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

5 July 2013

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME

WORLD FOOD PROGRAMME, ROME

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TABLE OF CONTENTS

Acronyms and abbreviations

ASIS	Agricultural Stress Index System
CBS	Central Bureau of Statistics
CFSAM	Crop and Food Security Assessment Mission
EIU	Economist Intelligence Unit
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	Data programme of FAO Statistics Division
GAPAR	General Authority for Palestine Arab Refugees
GDP	Gross Domestic Product
GFD	General Food Distribution
ha	Hectare
ICRC	International Committee of the Red Cross
IFRC	International Federation of Red Cross and Red Crescent Societies
kg	Kilogramme
MAAR	Ministry of Agriculture and Agrarian Reform
mm	Millimetre
MoFA	Ministry of Foreign Affairs
MWR	Ministry of Water Resources
NDVI	Normalized Difference Vegetation Index
NGO	Non-Government Organization
NPK	Nitrogen, phosphorus, potassium
OCHA	Office for the Coordination of Humanitarian Affairs
SARC	Syrian Arab Red Crescent
SHARP	Syria Humanitarian Assistance Response Plan
SYP	Syrian pound
t	Tonne
UN	United Nations
UNDP	UN Development Programme
UNHCR	UN High Commissioner for Refugees
UNWRA	UN Agency for Palestinian Refugees
USD	US dollar
WASH	Water, sanitation and hygiene
WFP	World Food Programme

Mission highlights

- Seasonal rainfall in 2012/13 was better than in any of the previous five years, especially in the northern cereal-producing governorates.
- Relatively less area was planted to cereals, compared to the last ten years. Contributing factors include high costs of production, reduced input availability including labour, prevailing violence, related damage to farm equipment, and abandoned land. The area under irrigated cereal production also declined significantly owing to power cuts, and damage to power stations, canals, and pumps; and high diesel costs.
- The supply chain of wheat is severely affected. Road transport is becoming increasingly expensive and is often unsafe, and less than one-third of the Government's wheat collection centres are operational. Most flour mills and bakeries are either no longer operating, or are operating at low capacity. Only 1 in 4 yeast factories is operational.
- Pre- and post-harvest grain losses are higher than average this year, due mostly to damage to harvesting equipment and storage structures.
- Accordingly, the 2013 wheat production is estimated at 2.4 million tonnes, significantly lower than the average for the ten years prior to 2010/11 that exceeded 4 million tonnes (a 40 percent decline) and 15 percent below the poor 2011/12 crop. The barley crop, which is predominantly rainfed, is expected to be close to one million tonnes, above the average annual production of 773 000 tonnes for the ten years prior to 2010/11.
- The wheat import requirement in 2013/14 (July/June) is estimated at about 1.47 million tonnes of which 1 million tonnes are anticipated to be imported commercially. An estimated 378 000 tonnes of wheat is planned to assist the most affected people from mid-2013 to mid-2014, still leaving a gap of 99 000 tonnes.
- The livestock sector has been seriously depleted by the ongoing conflict. Poultry production is estimated to be down by more than 50 percent compared with 2011, and sheep and cattle numbers are down approximately 35 percent and 25 percent, respectively.
- The Government's veterinary service is significantly eroded. Vaccines are in short supply and sanctions prohibit imports. Most private companies that were producing prophylactics have gone out of business because of damage to their premises and because of the difficulty importing.
- Due to higher prices; more Syrian livestock are being sold in Jordan, Lebanon, Turkey and Iraq. With the virtual loss of veterinary services within Syria, livestock diseases are being transmitted to neighbouring countries, thereby posing a potentially serious regional animal-health problem.
- An exodus has occurred from Syria; 1.6 million Syrians have become registered refugees in neighbouring countries as of the end of May 2013. In addition, it is suspected that many have departed as unrecorded voluntary emigrants.
- Over 4 million people have moved from their original residence to other locations in the country, leaving behind or losing their assets and income sources.
- Livelihoods, income earning, and purchasing power have suffered huge losses. The official 2013 unemployment rate is 18 percent; more than twice the 7-year average (2003-2010) of 8 percent.
- Inflation is rampant, and Syria’s currency has experienced major devaluation. In 2012, year-on-year inflation rose by 50 percent from 2011. The 2013 inflation rate is expected to rise above 30 percent. The official value of the Syrian pound has declined sharply by over 115 percent since 2011.
- Commodity costs have risen significantly. The real price of wheat flour has almost doubled from 2011, while that of livestock has fallen. Amongst non-food items, diesel has had the sharpest escalation in cost, with a 200 percent jump in January 2013, after cuts in Government subsidies.
- Food markets are seriously disrupted. In addition to higher prices; food access is compromised due to lower quantities of food in the markets. Main impediments to trade include insecurity, transport constraints, credit for suppliers, and foreign currency shortages.
- The quality of the Syrian diet and micro-nutrient intake is likely reduced. Many households are cutting back substantially on the consumption of fruits, meat, dairy products and eggs.
- Approximately 4 million people are facing food insecurity. Most vulnerable groups include the internally displaced, small scale farmers, and herders; casual labourers, petty traders, the urban poor, children, pregnant and lactating mothers, the elderly, the disabled and the chronically sick.
- The damage to infrastructure, plant and machinery inflicted by the deteriorating security situation will have an effect beyond the current season and longer term measures need to be put in place to rebuild food systems.

1. OVERVIEW

Following a request to FAO from the Ministry of Agriculture and Agrarian Reform (MAAR) on 27 March 2013, a joint FAO/WFP Crop and Food Security Mission (CFSAM) visited the Syrian Arab Republic between 18 May and 8 June 2013. In Damascus, the Mission had meetings with the Ministry of Foreign Affairs (MoFA), The Ministry of Agriculture and Agrarian Reform (MAAR), and the Ministry of Water Resources. Meetings were also held with the General Establishment for Cereal Trade and Processing, a department within the Ministry of Economy and Trade; the FAO national consultant on livestock; the National Agricultural Policy Centre (NAPC); UNDP; OCHA; the resident FAO office; and the resident WFP office.

From 27 May to 1 June the Mission undertook a short field trip to Homs, Tartous and Al Hasakeh Governorates. In each governorate, meetings were held with MAAR's Agricultural Directorate. The Mission met small farmers, horticultural producers and traders in Homs and Tartous and visited some production units, while in Al Hasakeh a group of 15 cereal farmers and livestock owners came to Qamishly to meet the Mission and discuss the current crop and livestock situation in the governorate. The field trip was limited not only by the small number of locations visited but also by the fact that those locations were exclusively within Government-held areas; no opposition-held areas were visited.

In addition to Government information, other sources of information used by the Mission in its assessment allowing a degree of triangulation included:

- Vegetation-related satellite imagery (NDVI and ASIS);
- a set of questionnaires distributed through, and completed by, MAAR officers in 13 of the country's 14 governorates (Dara'a was omitted as the current crisis prevented the movement of MAAR officials from that governorate);
- meetings with MAAR officers from 13 of the country's 14 governorates while they were in Damascus for a training course (again, Dara'a was omitted);
- records and reports from MAAR and the Central Bureau of Statistics;
- recent reports from UN and other agencies;
- discussions with independent NGOs and Internally Displaced People (IDPs).

Compared with recent years, rainfall during the 2012/13 cropping season was favourable, especially in the northern cereal-producing governorates, and rainfed cereals benefited accordingly. The Badia (the steppe of south-eastern Syria) also benefited, providing better grazing for livestock.

However, crop and livestock production, food availability and access to food have all taken an increasingly heavy toll over the last year as a result of the various ramifications of the ongoing events within Syria. The threat of violence has caused large numbers, including farmers, to leave the country and even larger numbers to move from their homes to safer areas within the country. Many of the means of production, processing and storage of crops have been either damaged or destroyed, such as tractors, harvesters, pumps, irrigation canals, cotton ginneries, and grain silos. Internationally imposed financial and other sanctions have exacerbated the situation, leading to shortages of agricultural inputs, crop-protection materials, diesel, and spare parts for machinery. The livestock sector has been especially badly affected by the current situation and by the internationally imposed sanctions. There is now, in many parts of the country, a virtual absence of routine drugs, vaccines and the veterinarians to administer them, as well as ongoing protracted shortages of concentrate feed. In addition, the Syrian pound has experienced significant devaluation over the past six months making it more difficult for producers to purchase the necessary production-related materials that are still available.

The overall results include a reduction in the area of cropped land and an anticipated further reduction in the area of land harvested; crop yields that are lower than they might otherwise have been in a year of satisfactory rainfall; difficulties in transporting and marketing agricultural produce; a highly significant depletion of the livestock sector; possible regional implications for outbreaks of livestock diseases in neighbouring countries because of cross-border sale of un-inoculated animals; loss of livelihood for a very significant section of the population; and an accelerating exodus from agricultural production.

The Government has attempted to ease the situation for both the producer and the consumer by offering a financial premium to wheat producers and by continuing to subsidize the price of bread. The premium for producers has, however, already been more than overtaken by the other escalating costs of production and marketing and by the fall in the value of the Syrian pound, while the amount of bread that can be made available at a subsidized price is far below what is required to satisfy demand. The other Government support mechanisms for producers such as subsidised fertilizer and livestock concentrates are now rare and irregular. Nevertheless, the Government has managed to secure some substantial imports of wheat in spite of the prevailing international sanctions.

If the present conflict continues, the food security prospects for 2014 could be worse than they are now. With so many adverse factors now stacked against the crop and livestock sectors, and assuming that the present crisis remains unresolved, domestic production over the next twelve months will be severely compromised. The Mission estimates that wheat production this year will be approximately 2.4 million tonnes. This is 15 percent lower than last year's estimated production of 2.84 million tonnes, and significantly below the average of more than 4 million tonnes achieved prior to the crisis.

Officially registered stocks of wheat amounted to approximately 2.9 million tonnes at the beginning of 2013. It was not possible for the Mission to assess the amount held domestically and by merchants, but it is assumed that it is relatively small in view of the fact that many grain-storage structures have been either seriously damaged or destroyed since 2011.

The Mission thanks the many agencies that provided invaluable information during its time in Syria, in particular the various directorates of the Ministry of Agriculture and Agrarian Reform (MAAR) at both central and governorate level. With regard to logistical support, the Mission thanks the Ministry of Foreign Affairs (MoFA), and the country offices of FAO and WFP.

2. BACKGROUND AND SOCIO-ECONOMIC CONTEXT

2.1 General

The ongoing crisis in Syria has had a very significant effect on the country's population. Under normal circumstances and using the average pre-crisis growth rate, the population would be expected, by the end of 2013, to number about 22 million. However, with a large exodus of voluntary and involuntary refugees, mainly to neighbouring countries, it is estimated that the population will, in fact, be about 20 million. In addition, the crisis has caused extensive movement of about 6 million people within the country, with the result that population density in some urban and peri-urban areas has increased dramatically while in other areas populations are severely depleted.

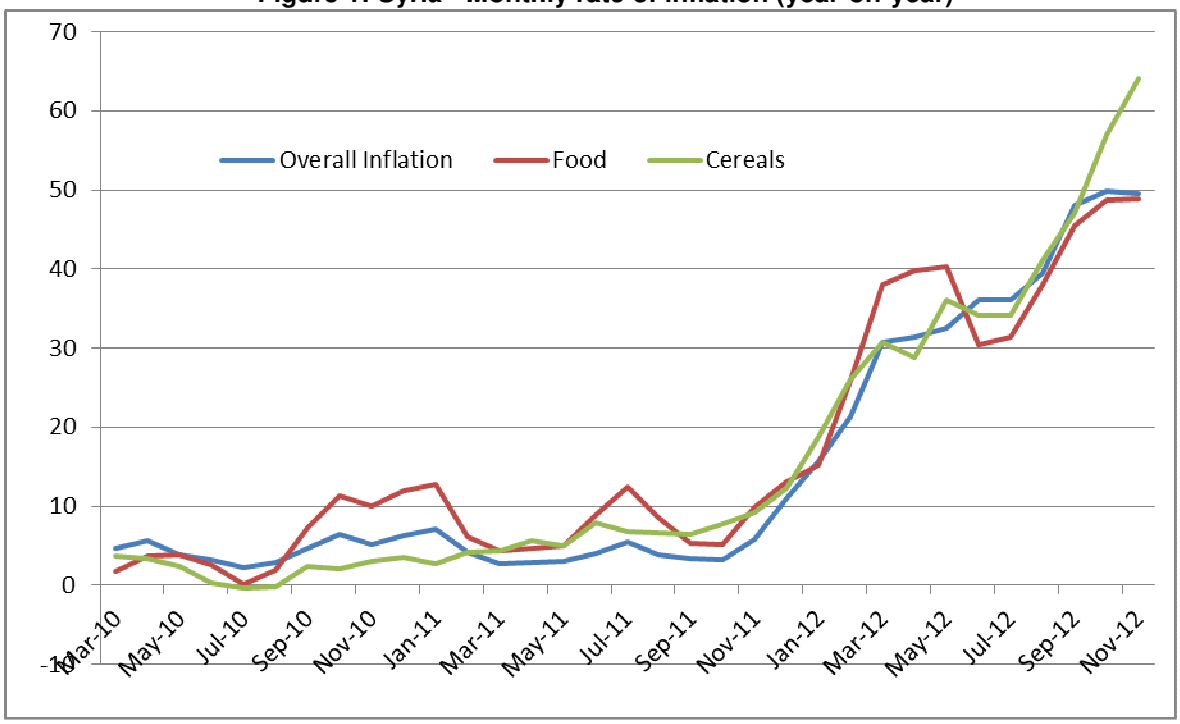
The Syrian economy grew at a moderate average rate of about 4.5 percent a year from 2001 to 2010. The per capita GDP grew at a lower rate of 2 percent a year due to an increased annual population growth rate (2.45 percent) over the same period. Economic growth was driven mainly by the transport, communications, manufacturing, finance, real-estate, and construction sectors. The agriculture sector, which was frequently hit by droughts, contributed relatively little to the country's real economic growth.

The pre-crisis decade (2001-2010) was characterized by a relatively stable economic situation with low levels of inflation, public debt and fiscal deficit, and healthy trade and current-account balances. In 2010, fiscal deficit was estimated at less than 5 percent of GDP; inflation was below 5 percent; the external current-account balance was slightly in deficit; public debt was estimated at about 23 percent of GDP; and international reserves amounted to almost USD 20 billion.

The decade-long benefits of the economic growth on the population were mixed. The unemployment rate remained stable at about 8 percent between 2003 and 2010, but this masked a high female unemployment rate which was reported as 22 percent in 2010. About 18.2 percent of the population was estimated to have fallen below the food-poverty line in 2009, with an increasing inequality in rural areas where the farming population was adversely affected by poor climatic conditions and consecutive years of severe drought. Idleb, Rural Damascus, Homs, Dara'a, Al Sweida and Hama governorates were considered to have the highest proportions of households living below the food poverty line.

