



WHOLE OF SYRIA (WoS)
FOOD SECURITY SECTOR
Strengthening Humanitarian Response

Wheat to Bread Market System Mapping and Need Assessment

Northwest Syria
December 2019



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1. Introduction

1.1. Objective

Since 2012, Donors and humanitarian agencies have supported bread programs across Syria, in areas outside of Syrian Government control. These areas are controlled by various actors and with varying market contexts. Implementing partners rely on multiple modalities to support food needs in Syria, including providing in-kind assistance procured in the region and inside Syria, and cash and voucher assistance. Bread is a key staple in the Syrian diet, humanitarian organizations also assist mills and bakeries across Syria to increase the supply of bread, as well as to improve households' access to bread at stabilized prices. Humanitarian agencies have expansion plan for extending project activities in northwest Syria.

1. How effective support to local silos, mills and bakeries can be designed in meeting program objectives;
2. Influences on markets and prices of inputs for bread making, bread and complementary and substitute commodities

The study was conducted in two different phases, market system assessment and facility mapping survey. This report represents findings of the market system assessment of the wheat-to-bread value chain across northwest Syria.

1.2. Geographical Coverage

The study prioritized presenting findings from north of Idlib City (north Aleppo/Euphrates Shield, west Aleppo, and northern Idlib). Data related to the wheat to bread market system assessment were collected from market actors who have a wide reach in the targeted geographic locations.

1.3. Methodology

Data collection: Qualitative data collection tools were used for the market system assessment. Three different tools were developed for each market actor (key informants, traders, wheat farmers, and consumers), mainly aiming to capture qualitative information in addition to quantitative insights. Accordingly, semi-structured questionnaires were administered to interview key informants and traders. Focus group discussions were conducted with consumers and wheat farmers. iMMAP conducted a related market system study for the wheat-to-bread value chain in 2017-2018 which targeted the northwest Syria region¹. This study was used as a baseline and as part of literature review for building the tools and updating information.

Seven market actors were interviewed who have a wide reach and knowledge in the targeted areas. Nine focus group discussions with wheat farmers and ten focus group discussions with consumers were conducted in Aleppo and Idlib

Data Analysis: The study adopted value chain analysis techniques which primarily focuses on producing a market map that identifies market linkages between most chain actors in the value chain and helps in better understanding the flow of information and production. Consequently, this leads to identifying bottlenecks, market gaps, and opportunities for support. The value chain and market system analysis help better understand the market environment and context that have a direct and indirect influence on market activities, for example, norms, rules, and governing institutions.

¹ CARE Syria Resilience Program, 2018. Mapping of Wheat, Olive and Dairy Market Systems in opposition-held areas of Idlib, Hama and Aleppo, Syria.

1.4. Limitations

The data collection and analysis were heavily confined to short timeframe. iMMAP had one month, starting from tools development to the final report. The timeframe limited the number of market actors interviewed, as many were not available on such short notice. However, iMMAP's previous study in 2017-2018 provided the team with a solid base for updating information on the wheat to bread value chain. Moreover, to capture comprehensive information, the interviewed key informants were mainly with officials in higher positions that overlook the entire value chain in the targeted geographic locations.

1.5. Conflict and Humanitarian Situation

The opposition-held areas of northwest Syria, at the time of data collection were in a stable security situation. The wheat-to-bread value chain is significantly supported by the Turkish Ministry of Interior Disaster and Emergency Management Market Environment-AFAD, the Syrian Trust Fund and other international and local organizations.

