

Food Security Research in North and East Syria

The research provides flash summary on the food security situation in NES, challenges, and recommendations.

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Acronyms and Abbreviations

AANES	Autonomous Administration of North and East Syria
NES	Northeast Syria
NGO	Nongovernmental Organization
INGO	International Nongovernmental Organization
WFP	World Food Programme
KIIs	Key Informant Interviews
IDPs	Internally Displaced Persons
LMs	Local Markets
SYP	Syrian Pound
USD	United State Dollar
SDF	Syrian Democratic Forces
ACDC	Agricultural Community Development Company
FSL	Food Security and Livelihood
ISIS	Islamic State of Iraq and Syria

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Overview

After nearly eleventh year, the conflict in Syria has inflicted an almost unimaginable degree of devastation and loss on the Syrian people and their economy. Over 350,000 documented deaths have been directly attributed to the conflict per some local and international resources, but the number of unaccounted deaths is certainly higher than what was reported so far. Due to ongoing conflict, more than half the country's population displaced, and the social fabric collapsed. The socio-economic impact as a result of conflict consequences is large and growing with not a notable resolution up to date. Syrians remain extremely vulnerable as a result of a lack of sustained and proper access to health care, education, housing, and food along with a lack of employment opportunities which led a large scale of the population to poverty. Additional shocks encountered that complicated the life of the community, such as the COVID-19 outbreak still unfolding, and Caesar Law have further restrained Syria's external economic ties, leading to fuel shortages, price hikes, and rapid depreciation in local currency.

Today, Syria considered one the disputed and fragmented between Syrian regime, opposition groups, and SDF. Per a local source, the percentage and geographical control by aforementioned groups is as following:

- The opposition groups have control over (10.98%) of the Syrian geography, as the areas they hold are distributed in Idlib and northern Aleppo, in the Tal Abyad and Ras al-Ain areas, in Ar-Raqqa and Al-Hasakeh, and in the Zakaf and Al-Tanf area (55-km de-confliction zone) in southeastern Syria.
- The Syrian regime has control over re-captured areas that come to (63.38%) of the Syrian geography, which encompasses the governorates of the coastal region of the country, central and southern Syria, and part of the eastern governorates and Aleppo. In addition, the regime forces extended their control over Daraa after stepping up its military operations against that governorate in July 2021 which was concluded in the format of reconciliation with the people of Daraa. The regime's control over As-Suwayda governorate in the south; however, remains fragile and limited to tightening the grip of its security branches and state institutions without subjecting the governorate to a military invasion as in other areas.
- The Syrian Democratic Forces "SDF", in contrast control over with: (25.64%) of the Syrian geography (*Figure 1*), which is the same percentage recorded since November

2019, and includes large parts of the Deir ez-Zor governorate, Ar-Raqqa, Al-Hasakeh, and parts of the Aleppo governorate.

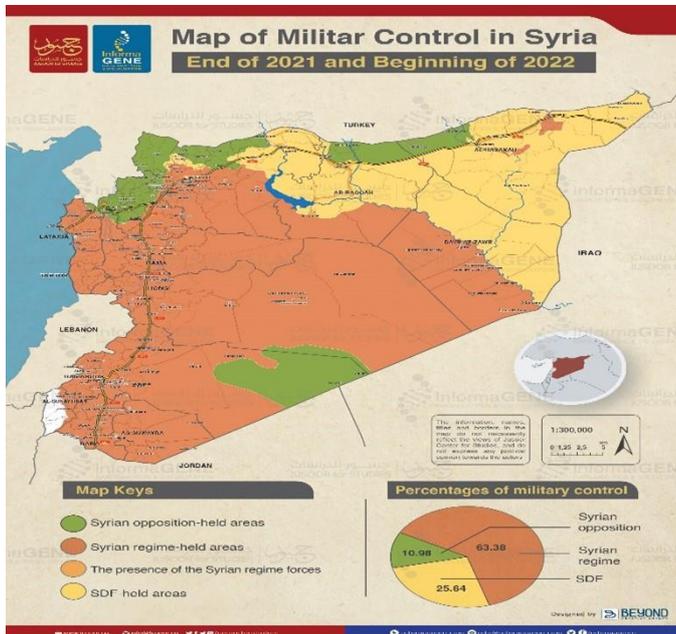


Figure 1: Areas of control - posted by Jusoor for studies

Due to aforementioned facts and continues of the conflict, the Syrian community is in highly need of food resources. Per food security cluster mid-year review iiiconcluded that 12.8 million people remain food insecure (over 60% of the population). The situation is expected to deteriorate further, also due to the present water crisis and its knock-on effect on agricultural production.

