SYRIA CROSS-BORDER HLG (NWS)
FOOD SECURITY & LIVELIHOODS
CLUSTER

November 2022

Wheat Value Chain Assessment

Northwest Syria

Table of Contents

1. Introduction

Wheat is the most critical food crop in Syria, as it is essential to the production of bread that is the primary staple food in the country. Since 2011, multiple humanitarian actors have been providing wheat production support and flour assistance procured in the region and inside Syria, and cash and voucher assistance. The consequent conflict events, loss of agricultural institutions, inflation, increase in fuel price, currency depreciation, shortage of manpower due to low wages, and high frequency of extreme weather events like floods, frost and drought scenarios, and the introduction of imported flour are all major factors in diminishing returns from the local production of wheat. Many farmers in Syria have abandoned wheat production and switched to cash crops in the face of various challenges limiting the farmer's capacity for wheat crop production.

There is a need to extend assistance to wheat farmers, in order to revitalize local production by increasing the availability of inputs and improving marketing skills, which would allow farmers to locally compete. In that regard, the Food Security and Livelihood (FSL) Cluster in Northwest Syria (NWS) and iMMAP carried out a value chain assessment focusing on input supply chain management and output market of wheat production in NWS. This study is supported by key findings of the most recent iteration of the quarterly Wheat-Flour to Bread Processing Facilities Mapping study of September 2022[1] , and the Wheat Market System Rapid Assessment for NWS in November 2021[2] that were conducted by iMMAP. According to FAO's terminology, a sustainable food value chain is defined as "the full range of farms and firms and the successive coordinated value-adding activities that produce particular raw agricultural materials and transform them into particular food products that are sold to final consumers and disposed of after use, in a manner that is profitable throughout, has broad-based benefits for society and does not permanently deplete natural resources." This wheat value chain gap analysis report on NWS is meant to mitigate an absence of technical literature by providing a snapshot on how local authorities, the private sector, and humanitarian partners can work together to create an enabling environment supporting wheat value chain development.

1.1. Study Objectives

1. Understand the current challenges and opportunities facing wheat crop producers in the NWS region.
2. Explore sources of wheat production inputs including wheat seed, and other agricultural inputs (fertilizers, pesticides, herbicides, and fuel, in addition to the harvesting cost and agriculture extension service support ...etc.)
3. Study price trends of the different sources of wheat seeds, wheat flour and agricultural inputs.
4. Explore the wheat to flour trading norms, and the effect of imported flour on local wheat production.
5. Understand opportunities and inefficiencies in the current system that are hindering market actors within the wheat value chain from sustaining their agribusiness and livelihood.
6. Identify leverage points along the wheat value chain that have potential in strengthening the effectiveness and efficiency of local wheat production across the NWS region.
7. Understand the role of different stakeholders and market actors (NGOs, Syrian Publishment Establishment of Grain (SPEG), and General Organization of Seeds Multiplication (GOSM)) in the wheat market system.
8. Identify the main potential interventions that address the marketing gaps.

1 The latest Wheat-Flour to Bread Processing Facilities Mapping study for August/September 2022 can be accessed through this link.

2 The Wheat Market System Rapid Assessment for November 2021 can be accessed through this link.

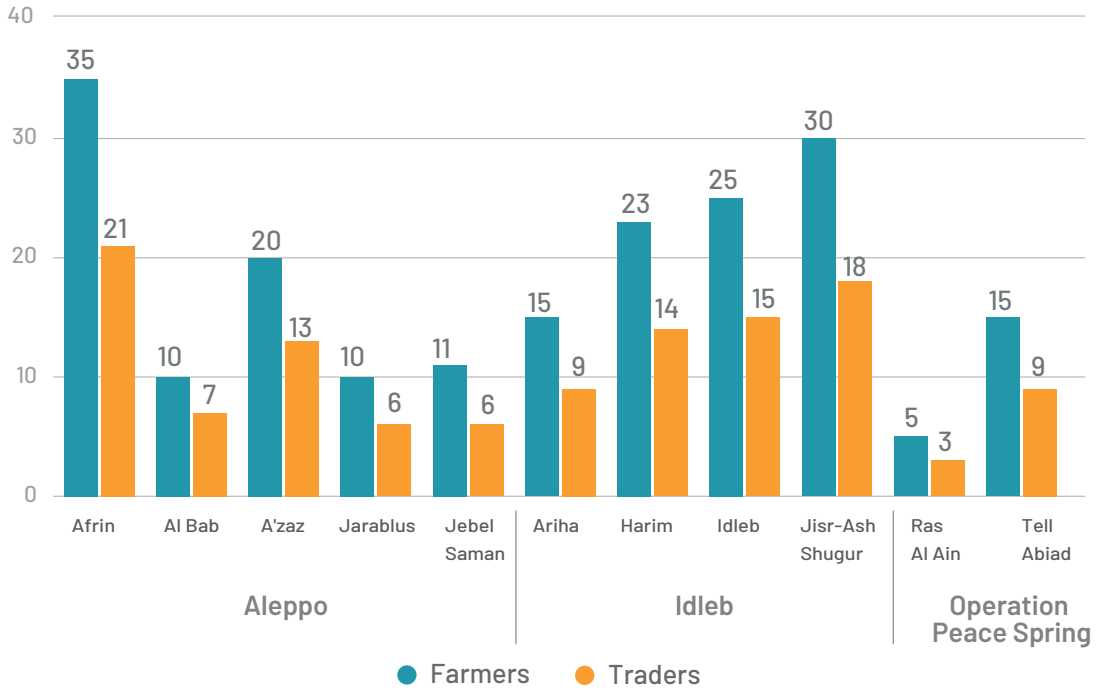
1.2. Study Methodology

The study methodology implemented a mixed and participatory design comprising document literature reviews, sample-targeted key informant interviews comprised of farmer household level surveys, traders, and field observations records. The use of a combination of techniques for an assessment and the data collection support of the Bread and Bakery Technical Working Group (BBTWG) members was critical to ensure good quality data while applying the agricultural value chain assessment-sensitive approach. The diversity in methods allowed triangulation to build on the intentional combination of multiple data collection techniques; the use of a variety of data sources, ensuring different background and the use of multiple perspectives or lenses to interpret records across the various components across the wheat value chain and related sectors.