2. Wheat to Bread Market System: Mapping, Key Challenges, and Opportunities²

The Market Environment

Institutions, rules, norms & trends



Cross-border taxes



SYP Depreciation



Laws and Regulations



Water Scarcity



Agriculture Plan and Loans



Climate Events



Gov- led production



Business Network

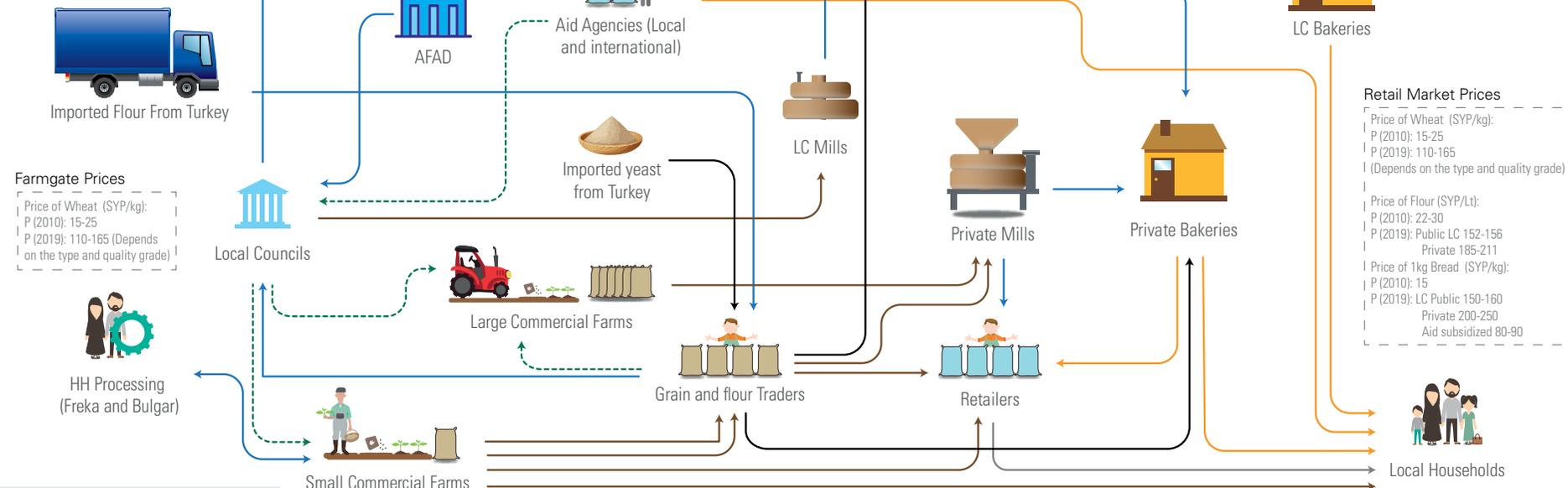


Quality Control

OCT 2019

Value Chain

Market actors & their linkages



Key Infrastructure inputs, market-support services



² The conversion rate used for price referencing is 662 USD/SYP, this exchange rate was being used in the market at the time of data collection according to the key informant interviews

2.1. Wheat to Bread Market Environment

The ongoing Syrian conflict in the last eight years resulted in major disruptions in economic activities, particularly in the agriculture sector. The conflict has not just reduced the country's GDP, it has also broken economic and social networks within different major supply chains in the market³. The centralized government of Syria's economic structure before the war had strong regulatory control over the production of strategic commodities and products. According to the key informant interviews, wheat production was one of the crops that used to be solely controlled by the Syrian government, represented by the General Establishment for Cereal Processing and Trade (HOB00B) and its counterparts. At the upstream end of the wheat-to-bread value chain, HOB00B used to manage the production and conservation of certified seed strains of high yield that would have been genetically engineered over the years to adapt to regional climate conditions and tolerate local pest and diseases. Wheat farmers used to obtain seeds and farming inputs at subsidized prices from HOB00B, in addition to the financial services and farming technical consultation. Post-harvest handling of wheat produce was managed by the government, where HOB00B used to purchase the full domestic production of wheat from farmers at a fixed price. Silos and mills facilities were mainly under the sole control of the government, which ultimately put the flour production under HOB00B's control. Towards the downstream end of the wheat to the bread value chain, HOB00B used to distribute flour to government-owned bakeries to produce bread at subsidized prices.