Objective

The Food security is one of the key issues that critically impact the stability and sustainability of the region. Despite the availability of the natural and human resources, however, due to the conflict circumstances and global climate change effects, the region is marching towards the food security crisis. Hence, this research spotlights on the main food security elements and provide overview on the current situation, gaps, and challenges along with recommendations for future programming in the NES.

Specific objectives:

1. Provide overview on the food security key elements that include availability, access, utilization, and stability in NES.

2. Identify the main gaps and challenges that facing the local community and authorities in NES.
3. Support future programming through providing recommendations in NES.

Methodology:

The researcher held focus group discussion with representatives of local community and authorities to gather data related to main food security issues, the role and internal capacity of the authorities. Also, the researcher conducted desk review with Shar`s food security and livelihood technical advisor for further inputs and lessons learned from agricultural project. Finally, the researcher relied on some trusted sources that focus directly or indirectly on the food security and general context.

Introduction

Per reported by the local authorities, over four million people is living in northeast Syria, including thousands of internally displaced persons. The area witnessed a massive destruction and damage due to power shift between different military actors. In 2019, SDF with support from international coalition led by the U.S completed liberation of Deir ez-Zor and Ar-Raqqa provinces from ISIS, and in the same year, Turkey began invasion in NES and occupied some rural areas in Al-Hasakeh and Ar-Raqqa provinces, specifically, Serê Kaniyê (Ras Al Ain) and Grê Spî (Tel Abyad) sub-districts.

These battels and years of ISIS control and Turkey invasion resulted high waves of displacement. Also, the conflict-torn critical agricultural infrastructure such as irrigation canals and network, factories, silos, fishponds, and poultries. This led most of the population losing out on agricultural income activities, livelihoods, food security and other life-saving resources. Historically, NES was considered the food basket source of the Syrian community. Before 2011, the key livelihood for the community was growing stable crops such as wheat, lentil, barley, cotton, pea, and bean along with raising livestock. The regime was supporting the farmers through selling them seeds, fertilizers, and foddors in the subsidized prices, but this process stopped starting from 2012-2013 because the regime lost the control on the territory. Per REACH humanitarian situation overview in 2021iv, Northeast Syria is the country`s “wheat basket”, producing between 70 and 80 per cent of the country`s wheat, a staple food crop for Syria`s roughly 17 million residents. However, reduced rainfall combined with

decreasing water levels in the Euphrates basin have placed significant pressures on a population bound at the intersection of agriculture and livestock production and distribution, resulting in combined shrinkages in food production and availability.

The combined drought and water access challenges impact agricultural production for both irrigated or non-irrigated farmland. While wheat harvests increased in 2019 and 2020, a variety of challenges, including prices of farm inputs, and the need for certain imports, along with access and distribution challenges between separate territorial regions of Syria, has nevertheless left a strain on wheat and bread markets that depend on local production and distribution of the crop. 25 Focus group discussions led by REACH with KIs knowledgeable about agriculture and food markets, indicated that farmers predict devastating yield losses due solely to natural factors that include drought and rising temperatures that also increase the likelihood of crop fires. All of that considered, combined with socio-political factors affecting access to water for irrigation, fuel expenses, distribution chains, potential livestock death, high food and water prices, and low expectations for this year's wheat yield, the potential impacts on food security for all Syrians are likely considerable.

