Animal Feed/Fodder Manufacturing Facilities Mapping
Northeast Syria (NES)

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

iMMAP

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Cover Photo: Joel Bombardier, Man herding sheep, Syria.

1. Introduction

The preservation of a productive livestock feed market system is essential to ensure sustainable livestock production and farming, hence enhancing the food security and livelihood situation in Northeast Syria. Drought tolerant animals like sheep and goats serve as preferred livelihood assets for meat and nutritious milk provision, in addition to poultry which provides meat and nutritious eggs for households, particularly in the semi-arid areas where climate-induced aridity is a cause for concern on ranges and pastures. Livestock farming and agriculture production of crops such as wheat and barley are considered widely practiced activities in Northeast Syria (NES), serving as a source of labor, food, and income for Syrian households. Despite the protracted crisis, the various livestock sectors remain a key part of the economy and contribute substantially to the food, nutrition, and livelihood security of the rural population. However, to maintain the effectiveness of a highly productive livestock value chain, suitable nutrition and supplementary feeding management is entailed.

Cultivated green and conserved fodder, as well as crop residues and processed by-products constitute the main sources of animal feed in Syria. Barley, wheat, and other types of green fodder, such as legumes, are the preferred fodder crop for livestock since they are considered a rich source of protein. Wheat bran, straw, and silage are also considered important crop by-products for feed production. Additionally, feed mixtures which include different types of green fodders and concentrates, minerals, and vitamins provide the essential nutrients for animal growth and production.

Prior to the onset of the crisis in 2011, livestock accounted for about 40% of Syria's total agricultural production and occupied about 20% of the labor force in rural areas. In addition, 35% of rural households raised livestock, which is considered their main source of food and income[1]. Since the collapse of government services in 2011, and by 2018, the livestock sector in Syria has suffered substantially, with estimated decreases in flock numbers of 40% for sheep, 29% for goats, 40% for cattle, and encountered a stabilization by 2018 after the 50% decrease of poultry in 2015[2]. Today with the ongoing crisis, livestock farming is facing acute challenges such as increases in the prices of feed, limited veterinary services, lack of expertise in animal husbandry and livestock support services. Furthermore, Syria's multiple crises have severely affected the agriculture sector leading to a sharp decline in crop production as a result of water scarcity, damaged infrastructure, scarcity of energy resources, and the high prices of agriculture production inputs. This has in turn affected the feed and fodder production that is essential for livestock production, in addition to the sharp decline in pasture growth, the limited supply of feed relative to the increased demand, high prices of feed imports due to the limited rainfall that is affecting local production, all of which in turn caused severe impacts on the health and nutrition of livestock and reduced the viability of livestock-based food production and livelihood systems[3].

1 FAO/WFP Crop and Food Security Assessment Mission in Syria, 2019. Link

2 FAO/WFP Crop and Food Security Assessment Mission in Syria, 2019. Link

3 2023 Humanitarian Needs Overview in Syria, December 2022. Link

2. Study Objectives

Given that animal feed is a limiting factor in livestock production in Syria, there was a flagged need by the Food Security and Livelihood (FSL) Working Group in NES and partners to have a better understanding of the geographical coverage of animal feed and fodder processing facilities and the market actor dynamics across the animal feed/fodder value chain. The study aims to provide insights and recommendations to the implementing partners as per the following specific objectives.

1. Map the geographical coverage of animal feed/fodder factory/trade facilities across NES.
2. Provide insights and reduce the information gaps on animal feed and fodder manufacturing and markets across NES.
3. Highlight the current practices and challenges of main business actors in the animal feed and fodder value chain in NES.
4. Highlight and map the capacity and functionality of animal feed and fodder producer factories in NES.
5. Present the seasonal price fluctuations pattern for animal feed and fodder in NES.
6. Explore the sale trends and trade patterns in the business of animal feed and fodder in NES.

Since animal feed varies depending on livestock type and the purpose of rearing livestock (milk or meat production), the study covered a wide range of animal feed types, which were divided into three groups:

1. **Green Fodder:** includes cultivated green and conserved fodder types such as Alfalfa, Corn Silage, Green Barley, and Azolla.
2. **Animal Feed:** includes processed animal feed pellets for poultry, cow, and sheep milk, meat, and egg production purposes.
3. **Mixtures for Animal Feed:** includes grinded animal feed mixtures for poultry, cow, and sheep milk, meat, and egg production purposes.