At that time the Syrian government had their agriculture activities designed based on the five main ecological regions, namely Southern, Central, Coastal, Northern and Eastern regions. Wheat production was mainly concentrated in the Eastern region of Syria given the accessibility to the Euphrates and Al Khabur rivers allowing intensive irrigated wheat production in the Eastern region which used to contribute about 64% of the national wheat production⁴. However, currently, the eastern region is mainly under the control of the Kurdish Syrian Democratic Forces, which resulted in a major disruption to the wheat supply into the assessed region of northwest Syrian.

Value Chain Stewardship System

The opposition held-areas of northwest Syria as targeted in this assessment face major disruptions across the flow of the wheat-to-bread value chain, transforming the market from being completely sufficient from domestic production to being dependent on imports and aid support from neighboring countries⁵. The centralized government of Syria system that was in place has been replaced by the Syrian Public Establishment of Grains (SPEG) which works under the local council's (LC) umbrella.

SPEG is adopting the same structure and regulatory system that the Syria government used to have before the conflict. However, their position and power in the market are far much limited. According to the key informant interviews with different SPEG's counterparts, due to SPEG's limited financial capacities and major destruction of wheat to bread value chain facilities and infrastructure, their support is currently limited to purchasing a portion of the local wheat production which is later processed in mills and bakeries that are contracted or owned by the local councils. The limited purchasing power from local farmers does not cover the supply needed to maintain the production of bread at subsidized prices. Therefore, they started receiving free flour from the Turkish Ministry of Interior Disaster and Emergency Management Authority (AFAD) in 2018, to maintain reasonable bread prices in the market.

Despite SPEG and LC's efforts to maintain the former centralized market structure, the supply of farming inputs, flour and bread are not enough to cover the demand in the market. This has opened the opportunity for the private sector to intervene and fill the gaps in the wheat to bread value chain. Private traders are currently present at different stages within the value chain, starting from wheat farming inputs (e.g seeds, pesticides, herbicides and fertilizers), flour imports and the production of private bread. According to a related report on the wheat to bread facilities mapping exercise, "only 9 (19%) of the bakeries receive flour from the local council, mainly from al Bab and Jarablus, 21(45%) of the bakeries buy 100% of their flour from the traders and 12 (25%) of the bakeries receive flour from aid agencies".

³ World Bank Group. (2017). The Toll of War, The Economic and Social Consequences of the Conflict in Syria

⁴ FAO. (2008). Irrigation in the Middle East region in figures – AQUASTAT Survey 2008. Rome: FOA.

⁵ FAO & WFP. (2019). FOA/WFP Crop and Food Security Assessment Mission to the Syrian Arab Republic

Quality control activities and regulations are limited to the LC production stream, where the different representations of SPEG have their defined quality standards and regulations at different stages within the wheat to bread value chain. However, the authoritative role of these systems is failing to enforce quality measures on private trading and production. Moreover, due to SPEG's limited capacity, wheat farming extension and financial services have been terminated.

Exporting activities are completely banned through the Turkish borders and to other governorates in Syria. Anecdotal statements from one of the traders that was interviewed, described some import crossing of flour from Turkey through opposition-led areas to SDF controlled areas. However, no solid evidence of such activities was found to validate this information.

According to SPEG's officials and farmers focus group discussions, many traders are taking advantage of SPEG's weak purchasing power of wheat grain and are marginalizing wheat smallholders by purchasing their harvest for lower and unfair prices. This and other factors related to limited water resources and the rising costs of wheat farming inputs, influenced farmers to shift from wheat production to barley and aromatic crops. While barley crop resembles the same family with wheat crop, barley production is less costly in terms of its agricultural inputs base. Moreover, barley being more tolerant crop in drier conditions can do better than wheat under rain-fed production.