Unaffordability of food & Crops

Wheat

Since 2011, the wheat value chain has witnessed a significant deterioration in Syria, including the Autonomous Administration areas, due to the deterioration of the quality of the seeds. The limited financial resources of local farmers prevented them to well plant and maintain the crops. Many wheat processing facilities are currently out of service due to their poor maintenance or being destroyed. Wheat processing plants are out of service, especially in Aleppo province. The condition of the roads connecting between production and manufacturing locations deteriorated and were cut off continuously due to the armed conflict. All of this led to a decrease in wheat productivity, as productivity in Autonomous Administration area in 2020 went below 1.25 million ton of wheat.

The reality of the wheat chain NES area in 2021:

The cultivated area with wheat in NES reached 1,000050 dunums, it is out of production at an average rate of 80%, wherein the planted lands with wheat as rainfed agriculture, were

estimated at about 750,000 dunums. As for the irrigated lands, the productivity did not exceed 400,000 tons, with a production rate of 200 to 250 kg per dunum.

It is a very low rate of wheat productivity compared to the rate of 2020, where it was for rainfed lands ranged from 150 to 250 kg per dunum, and for irrigated lands ranged from 400 to 550 kg per dunum.

The decline in wheat productivity in 2021 compared to 2020 is mainly due to the following reasons:

- Decreased rainfall rate, as the average rainfall for 2021 did not exceed 190 mm, compared to the annual average rainfall of 375 mm.
- The water levels of the Euphrates River have fallen to its lowest historical level, due to the reservation of its waters by Turkey.
- The spread of weeds in wheat fields and the failure to combat them in a good way due to the inability of wheat farmers to cover the expenses of the combating process.
- Lack of attention to the fertility of the land and the necessary fertilization to obtain increased productivity, due to the inability of farmers to cover the fertilization expenses.
- Selling a large proportion of the lands planted with wheat (rainfed agriculture) to livestock breeders before harvesting, due to the high selling price, because of the urgent need to buy crops as fodder due to the lack of fodder and their high prices if any.
- The high harvesting costs (Harvester machine rent- wheat bags - transportation), constitute a huge burden on farmers, which adds to the already weak production in this year.
- The deterioration of the agricultural roads' conditions, from production to marketing locations, which incurs high transportation costs.
- Poor quality of wheat seeds due to the collapse of infrastructure, especially seed multiplication centers, silos, and warehouses, for not carrying out restoration for a period exceeding ten years since the conflict began.

Due to aforementioned facts, NES witness several demonstrations especially in Deir ez-Zor and Ar-Raqqa provinces that demanding to improve overall basic services and quality of bread. Lack of quality wheat and processing into flour is the main reason behind the bread crisis. iMMAP study in 2019, in NES highlighted that facilities' functionality stood at less than 50% of their full production capacity. The reported maximum potential total weekly production

capacity of all assessed mills was 78,367 MT of flour; however, the mills' actual recorded total weekly production was 36,782 MT of flour. On average, the mills' functionality stood at 47% across the 47 assessed operational mills across the NES region. As for bakeries, the reported maximum potential total weekly production capacity of all assessed bakeries was 11,872 MT of bread; however, the bakeries' actual recorded total weekly production was 4,854 MT of bread. On average, the functionality of bakery facilities stood at 41% across the 301 assessed operational bakeries across the NES region. This indicated that the operational bakeries in NES were only producing at 41% of their potential/full production capacity during the reporting period. Compared to the previous round, March 2021, there was no major change in the functionality of bakery facilities, as bakeries were producing at 39% of their potential/full production capacity. Nonetheless, on governorate level, Aleppo governorate in this round recorded the highest functionality rate of 78%, while Ar-Ar-Raqqa governorate recorded the lowest functionality rate of bakeries at 29%.v

Legumes

Prior 2011, the farmers in NES areas were practicing crops rotation through planting lentil, chickpeas, and broad beans to respond to markets demand. However, there is no specific data related to number of dunums cultivated with legume crops in NES, but the productivity was playing critical role to cover the community needs along with enriching the soil organic matter, structure, decreasing soil PH.

