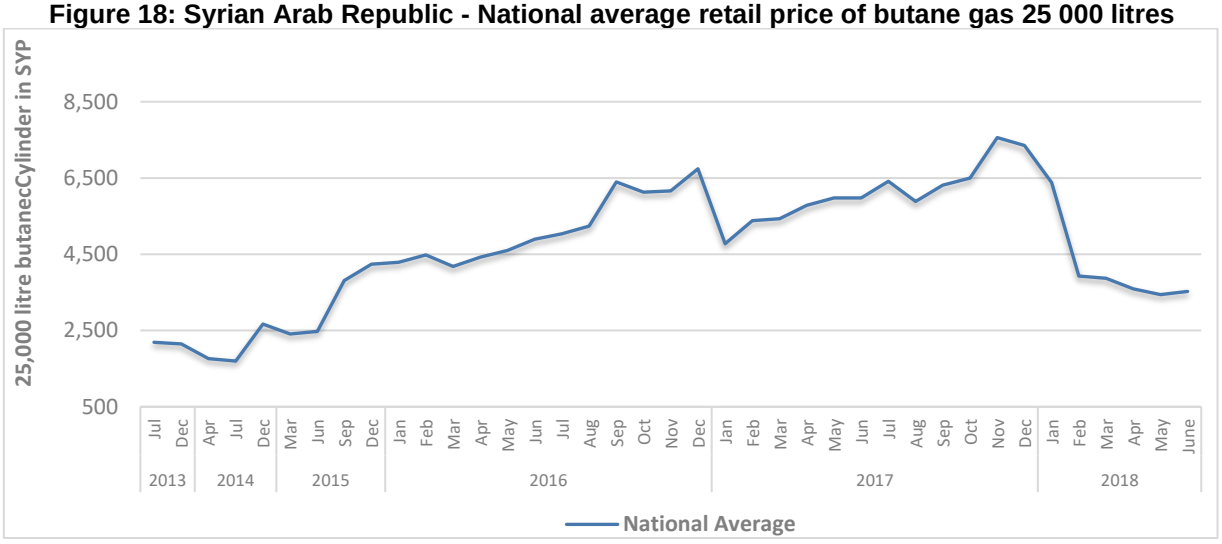
Figure 17: Syrian Arab Republic - National average retail price of diesel per litre



Source: WFP.

The national average retail price for a 25 000 litres of butane gas cylinder also saw increases throughout the conflict, increasing by 307 percent between July 2013 and November 2017. Its reduction since the changes in the line of control in Raqqa and Deir-ez-Zor has been significant with the national average price falling by 53 percent between November 2017 and June 2018 (Figure 18). Butane gas is one of the main energy sources used by Syrian households as cooking fuel.

Figure 18: Syrian Arab Republic - National average retail price of butane gas 25 000 litres



Source: WFP.

Livestock prices

The livestock sector is a strong contributor to the Syrian economy. In pre-crises times it contributed over 30 percent to the total value of agriculture production in the Syrian Arab Republic. The livestock sector was known to employ around 11 percent of the Syrian Arab Republic's labour force including many low-income families in rural parts of the country. Livestock rearing mostly takes place in the rural more arid parts of the country such as in southern parts Hasakeh, south Raqqa, Deir-ez-Zor, east Homs, Hama, Ghab, east Rural Damascus, Dar'a and As-Sweida.

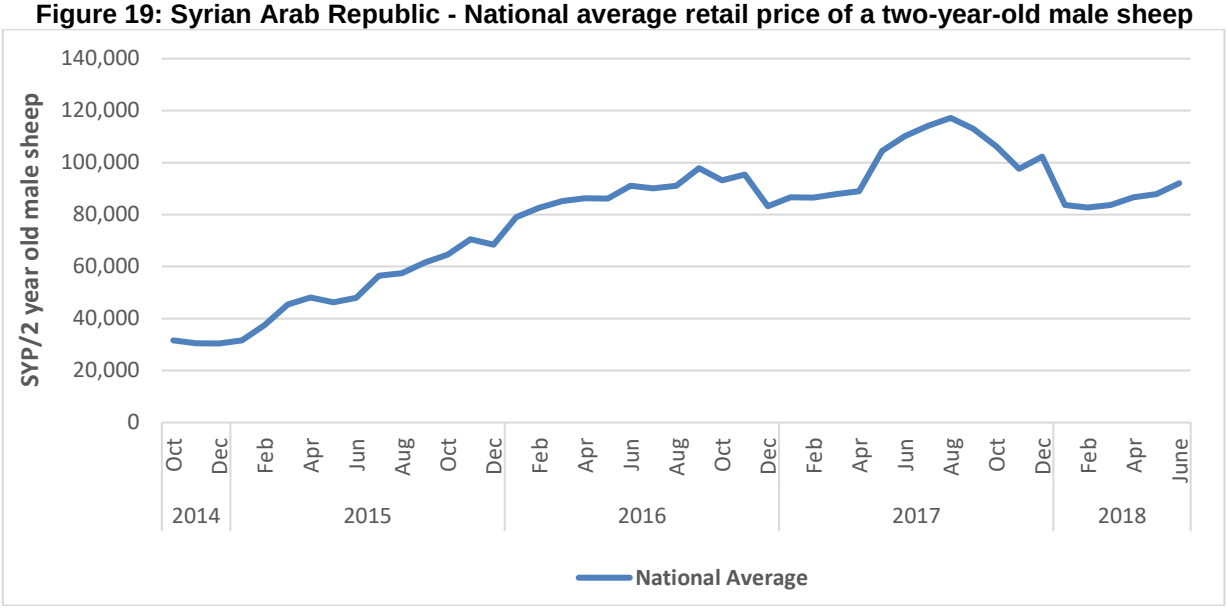
Among the more than 8 million people who were rural dwellers in pre-crisis times, 2.5 million were low income earners of which more than 35 percent were known to own livestock and derive 15 to 100 percent of their total family income from it.

Livestock numbers fell sharply in the early years of the conflict, however, ever since 2016 numbers have stabilized and are starting to slowly increase again even though they remain below pre-crisis levels.

With regards to livestock prices, the national average retail price for a two-year-old male sheep rose by 372 percent between October 2014 and August 2017. Since then national average prices have fallen by 21.4 percent (between August 2017 and June 2018). The reason for the reduction is believed to be related to the changes in the line of control in Raqqa and Deir-ez-Zor, where the highest concentration of livestock is

located. This change has facilitated the trade of livestock between the east and the west of the country. However, animal feed has recently increased in price due to the erratic rainfall patterns experienced across the Syrian Arab Republic in 2017/18, which have left many fields without pasture for animals to graze on.

Figure 19: Syrian Arab Republic - National average retail price of a two-year-old male sheep



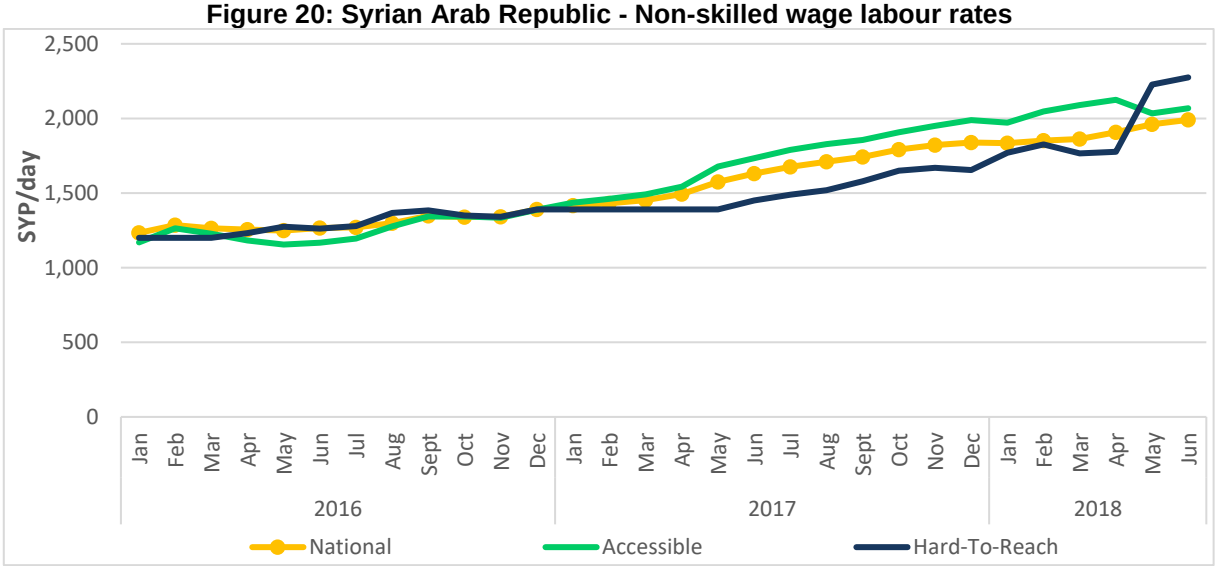
Source: WFP.

Terms of trade

In June 2018, the national average daily wage for non-skilled workers was SYP 1 990 (USD 4.6). As shown in Figure 20, the daily wage for unskilled workers has experienced a constant upward trend and by June 2018, it had increased by 61.4 percent compared to January 2016.

The increase in non-skilled wage rates has been constant across most of the Syrian Arab Republic. Non-skilled wage rates in accessible areas in the Syrian Arab Republic have increased by four percent compared to December 2017 and by 19 percent year-on-year. Hard-to-reach areas have increased by 37 percent compared to December 2017 and by 57 percent year-on-year.

Figure 20: Syrian Arab Republic - Non-skilled wage labour rates



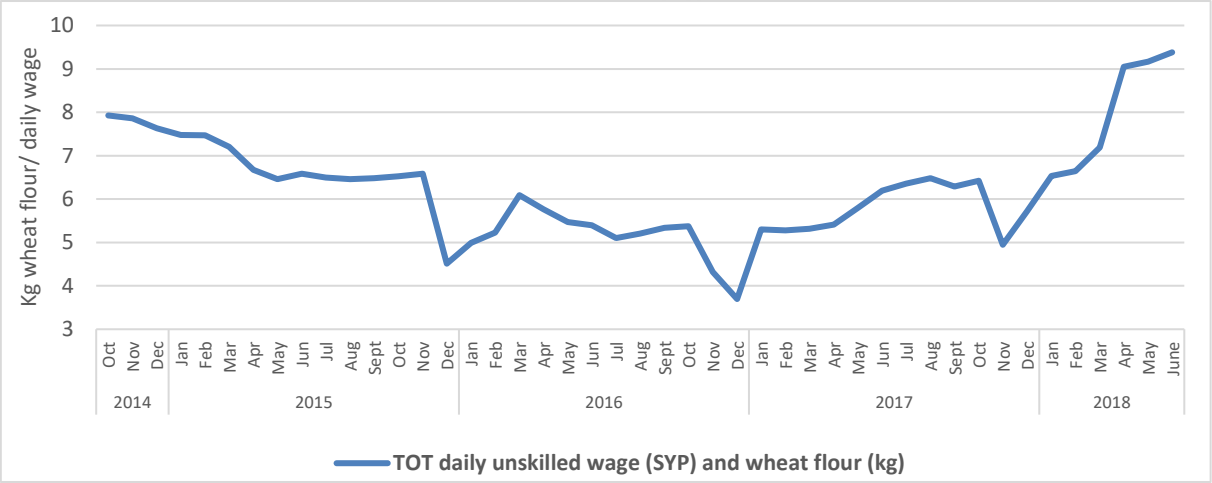
Source: WFP.