Three different deliverables were produced for this study to ensure comprehensive understanding and to provide better insights on the different study objectives.

1. Narrative Report: The present report provides an overall analysis of the different indicators on the commercial supply chain of the livestock feed at governorate level in NES, in addition to recommendations for future programming that are based on thorough quantitative and qualitative analysis.
2. Factsheets (Annex A): A factsheet for each governorate and sub-district was developed to summarize the trading and processing activities of animal feed and fodder for the different livestock production. This includes functionality, production, availability of inputs, warehousing capacity, number, and type of active market actors.
3. Interactive Dashboard: The dashboard summarizes numeric metrics of production/sales volumes, production costs, selling prices, and raw material costs for each type of fodder and animal feed.

Governorate level Dashboard	Sub-district level Dashboard

3. Methodology

Key informant interviews with animal feed market actors were carried out by enumerators, using a data collection tool with semi-structured questions designed to draw responses based on the study objectives. Study respondents targeted animal feed and fodder facilities (retailers, wholesalers, and grinding and manufacturing factories). The questionnaire was developed by iMMAP in close coordination with the FSL Working Group and the Agriculture Technical Working Group in NES. Six organizations participated in the data collection (*ACTED, Mercy Corps, Solidarites International, ArcheNova, EWAS, and MRD*), in addition to iMMAP's data collection service provider. Enumerators interviewed animal feed and/or fodder facility owners/managers to carry out the mapping of retailers, wholesalers, and factories. The surveys were designed to explore the operational capacity of the functional animal feed and/or fodder facilities and the commercialization of the livestock feed and fodder business.

A. Data collection

Upon the development of the data collection tool, iMMAP provided an online training to familiarize the enumerators on the tool, where the team took into consideration the enumerator's feedback to amend the tool accordingly.

B. Sampling

The snowball sampling technique was adopted to cover as many facilities as possible across the defined study area. It should be noted that the mapping of facilities, although covering 31 NES sub-districts, may not include all available facilities. The completed questionnaires were transferred from Syria to the iMMAP office in Amman, Jordan, through the Kobo Collect program. Finally, the narrative report was drafted by iMMAP market and value chain analysts, a food security and livelihood researcher, whereas, the iMMAP production unit worked on the graphic designing component of the report, factsheets, and their layouts.

4. Results

A. Animal Feed and Fodder Market Actors Assessment

Within this study, a total of 387 animal feed and fodder market actors were mapped and interviewed across 31 sub-districts in NES. Interviewees were divided into four categories:

1. Animal Feed Manufacturers

38 Animal Feed pellets and mixtures manufacturing and production facilities were mapped across all sub-districts.

2. Animal Feed Manufacturers and Traders

68 facilities specialized in the manufacturing, production, and trade of Animal Feed pellets and/or mixtures were mapped across all sub-districts. Most of the facilities reported wholesale trade of their productions (62%, n=42).

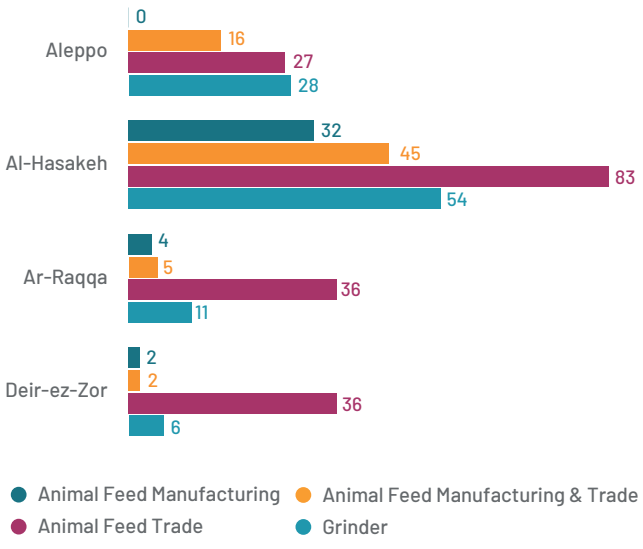


Figure 1: *Number and Type of Market Actors Reached per Governorate*

3. Animal Feed Traders

182 facilities specialized in Green Fodder, Animal Feed Pellets, and Animal Feed Mixtures trade were mapped across all sub-districts. Most of the trade facilities reported their trade activity size as retailers (49%, n=89) or petty traders (30%, n=54).