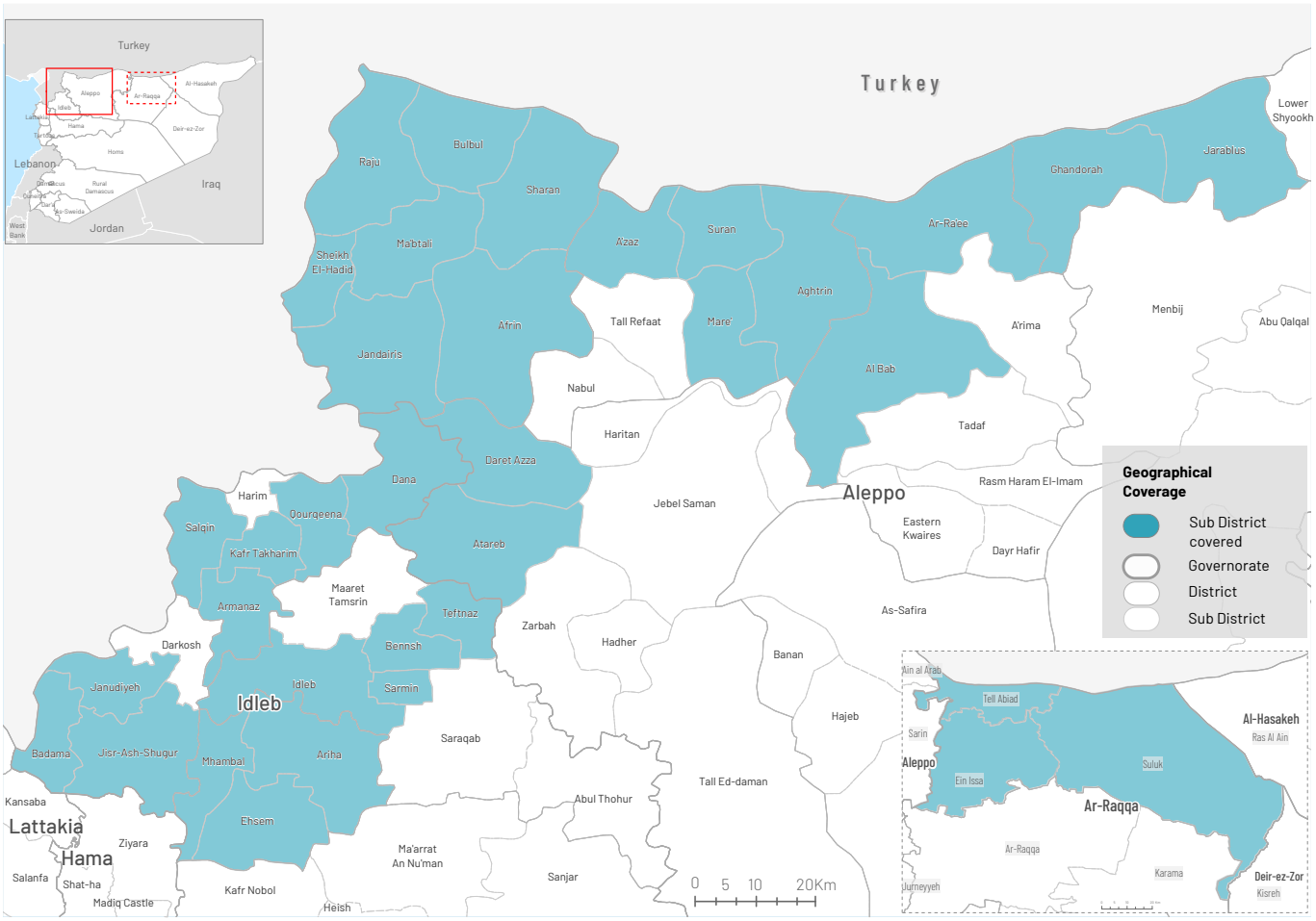
1.3. Data Collection and Geographical Coverage

Thirty-eight sub-districts were covered across 11 districts in 4 governorates: 4 districts in Idleb governorate, 5 districts in Aleppo governorate, Tell Abiad district in Ar-Raqqa governorate, and Ras Al-Ain sub-district in Al-Hasakeh governorate (Operation Peace Spring). One hundred and ninety-nine farmers and 121 traders were interviewed using data collection tools that incorporated qualitative and quantitative questions with a focus on marketing trends and challenges, as illustrated in figure 1. Fifteen Bread and Bakery Technical Working Group (BBTWG) member partners supported iMMAP in conducting the data collection.

Figure 1: Number of Key Informant Interviews per District



Map 1: Data Collection Coverage Map



1.4. Contextual Differences in the Different Areas of Inclusion

The eleven districts included in this study fall under four different areas of control in which the geopolitical context differs. These areas include: Operation Euphrates Shield (OES) and Olive Branch (OOB) areas (which include Aleppo's Afrin, Al Bab, A'zaz and Jarablus districts), Operation Peace Spring areas (including Ein Issa, Suluk, Tell Abiad, and Ras Al Ain districts in Al Hasakeh and Ar-Raqqa governorates), and areas in under Hayat Tahrir al-Sham (HTS) control in Idleb.

These areas are governed and controlled by different systems and actors. In Idleb, the de facto government is the Syrian Salvation Government (SSG), while OES and OOB areas are under the administration of the Syrian Interim Government (SIG), Turkish-backed groups, and Turkey itself. Areas in OPS are similarly under Turkish control but are reported to have more direct Turkish influence than its counterparts on OES and OOB areas.

Aside from disparities in governing bodies and structures, a notable difference is the existing of different militarized factions within the different locales. The Turkish-backed Syrian National Army (SNA) consists of multiple factions that are known to act independently of one another (or even in opposition on multiple occasions) and are reported to enjoy certain privileges from the control of resources in areas in which they operate. These include fees from checkpoints and crossings and taxes. In opposition held areas of Idleb, the primary security actor is HTS, which has recently attempted to exert its influence on areas of Afrin and northern Aleppo through an October incursion into Turkish and SNA-held territories that was eventually resolved through delayed Turkish intervention.

2. Market Environment

2.1. Seasonal Rainfall and Climate Change

Climate change continues to dramatically affect Syria, with below-average levels of rainfall in the 2021-2022 winter season impacting wheat crop physiology and productivity. The majority of farmers participating as study respondents (69%) reported low rainfall levels in 2021-2022 season in comparison to the 2020-2021 season (46%), indicating a 23% increase in the reported low levels of rainfall this season. Twelve percent of assessed farmers reported a decrease in the size of their cultivated land under wheat production for the season 2021-2022 in comparison to the previous season, whereas 66% of these farmers attributed this decline in wheat cultivation area to the low rainfall levels. The main effects of low rainfall reported were the decline in the cultivated crop yield, the increase in production costs due to the need to rely on full or supplemental irrigations while **having financial liquidity limitations, and the delay in agricultural activities such as planting where around 15% of the planting activities reportedly done late,** for instance in January and February 2022.

Figure 2: Farmers' Rainfall Levels Description

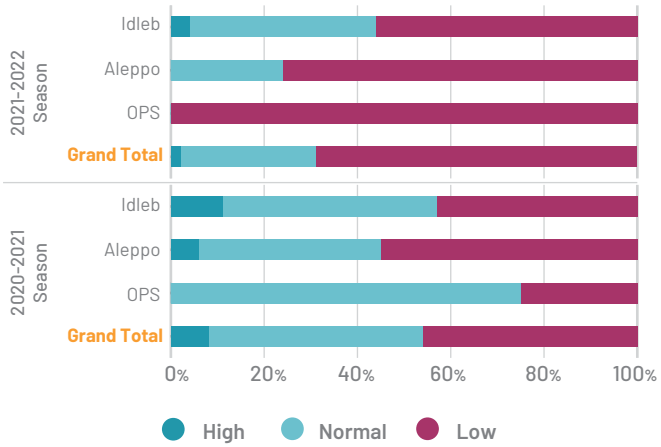
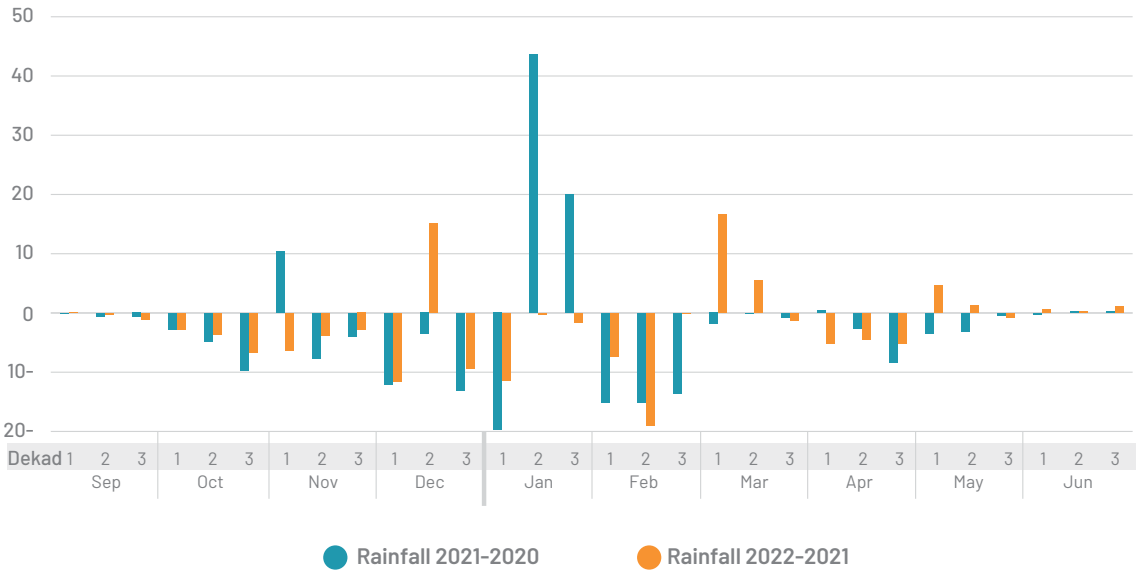