2.2. Wheat to Bread Value Chain

Wheat Production

Wheat Farmers Production Capacity :The current production of wheat is unregulated and is based on farmers' individual efforts. FGD with farmers indicated that the wheat land area ranged between 10-70 dunams per household, with few exceptions reporting 800 dunams per farmer. This gives a clear indication that most farmers were operating at smallholder's scale. SPEG and LC officials expressed their concerns towards the tremendous decline in wheat production due to either people displacement activities or farmers shifting the production from wheat to more profitable crops like barley and aromatic crops.

Wheat Seed Production and Agriculture Inputs: SPEG focuses on maintaining local strains of wheat seeds and sell them for season-fixed prices to farmers. However, SPEG's supply is covering limited portion of the current demand, and the majority of wheat farmers during the focus groups discussion reported that their major source for seeds were private traders. Others reported receiving seeds from aid agencies. Farmers raised the concern that the unregulated trade of seeds is jeopardizing the quality of local wheat seed strains, as it is being mixed with other imported seed sources that are not resilient to the local climate, local pest and diseases. As for chemical and organic inputs of agriculture, farmers reported purchasing them from private traders who import most of these inputs.

Wheat Irrigation: According to the key informant interviews, wheat production in the assessed areas is mainly rain-fed. However, in the last couple of years, supplemental irrigation was needed during periods of long dry spells, which requires pumping water from wells or transporting water through water trucks to meet wheat crop water requirements. Both solutions induced additional fuel costs to farmers, which was one of the major challenges reported in the focus group discussions with wheat farmers. **The high fuel costs were one of the drivers that encouraged wheat farmers to shift to more profitable crops with less crop water requirement.**

Wheat Prices: The current selling prices compared to the pre-conflict prices were as per the table below. SPEG was reported to have three different grades for wheat with its prices decrease by 3 United States Dollars (USD) per each grade. **Due to the depreciation of the Syrian Pound, SPEG tends to set the prices of wheat from farmers in USD.** Wheat selling prices were reportedly susceptible to change based on the harvesting season, which normally takes place during the summer (May through July), and prices tend to be lower compared to fall and winter season.

Figure 1: Wheat Cropping Seasonal Calendar

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Land tilling									●	●	●	
Purchasing inputs									●	●	●	
Planting										●	●	●
Weeding		●	●								●	●
Fertilizing			●									●
Pest-Controlling			●	●								
Harvesting					●	●	●					

Flour and Wheat Trading

Wheat Grain Trading: Interviews with traders, SPEG officials, and wheat farmers indicated that private traders are playing a vital role in the market and have a significant influence on the market power dynamics. All interviewed wheat farmers reported that most of their wheat grain is sold to traders, 1-30% of the wheat grain from harvest is saved for household food consumption during the winter or as seed input for the next subsequent season. Based on the focus group discussion findings, several factors were attributed to the farmers' preference to sell to private traders:

1. SPEG's limited financial capacity to purchase the entire wheat grain produce from farmers
2. In private trading, quality control is absent, whereas SPEG has a strong quality-check system in place, where a sample of the wheat grain produce must be tested and graded before purchasing.
3. Private traders cover the transportation cost, and transactions usually occur at the farm gate level
4. Private traders tend to pay up to 90% cash directly on the spot, whereas SPEG gives farmers vouchers that can be redeemed after one month.

One commonly reported monopolizing practice was reported by farmers and SPEG officials; that is, traders tend to buy the wheat grain produce during the wheat harvesting period of the season when prices are low and store it for autumn and winter season when the demand is higher for the wheat sowing/planting period of the season.

Flour Trading: Other traders were reportedly specialized more in importing flour from Turkey. These traders sell directly to wholesalers, bakeries, and LC entities. LC purchase flour from traders to complement the shortage from local production and AFAD's free flour support. AFAD was reported to normally distributes flour only 5days/week for much of the year, and in October the supply is normally suspended to give time for AFAD to renew their contracts with suppliers. Private traders take advantage of this contracting period to raise their prices for private flour.

