INTRODUCTION

The Bi-monthly Agriculture and Food Security Monitoring System (AFSMS) Bulletin is an FAO-Syria product and system, which regularly monitors the agricultural and food security situation, including on crop, livestock, pasture condition, water supply and food security from randomly selected sub-districts and communities. The monitoring is on a bi-monthly basis (i.e. once every two months), through discussions with key informants (KIs) and input from FAO technical staff in the field.

The AFSMS information portrays the prevailing general situation in the community at the time of each bi-monthly AFSMS reporting cycle, and helps FAO and the Food Security and Agriculture (FSA) sector understand the prevailing agriculture situation, seasonal performance and outlook, including preliminary insights on food availability, access and coping mechanisms being adopted by the majority of households, due to the difficult economic situation which could be affecting access to and availability of food.
The cumulative precipitation from September to December 2021 is generally low. Cumulative precipitation received during the reporting period is lower than the long-term average (LTA) across all governorates, except Latakia where it was 13% higher than the LTA. Noted that the cumulative precipitation received until the end of December 2021 is 55% and 83% below LTA in Aleppo and the northeastern governorates respectively. Also, the monthly precipitation it was in Nov-2021, mostly low and below average and the lowest rainfall was recorded in Raqqa and Idleb. Other governorates, received average to good rainfall. Rainfall in December 2021 was generally good in Dara, Quneitra, Hama and the coastal governorates, while it was quite low in the rest governorates.

The temperatures recorded in November 2021 were higher than the LTA in all governorates, within an average of 2.3°C Celsius degrees, especially in Idleb, Ar-Raqqa and Al-Hasakeh. In December 2021, the recorded temperatures were slightly lower than the average in Quneitra, while temperature recordings were 1.3 C° higher than the LTA in the rest of the governorates, especially in Tartous and Hama.

In December 2021, water volume in most reservoirs improved significantly particularly in Latakia and slightly in Homs, Hama, Dara and Aleppo, while it remained at the same level compared to the previous month in other governorates. The current level of water reserves generally lower compared to the level during the same period in the previous season in all governorates by an estimated 13%. The reduced volume and level of water is especially evident in Al-Hasakeh, Homs and the southern governorates.

Pastures in the Badia, during the autumn and winter months, are rare and limited to perennial pasture shrubs. The health and nutritional status of livestock in most areas is mostly moderate but generally lower than the animal condition last season. Due to the scarcity of pastures and depletion of the crop residues that livestock used to feed on, there is currently more dependence on fodder. However, fodder availability is generally limited and expensive; the latter is limiting access for most vulnerable livestock keepers, especially combined with the decline in pasture availability mentioned above. This will most likely affect animal health and nutrition.

Most food commodities namely legumes, vegetables, chicken meat, rice, eggs, sugar and vegetable oil are generally available during the reporting period. However, most households in the community are facing challenges in terms of accessing the available mentioned food items, including wheat flour. The major constraint is that the food items are available but expensive, limiting access especially for vulnerable smallholder farmers (VSFs) and families.
GENERAL AGROMETEOROLOGICAL CONDITIONS

Cumulative Precipitation

Cumulative rainfall until the end of December 2021 during the current season (2021—2022) was good in Latakia governorate (13% higher than the LTA). While it was weak to very weak in the rest of the governorates, especially in Damascus countryside, Aleppo and the northeastern governorates, where rainfall recorded was 39% less than LTA in Rural Damascus, 55% in Aleppo, 69% in Al-Hasakeh, 81% in Raqqa and 83% in Deir ez-Zor.

As highlighted in figure 2 below, precipitation was extremely low and less than the long term average (LTA) during the first and third dekads of November 2021, with the exception of Tartous, where rainfall was generally acceptable and good. During the second dekad of November 2021, precipitation received in most governorates, but it was generally low and less than the (LTA),

December 2021:
The amounts of rainfall received in December 2021 were good and higher than the LTA in Quneitra, Dara, Hama, Tartous and Latakia and it was above average by 21%, 19%, 5%, 28%, 80% respectively. Rainfall was lower than the LTA in the rest of governorates especially in rural Damascus and the northern and northeast governorates. Rainfall recordings indicate that rainfall received was less than LTA by 21% in Rural Damascus, 5% in Sweida and Homs, 31% in Idleb, 26% in Aleppo, 74% in Raqqa, 58% in Hasakeh and 84% in Deir ez-Zor).