In the early stage of the Syrian Arab Republic's crisis, the increase in food prices was outpacing the increase in daily unskilled wage rate and as a result the purchasing power of casual labourers, measured in Terms of Trade (TOT), was decreasing. This negative trend is clearly visible in the first part of Figure 21 where in October 2014 the national average daily wage of a casual labourer would purchase 7.9 kg of wheat flour and by December 2016 the average wage rate could only buy 3.7 kg of wheat flour. However, since December 2016 the continued increase in casual labour wage rates and the general reduction in wheat flour prices has

progressively improved the casual labourer's purchasing power vis-à-vis wheat flour. In fact, in June 2018, a casual labourer's average daily wage would buy 9.4 kg of wheat flour.

The improvement in purchasing power, however, varies by area's level of accessibility. In June 2018, accessible markets could on average purchase 9.8 kg of wheat flour with the daily wage compared to 8.9 kg of wheat flour in hard-to-reach areas.

Figure 21: Syrian Arab Republic – Terms of trade between daily unskilled labour (SYP) wheat flour (kg)



Source: WFP.

CEREAL SUPPLY/DEMAND SITUATION

Population

Population developments are described in the Background and Socio-Economic Context section. With the losses and uncertainty associated with a conflict situation, it is difficult to estimate the level of inward migration and population growth. MAAR estimates that some 800 000 people, many of them farmers, have returned to their homes, but since these are mostly IDPs their movement has no effect on the overall national population. Population estimates for 2018 vary significantly, so in the absence of any more substantiated estimate, and on the assumption that births and returns to the country will for the time being be balanced by deaths and departures, the figure of 20 million by the end of 2018 has been assumed for the calculation of the following food balance sheet.

National cereal balance sheet

The national cereal balance sheet for the Syrian Arab Republic's 2017/18 harvest (2018/19 marketing year) is presented in Table 10. The following assumptions have been made:

- By the middle of the 2018/19 marketing year (31 December 2018), the human population of the Syrian Arab Republic is estimated to be 20 million (see above).
- Cereal production in 2017/18 comprises 1.199 million tonnes of wheat and 390 000 tonnes of barley. A small amount of maize (less than 100 000 tonnes) was also harvested but is not considered in the balance sheet.
- Opening stocks of wheat at the beginning of July 2018 amounted to 500 000 tonnes.
- The closing stock of wheat by 30 June 2019 will be approximately 100 000 tonnes.
- Opening stocks of barley held either privately or by Government are 250 000 tonnes. (This includes other grains held by GOF; see Livestock: Animal nutrition above.)
- Per capita wheat consumption will be 170 kg/annum. (A reduction of 15 kg/capita/annum from the previously assumed 185 kg/capita/annum has been used to reflect the generally reported reduction in daily household consumption).
- A sheep/goat population of 10 million, and a cattle population of 600 000.
- An average feed requirement of 0.25 kg of barley grain/sheep per day as part of a ration of 1 kg/animal per day of total feed, including bran, browse and crop residues. This represents a minimum physiological maintenance requirement for sheep. An average feed requirement of 3.5 kg of barley grain/bovine per day. Out of 11.5 million chickens, about 2.7 million are fed 100 g wheat daily.

- The planned cereal area for the 2019 harvest will be similar to that of 2017/18. Seed rates of 220 kg/hectare for wheat and 170 kg/hectare for barley.
- Harvest and storage losses of 15 percent of production for wheat, barley and maize.
- The Government is expected to import 1 million tonnes of wheat and 50 000 tonnes of barley.
- Commercial companies are expected to import 200 000 tonnes of wheat.
- For 2018/19, some 67 650 tonnes of wheat and wheat products (i.e. wheat flour and bulgur) will be received as in-kind food assistance by WFP. Food assistance by other organizations would reduce the uncovered shortfall.

Table 10: Syrian Arab Republic - National cereal balance sheet, 2018/19 marketing year

	Wheat	Barley
Total Availability	**1 699**	**640**
Production	1 199	390
Opening stock	500	250
Total Utilization	**4 174**	**1 991**
Food use	3 400	0
Feed use	99	1 679
Seed	395	254
Losses, field and post-harvest	180	58
Closing stock	100	0
Import Requirement	**2 475**	**1 351**
Anticipated Government imports	1 000	50
Anticipated commercial imports	200	0
Food assistance	68	0
Uncovered shortfall	**1 207**	**1 301**/

1/ The figure for the uncovered shortfall in barley, 1 301 million tonnes, should be seen as largely hypothetical since under the present circumstances livestock do not generally receive the recommended amount of concentrates. To the extent possible, grazing and straw compensate for this shortfall.

HOUSEHOLD FOOD SECURITY SITUATION

Food security situation and trends

The overall food security situation has improved in many parts of the Syrian Arab Republic over the past year due to the enhanced security situation and improved market access. However, there remain areas of serious concern due to continued conflict affecting parts of the country and associated new displacements. In addition, the very poor crop season in northeastern Syrian Arab Republic has affected smallholders and other groups that are largely dependent on the agricultural and livestock sectors.

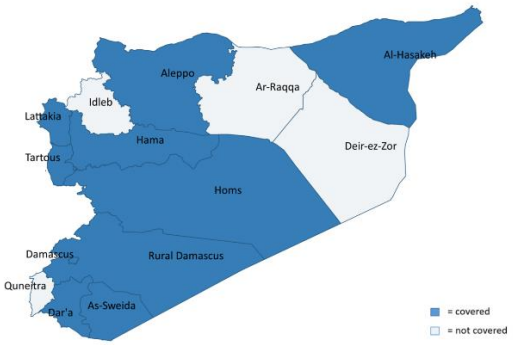
Data sources in this section include WFP's mobile Vulnerability and Mapping (mVAM)[9] data, focus groups and key informants discussions and transect walks conducted during the field Mission and a representative household interviews covering 6 012 households. The trend analysis presented in this section is based on mVAM data (starting from Figure 22). The number of people in need is based on preliminary analysis of the CFSAM household survey using WFP's standard food security classification (see table 11)[10].

For the trend analysis, the Mission has estimated the proportion of households vulnerable to food insecurity based on two indicators: food consumption and asset depletion strategies. In addition, reliance on assistance over the past month was also considered to ensure that the impact of food assistance would not lead to an underestimation of the vulnerability situation.

[9] In cases where the same households were interviewed more than once during the same period, duplicate cases were randomly removed. Data was weighted by population size and displacement status. Governorates for which the sample size was too small were removed from the analysis (Raqqa, Deir-ez-Zor, Idleb and Quneitra). As a result, in 2018 (January to June), 3 963 interviews were selected, including 2 311 resident households, 1 397 IDP households and 255 IDP returnee households.

[10] Further analysis and validation is currently ongoing and an annex report will be released before the end of 2018 with more in-depth food security information. For estimating the number of people in need, WFP's "Consolidated Approach to Reporting Indicators of Food Security" (CARI) method was applied.

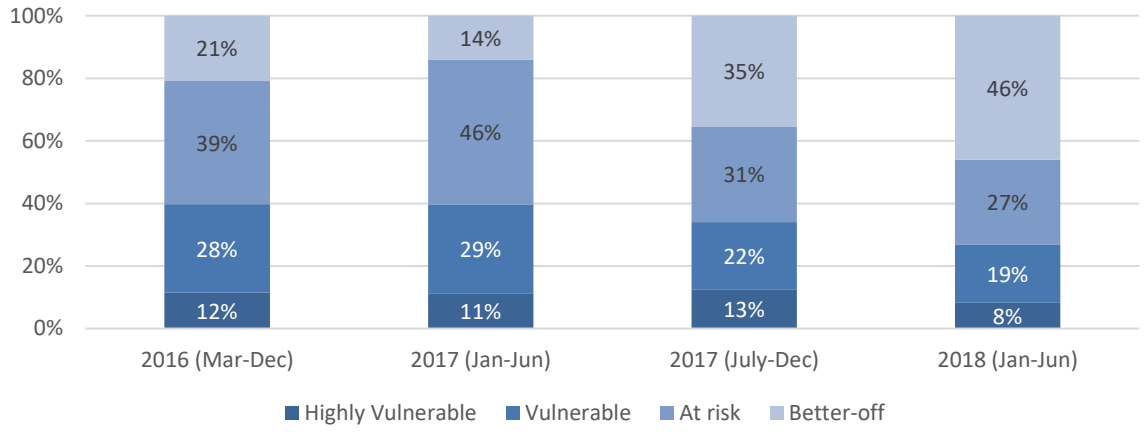
Map 2 - mVAM coverage in 2018 (governorates)



Classifying vulnerability to food insecurity for annual trend analysis (mVAM data)

Highly vulnerable: Households with poor food consumption (or borderline consumption if they are relying on assistance over the past month).
Vulnerable: Households with borderline consumption who are not assisted (or households with an acceptable food consumption who rely on assistance and are depleting assets).
At risk: Households with acceptable food consumption who rely on assistance or are depleting assets.
Better-off: Households with acceptable food consumption who are not relying on assistance and are not depleting their assets.

Figure 22: Syrian Arab Republic – Food security vulnerability trends, 2016-2018 (9 out 14 governorates)



Source: mVAM.

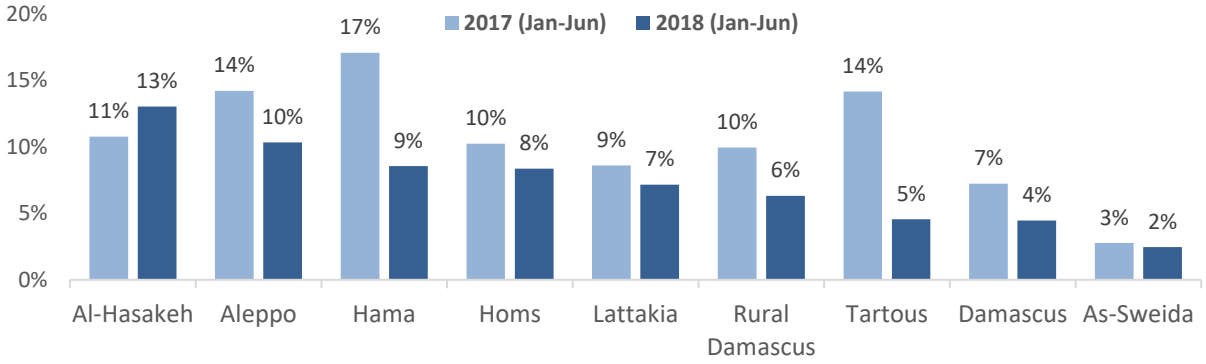
Based on mVAM data[11], the share of highly vulnerable and vulnerable households decreased by 13 percentage points comparing January-June 2018 with the same period in the previous year. Also, the proportion of households considered at risk has reduced remarkably in the areas covered (Figure 22).

With the exception of Al-Hasakeh governorate, the situation improved compared to last year in all other eight governorates covered. Al-Hasakeh in northeastern Syrian Arab Republic at the border with Turkey, continues to be among the most vulnerable governorates within the Syrian Arab Republic and the situation is likely to further deteriorate due to the impact of this season's unfavourable distribution of rainfall which affected a large proportion of the population. Al-Hasakeh has historically been the bread basket of the Syrian Arab Republic and a large proportion of the Syrian population depends directly or indirectly on the agricultural sector. Major improvements were observed in Hama and Tartous, which could be explained by a reduction in the IDP population.