Figure 3 shows Syria WFP VAM rainfall data for all NWS districts, which illustrated a comparison between the level of rainfall (in mm) for the rainy seasons 2020-2021 and 2021-2022, in respect to the annual average of rainfall (in mm) for the months September to June for both seasons[3]. Contradictory to the farmers point of view, the figure illustrated an overall slight improvement in the levels of rainfall for season 2021-2022 in comparison to the previous season particularly in December, February, and March, nevertheless, remaining below the annual long-term average across most of the season. **However, the rainfall distribution pattern was worse-off for the two rainy seasons under study, thereby negatively impacting the wheat crop productivity in NWS.**

Figure 3: Rainfall Anomalies in mm for the 2020-2021 and 2021-2022 Winter Season – Average of all NWS Districts



3 WFP VAM Seasonal Explorer; rainfall levels in Syrian Arab Republic NWS Region for the years 2020-2022. Raw data used can be accessed through this link.

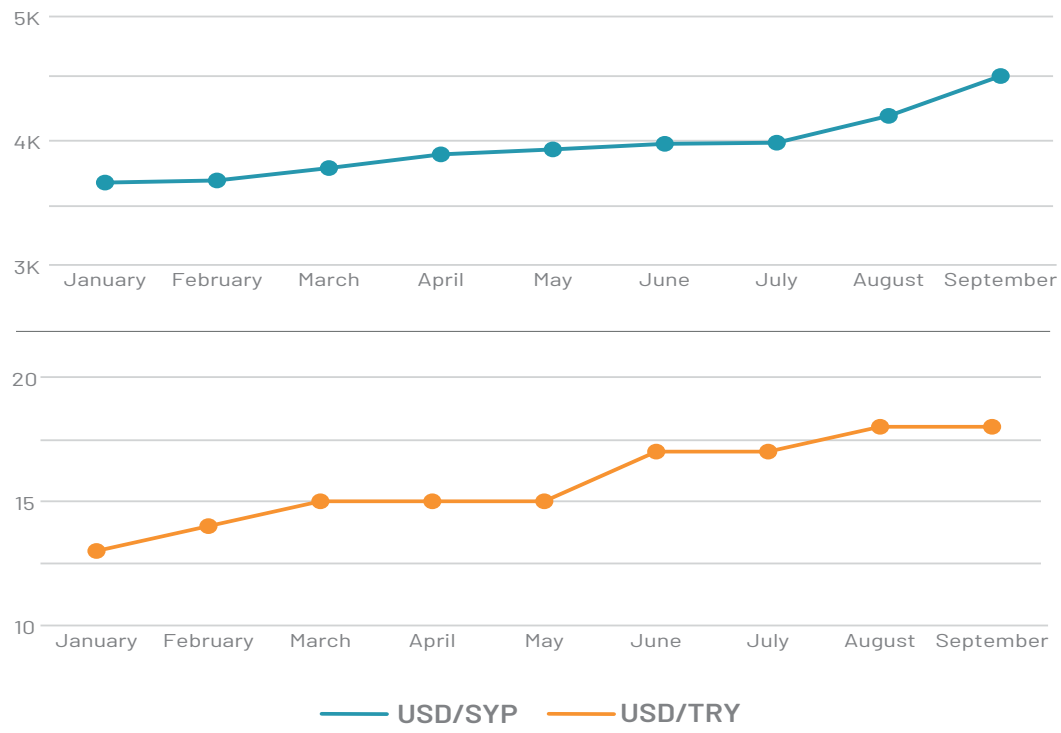
2.2. Currency Depreciation

The exchange rate of one US Dollar (USD) to Syrian Pound (SYP) continued to increase in 2022, reaching an average of 4,500 SYP in September 2022, while it was reported as 3,500 SYP in October 2021, indicating a 29% increase in the exchange rate of the US Dollar across the year[4]. **The average exchange rate reported by farmers in October 2022 was 4,950 SYP, with Tel Abiad district reporting the highest exchange rate of 5,000 SYP; this indicates high variability within the informal exchange market.**

The US Dollar (USD) and Turkish Lira (TRY) continued to be the dominant currencies for the economic activities in the NWS region. For this study, 89% of all reported wheat input prices purchased or sold by farmers and traders were provided in USD, followed by 11% reported in TRY, and no reported prices in SYP. Almost all 11% of the reported prices in TRY were by farmers and traders in Idleb governorate. **According to the latest Wheat-Flour to Bread Processing Facilities Mapping study conducted in August/September 2022[5], bakeries reported that 98% of their purchased bread production inputs were through using US Dollars**, while 97% of the sold bread outputs were through using TRY.

This indicated that the USD was more dominant in the trading market for raw inputs such as wheat and flour, while the TRY was more dominant in the trade for produced bread in the Wheat-Flour to Bread value chain.

Figure 4: USD Exchange Rate Against SYP and TYR for Jan-Sept 2022 in the NWS region.



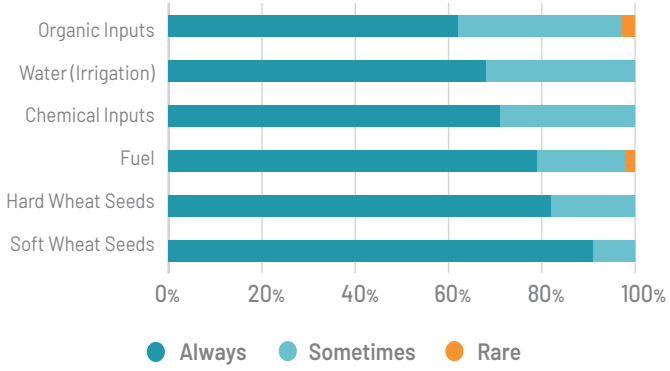
4 Turkey Cross-border: NWS Cash Working Group Market Monitoring Dataset (2022, September). This link is for the latest CWG dataset for the Joint Market Monitoring Initiative (JMMI) for Northwest Syria, reporting the exchange rates of the USD to SYP and TRY for 2022.

5 The latest Wheat-Flour to Bread Processing Facilities Mapping study for August/September 2022 can be accessed through this link.