The ongoing situation which started in 2011 has reversed most of the benefits of the decade-long economic growth. Real GDP growth is estimated to have contracted by 3.4 percent in 2011 and dropped sharply by almost 19 percent in 2012. The contribution of the industrial sector to the economic contraction is estimated at 36 percent. This is followed by an estimated 21 percent contraction of gross agriculture production in 2012, reducing further the share of agriculture in the economy. Estimates show that agriculture contributed to less than 17 percent of GDP in 2011, down from 20.4 percent in 2007. Continued contraction of the agriculture sector has a negative knock-on effect on rural incomes (and thus private consumption). This, combined with soaring inflation and rapid depreciation of the Syrian pound (SYP), has a severe negative impact on the living conditions of the population. Available official data indicate that year-on-year inflation surged by about 50 percent in 2012 (see Figure 1), owing, in particular, to higher costs of foodstuffs and fuel, with cereal price inflation reaching over 60 percent. Average consumer price inflation is officially forecast at 32 percent in 2013. In the 26 months since the onset of the crisis in March 2011, the official value of the SYP has fallen by more than 115 percent; on the informal market the devaluation has been even greater.

Figure 1: Syria - Monthly rate of inflation (year-on-year)



Source: Central Bureau of Statistics.

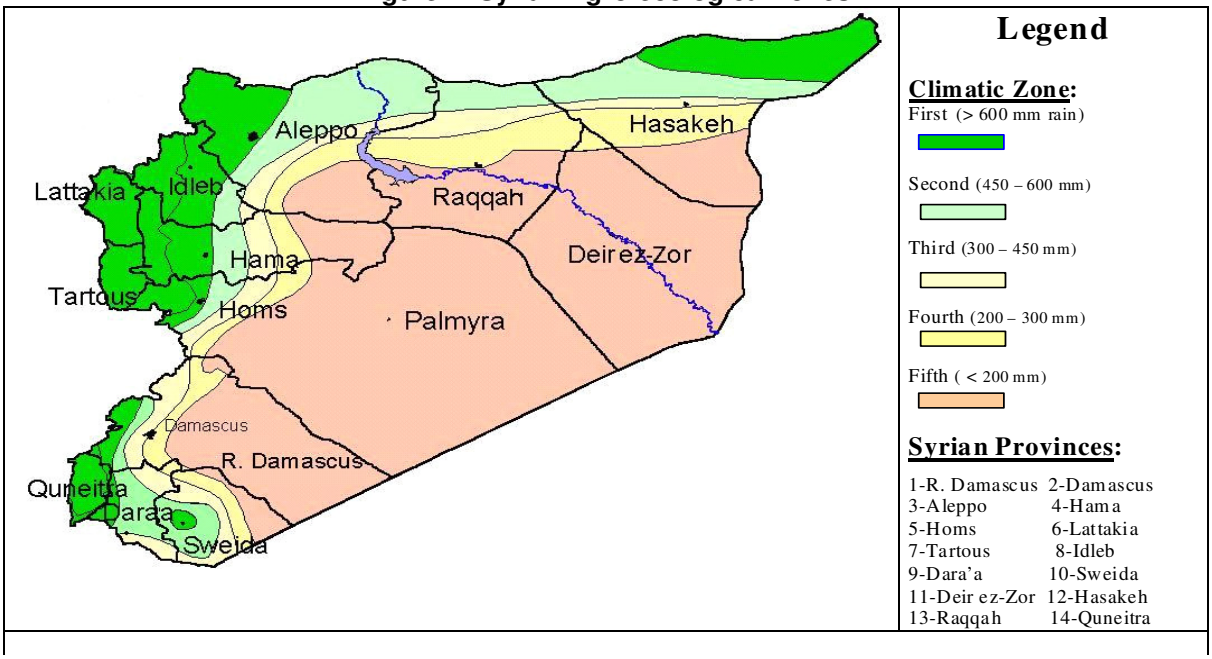
2.2 Agriculture

In recent years, agriculture has played a very important part in Syria's economy, contributing some 18 percent to its GDP, and involving 17 percent of its labour force. Prior to the current circumstances, some 46 percent of Syrians (10 million) were rural dwellers, and of these about 80 percent derived their livelihood from agriculture.

The country is divided into the following five agro-ecological zones based on the level of annual precipitation received. Figure 2 shows the approximate locations of the different zones.

- 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 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 2: Syria - Agro-ecological zones



Source: FAO.
Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Approximately 1.5 million hectares are normally irrigated, of which 550 000 ha are accounted for by state-administered irrigation schemes. Permanent crops (olives, fruit trees etc.) account for about 5.7 percent of the country's agricultural land.

Although agricultural production is now almost totally privately based, carried out mostly by a large number of relatively small farm units, the State has played, and continues to play, a significant role in subsidising agricultural inputs, purchasing crops from producers and subsequently either marketing the commodities to consumers or exporting them abroad in case of four selected strategic crops (wheat, cotton, sugarbeet and tobacco). The State has also been the main channel for the distribution of seed and fertilizers and for the provision of veterinary support to the livestock sector. The State is also involved in the management of irrigation schemes for private producers.

From the 1960s until the mid-2000s the State also played a part in the production of strategic crops 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.) Over the years, however, the State withdrew gradually from its productive role, as is shown in Table 1. The table also suggests that the proportion of State farmland actually cultivated, which was already less than half by 1970, also declined 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: Syria - Land under State farms (ha), 1970 and 2000

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 the current events, Syria was a significant exporter of agricultural produce, including cotton, sugar, tomatoes, potatoes, oranges, apples, olive oil, sheep, cattle, poultry meat and hens' eggs. The annual revenue lost as a result of the virtual extinction of agricultural exports due to the current circumstances has been estimated by MAAR at SYP 72 billion (about USD 0.5 billion).

3. CROP PRODUCTION, 2013

3.1 Assessment methods

The prevailing conditions in many parts of Syria at the time of the Mission's visit imposed severe restrictions on the Mission's movements. The Mission was therefore obliged to rely more on secondary information than would normally be the case for a CFSAM. The main sources of information for the Mission were:

- Rainfall and temperature data, and vegetation-related satellite imagery. The satellite imagery showed, for the whole country, the monthly NDVI (normalized vegetation difference index) from May 2012 to May 2013, and the dekadal ASI (agricultural stress index) from December 2012 to dekad number 2 in April 2013.
- Reports from relevant ministries, UN agencies and NGOs.
- Interviews with Government technical staff. In Damascus, the Mission held discussions with staff of directorates within MAAR (the Directorate of Marketing, Statistics and Planning, and the Fodder Directorate), with the Ministry of Water Resources, and with the General Establishment for Cereal Processing and Trade within the Ministry of Economy and Trade.
- Prior to visiting the field, the Mission took advantage of the fact that FAO was conducting a training course in Damascus for MAAR officers from 13 of the country's 14 provinces (Dara'a was omitted because of access difficulties caused by the current situation). At the end of the training course, the Mission held brief interviews with representatives of each province in turn in order to obtain a quick overview of the agricultural and livestock situation in his or her province and to get an idea of the overriding problems facing agricultural production and the food security of the population.
- Questionnaires. In order to increase coverage under difficult circumstances and within a limited timeframe and enable triangulation with secondary sources, the Mission used the services of provincial MAAR officers to collect primary data in each of 13 of the country's 14 provinces (Dara'a, being especially affected by conflict, was omitted). Each MAAR officer was provided with four sets of questionnaires for key informants farmers, host households, IDP households and key informant traders.
- Responses to the questionnaires were reviewed by the Mission and used to enhance its understanding of the current crop and food-security situation in the country.
- A short field visit by the Mission to three of the country's 14 governorates (Homs, Tartous and Hasakeh). For reasons of safety, the Mission was restricted to Government-held areas. Apart from meetings with the Agricultural Directorate of each of the three governorates, the Mission interviewed a number of farmers, horticultural producers, livestock owners and traders, and was able to see some crops in the field.

3.2 Area estimates

Under the prevailing circumstances it has not been possible for MAAR to determine accurately the area under cereal cultivation for 2012-13. Moreover, it is still unknown how much of the planted area will actually be harvested. There is, however, a general consensus amongst farmers and MAAR staff, and in the responses to the Mission’s questionnaires, that the area planted to cereals in the 2012/13 cropping season was smaller than in previous years and that not all the planted area will be harvested. MAAR has made informed estimates of the amount of harvestable land in each governorate. The reasons for these reductions are numerous. Some farmers have abandoned their land because of the threat of violence, and others because of the high cost of inputs and fuel and the low returns for their produce. Of the farmers who remain on their land (a substantial majority), some have had their tractors, harvesters and other machinery damaged maliciously; others have reduced their cultivated area because of the low availability and high cost of fuel, inputs and labour. Some farmers have had their crops burnt maliciously.

The area under irrigation in 2012/13 was severely compromised by power cuts resulting from damage to power stations, by damage to irrigation canals and pumps, and by the high cost of diesel. For example, the Agricultural Directorate of Hasakeh Governorate, a major wheat producer where, in normal years, irrigation accounts for approximately 40 percent of the total area under wheat, estimates that only 10 percent of its planned 250 000 ha of irrigated wheat was actually achieved, and

that most farmers produced their wheat as a rainfed rather than an irrigated crop or else grew another, more drought-tolerant crop such as barley or lentils. With better rainfall this year than in previous years, the consequences have been less serious than they might otherwise have been. The loss of irrigated area is nevertheless of great concern since under normal circumstances the production from one irrigated hectare of wheat is equivalent to the production from between two and three rainfed hectares.

A financial incentive of SYP 10/kg for wheat (now SYP 36 and SYP 37/kg for soft and hard wheat respectively) was introduced in December 2012 in order to encourage farmers to sell their produce to the Government. Had the incentive been introduced earlier in 2012 when farmers were preparing their land it might have encouraged them to grow a larger area of wheat, but such was not the case.

Accordingly, an estimated 1.418 million hectares of wheat, both rainfed and irrigated, were planted this year, representing a 15 percent reduction compared with the average of 1.671 million hectares for the ten-year period 2002-2011. The area planted to barley is estimated to be 1.257 million hectares. Despite this year's more favourable rainfall this represents a reduction of about 6 percent from the ten-year average of 1.332 million hectares.

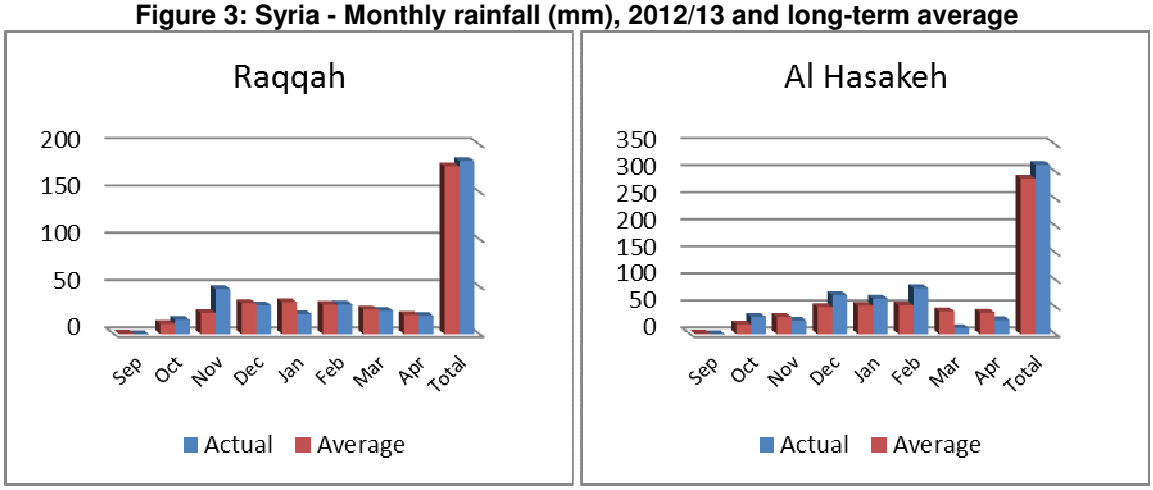
3.3 Factors affecting yields

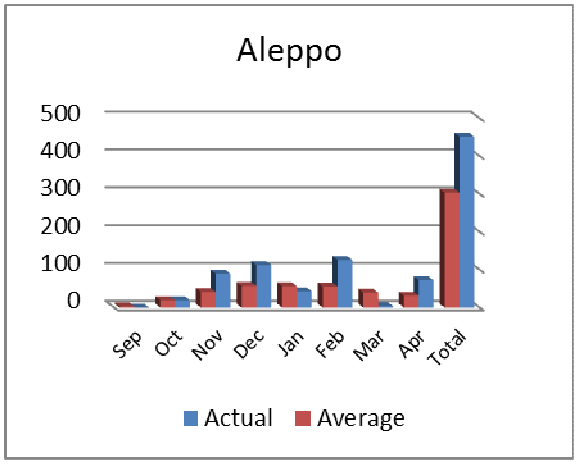
3.3.1 Rainfall

Rainfall in 2012-13 was relatively good compared with recent years, which included a major drought in 2008. As is shown in Figure 3, cumulative rainfall exceeded the average in most governorates and was especially high in the north-west and west of the country where it was occasionally excessive. Unusually heavy rains in May in Hasakeh and Raqqah Governorates (not shown in Figure 3) were reported to have lodged some of the standing cereal crop. In Deir ez-Zor, on the other hand, cumulative rainfall was slightly below the long-term average, and mid-season distribution was poor.

Figure 4, which shows the agricultural stress index (ASI) derived from satellite imagery, gives a favourable picture for most of the country with ASI at less than 5 percent, although greater stress is apparent in the Euphrates valley.