While the mVAM sample size was not large enough to provide reliable findings for the remaining governorates, slight improvements or at least a stabilization is expected in Raqqa and Deir-ez-Zor where many parts became accessible compared to the previous year (although military operations are still active in southern Deir-ez-Zor). The situation in Idleb remains highly volatile and the food security situation is likely to have deteriorated in Dar'a and Quneitra, which have been affected by the recent military operations.

[11] For 2018, the analysis is based on mVAM data from 10 governorates: Al-Hasakeh, Aleppo, As-Sweida, Damascus, Dar'a, Hama, Homs, Lattakia, Rural Damascus, and Tartous. Dar'a has been excluded for all annual trend analysis to allow comparability over time.

Figure 23: Syrian Arab Republic – Highly vulnerable households by Governorate, 2018/17

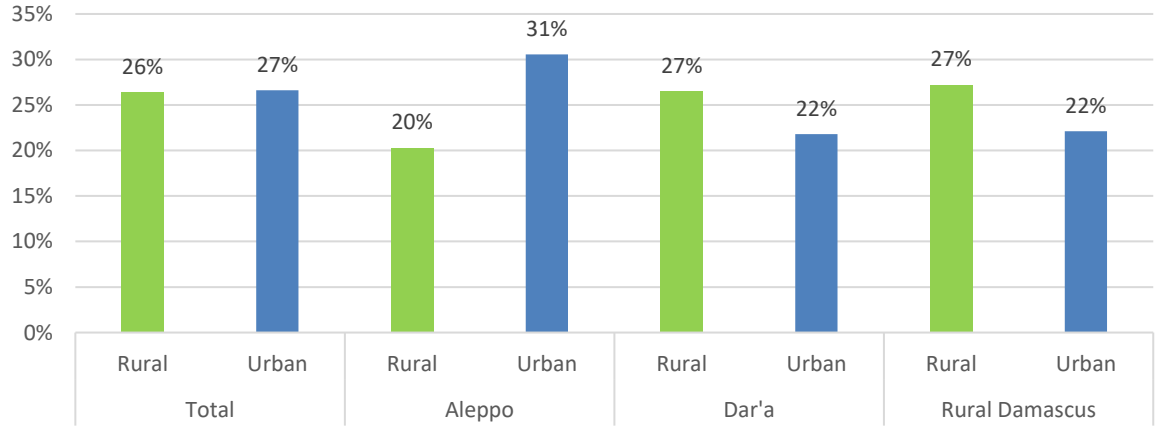


Source: mVAM.

Overall, vulnerability to food insecurity in the Syrian Arab Republic does not show major differences across rural and urban areas (see Figure 24); however, IDPs in rural areas are most likely to be highly vulnerable (14 percent) compared to IDPs in urban areas (8.5 percent). The situation also differs by governorate. While in Aleppo, households in urban areas tend to be more vulnerable compared to rural households, the opposite is the case of Dar'a and Rural Damascus, where vulnerability is higher in rural areas.

In Rural Aleppo, a key improvement has been the re-establishment of the main irrigation channels, which has revitalized the rural economy and also increased resilience to drought conditions - with the exception of rural communities where people only recently returned and are yet in the process to re-establish themselves. Aleppo City has one of the highest return rates in the Syrian Arab Republic with large numbers of vulnerable returnees concentrated in destroyed or partially destroyed neighbourhoods in very poor conditions. Many depend on food assistance and free bread distributions.

Figure 24: Syrian Arab Republic – Vulnerability status by rural/urban (January-June 2018), all and selected governorates

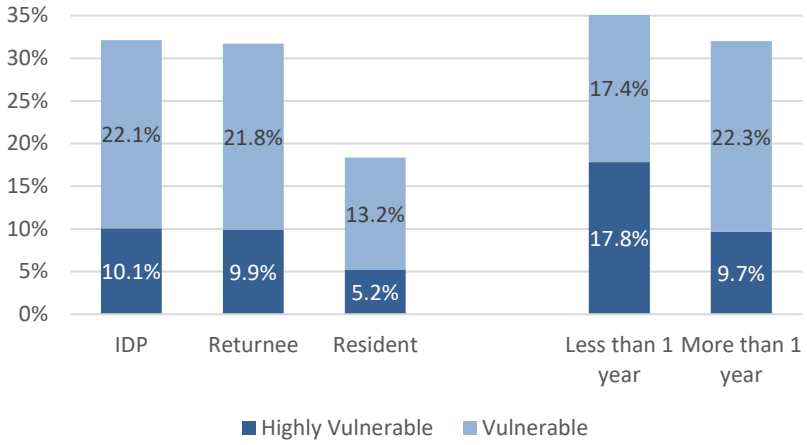


Source: mVAM.

Displacement due to conflict continues to be the main driver of vulnerability in the Syrian Arab Republic. Based on numbers provided by the Interagency Population Task Force for August 2018, 31 percent of Syrian households are currently internally displaced. In addition, 5 percent are returnees, the majority of them people who have been previously displaced inside the Syrian Arab Republic[12]. According to the Mission's observations and triangulated by mVAM data, returnees and internally displaced persons (IDPs) are more likely to be more food insecure compared to resident households. Length of displacement continues to be an important factor influencing food security. Findings suggest that recently displaced households (less than one year) are more likely to be more vulnerable to food insecurity compared to those who have been displaced for a longer period.

[12] In August 2018, there are about 987 000 returnees according to the Inter-agency Population Task Force. These are mainly IDP returnees, while returning refugees from neighbouring countries make up a small proportion. According to UNHCR, about 23 400 Syrian refugees have spontaneously returned to the Syrian Arab Republic from Lebanon, Turkey, Jordan, Iraq and Egypt.

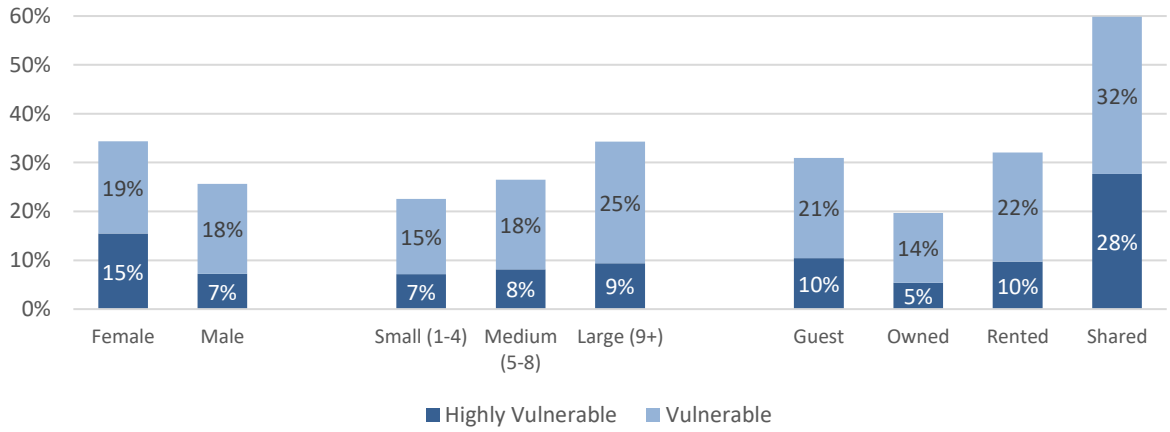
Figure 25: Syrian Arab Republic – Vulnerability by residence status[1/] and length of displacement, January-June 2018



Source: mVAM.
1/ All graphs and the analysis refer to IDP returnees. The situation of the returning refugees could not be captured by the Mission.

In terms of household demographics, female-headed households show higher levels of vulnerability to food insecurity compared to those with male heads. Similarly, the likelihood of being highly vulnerable increases as the household size increases. Households living in shared accommodations are more vulnerable to food insecurity (nearly 6 out of 10) compared to those living as guests, renting or owning their houses.

Figure 26: Syrian Arab Republic – Vulnerability to food insecurity by sex of the household head, household size and house ownership, January-June 2018



Source: mVAM.

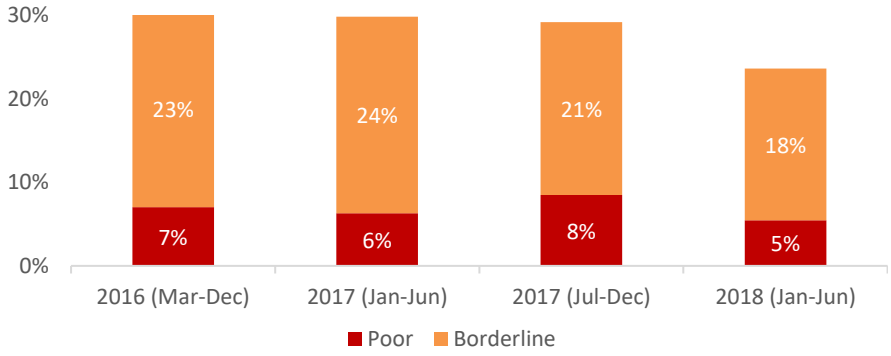
Based on the Mission's observations and key informant interviews, the most vulnerable groups continue to be IDPs and returnees (former IDPs) who have to restart their lives in the midst of devastated neighbourhoods. Compared to last year, overall situations have slightly improved in Raqqa and Deir-ez-Zor, however, many IDPs originating from these areas are yet to return and will have to start from scratch to rebuild their livelihoods. It has to be noted that many areas are also contaminated with unexploded remnants of war and improvised explosive devices, which could further delay IDPs' return and which pose a serious life and health threat to people who do decide to return.

The situation continues to be particularly dire in the areas affected by recent or ongoing conflict and cross-line fighting, particularly in Idleb in northern Syrian Arab Republic, as well as Dar'a and Quneitra in the South bordering Jordan. Households depending on farming and livestock activities in Al-Hasakeh are at high risk of increased vulnerability to food insecurity due to poor harvest and crop failure of the agricultural season (see Section: Cereal production). Seasonal agricultural labourers and farmers with small farm holdings and limited capital will be very much affected.

Food consumption

Based on mVAM data, the overall food consumption has improved in the nine governorates covered (see Figure 27). Despite the positive trend, nearly one out of four households had unacceptable food consumption (poor or borderline). Female-headed households are much more likely to have poor and borderline consumption (32 percent) compared to those headed by men (22 percent).

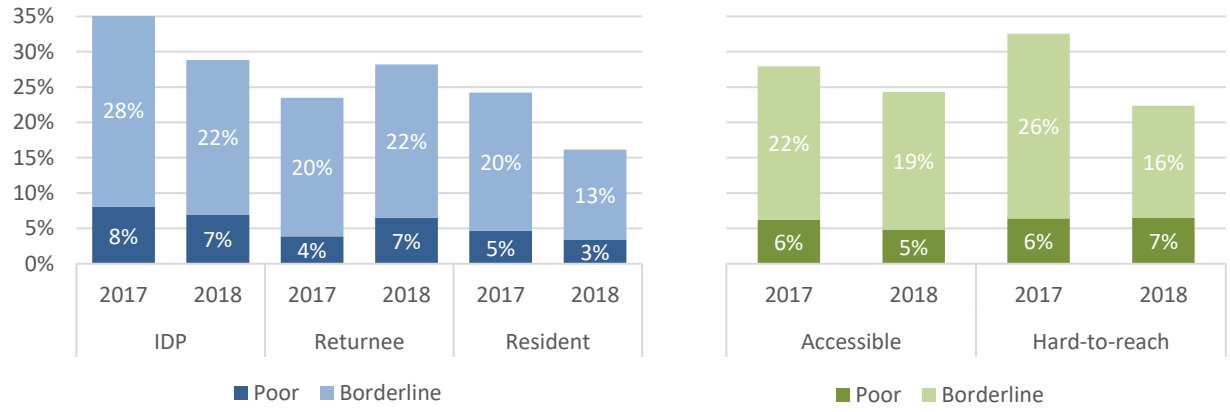
Figure 27: Syrian Arab Republic – Share of households with poor/borderline consumption, 2016-2018 (January-June)



Source: mVAM.