2.3. Availability of Wheat Production Inputs

Most inputs for wheat production were considered always available by farmers, the highest being soft and hard wheat seeds. On average, soft and hard wheat seeds were considered 87% available for the 2021-2022 season, with soft wheat seeds being more available than hard wheat seeds, and slightly increasing in availability from 84% in the previous season. The farmers who reported limited availability of wheat seeds (both soft and hard) were in Ghandorah, Jarablus and Sheikh El-Hadid sub-districts in Aleppo governorate, and Teftnaz, and Jisr-Ash-Shugur sub-districts in Idleb governorate.

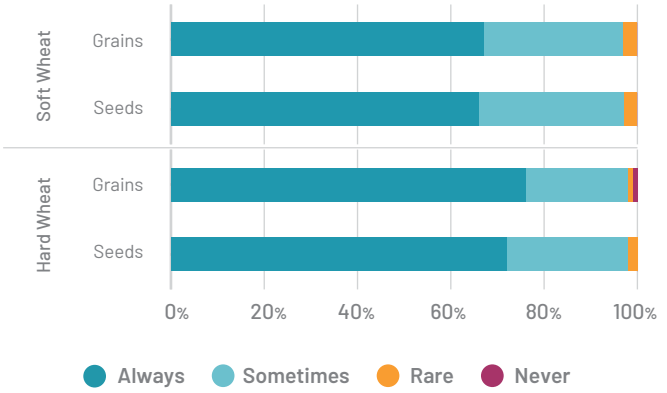
Figure 5: Availability of Wheat Production Inputs - Reported by Farmers



Similar to the previous season, other wheat production inputs were considered relatively available in the 2021-2022 season, however, farmers encountered limitations in accessing chemical inputs, organic inputs, fuel, and water for irrigation needs. The highest reported limitations were the overall international market prices increase of all wheat production inputs, **where the farmers' low financial liquidity and their limited access to support hinder their purchase capabilities of the required wheat production inputs**. Many farmers also reported high transportation costs and the closure of roads and crossings that limit their access to these inputs. The highest reported closure of roads and crossings was in Idleb governorate, followed by Aleppo governorate.

While wheat seeds were reported as 87% always available for farmers assessed, traders reported only 70% availability of soft and hard wheat seeds and grains as always available in the 2021-2022 season. In comparison with the previous season, the high availability of soft and hard wheat seeds and grains decreased by 6%, signifying that trader faced increased challenges in sourcing wheat seeds and grains than the previous season. The challenges reported by wheat market traders were the international increase in market prices of production inputs, the increase in the exchange rate of the USD to SYP, the monopoly of big traders in controlling the market, and the imposed taxes on wheat production inputs.

Figure 6: Availability of Wheat Grains and Seeds - Reported by Traders



It is also worth noting that the reliance on importing agricultural inputs across different locals can sometimes be complicated when political tensions escalate. An October Spot Report published by iMMAP's covered HTS's recent incursion into areas of Afrin and ensuing conflict with SNA factions in October of 2022. Though security tensions in the area have since de-escalated with the help of delayed Turkish intervention, potential future changes to points of access may cause disruptions in the flow of inputs and products between the areas of control assessed. Tensions between different factions may result in increased taxation of certain inputs through crossing points, raising already high prices of inputs necessary for wheat cultivation, or even the prevention of crossline trade and movement for periods of time.

3. Market Infrastructure

3.1. Storage Facilities

Some farmers (16%) reported storing wheat grain either to be sold later in the season for higher prices or to be used as retained seeds in production in the next season. Ninety five percent of farmers had access to storage facilities, the highest being areas in their own homes, followed by privately owned warehouses. The remaining 5% of farmers (n=6) who reported not having access to storage facilities attributed the access limitation to the high storage costs and low financial liquidity. Another reported reason for limited access to storage space was the lack of storage spaces in the area, mainly reported in Afrin sub-district in Aleppo governorate, and Badama subdistrict in Idleb governorate. On the other hand, 98% of traders had access to storage facilities, the highest being in rented or owned warehouses. **Storage facilities were considered the highest cost contributing to the traders' business costs.**

As for the strategic storage capacity in NWS, iMMAP Wheat-Flour to Bread Processing Facility mapping most recent study reported that 20% (n=3) of the silos in NWS were partially operational in September 2022[6]. **The main reported reason for the non-operation of silos was due to the need of building and machine rehabilitation.** The operational silos were in A'zaz district in Aleppo governorate, Idleb district in Idleb governorate, and Ras Al-Ain district in Al-Hasakeh governorate with storage capacities of 12,000 MT, 110,000 MT and 50,000 MT of wheat respectively, **while no operational silos were available in OPS areas of Tell Abiad district in Ar-Raqqa governorate in the NWS region.** Furthermore, it is worth noting that there was a significant loss of a large number of silos in areas in Idleb due to GoS incursion in 2019.

3.2. Irrigation

Forty percent of the farmers assessed were producing irrigated wheat crop, whereas around 50% of the farmers depend on artesian aquifer and water wells to irrigate their crops similar to the previous 2020-2021 season. Farmers who produce irrigated wheat crop faced major challenges related to water availability and poor irrigation water sources mainly due to the low rainfall levels. **The increase in fuel price, and the relative increased irrigation operational costs of pumping for water extraction was also reported as a major challenge for irrigated wheat crop production.**

According to the Market Price Watch Bulletin published by WFP in August 2022, the informal butane gas cylinder price and the price of informal diesel used for transport throughout the cross-border region increased month-on-month by two and five percent in August 2022, and year-on-year by 72 and 100 percent, respectively[7], which indicates a significant increase in fuel prices in comparison to the previous season.

Additionally, as mentioned earlier, availability and price of inputs – including fuel – are sometimes affected by geopolitical tensions in the area. In late October and early November 2022 in Idleb there was a noticeable shortage of fuel. The recent HTS incursion into Afrin is reported to have caused fuel passing to Idleb to be further taxed by factions controlling crossings and checkpoints across main routes.

6 The latest Wheat-Flour to Bread Processing Facilities Mapping study for August/September 2022 can be accessed through this link.

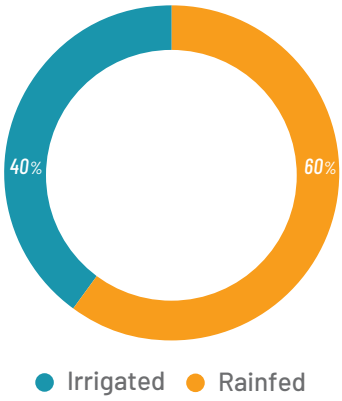
7 WFP VAM. (2022, August). Market Price Watch Bulletin (Issue). Link

4. Value Chain

4.1. Wheat Production

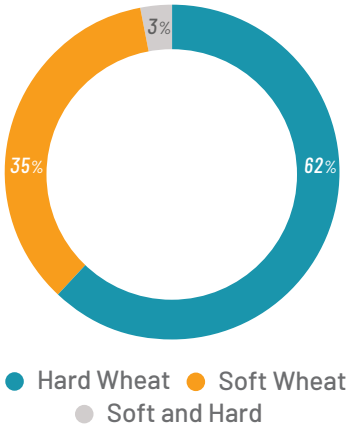
Most farmers (around 60%) reported producing rainfed wheat, whereas 40% of the interviewed farmers reported producing irrigated wheat. As in the previous winter season, the most dominant type of seed planted was hard wheat with 62% of farmers reported using hard wheat, 35% planted soft wheat seed, and 3% planted a mix of hard and soft wheat seeds.