Although the legume crops require less irrigation compared to wheat, the ongoing conflict led majority of farmers in the region to give less attention legume crops and rely on farming wheat or leave the field without to planting any crops. Based on some local sources, the areas that planted with lentil crop in NES was approximately 370,000 dunums viwith no figures related to productivity in 2020/2021 season. Respondents highlighted some key points that led to decline of planting legumes as outlined below:

- Before 2011, the farmers were selling the production to the Syrian regime, while now they sell to traders in the unfair price where they earn planting cost. Hence, the crops considered unprofitable for farmers.
- Dramatic increase in the prices of farming inputs such as seeds, fertilizers, pesticides along with plowing services.
- Lack of improved and hybrid seeds which highly impact of the productivity.

- Lack of irrigation resources and high cost of fuel.

Currently, NES rely on importing various legume crops from out-side the region mainly from Turkey, and KRG in Iraq, and this increase prices and restrict access of community to affordable food.

Cotton

Cotton is one traditional and considered as a second strategic crop after wheat, that producing in the provinces of Al-Hasakeh, Ar-Raqqa, and Deir Ez-Zor where farmers depend on Euphrates River and wells to irrigate this crop. Farming this crop was interrupted for 4-5 years in Deir Ez-Zor and Ar-Raqqa due to ISIS occupation, hence, Al-Hasakeh province became the key source of producing cotton in the country. With increasing the security and stability after defeat of ISIS, many farmers returned to the area especially in Deir Ez-Zor and Ar-Raqqa and began to farm cotton.

Majority of farmers rely on income from cotton crop to buy inputs relate to farming wheat and fertilizer. Reportedly, many farmers in Al-Hasakeh province had not plant cotton in 2020 and 2021 due high cost of extracting the water from the wells, also the pests that infect the crop in 2019 and causes high loss at financial aspect. Per respondents, approximately 55,000 dunums were cultivated cotton in 2021. In Ar-Raqqa and Deir Ez-Zor, planting cotton was delayed up to May and beginning of June 2021 due to several concerns such as low of Euphrates river due to Turkish seizures of the River after a poor winter, and this led to frequent stops at irrigation stations in Ar-Raqqa and Deir ez-Zor 2020 and 2021 along with high cost of fuel and frequent maintenance of pumping stations. However, respondents indicated that approximately 8,000-10,000 dunums planted with cotton Deir Ez-Zor and Ar-Raqqa and the productivity did not exceed 250 KG per dunum in 2021.

However, respondents stated that majority of farmers have no intention to farm cotton due to several factors as mentioned below:

- Non availability of improved seeds.
- High cost of fertilizers such as Urea and NPK.
- Lack of technical skills to combat the pests.

- Cotton requires one round of irrigation per 10 days, and this increase cost of irrigation.
- Low price offers by the local authorities and traders.

Vegetables & Fruits

Before 2011, NES region was not recognized as area of producing vegetables and fruits since the focus was on the strategic crops such as wheat and cotton. After the frequent closure of routes between the provinces in the country, and dramatic increase in the prices of vegetables and fruits, many farmers began to invest in farming vegetable especially during the summer season where they manage to meet the market demands.

However, the community are struggling to access affordable food during the winter season due to inability of farmers to plant in the greenhouses and supply the markets. Farming in the greenhouses is costing too much since it requires many tools, equipment, and drip tape network. Hence, NES rely on importing majority of products from out-side the region during the winter season.

It is worthy to mention that grain marketing faces additional significant challenges, as a nonperishable product it is more forgiving to delays in marketing than perishable fruits and vegetables. High transport costs and low consumer purchasing power led to bottlenecks in the marketing of vegetables and fruits which can result in wastage, especially at the peak harvest time. Because of non-availability of the cold store, most of the unsold products in the wholesale is used as fodder for livestock.

Per respondent, high quality of vegetable seeds are available in the markets and with affordable prices, farmers in the region plant wide space with vegetables during the summer season and very few have greenhouses especially in Ar-Raqqa province.

Livestock

Livestock activities is one of the essential aspects of the region farming system and an important sources of household income generation. Raising livestock mostly takes place in the rural areas, more arid parts such as southern rural areas of Al-Hasakeh, northern, eastern rural of Deir Ez-Zor, and south Ar-Raqqa.