The positive trend was observed across all groups, except for returnees, which now make up a much larger group compared to 2017 when IDP return movements were very limited. The largest improvements were observed among resident households who benefit most from the early economic recovery in parts of the country. The proportion of households with poor or borderline consumption in hard-to-reach areas has reached similar levels as those in accessible areas, an indication that access has significantly improved in parts of the country. This was confirmed during the field visits by the Mission team.

Figure 28: Syrian Arab Republic – Poor/borderline food consumption by displacement and access status[1/], January-June 2017/18



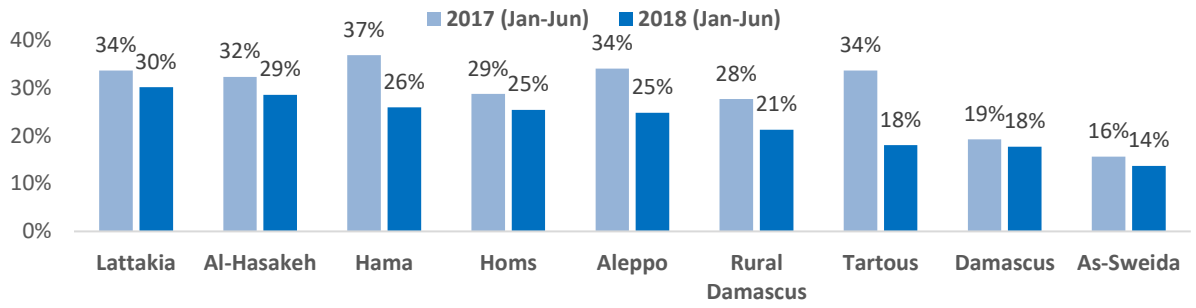
Source: mVAM.
1/ Access is based on UN-OCHA definitions, see Section: Humanitarian access.

Based on mVAM data, there is a general reduction in the number of households with poor and borderline food consumption compared to 2017 (January-June), with the highest decreases registered in Tartous, Hama and Aleppo. The latter, despite being one of the governorates hosting the largest numbers of IDPs and returnees, shows improvements compared to the previous year due to the relatively improved access and security situation in many parts of the governorate.

The governorate with the highest proportion of households with poor food consumption is Al-Hasakeh where the share of households with poor food consumption has increased from 7 to 12 percent compared to the previous year. This trend was also observed by the Mission team who visited several of the drought-stricken communities – where community members reported reducing the number of meals and limiting portion sizes. It is expected that the number of households who will engage in negative coping strategies in order to buy

food will increase in the months to come as the lean season kicks-in. Also, the severity of the coping strategies engaged in is also expected to worsen as households' livelihoods are further eroded.

Figure 29: Syrian Arab Republic – Share of households with poor/borderline food consumption by governorate, January-June 2017-2018

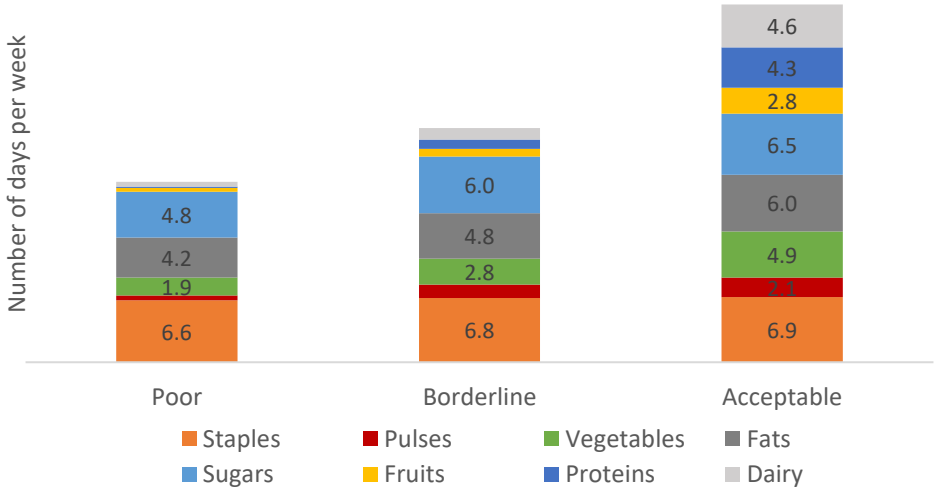


Source: mVAM.

Quality of the diet and the long-term impact on nutrition and health

Poor and borderline food consumption is associated with limited access to food in terms of both limited quantity and quality. Households with poor food consumption show very poor dietary diversity; their consumption is mainly based on staples, oil and sugar with very limited access to vegetables. Diets of the most vulnerable households largely consist of bread, potatoes and commodities provided as food assistance. A diet lacking quantity and quality increases the risk of acute (wasting), chronic malnutrition (stunting) and micro-nutrient deficiencies.

Figure 30: Syrian Arab Republic – Total food groups consumption by food consumption groups, January-June 2018

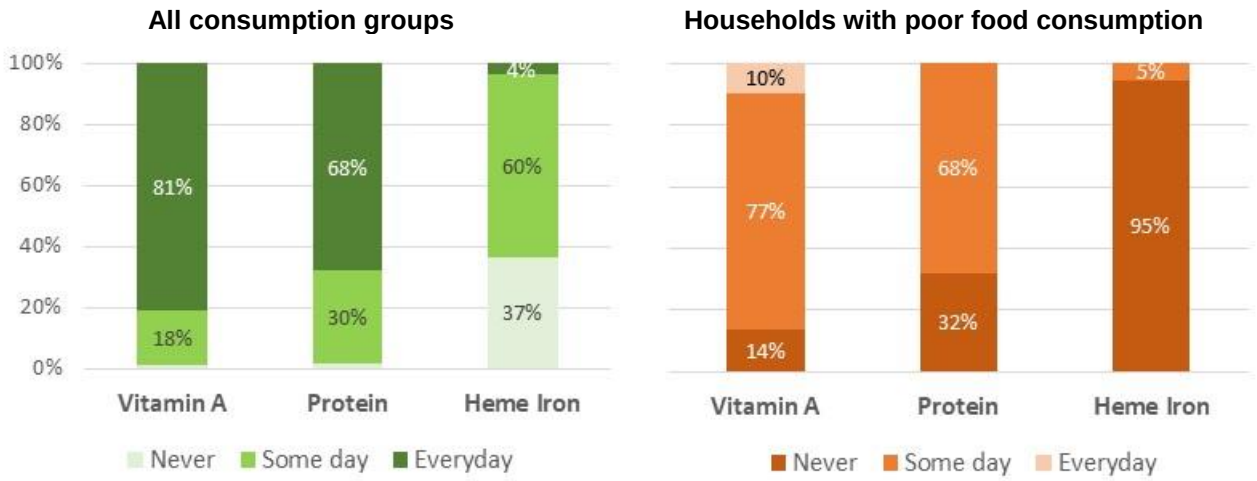


Source: mVAM.

Looking at the macro- and micro-nutrients consumed by the interviewed households, as in previous years, nearly none has regular access to hem iron. Iron deficiency is one of the main causes of anaemia with documented long-term impacts on people's productivity and quality of life.

Vitamin A deficiency, if tackled before the age of five, can reduce mortality and infectious diseases such as measles, diarrhoea and malaria. Protein plays a key role in growth and is crucial for the prevention of wasting and stunting which takes place largely within the first 1 000 days. Limited access to Vitamin A and protein rich foods affects nearly 18 and 30 percent of all interviewed household, respectively. Households with poor food consumption are more likely to be affected by micronutrient and protein deficiencies, with none having regular access.

Figure 31: Syrian Arab Republic – Consumption of macro- and micro-nutrients, January-June 2018



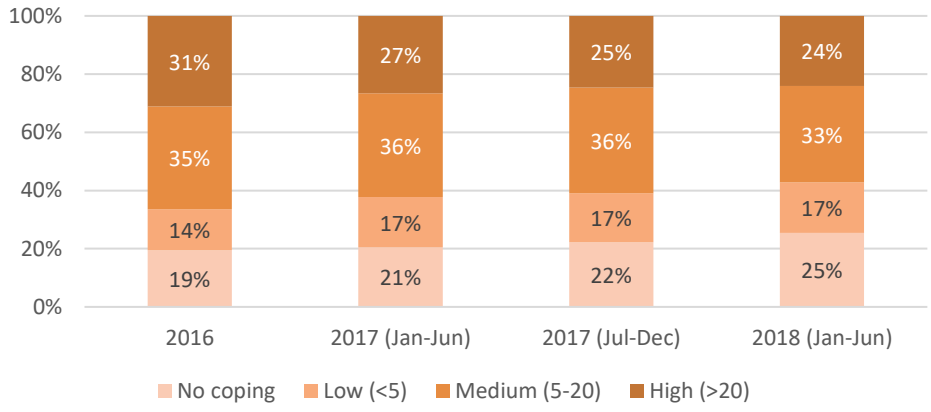
Source: mVAM.

Food coping strategies

The reduced Coping Strategy Index (rCSI) measures the stress level a household is facing when exposed to food shortage. The higher the stress, the higher is the index. It is comprised of five food coping strategies: 1) relying on less preferred and less expensive food, 2) borrowing food or relying on help from relatives or friends, 3) limiting portion size at meals, 4) restricting consumption by adults in order for small children to eat, and 5) reducing number of meals eaten in a day.

Food coping remains high among the surveyed households with 24 percent adopting a high degree of coping to meet food shortages. Some 50 percent rely on less expensive food, 44 percent reduced number of meals and 35 percent restricted the consumption of adults to prioritize children. However, the indicator is showing a slightly improving trend compared to previous periods.

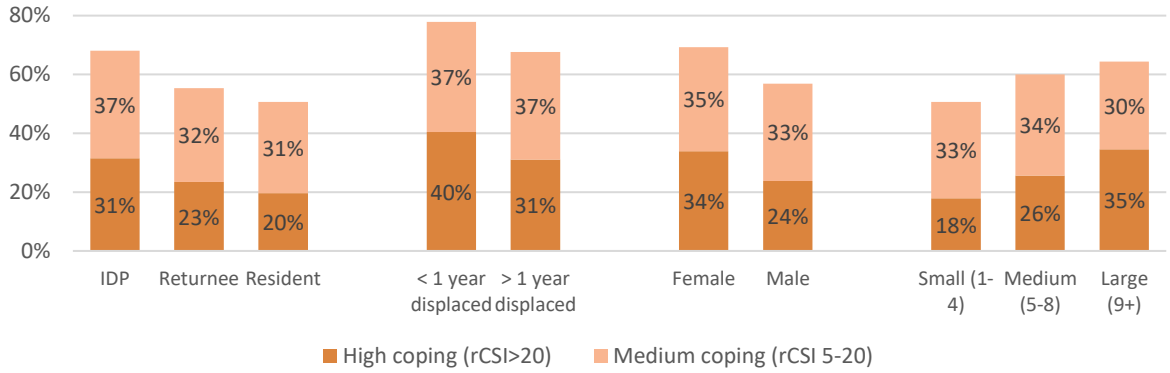
Figure 32: Syrian Arab Republic – Adoption of food coping strategies (rCSI) 2016-2018 (Dar'a excluded)



Source: mVAM.