Figure 7: Wheat Production Methods



it can be noted that for this winter season 15% of farmers performed planting activities in January and February. Furthermore, only 5% of farmers reported selling their produce after August, which indicated low levels of wheat storage post-harvest. The wheat production activities cycle further confirmed that the Wheat-Flour to Bread Processing

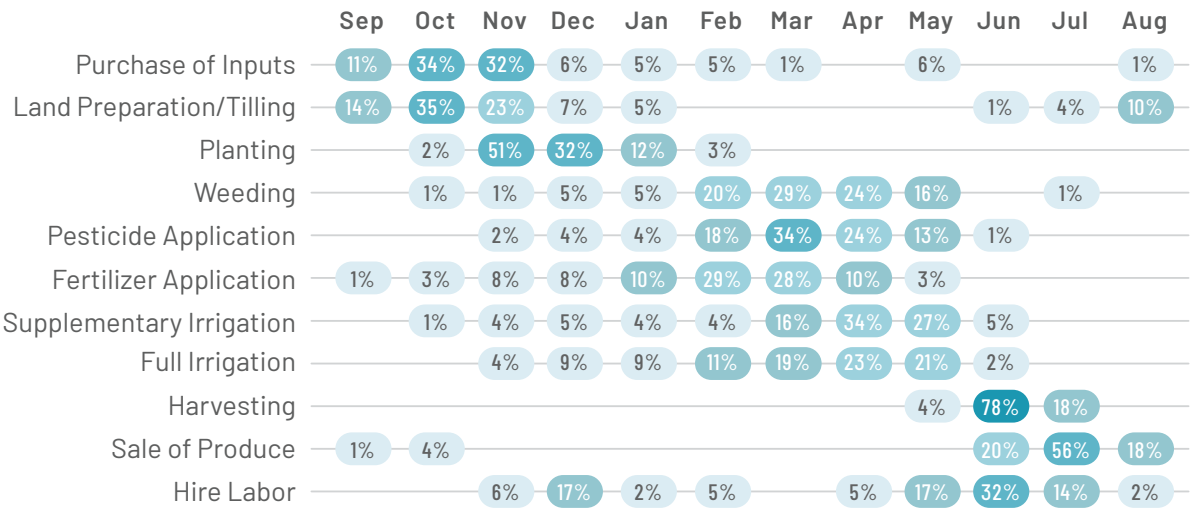
Figure 8: Types of Wheat Seeds Planted



Assessed farmers reported on their wheat production cycle activities for the winter season 2021-2022, as illustrated in Figure 10, where the reported activities remained within the regular wheat cropping calendar. The wheat planting season is usually reported between October and December; however,

Facilities Mapping most recent study findings, where the highest reported availability of locally milled flour is in the months June to September.

Figure 9: Wheat Production Cycle Activities



The overall land area cultivated with wheat crop increased amongst interviewed farmers by 7% compared to the 2020-2021 winter season. The increase was more evident amongst irrigated crop land, with 12% more land area than the previous season, while the rainfed crop land encountered a slight 1% increase in land area. **While both wheat production methods reported an increase in land area in the 2021-2022 winter season, the average reported rainfed crop yield per donum was lower by 20% than the 2020-2021 season, while the irrigated crop yield per donum was lower by 12%.** Table 1 shows the percentage change in the reported average wheat yield per dunam.

Table 1: Reported Change in Average Wheat Yield (MT/Dunam) - 2021-2022 Season vs 2020-2021 Season

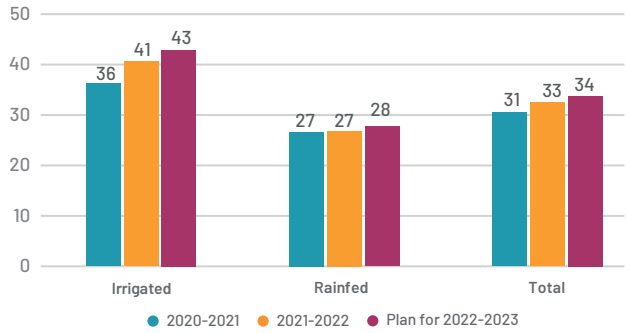
Production Method	Average Reported Wheat Yield (MT/ dunam) - 2021-2022 Season	Average Reported Wheat Yield (MT/ dunam) - 2020-2021 Season	Percentage Change
Irrigated	0.37	0.42	-12%
Rainfed	0.24	0.30	-20%
Total	0.30	0.35	-14%

The main reasons reportedly influencing the increase in the land area cultivated with wheat crop were due to farmers' implementation of crop rotation and the success of the crop in the previous season yielding better production and profit. However, the decline in the wheat yield in rainfed crop lands in the 2021-2022 season can be attributed to the low levels of rainfall encountered throughout the season, which led approximately 18% of farmers to turn to supplemental irrigation, causing increased production costs due to the high costs of agricultural necessities.

Additionally, geopolitical tensions affect the accessibility to land that was historically used for the cultivation of wheat. For example, some of the areas historically used for the cultivation of wheat in Idleb, including Jabal al-Zawiya and areas south of the M4 highway, are constantly targeted in exchanges of hostilities between HTS, the GoS, and other military actors. This has consequently caused interruptions and barriers to cultivation and harvesting of wheat, decreasing reliance on and dependability of these areas. As the GoS and its allies have increasingly targeted other areas of Idlib in recent months, similar barriers are likely to be posed to any agriculture in or near areas under heightened threat.

Farmers were asked about their planned land area cultivation for the 2022-2023 season; 23% of farmers reported their intention to reduce the area of land cultivated for wheat crop for the upcoming season, largely due to the increased cost of agricultural inputs required for wheat production. Eighteen percent reported their intention to increase the land area cultivation for wheat crop for the upcoming season mainly due to the success of their wheat crop production and 59% reported no plans to change. **Furthermore, 47% of the farmers interviewed reported their consideration of shifting to cash crop production instead of wheat. This was mainly attributed to the increased production cost of wheat, the lower production cost of cash crops, the lower irrigation needs of cash crops, and the higher selling price and profit from cash crop production.** With these plans for the upcoming season, the expected land area cultivated with wheat for the 2022-2023 is still expected to slightly increase for both rainfed and irrigated crop lands.

Figure 10: Land Area Cultivated with Wheat (Dunam)



On average, the overall production cost of one dunam of wheat increased by 22% in comparison to the previous season. The production cost of one dunam of irrigated wheat crop encountered a higher cost increase than rainfed wheat crop (30%), which can be attributed to the higher need for farmers to finance water sources and fuel for irrigation, all of which have increased prices in the market. Farmers reported that the highest contributors to wheat production costs are the use of chemical inputs, the use of machinery such as tractors and harvesters, and fuel.