In first dekad of December 2021, good rainfall received in Latakia, Tartous and Quneitra, and was acceptable in parts of the rest of the governorates, except for Raqqa governorate and the Badia regions. In second dekad, rainfall was good and higher than LTA in Hasakeh, Aleppo, Idleb, Latakia, Tartous, Quneitra, Dara and the western regions of Homs and Hama. Rainfall was weak and less
than LTA in the rest of the regions and governorates, especially Ar-Raqqa, Deir ez-Zor and Al Badia.

During the third dekad, rainfall was limited to Quneitra and coastal governorates, and limited areas of Dar’a, As-Sweida, Homs and Hama (figure ).

Temperature

The temperature in November 2021 was higher than the LTA across all governorates by an estimated average of 2.3 C°. Highest temperature was recorded in Idleb (3.5 C° above LTA), Al-Hasakeh and Ar-Raqqa (3.3 C° above LTA), Latakia (2.7 C° above LTA) and Homs 2.5 C° (above LTA). While the lowest temperature was recorded in Hama and the southern governorates, about 1.2 – 1.7 C° higher than the LTA respectively (figure 4).

Night frost occurred in most locations in northern, northeastern and southern governorates and during the last dekad of December 2021, the lowest temperature (-6 C°) was recorded on 24th in Surgaya town in Rural Damascus governorate. The average temperature recorded across all governorates was generally higher than the LTA by 1.2 C°. This was the case except for Quneitra governorate, where recorded temperature was slightly below LTA by an estimated -0.1 C°.

The highest recorded temperature was in Deir ez-Zor, Tartous and Hama (2.4 C°, 2.4 C°, 1.6 C° higher than LTA respectively), while the recorded temperature was generally lower in Ar-Raqqa and the southern governorates, ranging from 0.3 – 0.8 C° lower than LTA respectively.

NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI)

Based on FAO Global Information and Early Warning System (GIEWS) satellite imagery, from October to November 2021, there was a clear decline in vegetation cover in all governorates, especially in the northwestern governorates. The recorded vegetation cover during November 2021 decreased by 15 - 25 % below the average.

From November to December 2021, the vegetation cover worsened in most of the governorates, especially the NWE and southern and the Badia regions, as the satellite imagery shows a decrease in vegetative values (25-30%) in the northwestern governorates, 15 - 20% in the southern governorates and 10-15 % in the Badia, as in figure 6.

In general and during this reporting period, the vegetative cover of the current season and during this reporting period (i.e. November – December 2021) is remarkably less compared to same period during the previous season, especially in Hama the North-west, Southern and Badia.
WATER SUPPLY SITUATION

During this reporting period, there has been limited water supply from the different irrigation/water sources (i.e. underground sources, rivers, reservoirs such as lakes and dams), across all governorates. The shortage mainly attributed to the drought-like conditions and erratic rainfall experienced in 2020/2021 agricultural season, which was characterised by a delayed onset and early cessation of rainfall. Furthermore, there was notable scarcity of snowfall and extreme heat waves during the previous 2020 – 2021 agricultural season, which resulted in water scarcity and increased demand for irrigation water from the above-mentioned sources. Important to note is that there is still reduced water flow in most rivers, especially the Euphrates, and a reduction of the seasonal river flows. The limited rainfall received to date, has not helped the water supply situation since it remains below the LTA in most governorates, especially the southern and northern gov.

Lattakia governorate witnessed a remarkable improvement in water stocks, volume and supply from November to December 2021. A slight improvement observed in Hama, Homs and Aleppo, while Tartous and the southern governorates maintained the same level and Al-Hasakeh the water stocks and supply declined.

In general, the current water stocks are lower than the stocks of the previous season in all governorates, especially in Hasakeh, central and southern governorates, in which the percentage of available water reserves and volume decreased from 51% to 37% in Hasakeh, 37% to 23% in Central regions and 25% to 15% in Southern gov.