The analysis by group also confirms a similar trend. IDPs are more likely to adopt food coping strategies, followed by returnees and residents. Similarly, female-headed households and large households (9+ members) are more likely to resort to using food coping strategies.

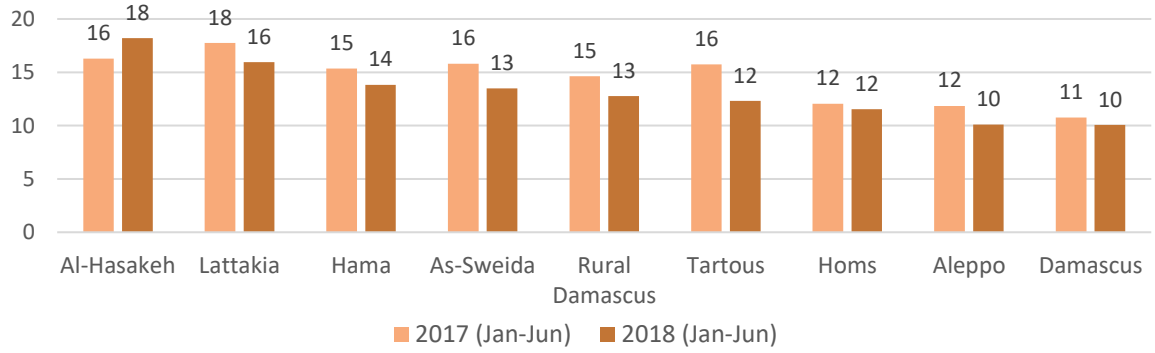
Figure 33: Syrian Arab Republic – Characteristics of households using food coping strategies, January-June 2018



Source: mVAM.

The governorate with the highest rCSI score is Al-Hasakeh, followed by Lattakia, Hama and As-Sweida. Al-Hasakeh is also the only governorate observing an increase compared to the same period in 2017.

Figure 34: Syrian Arab Republic – rCSI by Governorate, January-June 2017/18



Source: mVAM.

Livelihood trends

Overall, the Mission observed an increase in agricultural activities in 2018 compared to the previous year, mainly due to increased security in many parts of the country, re-opening of roads and greater market access. Several areas which were uninhabited in 2017, observed people returning, especially in rural Aleppo, but also Homs and Hama. However, farmers and other groups depending on the agricultural sector have been impacted to the poor crop season, particularly in northeast Syrian Arab Republic.

Due to overall improved physical access, trade is recovering throughout the country. Small businesses/petty trade starting to re-establish in many government-held urban areas. The Mission found that food availability in markets has generally improved compared to the previous year. Main constraints remaining are the exchange rate to US Dollar, high transport costs, and low demand due to high unemployment rates and limited purchasing power. While overall prices are reducing compared to the peak of the conflict, they still remain very high for Syrians and limited household purchasing power remains a key driver of food insecurity (see Figure 10).

There is an increasing demand for unskilled and skilled labour, however, large proportions of the most active population groups have left the country or have been recruited by the army. Overall, wage labour rates increased by 21 percent compared to the previous year according to WFP price monitoring (see section on Food Prices). Child labour and early dropouts of school continues to be a major coping strategy of farmers and displaced households. In terms of demographic breakdown, there appears to be a bias towards women, particularly in conflict-affected areas with implications on the labour market and gender relations. In some areas female salaries working as agricultural labour are lower than male earnings. Given the vast extent of the destruction in both urban and rural areas, major investments will be required to rebuild livelihoods.

Exposure to shocks and main constraints

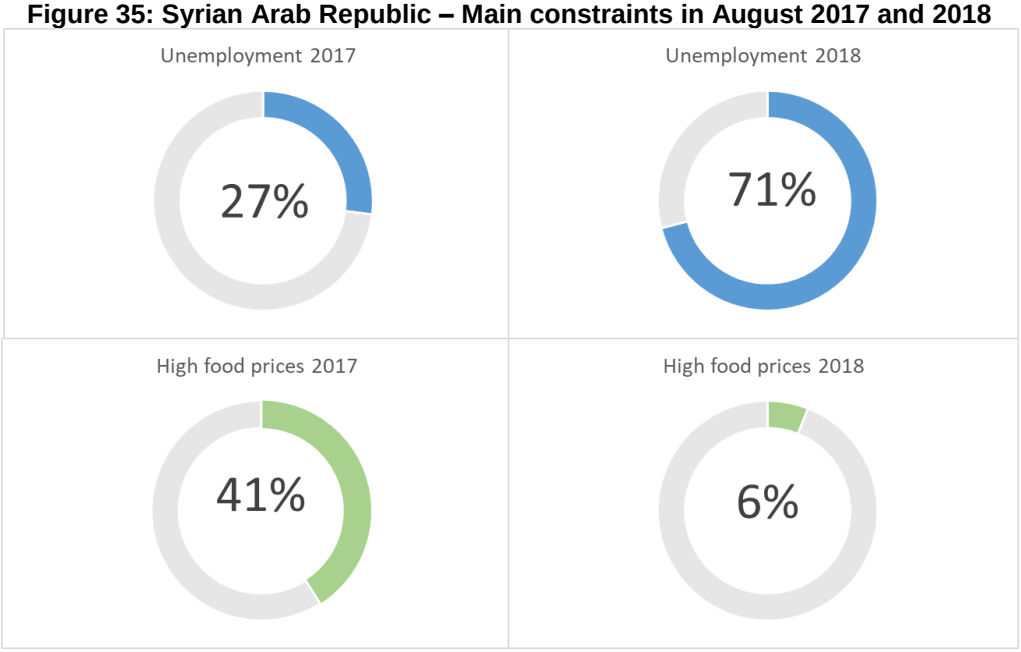
The main new shock observed during the Mission was the crop failure caused by a combination of a dry spell during the core growing season (February to April) followed by heavy rain combined with high temperatures and in some parts hailstorms during the pre-harvest period (May to June). The area most heavily affected has been Al-Hasakeh in northeastern Syrian Arab Republic, which is the main bread basket of the country producing, in a normal year, 45 percent of the country's requirements of wheat. A majority of the wheat and barley rain fed production failed, as well as irrigated crops, which observed losses due to lodging and fungal infections. Significant losses were also reported for Raqqa, Hama, Homs, Rural Damascus and Dar'a. The shock affects mainly farmers with small landholdings and limited capital, as well as agricultural labourers and other dependents on the agricultural sector. Due to reduced pasture and increased fodder prices, also livelihood herders are affected. In Al-Hasakeh, there have been reports of recent returnees moving back to urban centres. Based on field observation, the impact could already be observed in the villages visited by the Mission, which will face major food shortages at least until the next harvest season around May-June 2019. A major concern is the limited availability of quality seeds for the next planting season and limited purchasing power of farmers to buy seeds from the local market.

Even though there is an improved security environment, internal displacement continues to be a reality in many parts of the Syrian Arab Republic, both in the form of new displacements in combat-affected areas but also since for many people returning to their homes is not an option due to the destruction of their neighbourhoods. According to the field visits, main concerns expressed by IDPs include lack of employment, poor shelter conditions, lack of schooling opportunities and lack of resources to buy food. Several IDPs expressed concern about the reduced food assistance cycles and were worried that food assistance may be phased-out.

Returning IDPs are facing similar constraints; in addition, urban areas are largely concerned about the hygiene conditions and access to services in the neighbourhoods where they have returned to, while in rural areas, recent returnees are primarily concerned about the reconstruction of their homes in villages that have been vastly destroyed, the rehabilitation of the rural infrastructure and the access to productive assets, such as seeds and tools.

In 2017, high food prices were the main challenge expressed by mVAM respondents in the ten governorates covered, followed by lack of employment. Interestingly the ranks reversed in 2018, with lack of employment emerging as the top constraint, an indication that in many parts of the country market conditions have improved over the past 12 months (see Figure 35). Other main constraints reported in August 2018, included high rents (7 percent), electricity cuts (4 percent), and security concerns (3 percent).

Figure 35: Syrian Arab Republic – Main constraints in August 2017 and 2018



Source: mVAM.

Livelihood coping

In the seventh year of the crisis, the adoption of some livelihood coping strategies has reduced compared to the previous year, due to both that households in the eight years of conflict have depleted their strategies and that there was reduced pressure to apply them. On the other hand, buying food on credit continues to be adopted by every second household. It is more common among IDPs, returnees, female headed and rural households.

Figure 36: Syrian Arab Republic – Adoption of livelihood coping strategies

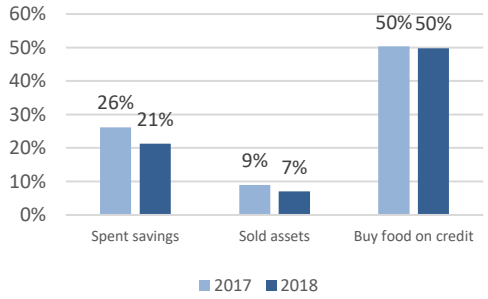
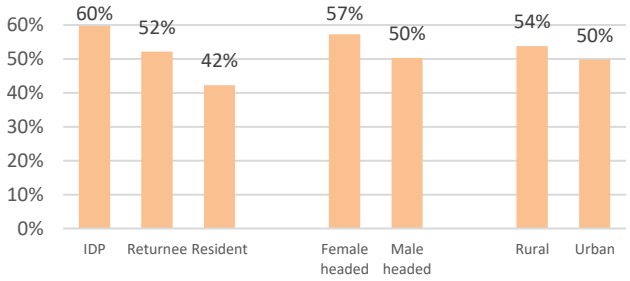


Figure 37: Syrian Arab Republic – Buying food on credit



Source: mVAM.

Similar to last year, the Mission observed many IDPs are keeping children out of school in order to work, and many adults were working long hours and in multiple jobs. According to the 2018 School in the Syrian Arab Republic Thematic Report (Edition 4)[13], the three main reasons for children dropping out of schools is lack of income, followed by child labour, and lack of educational materials, books, and stationery. The report also revealed that many children are going to school hungry and more than half are not consuming any meal at school.

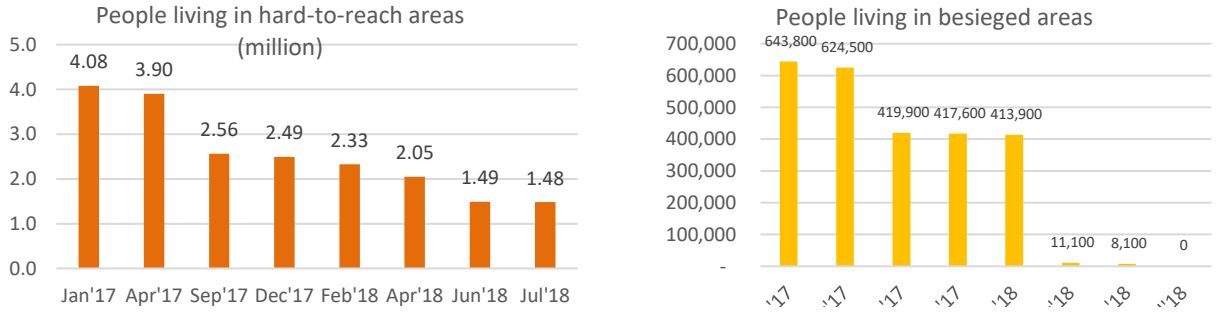
Humanitarian access

The geography of access has vastly changed compared to one year ago. By July 2018, 1.48 million people were considered living in hard-to-reach areas (down from 4.1 million in January 2017) and nobody left in besieged areas according to UN-OCHA (down from 643 800 in January 2017).