Figure 3: Syria - Monthly rainfall (mm), 2012/13 and long-term average

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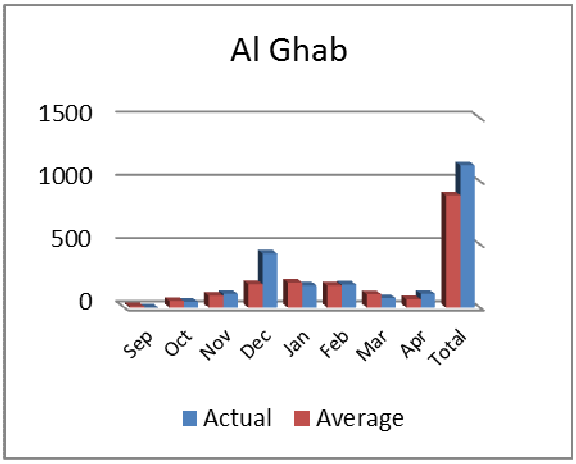
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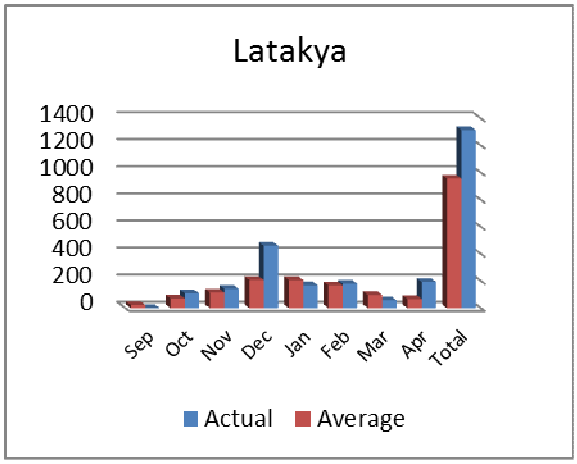
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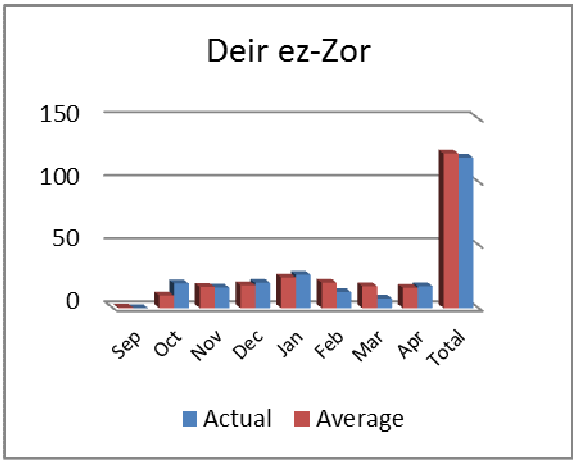
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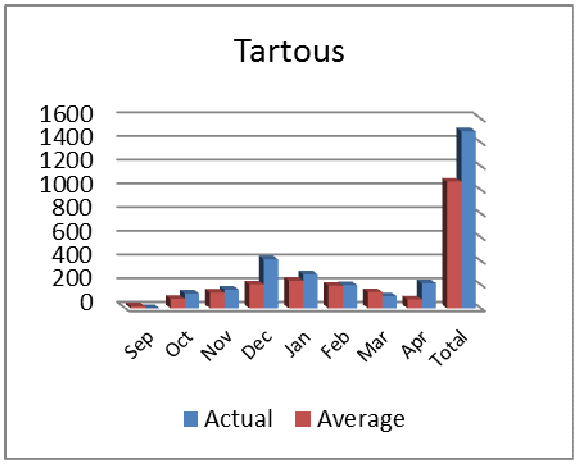
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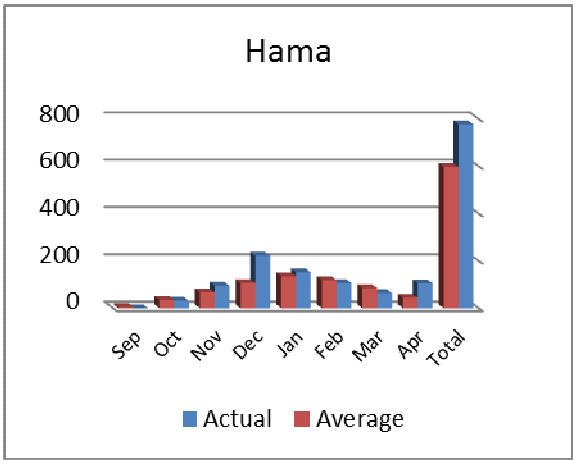
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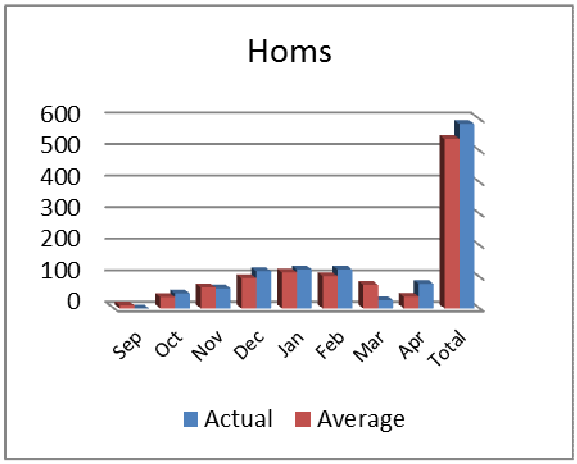
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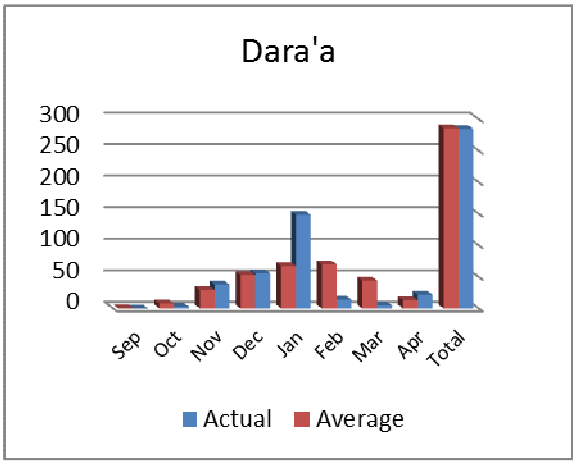
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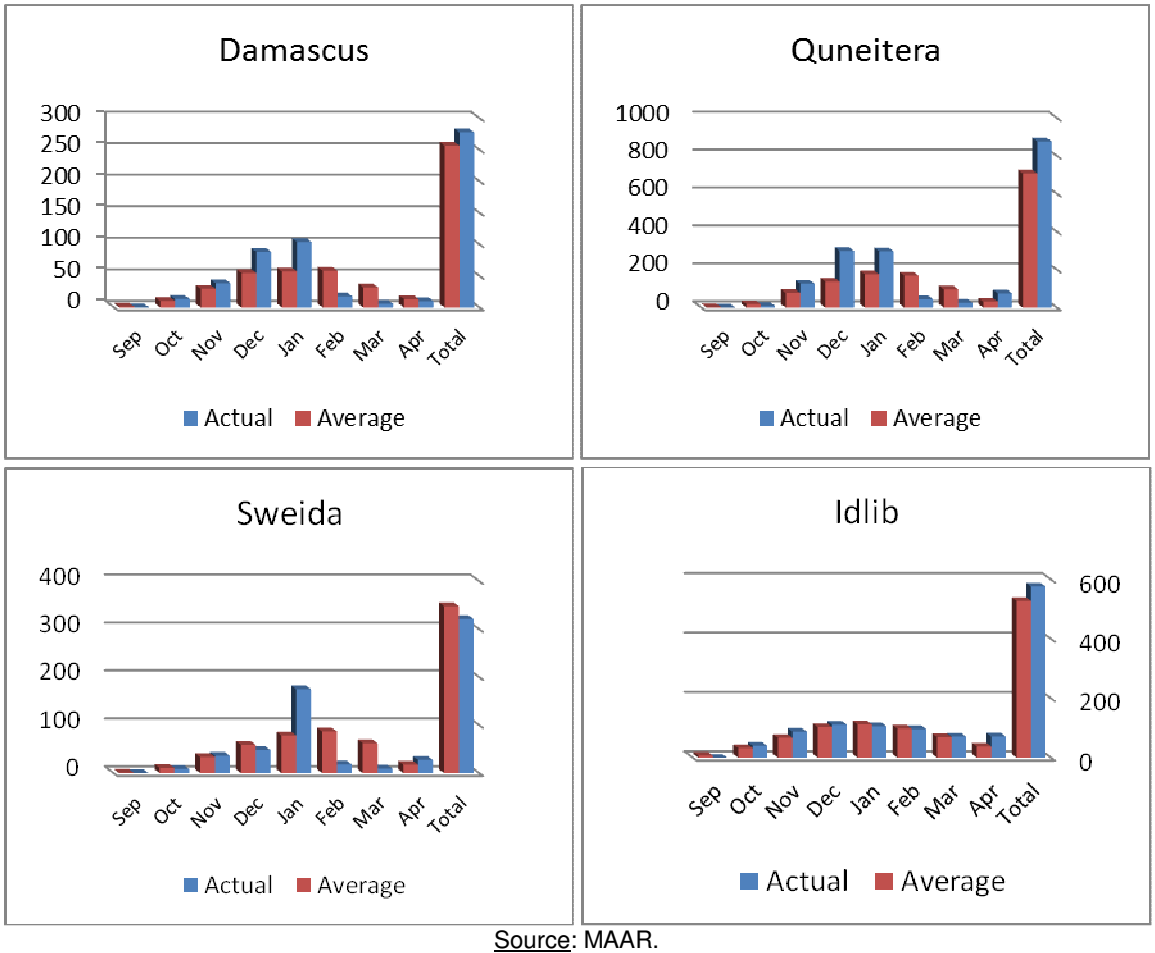
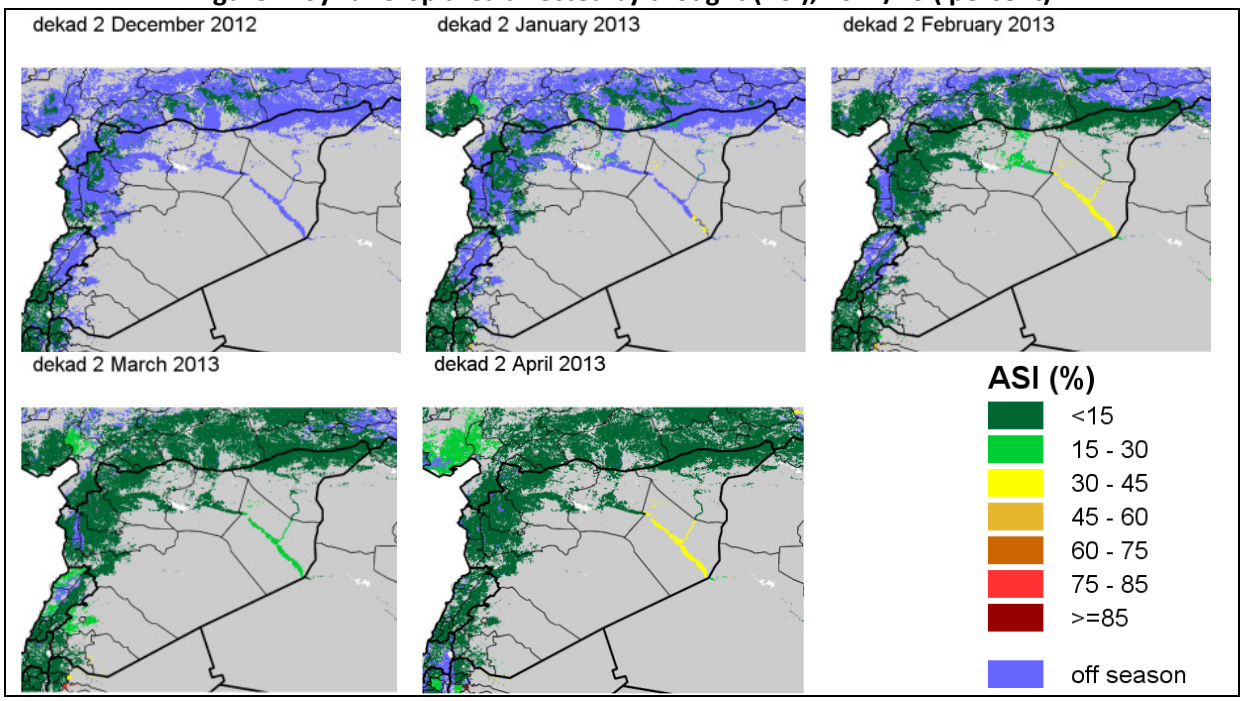


Source: MAAR.

Figure 4: Syria -Crop area affected by drought (ASI), 2012/13 (percent)



Source: FAO.

3.3.2 Irrigation

Syria has a total irrigated area of approximately 1.5 million hectares, most of which is situated in the valleys of the Euphrates River and its two main tributaries, the Balikh and Khabur Rivers. Public schemes, which are run by the Government but farmed by individuals, account for 550 000 hectares or just over one-third of the total. Some schemes are gravity-fed but most are pumped. The main irrigated crops include wheat, barley and cotton, as well as vegetables, fruits and tree crops.

In recent years there has been increasing concern about the over-exploitation of groundwater reserves resulting from unregulated drilling of wells in the private sector. The water table is reported to be falling, and water quality to be deteriorating with high levels of gypsum. The quality of water in the Euphrates is also said to have deteriorated on account of increased upstream irrigation use in Turkey leading to elevated concentrations of leachate. Syria's annual renewable water resources are estimated at 17 billion cubic metres, which is slightly less than the country's annual consumption of at least 18 billion cubic metres, some 88 percent of which is believed to be accounted for by agriculture (CIA Factbook). There are 165 dams in the country with a total storage capacity of 19.6 billion cubic metres (FAO).

Irrigated crop production, especially of field crops, has suffered during the present crisis. Electricity power failures, damage to power stations and the malicious cutting of power lines have incapacitated several pumping stations; pumps have been damaged and stolen; and irrigation canals have been broken. Damage to irrigation canals in Raqqah Governorate, for example, is estimated at 10 percent, while in Deir ez-Zor the figure is as high as 30 percent. Some schemes have been compromised or shut down because of a lack of essential spare parts for pumps. In addition, the low availability and high cost of diesel has persuaded many farmers using diesel-powered pumps either to cut back on their irrigation regimes or to revert to rainfed production. In some instances, however, it has been possible for farms to use shallow wells which require less energy for water abstraction.

Loss of irrigated crop production is especially serious considering that yields of irrigated wheat in Syria are typically two to three times as high as those of rainfed wheat. This year, for instance, Raqqah Governorate reported a loss of 30 000 ha of irrigated crop, which, in terms of production, may be considered as the equivalent of between 60 000 and 90 000 ha of rainfed crop in a year of average rainfall.

3.3.3 Inputs

The availability and cost of agricultural inputs, diesel and labour vary markedly from location to location within the country, largely according to the level of conflict or unrest experienced at the location. In practically all cases, however, prices have gone up and availability has gone down.