Per respondents, the number of livestock appeared be stabilized in 2019 due to availability of natural pastures and affordability of fodders such as barley, hay, bran, and combined fodder.

Hence, the livestock raisers were able to respond to market demands, and the products were affordable by the community. However, since 2020 the region has suffered from severe drought caused by extremely low rain levels affected by global warming that has impacted the Fertile Crescent ^{vii}, unavailability of fast-growing green fodder such as white corn and alfalfa which requires less irrigation rounds and can be a sufficient resource for livestock. Additionally, the region experienced a severe drop of water levels of the Euphrates River caused by Turkish control of the dams which have and will continue to threaten agriculture and livestock productivity and livelihoods of the Syrian population living in areas on the banks of the river. This led the livestock raisers to resort to a negative coping mechanism which threatens the sustainability of livestock herding and farming in both the short and long-term periods. These mechanisms include selling part of their livestock to be able to provide fodder for the remaining of the livestock in their possession, providing minimal amount of fodder to keep their livestock alive, rent farmed land with wheat or barley for livestock. It is worthy to mention that the price of each ton of barley was about 80-110 USD, while it reached to 550-650 USD in 2021.

Additionally, raisers are unable to provide veterinary services for their livestock due to the high cost of vaccines and related inputs.

Prior to conflict, a large population was guaranteed food security by executing livestock farming and promotion to sustain food demand in the markets in the country. The Syrian regime was providing livestock inputs including veterinary assistance, feed support, and vaccination campaigns, but this process stopped since 2012. The newly established authority structure represented by ACDC lacks the necessary resources to effectively respond to the needs of the community in relation to livestock herding in the region.

Also, it is important to mention that there were many dairy product factories in NES, processing the milk into yogurt, cheese, and butter and export the products to other provinces in the NES. During the conflict, majority of the factories were damaged and destroyed, but some owners managed to rehabilitate and operate with limited capacity.

Per respondents, currently the number of livestock in the region is around 2.5 million heads of sheep, goats, and cows. The general intention of livestock raisers is to reduce the number of livestock they own through selling a large number to traders who export them to KRG in Iraq. Many of them may look for alternative business due to lack of support to livestock.

Recommendations

Wheat

- As mentioned previously, it is necessary to intervene in the entire wheat value chain and this year mainly in the production stage, where farmers will suffer from securing the basic needs of wheat cultivation, especially improved seeds, cultivation operations and fertilizers.
- Restoration of production facilities related to wheat cultivation including storage system and capacity and restoration of agricultural supply routes.
- Rehabilitate and expand capacity of flour processing facilities in the region.
- Focusing on modern irrigation systems and trying to involve them such as sprinkler system systems.
- Improve technical capacity of farmers to enable them to combat the weeds.

Legumes

- Awareness session campaigns to enhance knowledge of farmers about important of legumes crops to support crop rotations and enhance quality of soil and yields.
- Provision of improved seeds, fertilizers, and pesticides.
- Support the market linkage to enable the farmers to sell the productions.

Vegetables & Fruits

- Support provision of greenhouses and tunnels inputs.
- Support the local authorities to construct cold storage for vegetables and fruits.
- Provision of the drip tape irrigation system for the crops.

Cotton

- Enhance access of farmers to quality seeds.
- Support the local farmers with fertilizers and pesticides.
- Provision of technical training for farmers to combat the pests.
- Rehabilitate and expand capacity of the ginning factories.

Livestock

- Promote capacity of local authorities (ACDC) to enable them to provide veterinary services including vaccination campaign per six months.
- Support livestock raisers through provision of fodder and plant green fodder such as Azolla and alfalfa.
- Provide technical training related to dairy production along with distribution of the necessary equipment.
- Rehabilitate and expand capacity of dairy product factories.

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- ^{vi} [شفان ابراهيم: واقع الزراعة في محافظة الحسكة قبل “الإدارة الذاتية” وبعدها - مركز حرمون للدراسات المعاصرة](#)
- ^{vii} [National Geographic: Fertile Crescent](#)
- ^{viii} Photo credit: Shar for Development