Hard-to-reach areas: An area that is not regularly accessible to humanitarian actors for the purposes of sustained programming as a result of denial of access, including the need to negotiate access on an ad-hoc basis, or due to restrictions such as active conflict, multiple security check-points, or failure of the authorities to provide timely approval.

Besieged areas: An area surrounded by armed actors with the sustained effect that humanitarian assistance cannot regularly enter, and civilians, the sick and wounded cannot regularly exit the area.

Figure 38: Syrian Arab Republic – Number of people living in besieged and hard-to-reach areas (April 2017-June 2018)



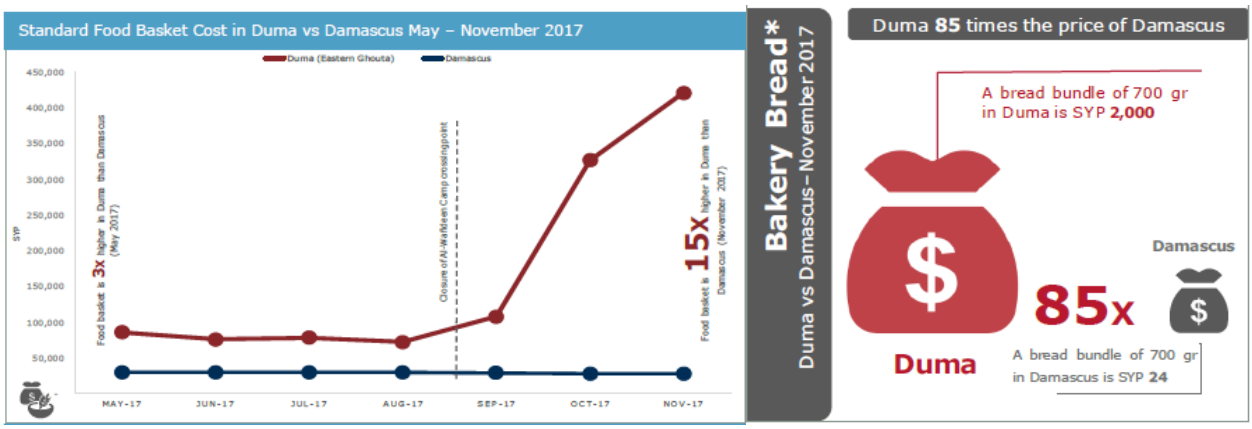
Source: Inter-Agency Population Task Force, August 2018.

[13] Schools in Syria, Thematic report – Edition 04 (2018). Available at: http://woseducation.org/uploads/assessments/Final_Schools2018_IMU_080818_C.pdf

These trends are associated with a slight recovery in economic activities and improved freedom of movement. At the same time, these locations represent a high human and economic cost, as they are exposed to fighting and widespread destruction, as reports from Eastern Ghouta and Deir-ez-Zor illustrate.

Eastern Ghouta during last months of besiegement:

Eastern Ghouta is an urban/peri-urban area east of Damascus city where some 393 000 people reside. The closest neighbourhood to Damascus city centre is just 15 km away. The area is occupied by a number of militant groups hostile to the Government of the Syrian Arab Republic. Government forces have besieged the area since 2014. The enclave is one of the de-escalation zones announced in the Astana Syrian Arab Republic talks in September 2017. However, since July 2017 besiegement of the area has tightened with supply routes closed and shelling in the area increased as government forces intensify efforts to re-control the area.
The intensification of the siege has significantly impacted the food security situation in Eastern Ghouta, including Duma. Since September 2017, cases of severe malnutrition and mortality among children have been reported.
The very limited food sources in the besieged area, skyrocketing food prices and weak purchasing power eroded people's capacities to deal with any further shocks. Since September 2017, adoption of emergency livelihood and consumption coping strategies have dramatically increased. This included the consumption of expired food, animal fodder, spending days without eating, begging and engaging in high risk activities to get food.
Due to the scarce food stock in markets and the total block of commercial supply routes, food prices have been increasing rapidly on a daily basis. For example, by mid-November 2017, a 700 grams bundle of bread was 85 times more expensive in Eastern Ghouta than in Damascus. In August 2017, the same bundle of bread was 24 times more expensive in Eastern Ghouta than Damascus. The escalation of fighting (including aerial bombing) starting in November further deteriorated the dire food security situation of the besieged people in Eastern Ghouta.
Shelling heavily increased in the late half of February 2018, with reports that it was one of the heaviest aerial bombing campaigns of the conflict so far in the Syrian Arab Republic. Shelling combined with ground advances have allowed Syrian forces to retake large areas of besieged Eastern-Ghouta. After the truce negotiations, inhabitants relocated to Idleb or were moved to IDP camps located in Rural Damascus.



Source: WFP: Syrian Arab Republic – Duma Interagency Assessment, Food Security Update (November 2017), Nashabiyeh Food Security Update (February 2018).

Slow early recovery in Deir-ez-Zor City:

Deir-ez-Zor has been besieged until September 2017 with a food aid airdrop operation as its only lifeline. Since then, the overall food security situation has relatively improved due to better commercial flows into the city, increased food availability and reduced food prices. Reports of people adopting severe coping strategies, mortality among new-born babies, severe malnutrition cases and petty crimes for food (theft and burglaries from homes and warehouses) have significantly decreased. Moreover, the prevalence and frequency of practicing other negative coping mechanisms have declined especially for skipping days without eating and sleeping hungry. The situation, however, remains precarious due to the heavy damage of the infrastructure, the increasing influx of returnees and the limited available livelihood options.
Due to the protracted years of besiegement and intensified offensive, the level of devastation and destruction of infrastructure in Deir-ez-Zor city is very high. As a result, areas conducive for accommodation are few and many returnees and IDP households are living together in tight spaces and under poor living conditions. Moreover, many bakeries, schools and medical centres remain out of service and generators are the only source of electricity for the entire city.

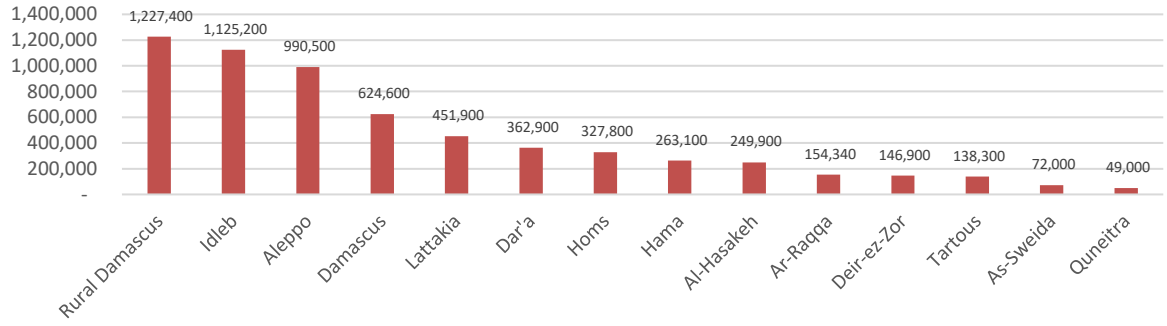
According to a recent VAM assessment, market functionality was identified to be weak in Deir-ez-Zor city due to traders' lack of capital and consumers' low cash liquidity, which resulted in limited food stock in the market. Key wholesalers reported that most of the warehouses in Deir-ez-Zor are empty, as traders cannot afford to buy more than their daily sales levels.
Despite the relative improvement in food accessibility, the daily diet for the majority of the population in Deir-ez-Zor City is limited. A typical diet is largely based on starch foods and pulses while financial access to nutritious and fresh food items was identified to be poor, likely resulting in the many cases of night blindness among children, a condition exacerbated by deficiency in vitamin A.

Source: WFP: Syrian Arab Republic - Deir-ez-Zor City Assessment, Food Security Update (February 2018).

Displacement and return

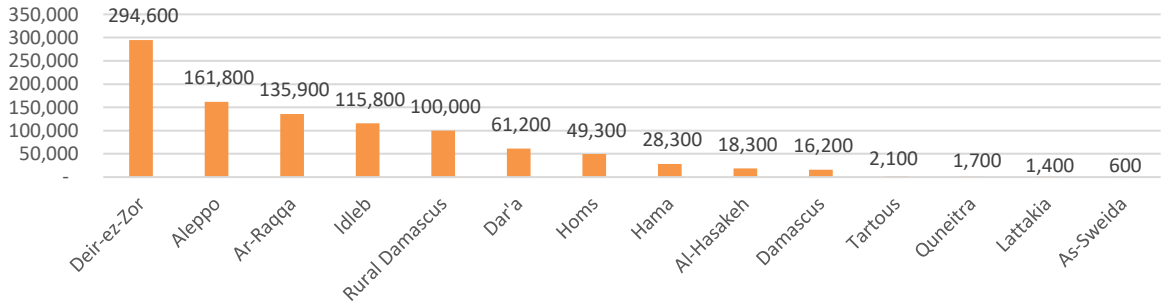
A large proportion of the population continues to be on the move inside the Syrian Arab Republic. According to Interagency Population Taskforce, as of August 2018, there are about 6.2 million internally displaced people, with an estimated number of 1.3 million new displacements of people displaced between January and June 2018, some of them several times. The highest IDP burden were observed in Rural Damascus, Idleb, Aleppo, Damascus and Lattakia. The highest increases compared to the previous year were observed in As-Sweida, Idleb, Lattakia, Dara, Al Hasakeh; while Tartous, Homs, Raqqa and Deir-ez-Zor observed the highest reductions. In addition, it is estimated that there are 987 000 returnees, representing an increase by 62 percent compared to 2017 (HNO). The highest numbers have been reported in Deir-ez-Zor, Aleppo and Raqqa. The number includes about 23 400 Syrian refugees who have spontaneously returned to the Syrian Arab Republic from Lebanon, Turkey, Jordan, Iraq and Egypt according to UNHCR[14].

Figure 39: Syrian Arab Republic – Number of IDPs by Governorate (status August 2018)



Source: Interagency Population Taskforce, August 2018.