Financial Services: Agriculture loans and official financial services are currently absent in the market, which implies additional financial stress and risk on trading activities. Mostly, monetary activities are cash transactions, however, informal credit-based trade is still in place between traders and wheat farmers. In some cases, traders pay the wheat farmer 50–90% as down payment at the selling point and pay the rest after a couple of weeks⁶. Such credit activities are very minimal compared to the pre-crisis era.

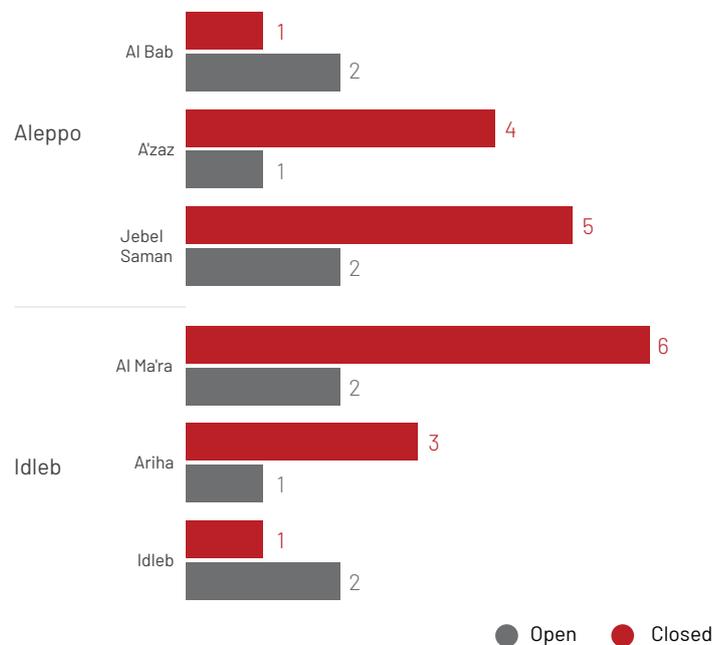
Flour and Wheat Processing

Wheat to Flour Processing: Several mills were destroyed as a result of the conflict, and others were closed due to limited operational capacity. Prior to the conflict, mills were exclusively owned by the government of Syria, however, currently these were reported to be under the control of the local councils. After the start of the conflict, several private mills opened to fill the wheat to flour processing gap in the market. Based on data collected from the facilities mapping exercise, 70% of the open mills in the geographic region covered in the assessment were private mills. According to interviews with SPEG officials, in the case of increased wheat grain supply in the market, the current operating capacity of mills in the northwest Syria region is limited and will not be able to process such upsurge.

LC mills are managed by SPEG, and the primary source of wheat grains is from local wheat farmers. Whereas private mills usually provide the processing service to private traders for an average fee of 17,000 SYP/ton of wheat.

Flour Baking: The same applies to bakeries, after the conflict, several private bakeries opened, and the public bakeries are currently run by the LC. LC bakeries receive flour directly from the local council for season-fixed prices. The different flour sources for LC public bakeries were local wheat grains processed in LC mills, AFAD free flour support, and private traders. As mentioned in the previous section, AFAD supplies LC 5 days/week and suspends its supply during October for a month or more, up to about 40 days. As for private bakeries, these purchase flour from private traders to produce the so called “free bread or private bread”, which tends to be higher in price than the price of the bread sold from public bakeries. Some local humanitarian aid organizations were directly distributing free flour to a selected number of private bakeries. Such support aims at producing subsidized bread for about 50% discounted prices.

Figure 2: Mills Operational Status across the study area of northwest Syria



Bread Consumption

The three main market outlets for bread are the LC bakeries, private bakeries, and retail shops. According to the focus group discussions with consumers, on average, the weekly consumption of bread per person ranges between 1.5 and 3 kgs. Consumers reported that the closest bakeries are 5-10 minutes away walking, and usually waiting time in the line to procure bread was between 0-10 minutes. In terms of bread availability, consumers reported that they always found bread in the market, however, during weekends and on holidays, bakeries tend to be more crowded. Generally, households did not have any major concerns in terms of convenience, availability and bread quality. The only concern was related to the high prices of bread, especially for the bread from the private bakeries.