The availability of seed appears to have been least affected by the current events, with, for instance, an estimated 50 percent of cereal producers in Hasakeh Governorate obtaining their seed from the Government and 50 percent either from private commercial companies or, in some instances, from their own or their neighbours' production. Price increases for cereal seed on the open market of between 10 and 90 percent were reported. The situation for 2013/14 will be different as most commercial seed companies have now gone out of business on account of the cost and risks of production, so cereal farmers are likely to have to depend solely on the Government for their seed; it is difficult to imagine that this demand will be met. Price increases for imported horticultural seeds have typically tripled. A packet of tomato seed that cost SYP 1 500 last year now sells for SYP 4 500.

Year-on-year price increases of between 100 and 300 percent were reported for fertilizers. In Homs, a 50-kg bag of urea costs SYP 1 800 from the Government, if available, and about SYP 3 000 on the open market, while the cost of a bag of compound NPK fertilizer has gone up from SYP 1 500 to SYP 6 000. The recommended fertilizer application rates for wheat are 250 kg/ha for urea and 150 kg/ha for triple superphosphate. The amount of triple superphosphate actually used is said to be negligible, and it is safe to assume that application rates of urea have fallen significantly in response to low availability and high prices. Syria's only fertilizer factory, which is located in Homs, is still functioning but only operates at about 25 percent of its capacity.

Pesticides have also seen a sharp price rise over the last 12 months, exacerbated by the international ban on exports of chemicals to Syria. The prices of two unidentified products were reported to have tripled from SYP 2 500 to SYP 7 500/litre and quadrupled from SYP 1 000 to SYP 4 000/litre.

Reported price increases for diesel have ranged from a low of approximately 20 percent in Damascus to 600 percent in Aleppo. Tractor hires and transport costs have risen to reflect these increases. In Homs, for instance, tractor hire cost SYP 900/hr last year; now it costs SYP 1 500/hr. Truck rental for a certain distance cost SYP 3 000/t in 2012, now it costs SYP 5 000/t. In Tartous, truck rental for a standard distance and standard load rose from SYP 1 500 in 2011 to SYP 3 000 in 2012 and SYP 8 000 in 2013.

Labour costs have typically increased by between 30 (in Damascus) and more than 100 percent. In Homs, labour last year cost SYP 500/day; now it costs SYP 1 000/day. In Tartous the daily rate rose from SYP 800 in 2012 to SYP 1 500 in 2013. The steepest increases were reported in Al Qunaitera where the daily rate last year was SYP 500 and this year is SYP 1 500. Horticultural producers in governorates such as Tartous, that are host to large numbers of people who have moved from elsewhere in the country, complain that although labour may be available from that pool of immigrants to the governorate, the required skills are lacking.

3.3.4 Mechanization

Syrian agriculture has, for many decades, had a high level of mechanization, but the current circumstances have seriously compromised mechanized production in many ways. Fuel for agricultural machinery (tractors, combine harvesters) and irrigation pumps has been and continues to be in short supply and the fuel that is available is not only expensive but often contaminated. Sanctions have resulted in a shortage of spare parts; this is especially unfortunate in the many situations where the spare parts required are relatively standard and replacement would normally be simple and routine. The maintenance of agricultural machinery has suffered because of the departure from several producing areas, and often departure from the country, of skilled mechanics and technicians because of the current events. The crisis has also resulted in damage to, and destruction of, tractors, harvesters and other agricultural machinery including irrigation pumps. The Agriculture Directorate of Homs quantified such damage and concluded that at least 9 percent of tractors, 17 percent of seeders and harvesters, and more than a quarter of all irrigation pumps had been damaged (Table 2).

Table 2: Syria - Damage to agricultural machinery in Homs Governorate

Item	Total number	Minimum number of damaged machines	Loss (percent)
Tractors	11 000	1 000	9
Seeders and harvesters	600	100	17
Irrigation pumps	19 000	5 000	26

Source: Agricultural Directorate, Homs.

The response to the reduction in mechanization has been, in the cereal sector, a reduction in cultivated area, and may also be expected to result in a reduction in harvested area. In the horticultural sector, a greater dependency on manual production methods is evident.

As discussed above (Irrigation), the consequences of damage to pumps have included a reduction in the area of crops under irrigation, conversion from irrigated to rainfed cropping, the cultivation of higher-value crops on smaller areas, and conversion to more drought-tolerant crops.

3.3.5 Pests and diseases

Despite the greatly reduced use of phytosanitary inputs this year due to high prices and low availability, there have been no reports of significant outbreaks of cereal pests or diseases, although some local instances of wheat rust and Septoria were reported. In the horticultural sector, there were reports of olive fly and aphids, but it is understood that their incidence levels were not unusually high.

3.3.6 Farm access and movement of farmers

In some areas that have been badly affected by the current circumstances, a number of farmers have abandoned their farms because of the physical risk to themselves and their families. Others have abandoned their farms for operational or financial reasons; the required inputs are not available, machinery has been damaged, labour is not available, or the costs of production, transport of produce and marketing exceed the potential financial returns.

3.4 Cereal production in 2013

3.4.1 Yields

Yields of rainfed wheat in Raqqah, the north of Hasakeh and parts of Deir ez-Zor are expected to be higher this year than in 2011/12 because of the relatively favourable rainfall. Further south, however, where the rains were generally no better than in 2011/12, yields of rainfed wheat are expected to be lower than those of 2011/12 because of lower applications of fertilizer and less attention being given to crops in the field.

Yields of irrigated wheat are expected to be lower than last year as a result of irregular delivery of irrigation water consequent upon the damage to pumps and irrigation structures, the high price of diesel, and the unreliability of the electricity supply. Homs Governorate, for instance, expects a substantial fall in yield from last year's 3.7 t/ha. Similarly in Hasakeh, yields of irrigated wheat have, in the past, been in the region of 4 t/ha. This year, because of inadequate electricity supply, the malicious cutting of electricity power-supply lines and damage to irrigation structures, yields are expected to fall to about 2 t/ha, and this on a greatly reduced area of irrigation.

Overall average wheat yields (rainfed and irrigated) are expected to be just under 1.7 t/ha, or about 70 percent of the average of 2.42 t/ha for the period 2002-2011. Barley yields, on the other hand, have benefited from the relatively good rains and are expected to be 0.79 t/ha, their highest level since 2006.

3.4.2 Production

In 2012 the Government purchased, from producers in Syria, 1.95 million tonnes of wheat for processing and 320 000 tonnes of wheat for seed, giving a total of 2.27 million tonnes. The amount of wheat purchased by the Government has typically been about 80 percent of total production (Table 3), the remaining 20 percent being retained by farmers for processing in small private mills or for sale privately. This implies a total wheat production figure for 2012 of 2.84 million tonnes [1], compared with an average of just over 3.5 million tonnes for the previous three years.

Table 3: Syria - Wheat bought by the General Establishment for Cereal Processing and Trade

Year	Total production (percent)	'000 tonnes
2010	80	2.37
2011	80	2.54
2012	80	2.27
2013 (Mission estimate) 1/	60	1.44

Source: General Establishment for Cereal Processing and Trade.

1/ Given the greatly depleted capacity of the Government to store wheat delivered by farmers, and the difficulty and expense of transporting wheat to Government collection centres, the Mission considers that this year only about 60 percent of total production will be delivered to the Government. The remaining 40 percent is expected to be retained by farmers for local milling or for domestic use as bulgur or cracked wheat.

[1] The official Government figure for wheat production in 2011-2012 is 3.61 million tonnes. However, in view of the amount purchased by the Government in 2012, the difficulties already being faced by farmers by early 2012, and the fact that 3.61 million tonnes would have exceeded the average production of the previous five years, this figure seems unduly high.

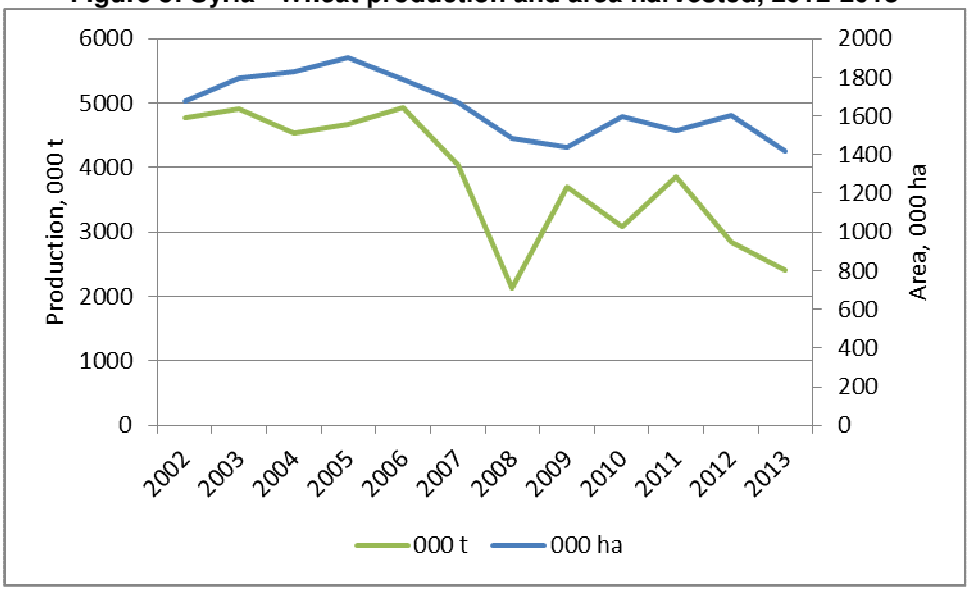
This year, 2012/13, the Mission considers, in the absence of more reliable data, that production will be the outcome of two opposing sets of circumstances. On the positive side, rainfall has been generally more favourable this year than last, and this will have boosted yields of rainfed wheat in several parts of the country. On the negative side, however, the harvested area will be less than that of last year, the irrigated areas were smaller than last year, and the reduced use of inputs means that it was impossible for farmers to take full advantage of this year's better rainfall. On balance, the Mission considers that the negatives will outweigh the positives, and that wheat production will be of the order of 2.4 million tonnes, 16 percent down on last year (Table 4 and Figure 5). (The official Government estimate of wheat production this year is 3.155 million tonnes. However, as with the Government estimate for 2011/12, this strikes the Mission as being excessively high under the current adverse circumstances.)

Table 4: Syria - Wheat production, 2002-2013

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
'000 ha	1 679	1 796	1 831	1 904	1 787	1 668	1 486	1 437	1 599	1 521	1 603	1 418
t/ha	2.84	2.74	2.48	2.45	2.76	2.42	1.44	2.58	1.93	2.54	1.77	1.69
'000 t	4 775	4 913	4 537	4 669	4 932	4 041	2 139	3 702	3 083	3 858	2 840	2 400

Sources: FAOSTAT, 2002-2011; MAAR and Mission estimate, 2012 and 2013.

Figure 5: Syria - Wheat production and area harvested, 2012-2013



Sources: FAOSTAT, 2002-2011; MAAR and Mission estimate, 2012 and 2013.

With better rainfall this year, and the change by some farmers from irrigated wheat to rainfed barley because of the expense or difficulty of irrigating, barley production is expected to be close to 1 million tonnes, its highest since 2006 (Table 5). (These figures are in agreement with those of the Government.)

Table 5: Syria - Barley production, 2002-2013

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
'000 ha	1 234	1 254	1 291	1 327	1 307	1 363	1 433	1 290	1 527	1 293	1 113	1 257
t/ha	0.75	0.86	0.41	0.58	0.92	0.58	0.18	0.66	0.45	0.52	0.71	0.79
'000 t	920	1 079	527	767	1 202	784	261	846	680	667	800	993

Sources: FAOSTAT, 2002-2011; MAAR and Mission estimate, 2012 and 2013.

3.4.3 Harvesting and storage

The reduced availability of machinery due to damage to tractors and harvesters, and the limited ability of farmers to fuel existing machinery, will prolong the harvesting of cereals. These will likely lead to

greater losses in the field through shattering of grain; the standing crop will also be vulnerable for a longer period to malicious damage such as burning.

In December 2012 the Government announced an increase of SYP 10/kg on its purchase price of wheat as an incentive to producers to sell their wheat to its collection centres (SYP 36 and SYP 37/kg for soft and hard wheat respectively). Under the General Establishment for Cereal Processing and Trade, the Government had 140 centres countrywide for the collection of wheat; of these, 36 had silos with a total capacity of 4.5 million tonnes. Of the 140 centres, only about 40 are still functioning. This will significantly reduce the Government's ability to store the delivered wheat in good condition. Syria's storage losses are normally reckoned to be low. This year, however, outdoor stacking of bags of wheat, which will inevitably be the most common method of storage, is likely to result in increased storage losses from rodents, moulds and storage pests; stored grain, either under cover or in the open, will also be vulnerable to malicious damage. (These anticipated losses are accounted for in the cereal balance sheet in chapter 7. Theft of grain, however, is not considered to be a loss as it will presumably be consumed.) The level of farmers' positive response to the Government's financial incentive is also open to question since the rapidly rising costs of labour, bags and transport have, in many cases, already cancelled out the incentive.

4. OTHER CROPS

4.1 Sugarbeet

Annual production of sugarbeet for the three-year period 2009-2011 averaged just over 1.3 million tonnes (FAOSTAT), the equivalent of perhaps 215 000 tonnes of sugar and about 600 000 tonnes of pulp and molasses for livestock feed. At present, only two of the country's four sugarbeet factories are operational, and MAAR expects that the area planted to sugarbeet this year will see a reduction of between 40 and 50 percent.

4.2 Cotton

For a number of years prior to the present events, there was a significant decline in Syria's production of cotton. In 2000 and 2001, Syria produced more than 1 million tonnes of seed cotton, but by 2010 production was down to 472 000 tonnes (MAAR, Annual Agricultural Statistical Abstract, various issues). The main causes of this reduction were the partial removal of subsidies, the increased cost of inputs, especially crop-protection sprays, and the poor financial returns to investment. This situation has been hugely exacerbated over the last two years as a result of the ongoing circumstances. Input prices have risen even more steeply than before, the necessary inputs are often not available, and several ginneries have been damaged. The effects are seen clearly in Hasakeh, previously an important cotton-producing governorate where in the past about 100 000 ha of cotton were cultivated each year. According to the governorate's Agricultural Directorate, this area fell to an average of approximately 57 000 ha between 2008 and 2012, and this year the area is expected to fall further to about 13 000 ha, or just over one-eighth of the usual area of the past. Nationally, MAAR expects that the area planted to cotton will be down by between 60 and 70 percent this year. Of the country's eleven cotton ginneries only four are still functioning.

4.3 Tobacco

In 2011 Syria produced some 17 000 tonnes of tobacco from approximately 11 400 hectares (FAOSTAT). MAAR expects that the area planted to tobacco this year may be reduced by between 20 and 30 percent.