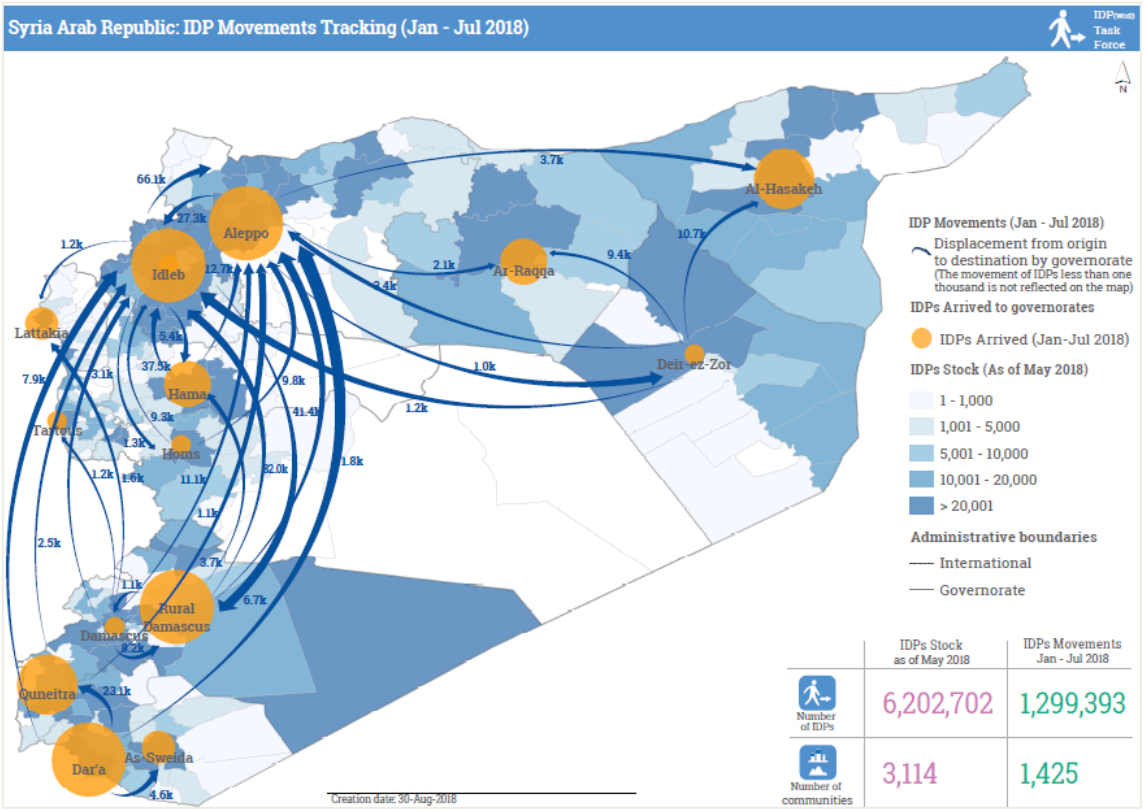
Figure 40: Syrian Arab Republic – Number of returnees by Governorate (status August 2018)



Source: Interagency Population Taskforce, August 2018.

[14] This figure reflects self-organized returns confirmed and verified by UNHCR. Actual number may be higher and are likely to increase throughout 2018.

Map 3 – IDP movement tracking (January-July 2018)



Source: Inter-Agency Population Task Force, 2018.

Recent developments in Idleb:
The northwest de-escalation area, comprising most of Idleb governorate, is home to approximately 3 million people. Around 1.4 million people are internally displaced persons (IDPs) from across the Syrian Arab Republic, as well as, people who had been displaced within the Idleb Governorate. This includes around 95 000 IDPs, who arrived in northwest Syrian Arab Republic under provisions made in local agreements reached between the parties to the conflict in previously besieged or hard to reach areas, such as Eastern Ghouta, northern rural Homs and southwest Syrian Arab Republic, between March and August of 2018.
A recent study conducted by REACH (August 2018) indicates that under the current situation, 38 percent of assessed communities in Idleb reported food to be a priority need. The use of negative coping strategies for lack of food was reportedly widespread as almost two-thirds (63 percent) of assessed communities reported that households were using strategies such as purchasing food on credit, reducing meal sizes, selling productive assets and skipping meals, in order to cope with a lack of food. In more than half of the assessed communities (58 percent) households reported to have faced barriers to access food markets primarily due to safety and security. Humanitarian assistance is reported as one of the main sources of food and livelihoods for IDPs. A further deterioration in the security situation could lead to massive internal displacement and results in a major humanitarian crisis.
Following sustained conflict between government forces and non-state armed groups and a perceived imminent offensive, on 17 September, the Russian Federation and Turkey agreed to create a 15-20 km demilitarized buffer zone to separate government troops from rebel forces, with Turkish and Russian soldiers patrolling the zone. While the situation has remained relatively calm since, there have been reports of violence and shelling in Southern Aleppo, northeastern Lattakia and northern Homs. Humanitarian agencies, including WFP, have prepositioned emergency stocks.

Source**:** Food Security Sector: Idleb Situation Report Number 1, (18 September 2018), UN-OCHA: Recent Developments in northwest Syrian Arab Republic (12 September 2018).

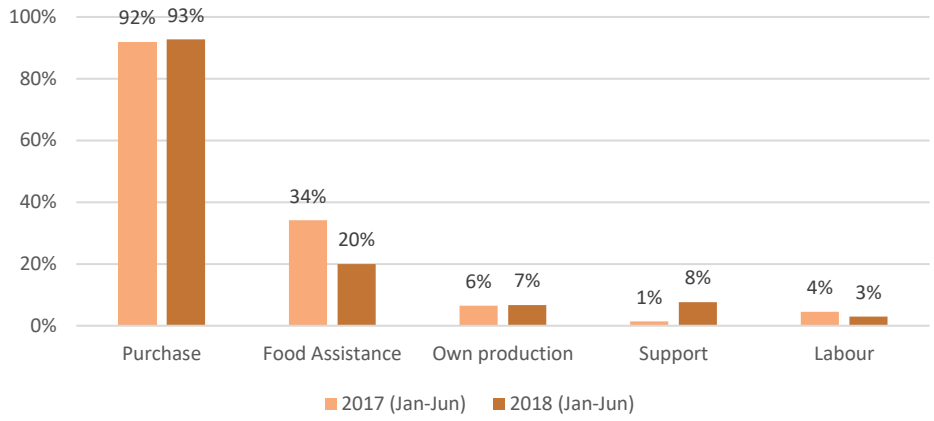
Food assistance and estimated assistance requirements

Overview of assistance

Food assistance continues to be an important food source for many Syrian households – though at a reduced rate compared to 2017. Every fifth household reported food assistance as one of their main sources. It remains particularly high among female-headed households (29 percent), returnees (30 percent) and IDPs

(22 percent). At the governorate level, the role of food assistance as main food source was particularly evident in Aleppo (30 percent) and Dar'a (24 percent).

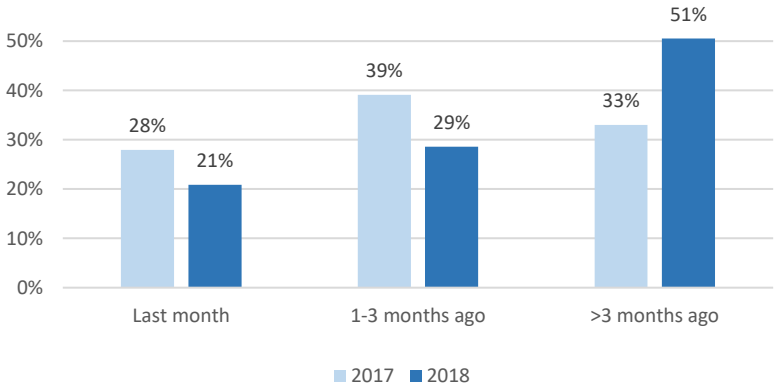
Figure 41: Syrian Arab Republic – Main food sources, January-June (2018/17)



Source: mVAM.

During the field visits, the Mission observed an increased lack of regularity of assistance. This observation was also validated through the mVAM analysis. The proportion of beneficiary households receiving assistance over the past three months has reduced compared to 2017 (see Figure 42). A possible reason could be reduced funding levels in 2018 compared to the previous year combined with practical challenges with the implementation of newly introduced prioritization strategies.

Figure 42: Syrian Arab Republic – Frequency of food assistance by beneficiary group (January-June 2017/18)



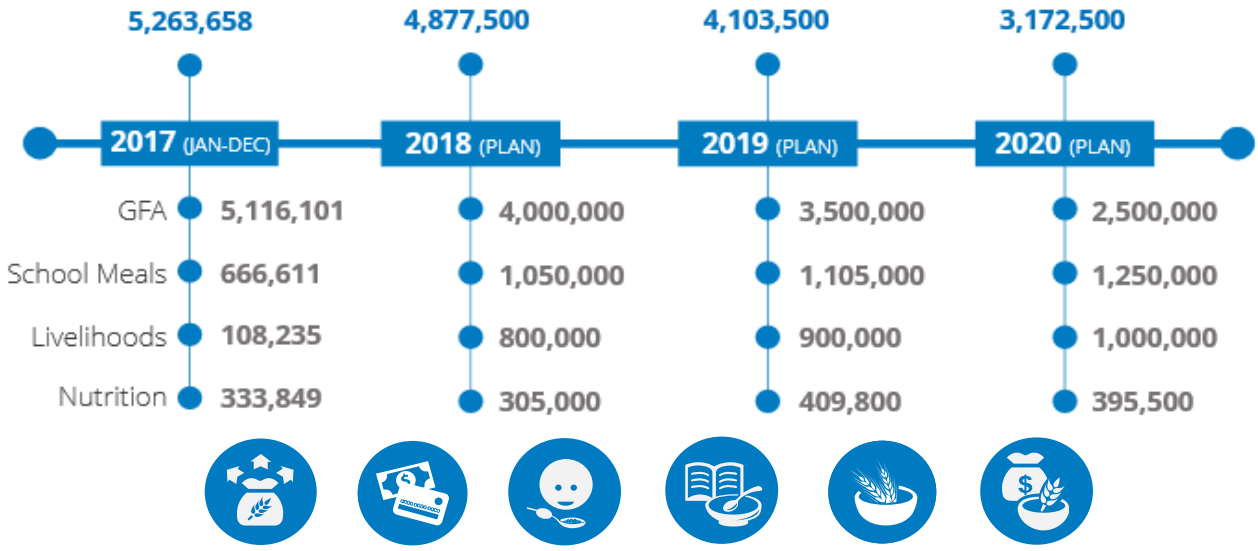
Source: mVAM.

There are also differences at sub-national level depending on the governorate involved. While Al-Hasakeh remains the most affected governorate, there has been a positive trend compared to last year when only 20 percent of the beneficiaries received assistance over the past three months. Road deliveries resumed in June 2017 and this allowed humanitarian agencies to increase the amount and types of assistance delivered to Al-Hasakeh. Before that, Al-Hasakeh had been cut off from land access since December 2015 and food assistance had to be airlifted. In all other governorates, the frequency of assistance reduced, in particular in Lattakia, Damascus, Tartous, Hama and Homs.

As of July 2018, various Food Security Sector partners reached on average 4.9 million people every month with regular monthly food baskets reaching 75 percent of the targeted 6.5 million people under Sector Objective 1 of the Humanitarian Response Plan. In addition, about 2.1 million people have been reached with livelihoods and agriculture assistance representing 41 percent of the targeted 5.1 million under Sector Objectives 2 and 3.

In 2017, WFP supported 5.3 million people and plans to support 4.9 million in 2018. Despite the funding shortfall, WFP reached 3.13 million people across all 14 governorates in the Syrian Arab Republic, by June 2018 via its general food assistance (GFA), which included emergency responses to Afrin, Eastern Ghouta, Dar'a, Quneitra and Idleb.

Figure 43 – Syrian Arab Republic - WFP programme portfolio, 2017-2020



Source: WFP.

In its draft two-year country strategic plan, WFP plans to reach 4.1 million people across different programme activities in 2019 and 3.2 million in 2020, including GFA, livelihood activities, school meals and nutrition interventions. In areas considered stable, WFP plans a gradual shift from GFA to safety nets and livelihood interventions to strengthen the resilience of communities and households to current and future shocks. In the course of 2019, WFP aims to reach 1.1 million school children and 0.9 million people though livelihood programmes. Providing an income support conditional on school attendance and restoring the assets of communities and households, strengthening the skills of individuals and investing in productive sectors at community level will be key to the recovery and return of displaced populations.