Table 1: Bread Prices

Bread type	Weight/pack	Pieces/pack	Price/pack
Public Regular Bread (LC)	0.8-1 KG	7-10	100-150 SYP/pack
Private Regular Breas	0.8-1KG	7-10	200-250 SYP/pack
Aid-Subsidized Regular Bread	0.8-1 KG	7-10	80-90 SYP/pack

Bread prices were reported to frequently change as it was said to be directly linked to the flour and fuel prices in the market. As a coping mechanism for bread price changes, LC bakeries tend to reduce the weight of bread per pack to 0.8-0.9 kg, to sustain reasonable fixed prices. As for the households, during the periods of high prices of bread and limited availability of public bread in the market, families would either bake bread at home or substitute bread consumption with lentils, rice or burghul as an alternative for bread.

Market Power

Wheat Farmers and SPEG officials reported the evident market power dynamics which private traders possess and dominate in the wheat to bread market. The monopolizing practices by the private traders were reportedly to normally become apparent during off-season periods of the wheat cropping/seasonal calendar, when AFAD's free flour supply stops, and when the wheat grain supplies in the market reduces and wheat grain produce becomes scarce. This gives traders the power to control the prices in the market and take advantage of the weak purchasing power of the local council. **However, in general, the limited financial capacity in the market confines business expansion and is creating a high dependency on the support of humanitarian aid organizations.**

2.3. Wheat to Bread Market Infrastructure

The ongoing conflict has virtually impacted the infrastructure and facilities of the wheat-to-bread value chain. Silos were strategic targets during the war, and many of these storage facilities were destroyed. Prior to the conflict, all silos facilities were under the Government's control. As a coping mechanism to the limited storage facilities, wheat farmers and traders switched to conventional storage in fabric bags either in outdoor spaces or in open space warehouses. The number of operating silos in the northwest Syria region was 2, whereas 13 silos were reportedly closed.

Fuel prices were considerably high and were reported constantly fluctuating, this would directly reflect on the production cost at all levels of the value chain. Upstream the value chain, wheat farmers reported that the use of farming water trafficking trucks and water pumps were tremendously increasing their operating cost. The same applies to bakeries and mills, where several study respondents reported that bread price setting was directly linked to the change in fuel prices. On the other hand, the main source of fuel was reported to be from the locally refined oil which was considered to be of poor quality compared to the imported fuel or the fuel quality type that was available during pre-conflict time.

Wheat production in the northwest Syria region was reported to be mainly through rainfed production, which makes crops highly sensitive to climate changes and requires supplemental irrigation during drought seasons. In the first quarter of 2019, Aleppo and Idlib governorates experienced rainfalls higher than the normal average⁸. As a result, the Normalized Difference Vegetation Index- NDVI reached 0.57 in April compared to the normal average of 0.38 (Figure 3 & 4). This was directly reflected in the wheat yield for the year 2019. SPEG officials confirmed that wheat production and yield of the year 2019 was higher than the last couple of years. However, the fact that the climate (e.g rainfalls pattern) have been unstable in the last five years will always put wheat farmers in the risks of floods or drought.