4.4 Tree and horticultural crops

Until recently, Syria has typically produced about 1 million tonnes of olives per year and exported part of its resulting virgin olive oil production (17 438 tonnes in 2010 (FAOSTAT)). This year there are reports of olives in some conflict-affected areas not having been harvested since 2011, while in areas not affected by conflict growers complain of the escalating costs of irrigation, labour and fertilizer.

Syria has, in recent years, been a significant exporter of tomatoes (407 619 tonnes in 2010 (FAOSTAT)). Not only has the current conflict effectively eliminated this trade, but it has also severely

compromised production and domestic sales. Growers are now faced with low availability of inputs such as crop-protection chemicals which are proscribed under international trade sanctions, shortages of skilled labour, increasingly high costs of production across the board, and expensive and risky transport of their produce to diminished markets.

5. LIVESTOCK

Prior to 2011, livestock played a very significant part in Syria's economy. Livestock production accounted for between 35 and 40 percent of the country's total agricultural production, and occupied about 20 percent of the labour force in rural areas. Mutton exports alone generated approximately USD 450 million as foreign currency per year. 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. Poultry production was mainly a private-sector activity, with a public-sector share of less than 10 percent. Private cattle ownership was typically less than ten per household in a mixed-farming context, in addition to which there were eleven State dairy farms.

During the last two years, the livestock situation has changed drastically with Government support impossible to implement in many parts of the country. In 2010, the country's livestock population was estimated at 15.5 million sheep, 2.01 million goats, 1.01 million cattle, and about 7 000 buffalo. As a result of the current situation, the national sheep flock is thought to have fallen by 30 percent to less than 11 million, and the national cattle herd by 40 percent to just over 600 000. There are reports of cattle herds being abandoned by their owners as a result of conflict, and the Hal Market abattoir in Damascus has seen a very high proportion of cows (as opposed to steers) being slaughtered. Syria used to export between two and 3 million sheep (mostly Awassi breed) to the Gulf countries each year. This number has now fallen to 100 000.

According to MAAR's Directorate of Animal Production and the Union of Agriculture Chambers, less than 35 percent of the country's poultry units were still operating by May 2013, and at least 50 percent of jobs in the poultry sector had been lost.

Production of barley, the principal livestock concentrate, was low in recent years because of poor rainfall (66 percent of the planted area was unproductive in 2010-11); hopefully this year's relatively good production should go some way towards easing that situation. On the other hand, imports of livestock feed and additives fell from 2.26 million tonnes in 2010 to 1.4 million tonnes in 2012, and have continued to fall since then, while concomitantly the cost of feed has risen in terms of Syrian pounds (Table 6).

Table 6: Syria - Indicative feed prices, SYP/t, 2011 and 2013

Governorate	Feed	2011	2013
Rural Damascus	Maize	16 000 - 17 000	42 000
	Soya cake	26 000 - 27 000	80 000
Tartous	Soya cake	24 000	70 000

Source: MAAR.

Government support to the livestock sector was, until recently, highly developed. Veterinary services were provided free of charge by 1 104 State veterinary units. Livestock vaccines were produced in Syria, and there were 54 private factories producing veterinary drugs. By May 2013 it was estimated that at least 40 percent of these private factories had been destroyed and that the rest had gone out of business. Vaccines are no longer produced in the country and existing stocks are almost exhausted. This has particularly serious potential implications, especially in view of the fact that many animals are being sold in neighbouring countries as a last resort. Fortunately, no serious outbreaks of livestock diseases have been reported in Syria in 2012-2013. However, in Turkey, confirmed cases of bovine tuberculosis, peste des petits ruminants and rabies are suspected of having emanated from Syria, and there are reports of lumpy-skin disease in Lebanon, Jordan and West Bank that may have been spread from Dara'a Governorate. This is therefore not just a serious national, but also a serious regional, animal-health problem waiting to explode.

6. LOCAL FOOD MARKET CONDITIONS

The trade sector, including food commodity trade, is one of the main employers of low-skilled workers. This sector incurred a major disruption due to a combination of factors, including reduction in demand because of reduced purchasing power, high food prices, bottlenecks in supply chains (risks, delays etc. on roads bringing produce to market), and higher energy and import costs driven by the sharp depreciation of the Syrian currency and economic sanctions.

To understand the extent to which the ongoing crisis is affecting local market conditions, the mission reviewed available Government and secondary data (including food commodity prices), carried out key informant interviews during field visits in Homs, Tartous and Qamishly and collected additional qualitative data from individual traders. A simple trader questionnaire was developed to cover availability of basic food commodities in local markets, changes in their prices, traders' response capacities and their main constraints. The questionnaire was administered by the staffs of the Ministry of Agriculture (MAAR) who reside in the governorates. They were trained in Damascus. A total of 32 individual traders were returned by interviewers instead of 26 planned for 13 governorates[2].

6.1 Wheat supply chain

The wheat supply chain has been substantially disrupted by the ongoing crisis. Wheat is particularly important within the Syrian diet, it provides about 40 percent of households' calorie consumption, and is consumed primarily as bread. As such, the supply chain of wheat, flour, and bread is predominantly managed by the Government. The General Establishment for Cereal Processing and Trade (HOBOOB) is responsible for Government wheat grain procurement through collection centres.

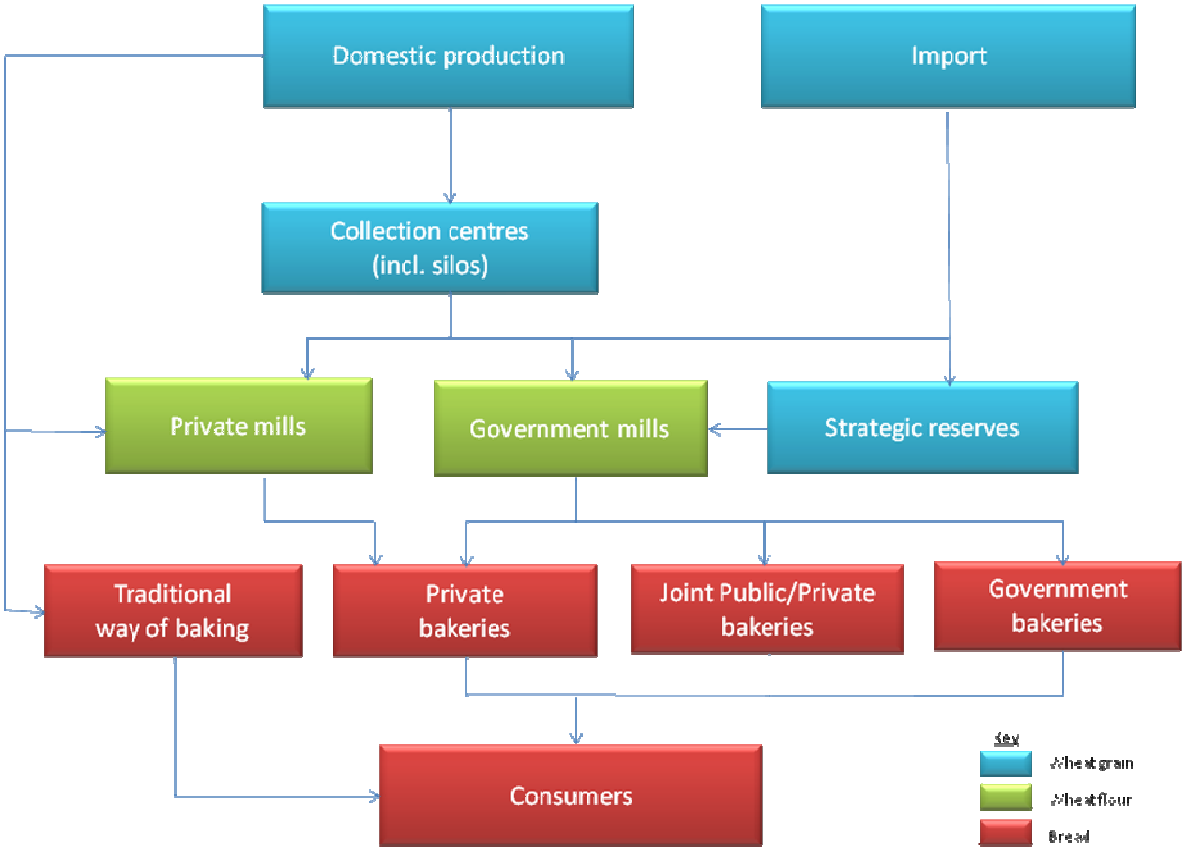
Of the 140 collection centres owned by the Government only 40 are still operational due to the ongoing crisis. Disruptions to procurement are particularly high in Al-Hasakeh governorate (a main wheat and barley production area); where only six of 40 collection centres are currently operating. Wheat production is subsidized by the Government through the payment of premium prices to growers. Bread consumption is also subsidized through retail prices set below the cost of production.

The crisis has led to fuel shortages and limited access to farms in some major production areas, inhibiting farmers' capacity to bring in the harvest. The premium price that Government pays for wheat is a strong incentive for farmers to sell to Government collection centres. In a normal year, as much as 80 percent of wheat harvested is sold through the collection centres. The remaining 20 percent is either kept for own consumption, or sold to private millers within the local governorates. This year, the Mission estimates that farmers will sell far less to the collection centres; perhaps up to 60 percent of their harvest. The crisis has affected both harvest activities, as well as the transport of crops to collection centres. Lower stocks at collection centres are related to a variety of factors; these include larger post-harvest losses, fuel shortages, higher transport costs, limited access to major production areas, and reduced storage capacities. To attract more selling into the collection centres, the Government has increased wheat procurement price by 40 percent (from 26 SYP/kg to 36-37 SYP/kg). This increase was slightly above the international price which is currently equivalent to 35 SYP/kg. The increase of wheat procurement price is expected to compensate partially for the increase of transaction costs incurred by farmers and encourage them to sell to HOBOOB. However this incentive is likely to be overtaken by inflation and other expenses - bags and transport costs, etc.

Most of the national wheat flour milling capacity and bakeries producing standard bread products are either no longer operating or are operating at low capacity. The Government owns 26 mills and contracts 35 others. It also owns 122 bakeries in addition to 90 other bakeries co-owned with the private sector. Bread production by bakeries is severely affected by shortages of yeast. Of the four yeast factories, only one is still operating. Reportedly, many bakeries have been damaged. Most private bakeries are either no longer operating or operating at low capacity due to either shortages of fuel, wheat flour, or yeast. The relatively few private bakeries that are still operating often rely on informal and cross border trade to obtain wheat flour and yeast supplies; and this is contributing to higher operational costs.

2 No data received from Dara'a.

Figure 6: Wheat supply chain



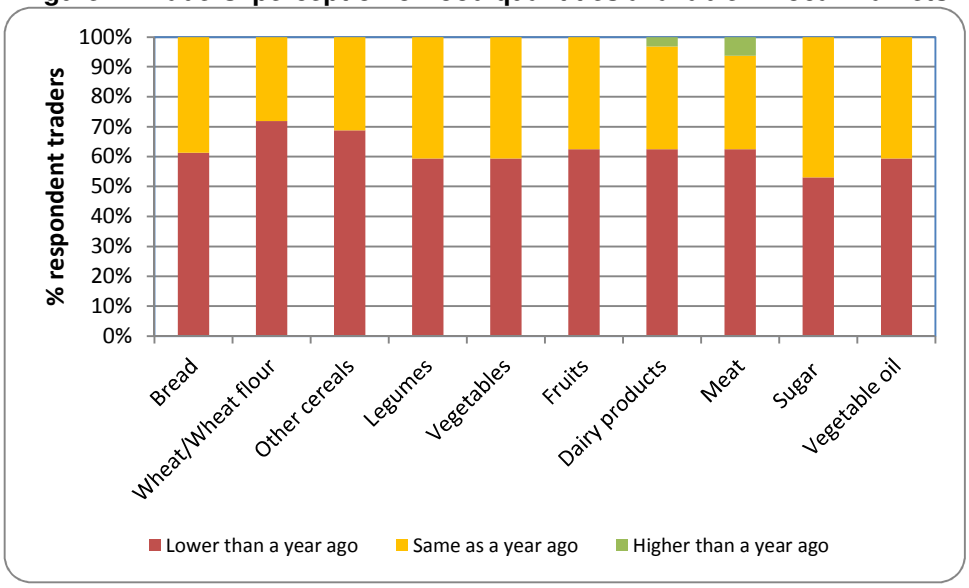
Source: Based on Discussions with Key Informants.

6.2 Availability of food commodities in local markets

Most interviewed traders indicated that markets are fully operating in areas less affected by the crisis such as Lattakia, Tartous, Sweida, Damascus and Al-Hasakeh. Although food commodities are available in all governorates, most traders reported that quantities for sale in local markets have reduced compared to last year (Figure 7). The reduction in quantities is applicable to all basic food commodities, regardless of whether they are produced locally (bread, wheat flour, legumes, vegetables, fruits, meat, dairy products) or imported (sugar, vegetable oil, rice, pasta).

As shown in Figure 7, a higher proportion of respondents reported lower quantities of wheat and wheat flour in local markets. This is particularly true in governorates severely affected by the crisis. There are also reports about changes in the quality of wheat flour and bread. More wheat grain is going into wheat flour production, which means that bread is being made with more bran. Many consumers do not prefer more bran in their bread, and thus there is a perception of inferior bread quality.

Figure 7: Traders' perception of food quantities available in local markets



Source: Rapid trader survey questionnaire.

According to traders, security concerns, limited transport facilities, lack of cash and reduced foreign currency are the main impediments to market functioning. According to key informant traders in Homs, the closure of the central market has resulted in the creation of a number of small retail markets on city outskirts. This has resulted in higher transaction costs, higher prices for the consumer, and a substantial reduction in the number of wholesalers. Most wholesalers have either become retailers or have simply gone out of business. Supply chains have changed because of transport disruptions. For example; vegetables and fruits are now mainly sourced locally; whereas in the past, much of the supply came from neighbouring provinces (e.g. Tartous) or from neighbouring countries such as Jordan.

There is evidence of increased cross-border imports, although, it is not possible to assess the magnitude of such trade. Compared to 2012, traders reported increased cross-border imports from Turkey into neighbouring governorates such as Aleppo or from northern Iraq into Al-Hasakeh and Qamishly. Some of the informal imports make their way to Government controlled areas. Wheat flour originating from Lebanon was also reported in Homs.

6.3 Local markets response capacity

Wheat storage capacities are severely reduced, with only 30 percent of the collection centres still operating. At the time of the harvest, warehouse facilities and open air storage are being increasingly used to compensate for the reduced storage capacities of the collection centres and difficulties in securing transport facilities to the collection centres. As a result, post-harvest losses are expected to increase and the quality of the grains would decrease due to less recommended storage conditions. The bulk of the 36 silos owned by the Government are widely distributed throughout major cities and the grain producing regions which are severely affected by the crisis.