4. Grinders

99 facilities specialized in the production of Animal Feed Mixtures or provided feed/fodder grinding services to customers were mapped across all sub-districts. Many respondents reported the use of mobile grinding machines as an alternative to the presence of a facility.

Overall, the highest number of market actors mapped was amongst Animal Feed Traders with 182 traders reached across all governorates. All mapped businesses in the Animal Feed and Fodder supply are privately owned, and most of the facilities reported the management of local processing or trading of facilities by their owner. Only 5% of the facilities in Al-Hasakeh, and 7% of the facilities in Ar-Raqqa reported the management of their businesses by employees.

B. Animal Feed and Fodder Market Actors Business Age

The majority of all mapped market actors (62%, n=239) have been active between 1 to 10 years. As shown in figure 2, there has been a significant increase in the number of traders and grinders opening their businesses in the last five years, representing 30% of the total number of mapped facilities (n=116). On the other hand, a smaller number of animal feed manufacturing facilities opened their businesses in the same period. **These trends, including the high presence of traders in the value chain, could indicate a shift towards a greater reliance on trading and grinding services, rather than local production of animal feed.**

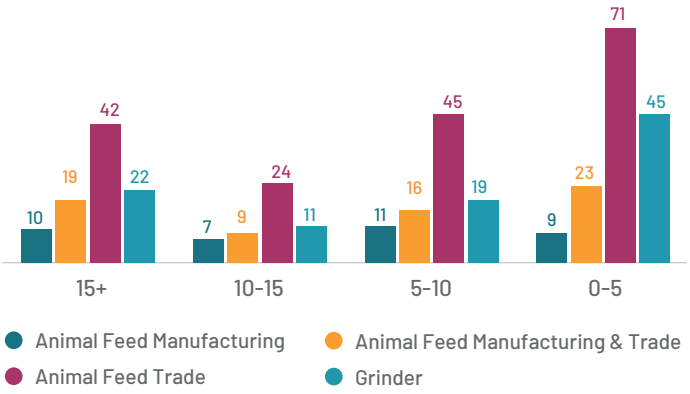


Figure 2: *Market Actors Business Age (Years)*

C. Animal Feed and Fodder Producer Factory Status

Animal Feed Manufacturers, and Animal Feed Manufacturers and Traders

Out of a total of 106 mapped manufacturers, only two were found to be non-operational at the time of data collection. These facilities were located in Ain Al Arab sub-district of Aleppo governorate and Karama sub-district of Ar-Raqqa governorate. The main reasons for the non-operation of these facilities were the high prices of inputs and raw materials needed for production, as well as the instability in the security situation in Ain Al Arab sub-district, and the lack of available support for local production in Karama sub-district.