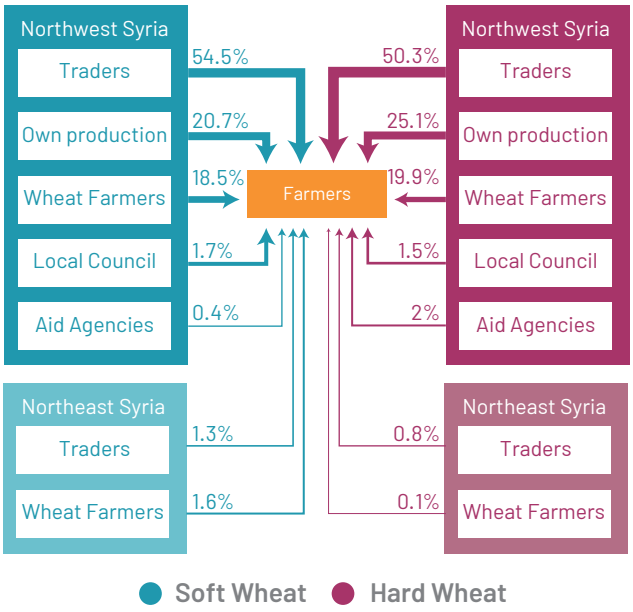
Table 2: Change in Average Production Cost (USD/Dunam) - 2021-2022 Season vs 2020-2021 Season

Type crop	Average Production Cost (USD/ Donum) - 2021-2022 Season	Average Production Cost (USD/ Donum) - 2020-2021 Season	Percentage Change
Irrigated	95.1	73.2	30%
Rainfed	67.4	58.4	15%
Grand Total	78.5	64.6	22%

Sources of Wheat Seeds

Most farmers reported sourcing their wheat seeds from local traders in NWS, for both hard and soft wheat seeds. This was followed by using own production of retained wheat seeds, where 21% and 25% of the used soft and hard wheat seeds respectively were from the farmers' retained seeds from the previous season (n=63 farmers). **Sixty five percent of retained seeds used were originally planted for the first time in 2019 onwards.** The remaining 35% of the retained seeds had been originally planted for over four cropping seasons (between 2011 and 2018), most instances of which were reported by farmers who produce rainfed wheat in Idleb governorate. The use of retained seeds older than 2019 increases the likelihood of reduced seed viability and deterioration of seed quality, in turn affecting the success and quality of the yielded wheat crop. Furthermore, in comparison to the previous 2020-2021 winter season, less wheat seeds were sourced from the Local Council and Aid Agencies in NWS. A small number of farmers also reported sourcing their seed supply from the Northeast Syria region.

Figure 11: Farmers' Sources of Wheat Seeds



On the other hand, most traders reported sourcing their wheat seeds and grains from local wheat farmers in NWS, followed by other local traders in NWS. However, there is a distinct number of traders who purchase wheat seeds and grains from importers in NWS, or from wheat farmers in the NES region. Only 15% of traders reported having contracts with their suppliers, indicating set terms for the amounts of wheat purchased, prices, and specified period of payment. The main payment modality of traders with their suppliers is cash, followed by informal credit payments with set payment period conditions.

Figure 12: Traders' Sources of Wheat Grains

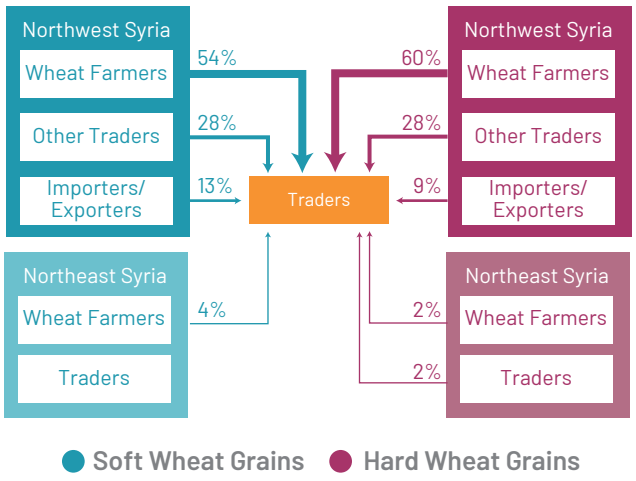
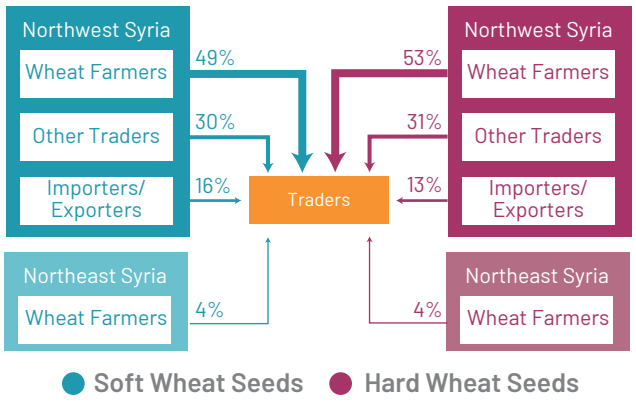


Figure 13: Traders' Sources of Wheat Seeds



4.2. Climate Smart Agriculture Practices

Most farmers reported using most of the assessed climate smart agriculture (CSA) practices. The activities with the lowest implementation are the use of organic manure, use of irrigation, and water harvesting. On the other hand, more than 90% of farmers reported using composting, minimum soil tillage, herbicides, and incorporating residue as adopted CSA practices.

Although on average water harvesting is used by only 35% of assessed farmers, it is heavily utilized in Tell Abiad district in OPS-controlled areas of Ar-Raqqa governorate, where 100% of farmers harvest water. Water harvesting is lowest in OES areas of Aleppo governorate, with only 20% of farmers using this CSA practice. The main reported reasons for the low implementation of water harvesting are due to its' high cost and the farmers' lack of financial liquidity, the low levels of rainfall in the area, and the unsuitable nature of the area to build underground reservoirs to harvest water.

Farmers also reported the limited need for water harvesting due to their access to water wells, artesian aquifers, and rivers for their irrigation needs. It can be noted that although water harvesting is low, higher number of farmers reported the use of irrigation, specifically in Aleppo, where only 20% of farmers harvest water but 74% of them use irrigation methods for production, hence, indicating relying on other irrigation sources of water than harvested water.

As for organic manure usage, Tell Abiad district in Ar-Raqqa governorate and Ras Al-Ain sub-district in Al-Hasakeh governorate (both areas in OPS territory) had the lowest usage of this CSA activity with only 30% of farmers using organic manure in their wheat production. The main reported reasons for the low usage of organic manure are due to its low availability associated with the low availability of livestock in the area, in addition to the increase in the organic manure's market cost. Farmers reported that they rely on chemical fertilizers instead.

Figure 14: Use of Climate Smart Agriculture Practices - Per Governorate

	Aleppo	Idleb	OPS	Grand Total
Water Harvesting	20%	39%	80%	35%
Crop Rotation	93%	86%	50%	85%
Minimum Soil Tillage	90%	98%	100%	94%
Incorporate Residue	87%	95%	95%	91%
Composting	98%	95%	75%	94%
Certified Seed	92%	84%	70%	86%
Organic Manure	60%	67%	30%	60%
Use of Herbicides	98%	100%	40%	93%
Use of Pesticides	98%	88%	25%	86%
Use of Irrigation	74%	41%	55%	57%

The general attitude of assessed farmers concerning climate smart agriculture practices was found to be positive. The positive attitude towards the practices was attributed to perceived potential to increase wheat production and conserve soil and water among other benefits mentioned. However, the major setback to their positive outlook was the perceived high risk and uncertainties concerning the climate smart agriculture practices, particularly high capital financial requirements to adopt some of the practices like water harvesting and irrigation system development, greenhouse installation and solar power system installation to pump irrigation water and/or to power other agricultural machinery. The study demonstrated climate change impacts such as decline in wheat crop yield likely due to climate induced aridity and local currency inflation induced instability in wheat production, which had consequently, compelled farmers to adopt some of the climate smart agriculture practices though to a large extent.