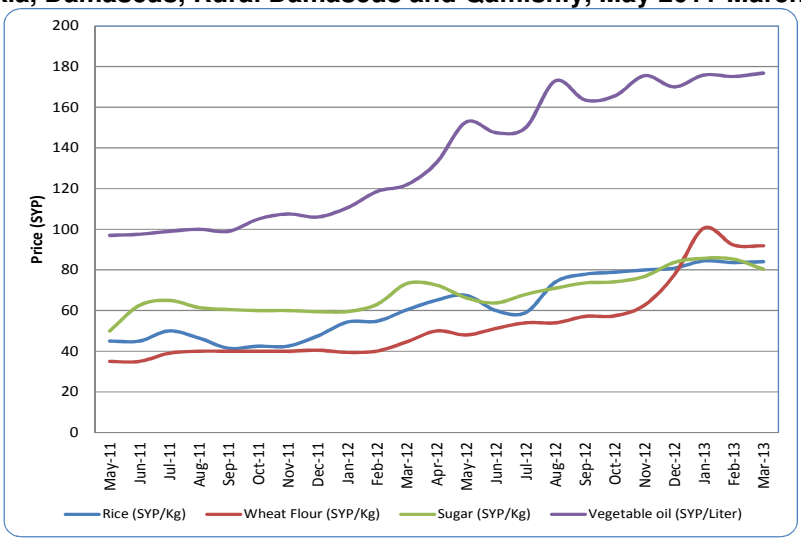
Overall, traders perceive a reduction in their capacity to supply markets, compared to last year and in the next six months. Most interviewed traders indicate that food commodity storage is negatively affected by widespread looting and regular attacks on warehouses and storage facilities and reduced credit facilities to purchase commodities. They also anticipate further reduction in sales volumes in the next six months due to further reduction in household purchasing power and continued trade disruptions caused by the crisis. In all governorates, respondent traders indicate that loans have become rare as the main money lenders migrate abroad or refrain from extending credit due to increased traders' default risk.

6.4 Food price trends and volatility

Since the beginning of the current events, prices of the main food commodities have increased substantially both in nominal and in real terms. Average monthly prices of wheat flour in local currency

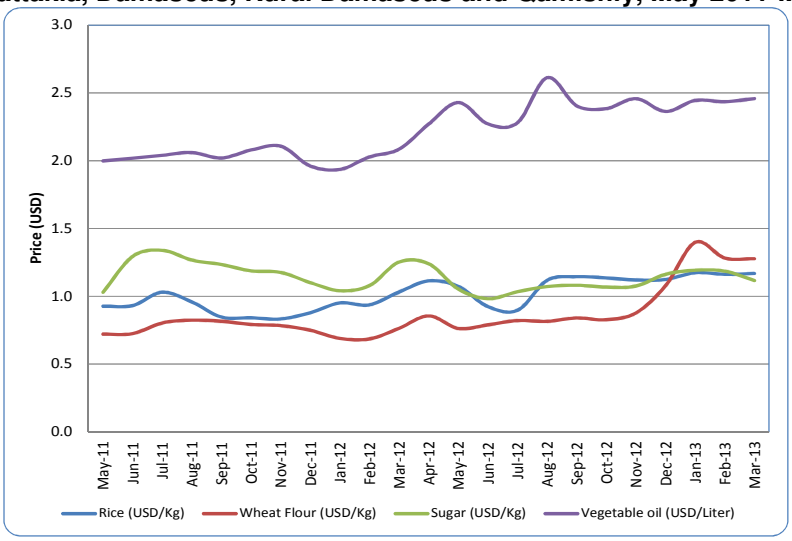
have more than doubled since 2011 in several locations (Figure 8a). Rice and vegetable oil prices have almost doubled whereas sugar prices are almost 65 percent higher than in 2011. Local currency devaluation is not the only factor explaining food price increases. When controlling for inflation due to the depreciation of the SYP, food commodity price increases remain high. In USD term, wheat flour price is now almost double its 2011 level, and vegetable oil and rice prices are about 25 percent higher (Figure 8b). However, the increase in sugar price is less than 10 percent in USD terms.

Figure 8a: Syria - Staple food prices (SYP) averaged from Aleppo, Dara'a, Homs, Tartous, Lattakia, Damascus, Rural Damascus and Qamishly, May 2011-March 2013



Source: WFP.

Figure 8b: Syria - Staple food prices (USD equivalent) averaged from Aleppo, Dara'a, Homs, Tartous, Lattakia, Damascus, Rural Damascus and Qamishly, May 2011-March 2013



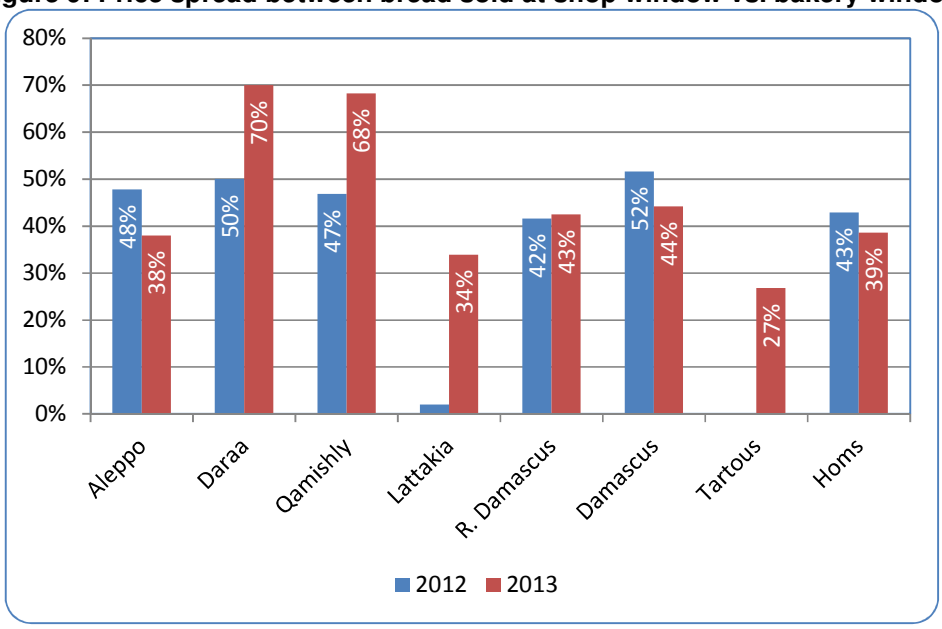
Source: WFP.

WFP weekly price data indicate that average monthly prices of bread are particularly volatile in Rural Damascus, Dara'a, Qamishly and Aleppo[3]. Wheat flour price has been volatile almost everywhere. High volatility in wheat flour prices is attributable to the sharp reduction in milling capacities (especially in Aleppo), and to wheat supply and transport disruptions in many locations. However, since March 2013, there have been signs of relative wheat flour price stability, though at high levels. This is mainly due to increased volumes of wheat imports from neighbouring countries and the international markets.

[3] Price volatility is measured by the coefficient of variation.

For two consecutive years (2012-2013), the spread between bakery bread and shop bread has remained high in the range of 40-50 percent in most conflict affected areas such as Aleppo, Rural Damascus and Homs (Figure 9). This is due to increased transaction costs (distance, insecurity, transport costs and time) in getting bread from bakeries to shops and demand pressure on subsidized bread sold at shop level. The pressure on bread prices, particularly in 2013 is noticeable in Tartous and Lattakia. This is due partially to the demand pressure of the massive inflow of the population in both governorates. For instance, the population of Tartous city is estimated to have doubled from 0.8 million to 1.6 million since 2011. As most private bakeries are no longer operating, Government bakeries are said to be the main source of bread. Prior to the crisis, Government bakeries accounted for roughly 50 percent of bread supply. Long queues at Government bakeries during the more recent period are indicative of increasing consumer demand for subsidized bread.

Figure 9: Price spread between bread sold at shop window vs. bakery window



Source: WFP.

6.5 Terms of trade

In terms of SYP, livestock prices have risen over the last twelve months. However, these increases have been cancelled out by the depreciation of the value of the SYP, so that livestock prices have actually fallen in hard-currency terms. It should be mentioned that chicken meat, coming from the worst-affected division of the livestock sector, has not risen even in SYP terms. On the other hand, grain and flour prices have risen significantly in SYP terms to the extent that they have also risen in hard-currency terms. These terms of trade - a fall in livestock prices and a rise in food prices - are expected in stressed agricultural markets such as Syria's at present.

7. CEREAL SUPPLY/DEMAND SITUATION

7.1 Population

Not surprisingly, the estimation of Syria's population under the present circumstances is highly problematic. Based on the results of the last national census in 2004, the Central Bureau of Statistics forecasts in 2011, a population of 22 106 879 by the year 2013. Since then, however, there has been a very substantial exodus in response to the current events. By the end of May 2013, the UNHCR announced that there were 1.61 million Syrian refugees in neighbouring countries (mostly Jordan, Lebanon and Turkey), who were either registered with UNHCR or waiting registration. A further unknown, but possibly very large, number of Syrians have left the country using their own means without being recorded as refugees. Additionally, the UN Commissioner for Human Rights estimated that by mid-June 2013 the crisis had accounted for 93 000 excess deaths within the country.

According to OCHA, there were 525 000 Palestinian refugees in Syria in mid-May 2013, but this number may already have fallen during the first half of June 2013. Numbers of Iraqi refugees in Syria (estimated by the Government to be 480 000 in April 2013) may also have fallen in recent weeks.

Taking all these considerations into account, and acknowledging the unpredictable and volatile nature of the issue, the Mission believes that a population figure of 20 million for the middle of the 2013-2014 marketing year (31 December 2013) is reasonable for the purpose of estimating the country's food requirements over the coming twelve months.

7.2 Stocks

Throughout the current events, the Government has managed to retain substantial, though gradually declining, reserve stocks of wheat, as shown in Table 7.

Table 7: Syria - Government stocks of wheat, 2011-2013

Date	Stocks ('000 t)
1 January 2011	3 602
1 January 2012	3 402
1 January 2013	2 938

Source: Ministry of Internal Trade and Consumer Protection.

No information was available regarding commercial and domestic stocks but they are assumed to be negligible.

7.3 National cereal balance

The national cereal balance sheet for Syria in 2013/14 is presented in Table 8. In order to calculate the national cereal balance, the following assumptions were used.

- Cereal production in 2012/13 comprises 2.4 million tonnes of wheat, 993 000 tonnes of barley and 80 000 tonnes of maize.
- By the middle of the 2013/14 marketing year (31 December 2013), the human population of Syria will be 20 million (see above).
- Opening stocks of wheat at the beginning of July 2013 will amount to 1.288 million tonnes. This is calculated by subtracting the assumed consumption of a population of 20 million during the six-month period January-June 2013 (1.65 million tonnes) from the stock reported to have been held by the Government on 1 January 2013.
- The closing stock of wheat by 30 June 2014 will be smaller than that estimated to be held on 1 July 2013. A figure of 1.1 million tonnes is assumed.
- Opening and closing stocks of barley and maize (stock change) held either privately or by the Government are assumed to be zero.
- Per caput wheat consumption will be 170 kg/annum. (A reduction of 15 kg/caput /annum from the previously assumed 185 kg/caput/annum has been used to reflect the generally reported reduction in daily household consumption.)
- A sheep/goat population of 11 million and a cattle population of 700 000.
- An average feed requirement of 0.25 kg of maize and barley grain/animal 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.
- For the purpose of estimating cereal seed requirements for the coming season, it is assumed that the cereal area for 2013/14 will be similar to that of 2012/13, and that seed rates of 180 kg/ha for wheat and 170 kg/ha for barley will be used.
- Harvest and storage losses of 15 percent of production for wheat and barley.
- Accordingly, the wheat import requirement in 2013/14 (July/June) is estimated at about 1.47 million tonnes of which 1 million tonnes are anticipated to be imported commercially, of which 800 000 tonnes of wheat is planned to be imported by the Government. This depends on the continuing financial ability of the Government to do so in light of the devaluation of the SYP and difficulties in accessing hard currency. In addition, an estimated 378 000 tonnes of wheat is planned to assist the most affected people from mid-2013 to mid-2014, still leaving a gap of 99 000 tonnes.

- Historically in the decade prior to 2011/12, barley and maize import, normally used for animal feed, averaged about 570 000 and 1.5 million tonnes, respectively.

Table 8: Syria - Cereal balance sheet, 2013/14 (July/June)

	Wheat	Barley	Maize
Total Availability	**3 638**	**993**	**80**
Production	2 400	993	80
Opening stock	1 238	0	0
Total Utilization	**5 115**	**1 263**	**1 500**
Food use	3 400	200	300
Feed use		700	1 190
Seed	255	214	2
Losses, field and post-harvest	360	149	8
Closing stock	1 100	0	0
Import Requirement	**1 477**	**270**	**1420**
Anticipated commercial imports 1/	1 000	0	0
Of which Government	800	-	-
Estimated food assistance	378	0	0
Uncovered shortfall	**99**	**-**	**-**

1/ Source Ministry of Economy and Trade.

7.3.1 Ongoing food production assistance

Within the limitations of current funding, FAO is providing support to smallholder, livestock herders, IDPs and hosting families with a specific focus on female-headed households. Activities are aimed at supporting crop production capacity and livestock activities for 8 500 vulnerable households (approximately 56 000 individuals). Agricultural responses have been focusing on:

- Provision of essential agricultural inputs such as cereal seeds and fertilizers.
- Protection of productive assets through the provision of animal feed to preserve surviving flocks and herds.
- Support to backyard agriculture and poultry production with the double objective of enhancing food consumption and generating income of vulnerable households.
- Support to the coordination of humanitarian aid through continued data collection, analysis and information sharing.

The Aga Khan Foundation is assisting smallholders in Hama Governorate to develop more water-efficient methods of irrigation.

8. HOUSEHOLDS FOOD SECURITY SITUATION

8.1 Methodology

In Syria, there is no nation-wide baseline analysis of household food security and nutrition. Recent estimates of the proportion of food insecure people are generally based on food poverty rates, estimated from the 2009 household income and expenditure survey of the Central Bureau of Statistics (CBS). To get an overview of potential changes in the food security situation due to the ongoing crisis, the mission team reviewed available studies.