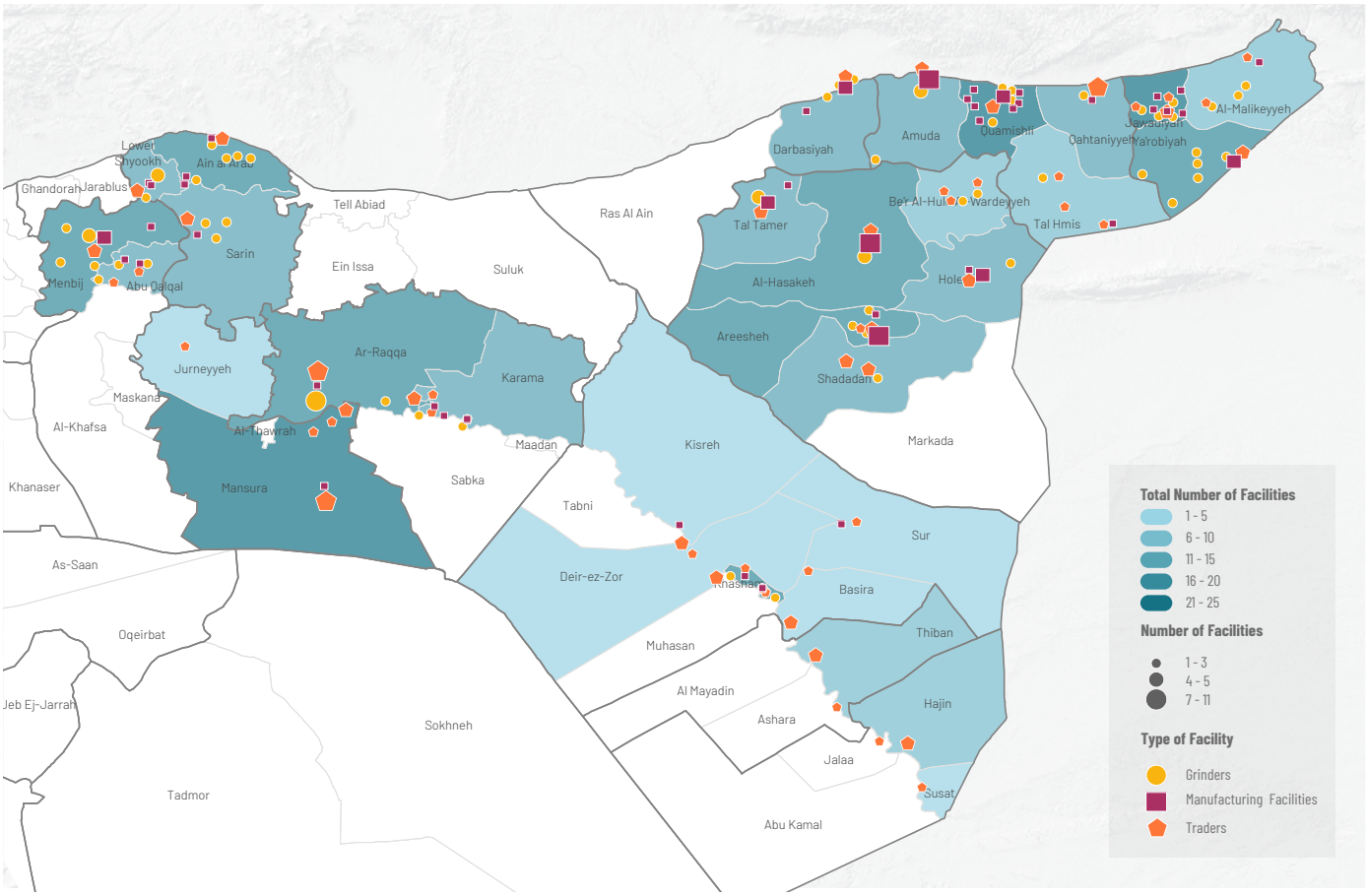
On the other hand, 17% of the mapped manufacturing facilities (n=18) were found to be partially functional, and 81% (n=86) reported full functionality. The main reasons reported for partial functionality were the increase in prices of inputs and raw materials needed for production, the instability in the exchange rate of the US Dollar to the Syrian Pound, and the decrease in demand for animal feed products. The partial operation of manufacturers was reported across several sub-districts; however, its effect was mainly in Karama sub-district of Ar-Raqqa governorate where the four manufacturing facilities were either non-operational or partially operational, and Ya'robiyah sub-district of Al-Hasakeh governorate where the four manufacturing facilities were partially operational.

Grinders

Out of a total of 99 mapped grinders, only two were found to be non-operational at the time of data collection. These facilities were located in Hole and Qahtaniyyeh sub-districts of Al-Hasakeh governorate. The facility in Hole sub-district reported non-operation reasons due to the instability of the security situation, the decrease in the availability of livestock that in turn indicates the decrease in the demand for animal feed, and the instability in the exchange rate of the US Dollar to the Syrian Pound. Whereas the facility in Qahtaniyyeh was closed due to the need for building and machinery rehabilitation.