Figure 3: NDVI for Aleppo governorate-2019⁷

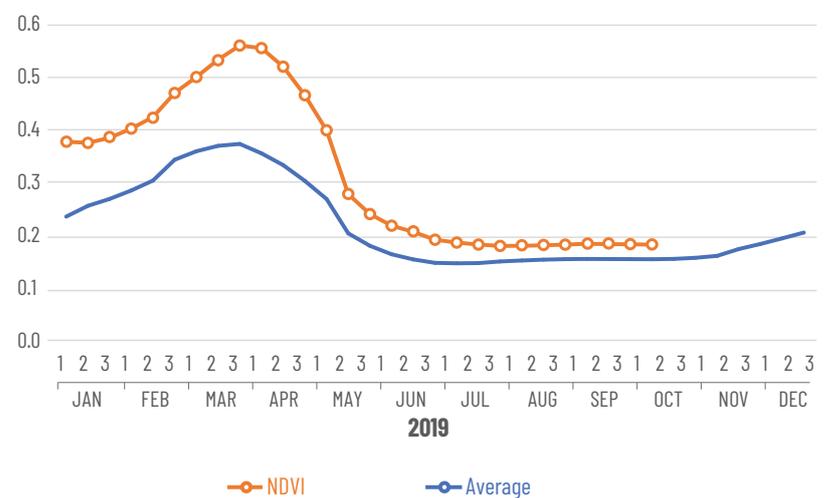
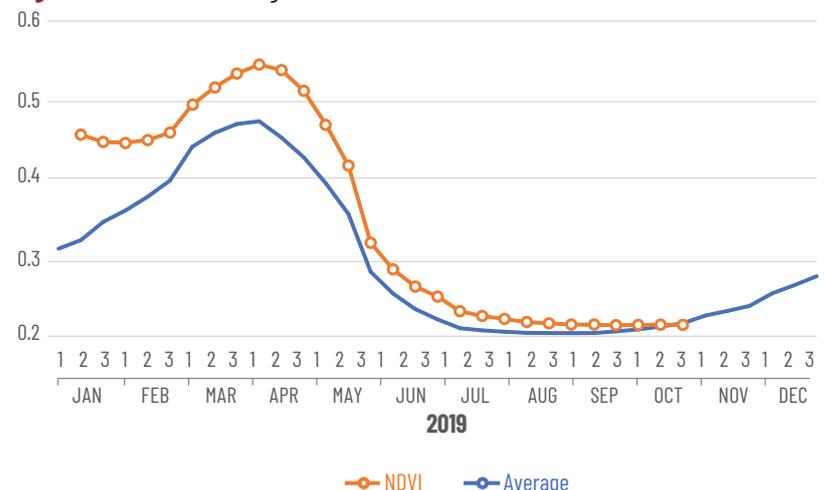


Figure 4: NDVI for Idlib governorate-2019⁹



⁷ Syria UNWFP-VAM Seasonal Explorer, October 2019

⁸ Syria UNWFP-VAM Seasonal Explorer, October 2019

⁹ UNWFP-VAM Seasonal Explorer, October 2019

Transportation cost is another factor linked to fuel prices. As for road conditions, according to the key informant interviews, main roads that link different districts were reported to be in acceptable condition and the local councils were working on road rehabilitation within their financial capacity. However, road networks at community level were reported to be in poor conditions due to the war activities and the local council's limited financial capacity to work on rehabilitation works.

3. Value Chain Challenges

3.1. Market Power

Wheat Seed and Wheat Farming Inputs

- Maintenance and protection of local wheat seed strains
- Limited availability and affordability of high-quality wheat seeds in the market that are resilient to local climate changes and tolerant to local pest and diseases
- High prices of chemical and organic agricultural inputs, such as pesticides, herbicides and fertilizers, specifically imported agricultural inputs
- Limited access to farming equipment and machinery
- High and fluctuating fuel prices, which reflects on the operating cost of farming machinery and water pumps and related irrigation systems.

Information Flow

- Limited availability of reliable information channels related to market prices, climate changes and market performance
- Absence of early warning channels for major climate incidents

Finance and Market Power

- Absence of farmers' cooperatives which limits the risk of marginalization of farmers by the private sector
- Absence of an official financial system and support related to agriculture loans

Climate and Water

- High operating costs of supplemental irrigation in case of drought seasons or long dry spells during cropping seasons
- Erratic rainfall pattern in the last five years

Security Situation

- Farmers abandoning their lands due to the security situation in the region

3.2. Processing Challenges

Bakeries

- Inconsistent flour quality, due to the wide variation of sources in the market. In addition to the absence of a solid quality control system, particularly for private trading
- High and fluctuating fuel prices, which directly reflects on the operating cost and bread prices
- Absence of reliable power source, leading to several power cuts per month.
- The additional operating cost attributed to the use of private electrical generators as sources of power