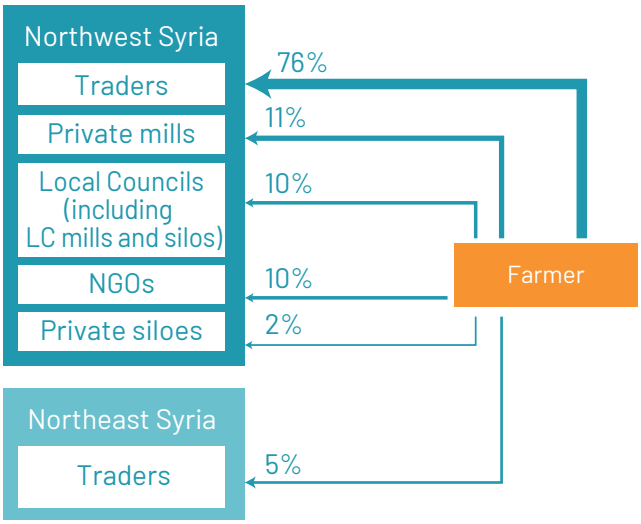
However, assessed farmers demonstrated limited understanding of many other climate change adaptation options like diversification to other non-farming activities, limited access to accurate weather and climate forecasting information, lack of access to market price information and lack of knowledge on the importance of timeliness of operations on varying planting date and agroforestry. The study indicated significant shortcomings in dissemination of agro-weather information through extension services, bulletins, and farmer groups/organizations, which once strengthened, would lead to enhanced access of agro-weather information among farmers.

4.3. Post-Harvest Handling of Wheat Grain, Trading and Marketing

On average, the direct selling of wheat grain harvest in the market was the highest post-wheat harvest activity reported by farmers (74%), followed by storing selected wheat grain as retained seed to be used in production in the next season (9%). The storage of wheat grain harvest to be sold after the harvest for higher prices was low (7%), giving an indication of the weak market power that the farmer holds, meaning that farmers need immediate cash upon post-crop harvest.

Farmers' main market outlets were through local traders; 76% of farmers reported sold directly to local traders in NWS, followed by 13% of farmers selling to private mills and silos. **In comparison with the previous season, when no NGOs were reported as farmers market outlets, 10% of farmers reported sold wheat grain directly to NGOs in the 2021-2022 season.** Furthermore, only 5% of farmers reported selling their wheat grain to traders in NES, which decreased from 13% in the previous season. The most dominant selling modality among all farmers was cash, except for NGOs, where cheques were more often used. The transportation cost is usually covered by the customer with traders, and by the farmer with other customers.

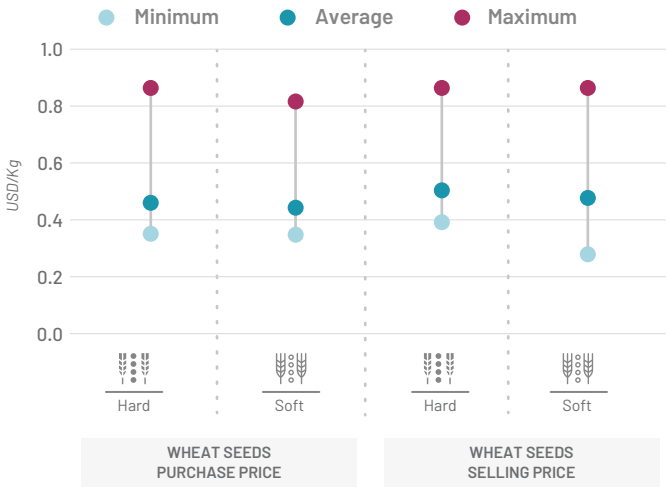
Figure 15: Farmers' Customers



Wheat Price

Figure 16 provides a breakdown for the ranges and averages of reported traders' purchase and selling prices for soft and hard wheat seeds. On average, the recorded purchase price of hard and soft wheat seeds was reported by traders as $0.47/Kg and $0.45/Kg, while the selling price of hard and soft wheat seeds were reported as $0.51/Kg and $0.49/Kg respectively. Business costs excluded, the reported prices indicate an 8% and 10% profit margin for the trade of soft and hard wheat seeds respectively.

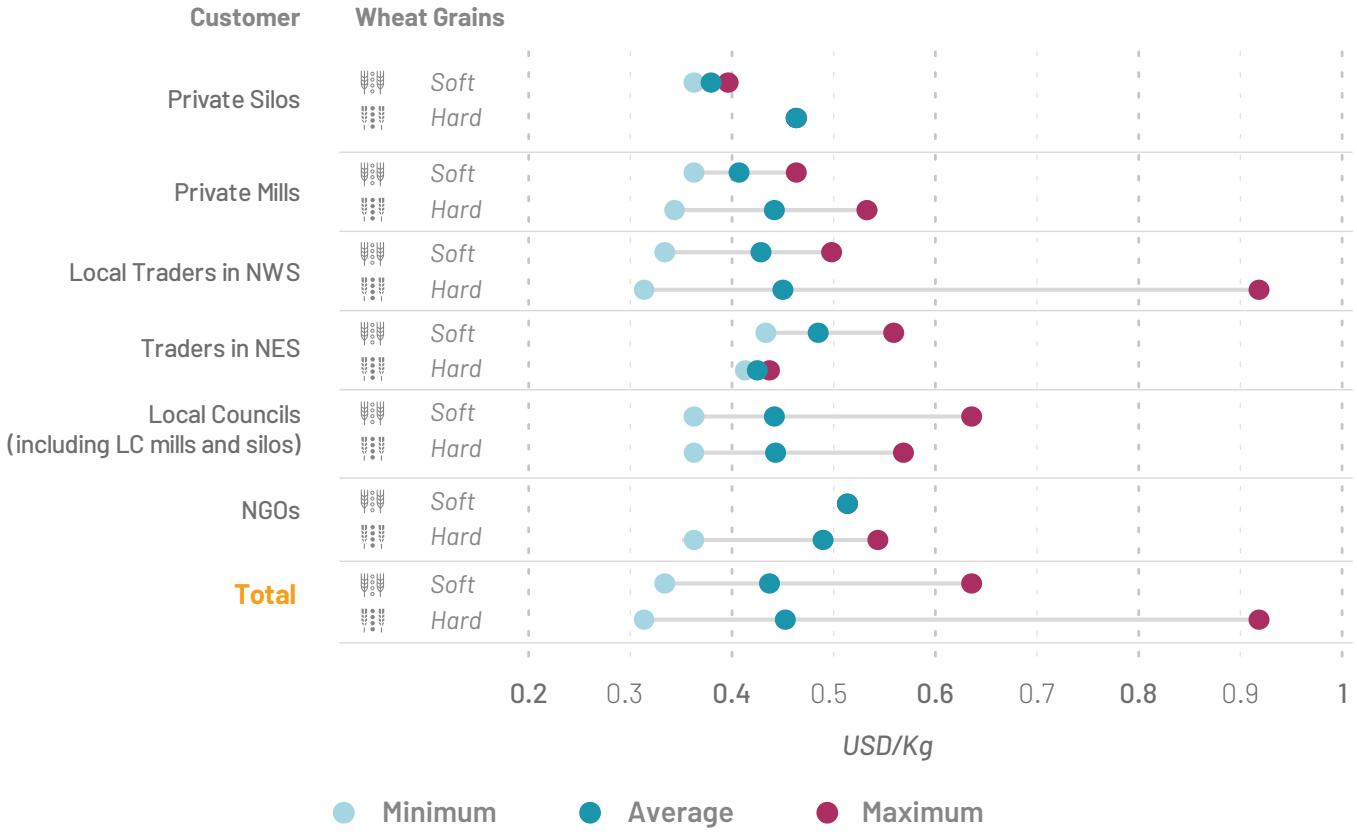
Figure 16: Traders' Purchase and Selling Prices of Wheat Seeds USD/Kg



On the other hand, the total average reported farmgate selling price of soft and hard wheat grains by farmers was $424/MT and $440/MT respectively. Figure 14 provides a breakdown for the ranges and averages of reported farmer selling prices for the different types of customers of wheat grains.