On the other hand, 36% of the mapped grinding facilities (n=36) were found to be partially operational, while 62% (n=61) reported full functionality. Similar to manufacturers, grinders reported their partial functionality due to the increase in prices of inputs and raw materials needed for production, and the decrease in demand for animal feed products. Additionally, the facilities reported the decrease in livestock count as reason for their limited animal feed production.

Moreover, 6% (n=24) of all the mapped facilities reported operating for periods less than 15 days per month, which was also attributed to the decrease in both the demand for animal feed and the availability of livestock. Furthermore, over the last five years, 12% of the facilities (n=47) had to temporarily halt their animal feed production and trade activities for an average of 11 months (ranging from 1 month to 55 months). The main reasons for these pauses were the instability of security situations in certain areas such as Ar-Raqqa and Karama sub-districts of Ar-Raqqa governorate, displacement of business owners, limited financial liquidity of business owners, and lockdowns due to the COVID-19 pandemic.



Map 1: *Coverage and Functionality of Facilities*

Infrastructure Rehabilitation Needs

When asked about rehabilitation needs, the majority (68%) of Grinders and Animal Feed Manufacturing facilities reported that their facilities are well-maintained and did not require any rehabilitation. Whereas 23% of facilities reported either equipment maintenance or new equipment needs, and 9% of facilities reported minor or major building rehabilitation needs. The estimated rehabilitation cost ranges are detailed in Table 1.

Table 1: *Estimated Cost Range of Rehabilitation*

Building Rehabilitation (USD)	Equipment Maintenance (USD)	New Equipment (USD)
300 - 5,000	200 - 15,000	2,000 - 50,000

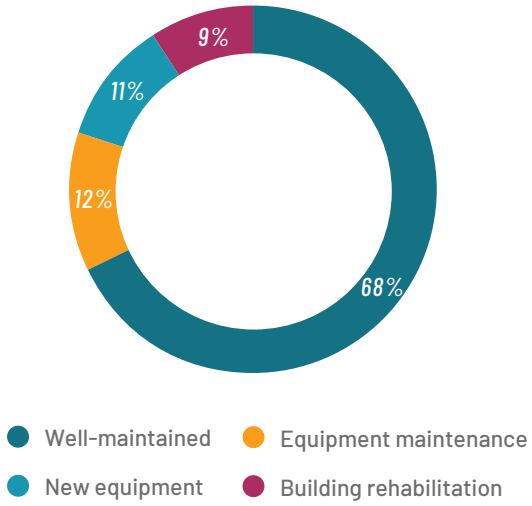


Figure 3: *Infrastructure Rehabilitation Needs*

D. Animal Feed and Fodder Production and Sales Volumes

Green Fodder Production and Sales Volumes

The number of market actors that reported production or trade of green fodder including Alfalfa, Corn Silage, Green Barley, and Azolla was relatively low. Aleppo governorate recorded no production or trade of any type of green fodder, while **Al-Hasakeh governorate reported the highest production or trade of the four types of green fodder assessed, this is mainly due of the favorable climate conditions for production.**

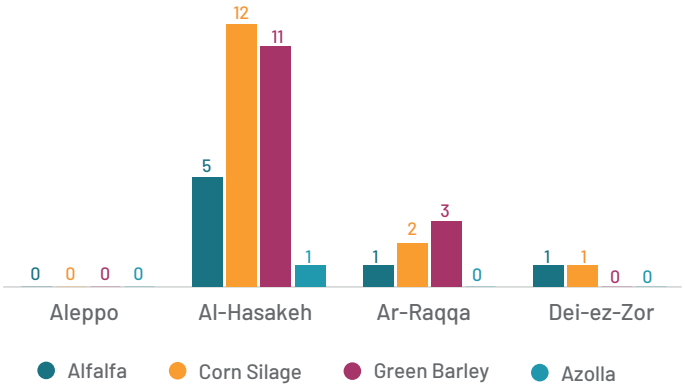


Figure 4: *Number of Market Actors that Produce or Sell Green Fodder*

Generally, the number of market actors involved in corn silage and green barley production and/or trade was the highest reported. It is worth to mention that most of market actors reported higher production and sales volumes of green fodder during winter season; this is attributed to the seasonality of these crops.