Mills

- The limited local supply of wheat grains in the market
- The limited number of open and operating mills in the market
- Need for technical skills and expertise related to mill management
- Absence of reliable power source, leading to several power cuts per month.
- The additional operating cost attributed to the use of private electrical generators as sources of power

3.3. Storage Challenges

- SPEG's limited financial capacity to rehabilitate and manage silos or to construct new silos
- Destruction of many silos in the area as targeted by warring parties
- Absence of suitable spaces for grain storage, and using open areas as an alternative

4. Value Chain Opportunities

Production Opportunities

- **Protection of local wheat seed strains:** Seeds quality was one of the major concerns raised by wheat farmers and SPEG officials. There is an opportunity to build the capacities of SPEG to maintain and protect the local wheat seed strains. Moreover, humanitarian aid agencies who are supporting the market and programs with wheat seeds input, need to be more selective in the type and quality of seeds.
- **Support with wheat seeds and farming inputs:** There is an opportunity in supporting farmers with their farming inputs in terms of quality and price. This can be approached by; 1) directly distributing quality wheat seeds and inputs to farmers; 2) build the capacities of SPEG and traders to ensure that the quality of inputs can be sustained in the market even after the end of the interventions.
- **Introduce new irrigation solutions:** The introduction of irrigation solutions that require low energy consumption will directly reduce the farmer's production cost. For instance, Farmer training on Conservation Agriculture practices like Zero tillage for soil and moisture conservation techniques.
- **Capacity building:** Provide training to farmers on how to be more resilient to sudden climate changes and early pest and disease identification. This can be done by providing farmer training on Climate Smart Agriculture, Integrated Pest and Disease Management. Moreover, train farmers on the different corporation models that can better position farmers in the market.
- **Information sharing:** Support the local communities in developing an information-sharing platform that can be utilized in sharing information between the different chain actors in the market, regarding production, market prices, climate changes, and market performance.

Processing Opportunities

- **Rehabilitation of processing facilities:** Rehabilitation of the closed and operating facilities will raise the wheat to bread processing capacity across northwest Syria region. This will allow the market to absorb more supply of wheat and flour in the future. However, such intervention needs to be carefully approached and must be sensitive to the competition between the different chain actors in the market. For example, the wheat to bread facility mapping assessment revealed that some bakeries closed because their competitors in the area were receiving free flour support and were able to produce bread at subsidized prices. This has reduced their market share and led to some operators losing their customers to the supported bakeries. This risk can be mitigated by efficiently mapping the facilities in the market and conduct an in-depth market analysis to better understand the need in each targeted area.
- **Introduce alternative energy solution or green biofuel alternatives:** The major driver for the high operation cost is the high and fluctuating prices of fuel. Green solutions will directly contribute to lowering the cost of flour and bread production, which will eventually reflect on the bread prices in the market.
- **Humanitarian aid organizations utilize local flour and wheat production:** Some humanitarian aid organizations were reportedly importing flour for their flour distribution interventions. As much as such efforts are stabilizing the supply of staple food/bread in the market, however, it could contribute to some level in marginalization or out-competing of local wheat farmers and local production of flour by local millers. It is recommended for humanitarian aid agencies, to consider improving the local flour production and locally source wheat from farmers then process it into flour in local mills. Such interventions will empower the local market and encourage actors not to abandon producing wheat and flour. This recommendation can ensure sustainability of the local wheat to bread value chain in Syria.

The aforementioned recommendations need to be approached simultaneously with each market chain actor, to ensure an inclusive impact on the value chain. Targeting one segment in the value chain could create new bottlenecks and will disrupt the production flow. The inclusive market system approach requires more in-depth market analysis to quantify the supply and demand needs in the market. Moreover, implementing partners must be constantly adaptive to the changes in the market dynamic, which requires continuous monitoring along with activity implementation.