The shift from WFP's in-kind food assistance to market-based interventions through a gradual increase in local procurement, and reliance on the use of cash-based transfers provided to targeted households and engagement with the private sector will help strengthen capacities and stimulate the local economy.

Food assistance requirements

Food assistance requirements were estimated through the CFSAM household survey, which was jointly coordinated by WFP and FAO, and implemented with the support of the Ministry of Agriculture and Agrarian Reform (MAAR). Data collection took place in August 2018 and in total 6 012 households were interviewed[15]. Numbers were estimated based on WFP standard food security classification methodology (CARI)[16].

The Mission recommends further validation and analyses of the data collected and additional assessments to update the situation, especially in those governorates that are experiencing fighting or other access constraints.

Based on the available data, the Mission estimates that 5.5 million Syrians are food insecure and require some form of food assistance. There could be an additional 500 000 to 800 000 food insecure people in Idleb, a number that has to be reconfirmed once conditions permit. While there have been significant improvements in many parts of the country, these gains are partially offset by a variety of factors: the overall poor economic situation and high unemployment leading to low purchasing power, especially affecting the most vulnerable; continued instability in some area resulting in new displacement; the increase in the number of IDP returnees, who require support to re-establish their lives and livelihoods; and the poor crop season particularly in the northeast of the country, is affecting households relying on the agricultural sector.

[15] Three governorates were not covered: Idleb, Dar'a and Quneitra. For the latter two, findings from the 2017 Food Security Assessment were used as proxies.
[16] CARI stands for "Consolidated Approach for Reporting Indicators of food security". It is a composite indicator combining food consumption, livelihood coping strategy and food expenditure share to assess food security levels.

Table 11: Syrian Arab Republic - Estimated number of people in need of food assistance

Governorate	Estimated population (August 2018)	Estimated food insecure (percent)	Estimated number of food insecure
Aleppo	3 795 328	41.4	1 571 400
Al-Hasakeh	1 010 783	38.4	387 700
Raqqa	671 386	38.9	261 400
As-Sweida	363 882	42.0	152 900
Damascus	1 812 164	27.9	505 000
Dar'a[1]	984 057	41.8	411 300
Deir-ez-Zor	689 610	42.3	291 600
Hama	1 538 162	30.1	463 600
Homs	1 452 395	25.8	374 700
Tartous	813 169	12.3	100 400
Lattakia	1 163 263	10.1	117 000
Quneitra[1]	103 867	30.4	31 600
Rural Damascus	3 177 441	26.0	825 600
Idleb	2 379 650	NA	n.a.
Total population (without Idleb)	**17 575 507**	**31.3**	**5 494 200**

Source: CFSAM household data, August 2018. Population data is based on the estimates shared by the Interagency Population Task Force.
Note: Totals and percentage change computed from unrounded data.
1/ Food insecurity figures for Dar'a and Quneitra are based on 2017 Food Security Assessment.

RECOMMENDATIONS

Agriculture (short-term recommendations)

Under the prevailing conditions of continuing conflict, international trade sanctions and population movement and fluctuation, advancing a number of long-term crop production recommendations may appear hypothetical. Nevertheless, as many parts of the country are now more secure than they had been for several years, a start to recovery and improvement should now be envisaged more concretely. At the same time, interventions should be aimed supporting income-generating activities to increase the purchasing power of rural populations.

Wheat seed

Seed-screening equipment should be repaired where possible, and new equipment provided to a large number of centres so that seed can be cleaned close to its point of production.

Seed rates

Most farmers currently use high seed rates, partly because they believe that the germination percentage of their seed might be low or that their seed might be contaminated with different species. This is obviously wasteful, especially after a very poor harvest when there is bound to be a shortage of good-quality seed. Field plots should be established to demonstrate crop yields using the recommended seed rates for species and varieties grown in different parts of the country. Arrangements should be made to bring local farmers to see the plots at seedling and again at harvest.

Irrigation

With the already existing shortage of water and climate change becoming an increasingly evident reality, the Syrian Arab Republic needs to take a long-term view of increasing the country's capacity to irrigate field crops. This should begin with the rehabilitation of existing networks and installations, but then progress to promoting the use of efficient modern irrigation methods and water-harvesting techniques.

Water-User Associations (WUAs) with clearly defined structures and individual responsibilities should be established or re-established to ensure the proper running and maintenance of irrigation systems and to guarantee an equitable distribution of water to all users[17].

The payment of water charges according to crop type and area should be enforced in order to discourage the wasteful use of irrigation water.

Unauthorized wells in areas of lowering water table should be closed within a reasonable timeframe in order to conserve groundwater. Owners of closed wells should be compensated in some appropriate way that would ensuring that they can continue their crop production.

Mechanization

Approved metal workshops should be encouraged, through grants or loans, to produce simple spare parts for tractors and other farm machinery.

Export restrictions

The ban on exports of fruit and vegetables should be lifted with limited export licences being issued to qualifying traders.

Poultry

Assistance in the form of subsidized feed and medication should be provided to approve commercial poultry units. With its rapid multiplication, poultry is arguably the easiest livestock sector to restore.

Agriculture (long-term recommendations)

Provide the basis for sustainable longer-term solutions to facilitate and strengthen the viability of agricultural livelihoods and food security resilience of the population, particularly returnees, by providing an enabling environment for agricultural production and facilitating the supply of necessary inputs for crop and livestock production:

- Rehabilitate the seed production and distribution systems along the value chains, including seed potato multiplication facilities to improve access to drought tolerant and disease resistant varieties.
- Continue rehabilitating damaged irrigation systems and improve water for production efficiency through low cost technology (solar panels and others), possibly by implementing cash for work schemes.
- Rehabilitate the fertilizer production sector, while considering other sources of nutrients available in domestically, such as compost production, animal manure, and food waste management.
- Rehabilitate the feed system, by the establishment of feed processing units, and the introduction of fodder crops in the crop rotation.
- Provide some credit lines to farmers using alternative collaterals, such as part of forward contracting, to allow investments in agricultural assets and farm machinery.
- Rehabilitate veterinary services, including rehabilitating domestic vaccine production.
- Rehabilitate research services, able to test and control quality of agricultural inputs on the market and to improve local varieties and breeds.
- Rehabilitate extension services and farmers' training.
- Rehabilitate the fisheries and aquaculture sectors.

Food Security and livelihoods

While there have been general improvements in the food security situation due to improved access and stability in parts of country, the coming two years are a crucial period for rebuilding lives and livelihoods across the Syrian Arab Republic. Declining levels of external assistance without a corresponding growth in the productive

[17] Near the village of Rabiyeh in Homs Governorate, the Mission came across an earth irrigation canal that had been rehabilitated with FAO assistance but which was rapidly becoming congested with weeds. The canal served to irrigate 120 hectares farmed by 250 families, but no WUA had been established. Assistance in rehabilitating canals and other irrigation structures should be contingent on users forming a WUA. Proper maintenance of the network could later be rewarded with, for example, packages of seed or fertilizer. At Rabiyeh it should have been possible to assign each user to the maintenance of a relatively short length of canal, but this had obviously not been done.

private sector could offset the recent food security gains. Further reductions in vulnerability and improved food security can only be achieved with sustained economic growth and the creation of jobs.

Continuing general food assistance to vulnerable IDPs, IDP and refugee returnees, and conflict-affected communities

Food assistance has been a lifeline for conflict-affected households across the country. General Food Assistance (GFA) will continue to be required to support the newly displaced and most vulnerable among the longer-term displaced populations and other conflict-affected populations. Recent IDP returnees will require assistance during the resettlement phase. GFA in areas with improving food security trends should be reduced over time to focus on the most vulnerable groups only, regardless of their status, but linked with their socio-economic vulnerability. While the number of refugees returning to the Syrian Arab Republic from neighbouring countries is still at small scale at the time of the Mission, an increase in the number of returns in the coming years is likely and will result in a higher demand of assistance. Closely monitor the situation and develop joint scenarios and response plans with key partners.

Seasonal food assistance in the Northeast

Assist smallholder farmers and seasonal agricultural labourers in Al-Hasakeh, Raqqa and Deir-ez-Zor who have been affected by the record low harvest. Coordinate closely with partners at all levels to facilitate access to quality seeds to encourage cultivation and consider seed protection programmes for the most vulnerable farmers to bridge the time until the next harvest season.

Expansion of Cash-Based Transfers (CBT) to meet food and other essential needs

With the improving market situation, further expand CBT if operationally feasible, especially in urban and peri-urban settings. Continue conducting market assessments to assess the feasibility of expanding market-based interventions. In the medium to longer term, work towards the alignment of partners related to a move towards the establishment of social safety nets for the most vulnerable population in the Syrian Arab Republic, focusing on meeting the essential needs.

Assistance frequency and regularity

With reduced funding, the pressure to decreasing assistance frequency has increased compared to last year. It will be key to continue awareness-raising and strengthen the targeting capacities of all partners involved to reduce this practice and ensure a regularity in the assistance provided, which will allow vulnerable households to use their limited resources in a more forward-looking way. The expansion of the beneficiary information system and coordinated systems among humanitarian/development stakeholders at all levels will be instrumental.

Review and further enhance current targeting practices

The existing targeting criteria are largely in line with the vulnerability criteria established by the Mission; however, it is recommended to further validate the criteria through in-depth analysis, as well as reviewing the targeting methods and implementation processes and practices with key stakeholders in the Syrian Arab Republic. While overall rural and urban areas are equally vulnerable, there are differences between governorates and various target groups, which should be further validated and targeting strategies adjusted accordingly.

Expanding livelihood support

Reorient the livelihood programming by building on current strengths, articulating new partnership models, and identify opportunities to enhance scale, outreach and impact. This may include food assistance for assets to enhance household and group-based productive assets, including communal agricultural infrastructure, food assistance for training for human capital development, and retail sector rehabilitation. Expand partnerships to guide livelihood programmes in urban areas and validate local labour demand, including line Ministries such as the Ministry of Social Affairs and Labour (MoSAL) and the private sector through local chambers of commerce and business associations. Joint programming and coordinated actions by the Food Security Sector and the Early Recovery and Livelihood Sectors will be essential, with a priority action to implement the agreed Integration Strategy linking food security and early recovery/livelihood interventions.

Strengthen targeting within rural livelihood programmes

Consider geographic focus of livelihood activities to ensure measurable impact at a higher scale. Focus on districts with high prevalence of food insecurity, districts experiencing or anticipating high levels of returnees and areas with high levels of destruction of agricultural infrastructure. A relative degree of security and stability will also be required to enable regular access and community engagement. Main target groups will include moderately food-insecure households, whose livelihood assets and incomes have been degraded due to the crisis, and small- and medium-holder farmers, who will benefit from the rehabilitation of communal agricultural assets.

Increase local procurement when feasible

Scale-up the local procurement of food assistance commodities either by implementing agencies directly or by the targeted households through cash-based transfers as income support. Realistic targets need to be set to ensure that the national supply chain can cope with the demand. This is particularly critical due to the poor 2017/18 agricultural season.

Continue and expand back-to-school initiatives and nutrition sensitive programmes

Despite improving trends, out-of-school children continues to be of concern. Among the various requisites to address the issue of school dropout and child labour (i.e. return of teachers, school infrastructure capacity, material and equipment), it is recommended to expand the joint back-to-school programme, e.g. by expanding the cash-based transfers to families to send out-of-school children back to school. Expand nutrition sensitive programmes across all operations, including the fortification programmes. Continue the cash-based nutrition programme targeting pregnant and lactating women form vulnerable households.

ISBN 978-92-5-131016-8

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CA1805EN/1/10.18