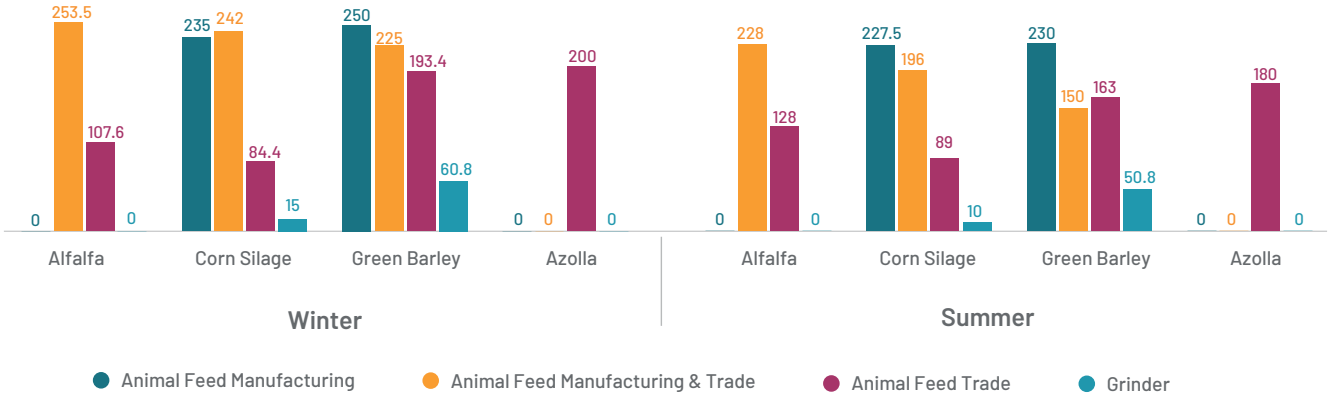


Figure 5: *Average Production or Sales Volumes of Green Fodder (MT/Month) per Market Actor*

Animal Feed Production and Sales Volumes

The selection and use of animal feed varies based on the type of livestock and the purpose of livestock rearing. In this assessment, animal feed products were categorized as the following:

1. Cow-milking
2. Cow-meat
3. Sheep-milking
4. Sheep-meat
5. Poultry-eggs
6. Poultry-meat

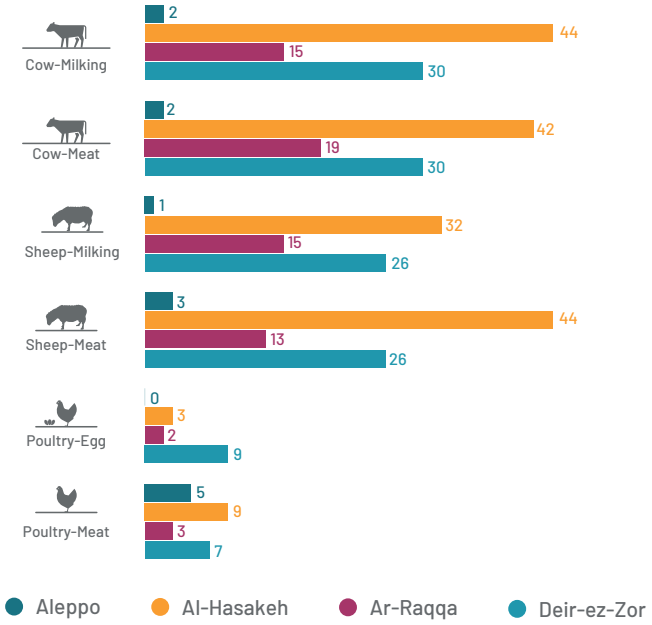


Figure 6: *Number of Market Actors that Produce or Sell Animal Feed*

The number of market actors involved in the production and trading of animal feed is significantly higher than the ones engaged in green fodder production. Among them, animal feed manufacturers for poultry egg and meat production were the least common. Moreover, Aleppo governorate had the least number of animal feed manufacturers although 71 market actors were mapped.