This review was complemented with household level data collection. Two simple questionnaires were developed to cover household income and livelihood sources, food sources, food consumption and expenditures and coping strategies. After adjusting for data quality, 45 resident households and 45 internally displaced households were actually analysed, covering 13 of the 14 governorates (excluding Dara'a). The questionnaires were administered by the staffs of the Ministry of Agriculture (MAAR) and NGO staff who reside in the governorates. The interviewers were trained in Damascus

by the mission staff. For the purpose of the survey, a household was defined as a group of people who consistently share food and resources for meals together (i.e. 'eat from the same pot'). The mission also interviewed key informants during field visits in Homs, Tartous and Qamishly.

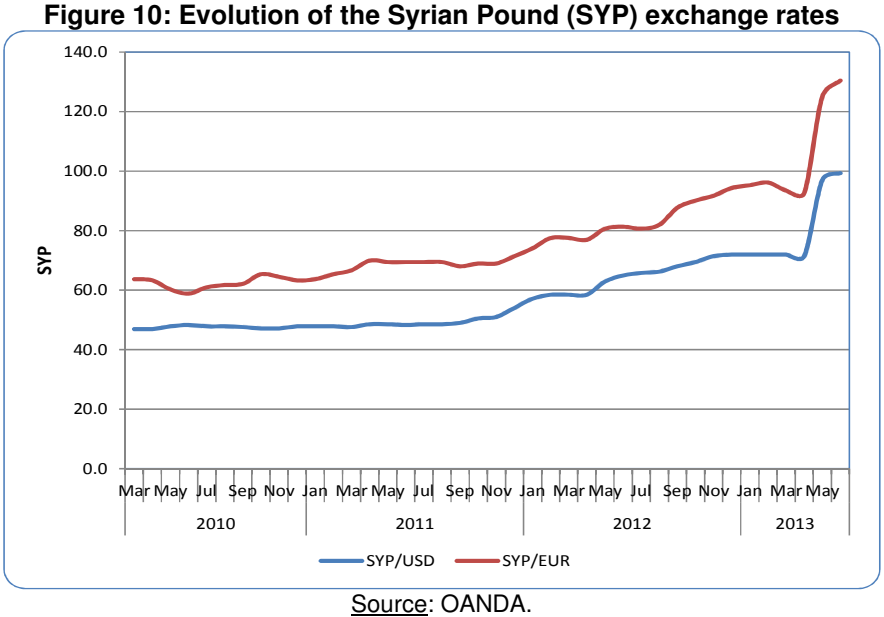
The qualitative results presented in this section are not meant to be representative of the food security situation of the whole population in Syria. They only aim at understanding potential changes in household food security situation due to the ongoing crisis. The findings were complemented with secondary sources referenced in the report.

8.2 Main drivers of household food insecurity

Massive internal population movements, disruption of agricultural production, rapid rise in inflation, high food prices, economic sanctions, steep currency depreciation, and substantial losses in employment, income opportunities and purchasing power in both the private and public sectors are the main drivers of household food insecurity.

The Syrian crisis and related economic sanctions are having a detrimental impact on the economy and the living conditions of the population. Syrian real GDP is estimated to have contracted by about 19 percent in 2012[4]. The EU embargo on imports of Syrian oil has resulted in a sharp reduction in oil outputs by about 80 percent, from 385,000 barrels produced per day in early 2011, before the start of the uprising. As a result, foreign reserves have plummeted leading to a steep depreciation of the Syrian Pound (SYP) and constraining the country's import capacity. Compared to 2011, international reserves are estimated to have decreased by 68 percent in 2012, according to the EIU. Since March 2011, the official rate of the SYP has depreciated by more than 100 percent (Figure 10), while the shadow price depreciated by more than 150 percent, affecting local prices substantially. As of May 15, the official exchange rate further depreciated by almost 40 percent from the average rate of April 2013. The depreciation of the SYP is likely to persist and continue to accelerate unless foreign exchange reserves of the Central Bank make a quick recovery.

Figure 10: Evolution of the Syrian Pound (SYP) exchange rates



Source: OANDA.

The rapid rise in inflation has a devastating impact on the purchasing power of the population, particularly the poor and vulnerable households, whose expenditure is mainly devoted to basic food commodities. As mentioned in section 2.1, year-on-year inflation surged by about 50 percent in 2012. Shortage in diesel and fuel gas for households use and the reduction of Government subsidies on gasoil led to a surge in fuel prices by about 200 percent in January 2013. As a result of the fuel subsidy cut, and continued depreciation of the Syrian Pound, inflation will remain high in 2013 (above 30 percent according to the EIU) and imported food costs will continue to rise.

4 EIU: Syria Country Report, May 2013.

Difficulties in importing substantial goods and services (including medicines and vaccines) due to the financial sanctions, the prohibition on importing biological and some chemical materials, the embargo on Syrian oil imports, and the currency depreciation have negatively affected the lives and livelihoods of people. The crisis has led to massive job and income losses and the unemployment rate has soared. For the seven years prior to 2011 (2003-2010) the official unemployment rate average was about 8 percent[5]. The corresponding figure is estimated at 14.9 percent in 2011 and 18 percent in 2013; more than double the 2003-2010 average rate. Total unemployment (recorded and unofficial) rate is estimated at more than 30 percent in 2012[6]. The increase in unemployment rate is attributed mainly to job losses in the agriculture and transportation sectors, and, to a lesser extent, in the construction and manufacturing sectors. To the contrary, public sector employment (mainly temporary jobs) increased to compensate part of these losses. Most unemployed (52 percent) lived in rural areas, mainly in Al-Hasakeh, Al-Raqqah, Idleb and Homs governorates and have limited skills. The unemployment rate for women is typically much higher as compared to men; female unemployment rate was high at 42 percent in 2011, from 39 percent in 2010. During the more recent crisis years, women's unemployment is likely to be disproportionately higher.

8.3 Ongoing food access assistance

Food assistance needs are increasing at a steady pace. However, most food assistance operations are faced with access problems and limited availability of trucks willing to transport the food.

Several actors are involved in providing relief food to households affected by the crisis. Main actors include the Government, World Food Programme (WFP), the International Federation of Red Cross and Red Crescent Societies (IFRC), the International Committee of the Red Cross (ICRC), the United Nations Reliefs and Works Agencies (UNRWA, attending Palestinian refugees) and local charity organizations. Government and government-supported private bakeries are the main source of bread for the entire population. Despite increases in production and transaction costs (wheat, milling, yeast, fuel and transport), the Government has maintained the subsidized bread price at 15 SYP per bundle of 1.55 Kg. Government officials intend to maintain the subsidized prices in locations where the Government has full access and public bakeries are functional.

Since December 2011, WFP has been providing a diversified food basket under a general food distribution (GFD) scheme. From January to April 2013, the programmed food basket contained wheat flour, rice, vegetable oil, tomato paste, bulgur, canned pulses, lentils, pasta and sugar. The number of WFP target beneficiaries has increased significantly from 50,000 at the onset of the crisis to 1.5 million people per month in September 2012. Between January and May 2013, on average 90 percent of the target of 2.5 million beneficiaries was covered. However, because of the security situation accessing beneficiaries is challenging, especially in Al-Raqqah, Dara'a, Al-Hasakeh and Qamishly. Efforts are underway by the Ministry of Foreign Affairs (MoFA), the Ministry of Social Affairs (MoSA) and the Syrian Arab Red Crescent (SARC) to facilitate food delivery with support of cooperating partners.

WFP is also providing supplementary feeding to prevent rise in the levels of moderate acute malnutrition and micronutrient deficiency in children under-five of both IDPs in collective centres and host community, in partnership with the Ministry of Health (MoH) and UNICEF. Started in March 2013, the programme is currently covering 89,058 children with Plumpy Doz[7] and Nutributter[8], with plans to reach the target of 100 000 vulnerable children by July. This intervention covers all 14 governorates namely, Aleppo, Idleb, Damascus, Rural Damascus, Sweida, Quneitra, Dara'a, Al-Hasakeh, Raqqah, Deir ez-Zor, Tartous, Lattakia, Hama and Homs.

Other actors are also involved in providing food assistance. IFRC provides food assistance to some 64 200 families in Homs, Damascus, Rural Damascus, Deir-ez-Zor and Al-Hasakeh. ICRC also provides food assistance to 167 000 persons.

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5 Central Bureau of Statistics (2011): Labour force survey.

6 Syrian Centre for Policy Research: Socio-economic roots and impacts of the Syrian crisis, January 2013.

7 Plumpy Doz is used for the prevention of Moderate Acute Malnutrition in children between the ages of 6-59 months residing in collective centres.

8 Nutributter is used to prevent and treat micronutrient deficiency in children between the ages of 6-23 months residing in the host community.

8.4 Recent changes in household food access indicators

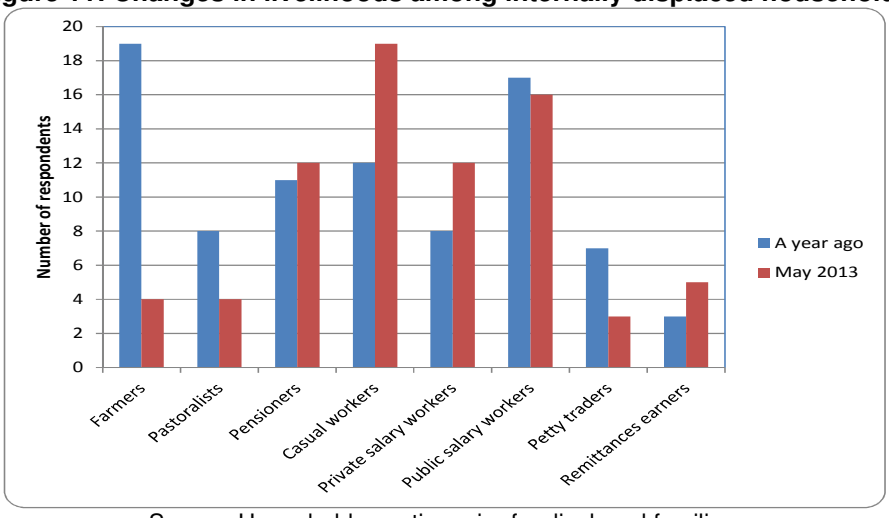
8.4.1 Livelihoods and income sources

Livelihoods and income earning activities have suffered huge losses as a result of the crisis; some of the most negative outcomes have included damage to productive assets and infrastructure, very high unemployment rates, losses in household incomes, massive internal displacements and refugee outflows. Internally displaced families who lost their income sources, urban poor who are mainly market dependent, subsistence farmers, small-scale herders, casual labourers and petty traders are the most affected livelihood groups.

Farm and livestock-dependent livelihoods are severely affected due to limited availability or shortages of agricultural inputs, including fuel, electricity, fertilizers, seeds, farming equipment, spare parts for irrigation. In Al-Hasakeh governorate, key informants reported that fewer farmers engaged in wheat production during 2012/13 (approximately 20 percent fewer), and about half the normal number of agricultural wage workers were hired. Job and incomes losses in cotton farming are reportedly high: key informants indicated that up to 70 percent of cotton farmers gave up on cotton farming. This resulted in a reduction of cotton farm casual labour hiring by about 60 percent in Al-Hasakeh governorate. Lack of market opportunities due to the destruction of most cotton factories in Aleppo is considered as a compounding factor. Reportedly, many farmers also shifted from cotton farming to other crops less demanding for irrigation. Reduced availability of animal feed, limited or lack of access to veterinary supplies and care, deaths of animals, particularly in the steps and arid regions of the country have caused major livelihood losses among livestock-dependent households.

Among internally displaced families, farmers, pastoralists and petty traders are the most affected livelihood groups (Figure 11). These families are resorting increasingly to casual labour, work in private businesses or receiving remittances to compensate for income losses.

Figure 11: Changes in livelihoods among internally displaced households



Source: Household questionnaire for displaced families.

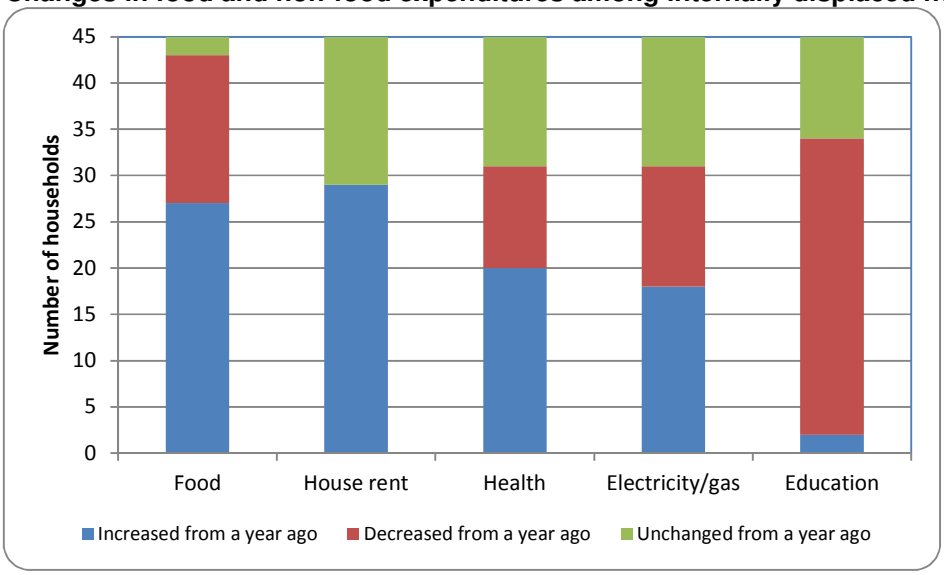
8.4.2 Households expenditures

Households are incurring higher food expenditures due to severe reduction of income generating opportunities and increases in basic food prices. Most of the 45 resident households interviewed reported an increase in the share of their current food expenditures by 60-70 percent for food items compared to a year ago. All respondent resident households estimated the current share of their food expenditures between 40-80 percent. Of the 45 internally displaced families interviewed, 27 reported an increase in the share of food expenditures, compared to a year ago. Of the internally displaced households reporting an increase, the share of expenditures on food increased by 45 percent on average with a minimum increase of 17 percent reported in Damascus to a maximum increase of 100 percent in Lattakia. It is worth noting that displaced households could be receiving some form of food assistance through humanitarian and charity organizations. The number of households reporting

increases in the share of food expenditures is higher Aleppo, Deir Ez-Zor, Hasakeh, Damascus and Raqqah.

Of the 45 internally displaced households interviewed, most of them reported an increase in the share of their expenditures on non-food items such as house rent (29/45), healthcare (20/45) and energy (18/45). However, the share of expenses on education is reported to have decreased from last year according to most of the respondents (32/45). As they move to new locations, many children are withdrawn from school, hence the reduction in expenses on education. The number of households reporting increases in the share of non-food expenditures is higher in Rural Damascus, Deir Ez-Zor, Hasakeh, Raqqah, Hama, Idleb, El Ghab, Qunaitera and Sweida.