There is a notable increase in the prices of soft and hard wheat grains in comparison with the collected data in the NWS Wheat Market Systems Rapid Assessment by iMMAP in November 2021, where the farmers' average selling price of wheat grains was $322/MT and $326/MT respectively. **The highest selling price of soft wheat grains is to NGOs and traders in NES, while the highest selling price of hard wheat grains is to NGOs and private silos.** However, there was limited market price information dissemination to farmers probably due to lack of trainings on market search and market linkages.

Figure 17: Farmers' Selling Prices of Wheat Grains USD/Kg



Furthermore, it should be taken into account that different governing bodies in different areas of NWS and NES have different standardized prices at which they purchase wheat. IMMAP field sources indicated that the Self-Administration of Northeast Syria (SANES) wheat grains' purchase price was at 450-500 USD per metric ton, while the Syrian Salvation Government (SSG) in Idleb wheat grains' purchase price was at 400-450 USD per metric ton, and the Syrian Interim Government (SIG) in northern Aleppo wheat grains' purchase price was at an even lower price which iMMAP was unable to verify.

4.4. Processing

The local wheat processing is low compared to the local milling capacity. The Wheat-Flour to Bread Processing Facilities Mapping study conducted by iMMAP in September 2022 reported that the weekly milling capacity of all operational mills in NWS was 6,450 MT, whereas the actual reported weekly milling capacity of all operating mills in NWS was 4,416 MT. When comparing this finding with the bakeries' usage of local flour; the actual local milling capacity only covers 25% of the bakeries' usage of local flour.

The same study showed that on average the mills' functionality stood at 68% across the assessed operational mills in the NWS region.

Furthermore, the average reported selling price of 1 kg of subsidized bread in NWS in September 2022 was 4.25 TRY/kg which is 49% higher than the price of the same product in March 2022. The same applies to locally milled flour where prices increased by 19% in September 2022 (571 USD/MT) compared to the price of March 2022 (480 USD/MT)[8].

8 The latest Wheat-Flour to Bread Processing Facilities Mapping study for August/September 2022 can be accessed through this link, and the March/April 2022 report can be accessed through this link.

5. Recommendations and Implications for FSL Programming

- Climate-induced aridity and water scarcity continue to affect Syria with below-average levels of rainfall in the 2021-2022 winter season, affecting wheat crop physiology and productivity. Furthermore, the rainfall distribution pattern was worse for the two rainy seasons under study, thereby negatively impacting the wheat crop productivity in NWS. As suggested in other regions of Syria, **it is recommended to engage with the local authorities and humanitarian partners to stress the importance of, and support farmers' awareness campaigns on the adoption of Climate Smart Agriculture practices, including soil and water conservation techniques and water harvesting particularly for rainfed wheat producing areas.** Promoting relatively drought-tolerant wheat seeds in the local farming systems, including access to drought-tolerant wheat seeds, is of paramount importance, as these can withstand reduced water availability caused by the changing climate in NWS. **Scale-up support towards the light rehabilitation of irrigation systems, linking this with efficient systems for water delivery to wheat production**, as well as the use of non-conventional water (i.e., treated water) for irrigation. Irrigation systems can be rehabilitated through conditional cash transfer programming, where appropriate. USD was dominant in the trading market for most inputs of wheat production and raw inputs such as wheat and flour for the wheat-flour to bread value chain. Moreover, the study r**ecorded high variability** within the informal exchange rate of the hard currency of USD and TRY to the local currency of SYP. **In that regard, it is recommended for the local authorities to establish conducive environments and local policies that encourages humanitarian partners to use hard foreign currency like USD in cash programming** to mitigate the negative impact of inflation and depreciation of the local currency which is common when beneficiaries receive cash entitlements in local currency.
- The study highlighted wheat farmers' delay in agricultural activities such as planting, where around 15% of the wheat planting operation was recorded for the winter cropping season of 2021/2022. **With the changing climate and poor rainfall distribution, which is now a common phenomenon in Syria, it is recommended that agricultural extension agents carry awareness campaigns on the importance of timeliness of operation in wheat production across farming communities.**
- The study noted that wheat farmers encountered limitations in accessing chemical inputs like fertilizers and organic inputs. It is recommended that, the local authorities and relevant market actors assess the capacity of and rehabilitate the fertilizer production sector to provide farmers with the required wheat production inputs, while farmers could also consider other sources of nutrients available domestically, such as compost production, animal manure, and food waste management.
- Storage facilities were considered the highest contributing factor to traders' business costs. As for the strategic storage capacity in NWS, only 20% of the silos were partially operational. **It is recommended for local authorities and partners to consider rehabilitation of silos and its related equipment and machinery.**
- The study recorded an increase in fuel price, and the relative increased irrigation operational costs of pumping for water extraction was also reported as a major challenge for irrigated wheat crop production. **It is recommended to intensify the introduction of alternative energy solutions or green biofuel alternatives.** The major driver for the high operation cost is the high and fluctuating prices of fuel. Green biofuel or solar energy solutions will directly contribute to lowering the cost of production across the wheat-flour to bread value chain, which will eventually reflect on the related end-products in the market.

- Some farmers reportedly considered shifting from staple wheat to cash crop production, mainly due to the increased production cost of wheat, the lower production cost of cash crops, the lower needs of cash crops for irrigation, and the higher selling cost and profitability nature of cash crop production in NWS. **It is recommended for local authorities and humanitarian partners to support farmers on producing high value cash crops on marginalized lands where wheat production tends to give diminishing returns. Cash crop production can lead to household income security, which is linked to improved household purchasing power which can ensure household affordability and accessibility to the much-needed staple food.** Food security is not always synonymous to own food production, but household income generation can ensure household food security.
- **Thirty five percent of the retained seeds had been originally planted for over four cropping seasons (between 2011 and 2018), most of which were reported by farmers who produce rainfed wheat in Idleb governorate,** implying reduced seed viability and poor germination capacity. On the other hand, most traders reported sourcing their wheat seeds from local wheat farmers in Northwest Syria with no seed quality control mechanism in place between farmers and local traders. Syria is the center of origin and domestication for tetraploid wheat where a considerable wealth of genetic variability and diversity still exists on the farms. **It is recommended for the local authorities and relevant actors in the agriculture sector to design an innovative and integrated wheat seed genetic resources conservation, community-based seed multiplication and utilization strategies and approaches that could meet the aspiration and food security of most farmers that depend on agriculture-based livelihood.**
- In comparison with the previous season where no NGOs were reported as farmers market outlets, in the 2021-2022 season, 10% of farmers reportedly sold wheat grain directly to NGOs. It can be noted that the highest selling price of soft wheat grains was to NGOs and traders in NES, while the highest selling price of hard wheat grains was to NGOs and private silos**. It is recommended for extension agents and humanitarian organizations to promote market linkages with local farmers as opposed from NGOs solely importing wheat and flour at the expense of local wheat farmers and local mills of flour – this will ensure the sustainability of the local wheat-flour to bread value chain.**

TELL US WHAT YOU THINK!

LINK