PROGRESS ON 2021/2022 CROPPING SEASON

The delay in the onset of rainfall during the current 2021/22 agricultural season, as of November 2021, and the decline of crop production output from the 2020/21 season, due to erratic climatic conditions, led to most farmers delaying and hesitating planting of cereal crops, especially in rainfed areas. During November - December 2021, most of the crop stage ranged from sowing to germination, especially in the northern and northeastern governorates.

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Figure 7: The evolution of dam stocks during the current season compared to last season.
Source: Analysis of Monthly bulletin of Drought monitoring MAAR

Figure 8: A graphical comparison and depiction of area planted under wheat and barley during the current 2021 – 2022 agricultural season, compared to the previous season (2020 – 2021).
Source: FAO field monitoring reports.
As of the end of December 2021, land preparation for legumes, namely lentils, peas and beans, was underway including for medicinal and aromatic crops such as anise, galbanum, Nigella sativa, and coriander. In November 2021, cotton, sesame and corn harvest completed, mostly in the northeastern regions. Winter vegetables, autumn potatoes, leafy vegetables, and citrus fruits continued to be harvested and marketed. However, there were reported incidents of some of the afore-mentioned horticultural crops being infected by insect pests in a wide range, but with slight severity. Most olive and citrus trees in the central and coastal governorates were infected by Olive and Citrus Fruit Flies among others. In addition, some vegetable plantations damaged in coastal governorates due to the strong windstorms. Furthermore, frost also affected planted vegetables in other governorates namely Deir-ez-Zor and Rural Damascus.

The main challenge that farmers faced is the lack of fertilizers and exorbitant cost in local currency, in addition to the severe shortage of energy, especially electricity, which became much worse during the winter season due to the increase in the frequency and hours of rationing. This forced most farmers to use fuel for irrigation and this resulted in the slight increase in diesel prices across most local markets, due to increased demand.

LIVESTOCK SITUATION AND CONDITION

The autumn and winter months are critical periods for livestock, especially sheep and goats, since this is a period when most animals forage for grazing. The period November and December 2021 was quite difficult for livestock herders and keepers, since there was a general lack of availability of pastures and crop residues in the Badia. Most animals rely on pasture availability and crop residue for their nutritional needs, growth and development, especially during the critical lean period. Noted that livestock feed / fodder availability was generally limited and costly, and the poor rainfall and pasture rejuvenation in November and December 2021 has presented an additional layer of challenges on livestock production and productivity. The effect of the erratic rainfall on vegetation growth and pasture availability most likely will be felt in the coming months.

The price of livestock has decreased in some locations, especially the northeastern regions, due to the high cost of feed and the difficulty of securing it. To cope with these difficulties, breeders are opting to sell part of the herd to buy fodder to sustain the remaining productive herd. The animal feed shortages coupled with access related constraints due to high cost, this might be reflected on animal health situation. The increased prevalence of livestock diseases may be attributed to winter season and the decline in nutritional status of the herds. The high cost of veterinary services, mainly medicine (i.e. vaccines) and veterinary medicines cannot go unmentioned. It should also be noted that a decrease in the nutritional level of the herds, especially females, will lead to a decrease in fertility and thus result in a decrease in the number of newborns in the following season (i.e. parturition). As for poultry breeders, production costs have increased significantly due to the high cost of production requirements as well as the fuel needed to secure lighting, heating and to operate automated equipment. Access to fuel remains a major concern due to the high cost as well. The increase in poultry production costs reflected by the increase in prices of eggs and broiler meat in the market. The pasture condition and situation in the current 2021 – 2022 agricultural season and during the reporting period is worse than the previous season, and therefore the livestock condition is concerning and needs urgent support. Support should immediately be directed towards ready-
Support should immediately be directed towards ready-made animal feeds or alternatives to green fodder production, ensuring that livestock interventions are integrated with sustainable approaches for greater and wider impact, to help livestock breeders to be more resilient to current and future shocks.