Figure 12: Changes in food and non-food expenditures among internally displaced households



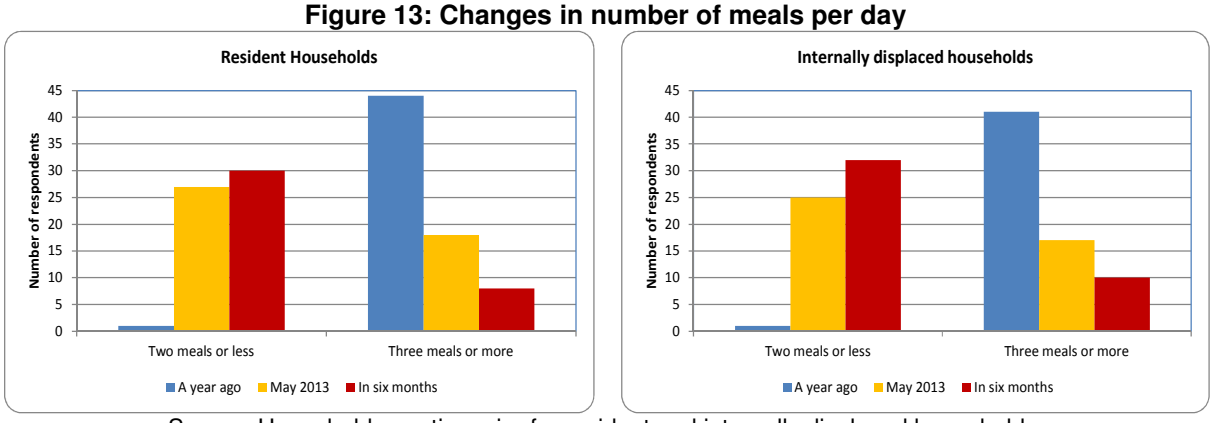
Source: Household questionnaire for internally displaced households.

8.4.3 Households food consumption

Losses in food production due to un-harvested areas, displacement, insecurity, livestock destocking for different reasons, lack of job opportunities and loss of the bread winner are the most important constraints for vulnerable people's access to food.

The rapid household survey conducted with support of MAAR shows that most households have reduced the number of meals per day (Figure 13). Among resident and internally displaced households, over 40 out of 45 respondents in each group said they were having at least 3 meals a year ago. At the time of the survey in May, less than half of them continue to eat at least 3 times a day. They expect a worsening of the situation in the next six months, with more than 30 respondent households (out of 45) expecting that they will be eating at most two meals a day. In both categories of respondent households (residents and internally displaced) 4/5 of them reported that their current food stocks would last less than a week.

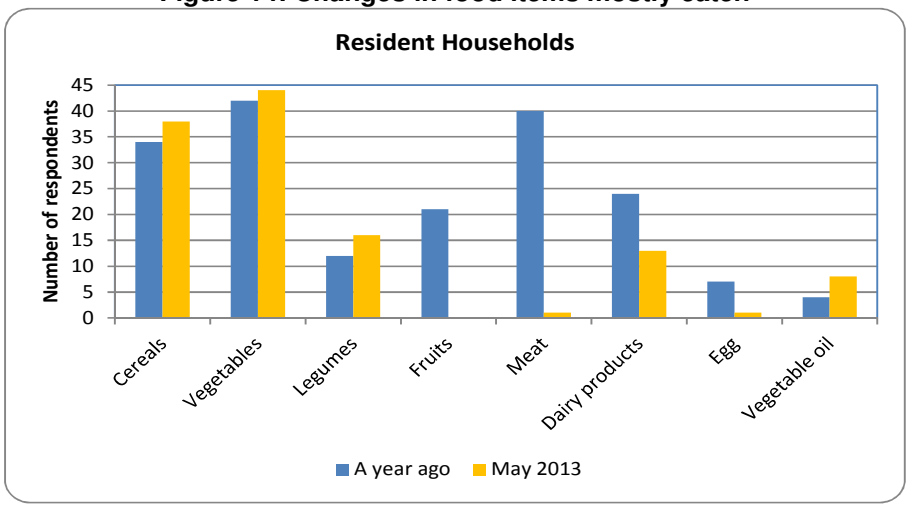
Figure 13: Changes in number of meals per day



Source: Household questionnaire for resident and internally displaced households.

Compared to last year, cereals (mainly wheat flour and bread), vegetables, legumes (potatoes) and vegetable oil continue to be the most eaten food items by resident households (Figure 14). However, there is a sharp decrease in consumption of fruits, meat, dairy products and eggs.

Figure 14: Changes in food items mostly eaten

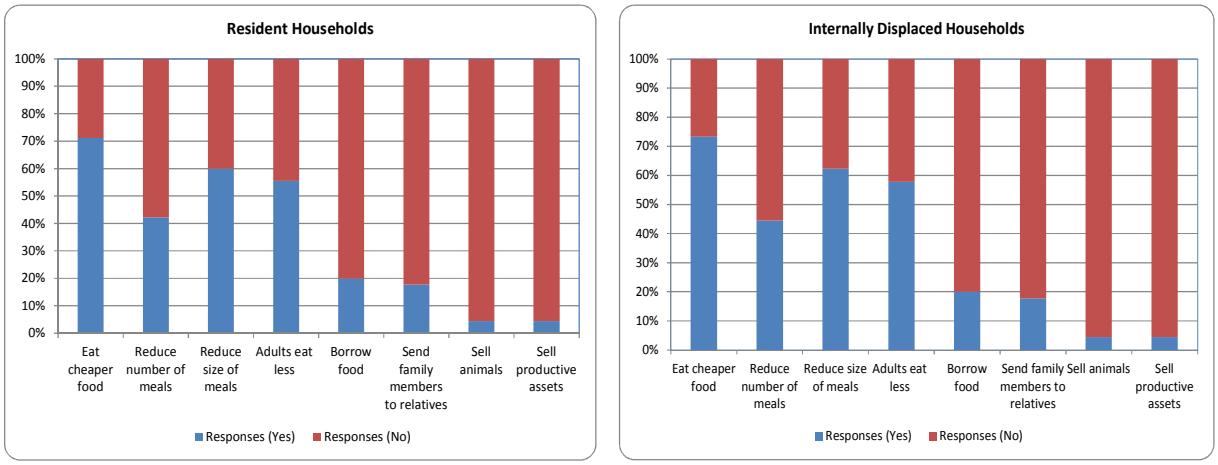


Source: Household questionnaire for resident households.

8.4.4 Households coping mechanisms

Figure 15 shows that both resident and internally relocated households are coping with food access problems by resorting mostly to cheaper meals (around 70 percent of 45 respondents in each group), reducing the number of meals or adults eating less (about 60 percent of respondents) and reducing the size of meals (about 40 percent of respondents). Households are also coping by borrowing food or sending family members to relatives. Although less prominent, there are initial signs of negative coping mechanisms such as sales of productive assets and livestock. Few cases of early marriage, temporary works for the Government and also for armed groups and begging were also reported by key informants.

Figure 15: Coping strategies to meet food needs



Source: Household questionnaire for resident and internally displaced households.

8.5 Estimate of food assistance requirements

The Syrian crisis has resulted in heightened vulnerability, massive movements of the population inside the country and a substantial setback in living conditions. Economic decline, the loss of jobs and livelihoods, as well as the impact of economic sanctions have increased vulnerability among large sections of society. Sharp reduction in purchasing power due to significant losses in income opportunities and price hikes affecting basic staples, including bread, has increased reliance on humanitarian food assistance. Social networks are under increasing pressure due to the limited and depleting resources of host families and local communities. The most vulnerable segments (women, children, displaced families, etc.) are seeing their capacity to generate income and to access food drastically reduced. Dramatic increases in internal population movements and refugees across the borders have further heightened vulnerability of the population.

The ongoing crisis has also inflicted a severe setback on the performance of human development indicators such as health and education. Before the crisis, the net school attendance ratio was estimated by UNICEF at about 87 percent in 2010. This rate is expected to have decreased by about 11 percent and 23 percent in 2011 and 2012 respectively[9]. As the crisis persists and population movement continues, the net school attendance ratio is likely to decrease further in 2013. Pre-crisis performance in the health sector is also severely compromised by the ongoing crisis. In north Syria, food, medicines, vaccines, water and sanitation are reportedly among the top priority need of households, especially for people who have moved from their original residences[10]. Children, pregnant and lactating mothers, disabled and chronically ill persons are most at risk. Besides reduction in quality of diet, child health concerns are also due to reduced vaccination coverage from 95 percent in 2009 to 80 percent in 2012. This coverage will further decrease as the crisis persists. Areas of highest pre-crisis child mortality, morbidity and malnutrition are the worst affected by the crisis, together with IDPs. According to a study conducted by the Ministry of Health (MoH) in 2007, the pre-crisis nutrition situation was already alarming, with 9.3 percent of children under five suffering from wasting and 23 percent of them stunted. Earlier studies point to high deficiencies in Vitamin A and iodine. The 2007 MoH study found 52.7 percent of pregnant women suffered from anaemia.

According to the Syria Humanitarian Assistance Response Plan (SHARP) released in June, 6.8 million Syrians are in need of humanitarian assistance[11]. This estimate includes over 4 million people who have moved from their original residence to other places in the country. About half of those in need of assistance are children. According to the SHARP, between 5 percent and 10 percent of the households affected are headed by women and considered highly vulnerable. The SHARP estimates the number of people in need of urgent and sustained food assistance at 4 million for the rest of 2013.

9 Syrian Centre for Policy Research: Socio-economic roots and impacts of the Syrian crisis, January 2013.
10 Joint Rapid Assessment in North Syria (J-RANS), February 2013.
11 Syria Humanitarian Assistance Response Plan (SHARP), January-December 2013.

This estimate is consistent with the number of food-insecure estimated by the Joint Rapid Food Security Needs Assessment (JRFSNA) conducted in December 2012 by WFP and FAO in collaboration with the Ministry of Agriculture and Agrarian Reform (MAAR)[12]. A study released by the Syrian Centre for Policy Research in January 2013, estimated the number of people living in extreme poverty to have increased from 2.2 million in 2010 to 3.7 million in 2012, an increase of 68 percent in two years[13]. As the conflict is likely to persist till late 2013 and beyond, the number of people falling into extreme poverty will increase further. In general extreme poor face challenges in meeting their basic food needs, often at the expense of non-food items. Given the estimates from different sources are consistent with each other, the mission estimates that the figure of 4 million people in need of food assistance is accurate.

WFP plans to scale-up its response in line with the upsurge of the population in need of food assistance. The food assistance requirement is estimated at 378 000 tonnes to meet the needs of 4 million unique beneficiaries between mid-2013 and mid-2014. However, humanitarian access to some of these areas remains constrained, often preventing the delivery of life-saving assistance to affected populations. While the crisis is most likely to continue till the end of the year, a gradual reduction of the scale of the crisis is expected between 2014 and 2016. In such context, access is expected to improve concomitantly in several areas allowing for greater humanitarian access. This will also allow for a low number of returns in the latter part of 2014 and possibilities for recovery activities in 2015. As the situation improves, the relief component of the WFP plan will reduce accordingly.

9. RECOMMENDATIONS

The following may be regarded as urgent livestock and crop-production needs rather than recommendations as such. The feasibility of turning these needs, either fully or partially, into recommendations that can be acted upon will depend on a number of political, administrative and conflict-related factors, but for each, the possibility of doing so should be given serious consideration. While the report and the recommendations concentrate on the immediate supply situation, the damage to infrastructure, plant and machinery inflicted by the deteriorating security situation will have an effect beyond the current season and longer term measures need to be put in place to rebuild food systems.

- In order to avoid a serious regional outbreak of livestock diseases, vaccines need to be provided and cold chains re-established in order to facilitate their distribution. Neighbouring countries need to be supported in preventing the spread of livestock diseases.
- Routine veterinary drugs (anti-helminthics, acarides etc.) should be provided to preserve livestock assets.
- Distribution of this year's relatively good barley harvest to livestock needs to be ensured.
- In the poultry sector, as small producers are particularly vulnerable to conflict, urgent attention and intervention is required to ensure the maintenance of the breeding stock, in particular for small farmers.
- With the loss of grain-storage capacity, both Government and private facilities will require storage structures (possibly temporary) and grain-storage protection materials such as actellic powder.
- Wheat seed needs to be provided to farmers as there is likely to be a shortage for the 2013-2014 farming season.
- Many tractors and other mechanized farm implements that have not been damaged in the current conflict are not functional because of lack of routine maintenance or lack of spare parts. Simple repairs and maintenance need to be carried out, and spare parts provided, in order to ensure maximum use of available machinery for the forthcoming winter cropping season. Local mechanics need to be hired for these activities as many farmers may be unable to pay them.
- Clean diesel needs to be made available to farmers at affordable prices in order to ensure crop production over the next twelve months.
- Horticulturists need to have access to fertilizers and crop-protection materials which are either unavailable or prohibitively expensive.

- 12 JRFSNA, December 2012.
- 13 Syrian Centre for Policy Research: Socio-economic roots and impacts of the Syrian crisis, January 2013.

- The fertilizer factory in Homs needs to be assisted in increasing its production from 25 percent to close to full capacity, and assistance needs to be given for the distribution of fertilizers to the main producing areas.
- Damaged irrigation canals that conduct water directly from the Euphrates River need to be repaired. Assistance to rainwater harvesting can also be considered. However, assistance should not be given for the abstraction of groundwater as the water-table has already been lowered excessively in many irrigated areas.
- Assistance, in the form of inputs, tools, technical advice or access to land, needs to be provided to those who have had to move from their homes and are capable of producing food crops at a household level.
- Efforts to expand short-term relief food distribution to food insecure host communities with high concentration of internally displaced households and the most vulnerable households need to be continued. In this context, school feeding take-home rations can be considered as a means to encourage children attendance and return to school.
- Provision of immediate nutrition security protection to pregnant and lactating women, and children under five, especially among internally displaced households should continue with high priority. There is currently no detailed information on the impacts of the crisis on nutrition; a nutrition assessment should therefore be considered.
- Given the demand and high price of bread and wheat flour, wheat flour and yeast, should be provided to various bakeries throughout the country. Priority should be given to bakeries that can serve the IDP population, as well as to bakeries in the poorest rural and urban areas.
- In urban centres where internally displaced households are concentrated, supplies are less disrupted and food prices are less volatile (e.g. Tartous and Lattakia), the feasibility of voucher interventions for IDPs and cash for work activities (e.g. collection of debris…) could be explored as a possible intervention.