FOOD SECURITY AND COPING STRATEGIES

With the advent of winter, the food insecurity prevalence and suffering increased among many vulnerable families. This is due to the increase in expenditure due to increased needs for heating, winter clothes etc. The increased needs due to the peak winter season exerted more pressure on the already limited purchasing power and this made it more difficult for families to economically access sufficient and nutritious food. Field monitoring by FAO indicates that most vulnerable families are reporting increased dependence on less preferred and less expensive foods, limiting the amount of food in the meal (i.e. portion size) and reducing the number of meals. Other food-based negative coping strategies include restricting the consumption of adults so that the young eat or borrowing food.

On the other hand, one of the coping measures in the field of nutrition that the population has recently adopted is to rely more on leafy vegetables (chard - spinach - cabbage..), which are more available during winter and are relatively cheaper. However, despite their good nutritional value, they do not replace the major macro-nutrients like carbohydrates, fat and proteins.

As it was previously explained, good food reflects on public health, and people's lack of adequate and nutritious food is reflected in the long-term by increased prevalence of malnutrition in children due to the lack of micronutrients. The deficiency may compromise the body's immunity and resistance to diseases. With the prevailing spread of Covid-19, good and nutritious food is one of the most important factors that can help boost immunity and resistance to disease.

It is worth noting that the farming households that suffered from the extreme agro-climatic conditions during the 2020 – 2021 season, and the failure of their crops and the deterioration of their livestock-based livelihoods and assets, has increased vulnerability and eroded resilience. There is urgent need to cushion and support vulnerable smallholder farmers impacted by the 2020 – 2021 drought-like conditions, through provision of critical quality inputs to sustain agricultural production. Integration through provision of protection food rations (PFRs), targeting affected farmers, is also critical to ensure that farmers do not adopt irreversible adverse coping mechanisms and boost their absorptive and adaptive capacity, especially during the critical lean winter season.

Recommendations

♦ Increasing support to vulnerable farmers through provision of critical and quality agriculture inputs, or cash and vouchers, based on seasonality (i.e. winter and summer), to sustain and increase food production to reduce the existing food supply deficit, especially in rural areas.

♦ Sector partners and farmers are encouraged not to use seed from unreliable sources since these may not affect farmers over one season, but may have unwanted ripple effects on the environment and agriculture production in the country.

♦ It is also important for sector partners and farmers to adopt climate-smart agriculture (CSA) approach, including modern and efficient irrigation systems in order to address the water shortages and agro-climatic anomalies,
canals, remains critical since water is one of the key inputs for food production. The light rehabilitation of the afore-mentioned irrigation infrastructure will enhance the farmers’ access to irrigation water, in anticipation of a scenario similar to the last season.

- Motivating farmers to plant and manage fodder crops and adopt modern methods to create a reserve stock of fodder to bridge the gap of lack of pastures and lack of fodder, remains key. Where feasible and using an area-based approach, sector partners and farmers are also encouraged to consider strip intercropping of vegetable crops with fodder legumes as they will provide soil fertility benefits and animal feed.
- Since some farmers will be turning to relying on solar energy to fill the gap of fuel needed to pump irrigation water, stressing the need to rationalize water use and adoption of collective irrigation as much as possible and wherever possible, is critical.
- In irrigated areas, as well as areas that may receive high precipitation, combined with high temperature, FAO warns sector partners and farmers of the high likelihood of the outbreak and spread of wheat rust, especially yellow rust on wheat crop. Farmers and technicians advised to monitor and consult with their local extension staff in this regard.

**Disclaimer**: The information contained herein, is based on FAO’s Global Information and Early Warning System (GIEWS), collection of bi-monthly Agriculture and Food Security Monitoring System (AFSMS) data and triangulation of local weather periodicals. The data presented herein also captures results from field monitoring of crops, livestock and water resources done by FAO field staff. While FAO Syria strives to provide accurate and timely early warning information, there may be slight unintended technical or factual inaccuracies. Decisions based on information contained herein are the sole responsibility of the reader.

For more in-depth statistics and trends:
- Refer to WFP Syria mVAM Bulletin for January - February 2021.
- Request for the FSA/FSLA factsheets for 2020 from the Food and Agriculture Sector (FAS) for details on food access and food insecurity prevalence by governorate and sub-district.