In terms of production and sales volume, this varied significantly across market actors and governorates. Figure 7 summarizes the reported average monthly production or sales for each animal feed product per market actor engaged in its' production or trade. Overall, winter seasons reported to have slightly higher production and sales volumes, more specifically for cow and sheep meat, whereas the production of animal feed for cow and sheep milk purposes by manufacturers is higher in the summer season. Furthermore, animal feed traders have slightly higher volumes of sales across the types of animal feed in the winter season, but mainly grinders have the highest variation in production levels between summer and winter season, with distinctly higher levels of production in winter.

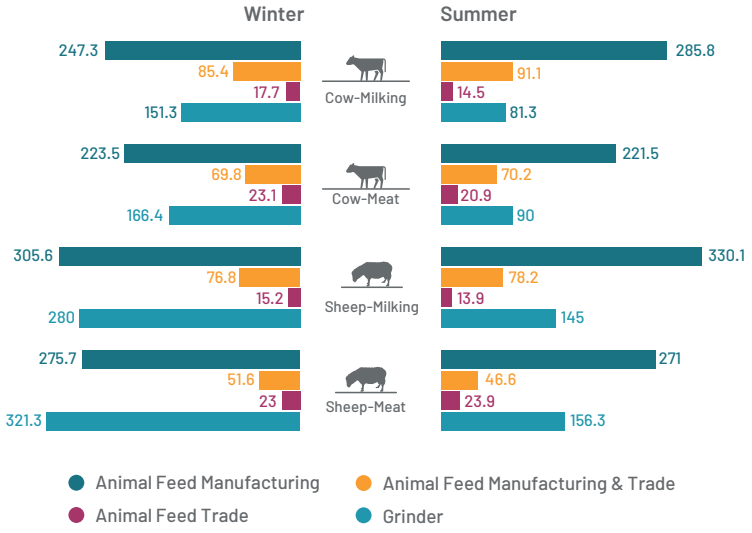


Figure 7: *Average Monthly Production or Sales Volumes of Animal Feed for Cow and Sheep (MT/Month) per Market Actor*

Overall, the average monthly production and sales volumes were higher for sheep milk and meat purposes than for cow milk and meat purposes. The highest average monthly production per market actor was reported by Grinders for sheep-meat purposes with an average of 321 MT/month in winter, followed by sheep-milking purposes by Animal Feed Manufacturers with an average of 306 MT/month.

As shown in figure 8, the monthly production and sales volume of poultry feed was significantly higher compared to cow and sheep feed production and sales, despite the low number of market actors involved in poultry feed production and trade. Animal Feed Manufacturers were the only market actors with a sufficient production of poultry feed for both egg and meat purposes, while the remaining market actors specialized mainly in the production and sales of poultry feed for egg purposes. Overall, poultry feed production and sales are higher during the winter season, specifically for meat purposes, while production and sales of poultry feed for egg purposes is higher in the summer season. The highest average monthly production per market actor was reported by Grinders for poultry feed for meat purposes with an average of 850 MT/month in winter, followed by poultry feed for egg purposes produced by Animal Feed Manufacturers with an average of 673 MT/month.

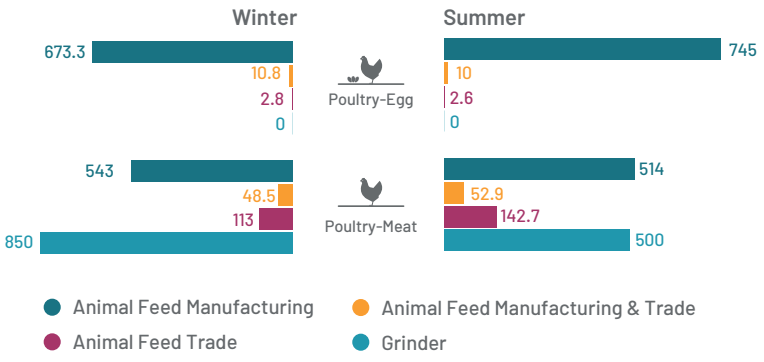


Figure 8: *Average Monthly Production or Sales Volumes of Animal Feed for Poultry (MT/Month) per Market Actor*

On a governorate level, the highest average production and sales quantities of poultry feed for egg and meat purposes were reported in Deir-ez-Zor governorate, with an average of 226 MT/month and 288 MT/month respectively. On the other hand, the facilities mapped in Aleppo governorate reported no production or sales of poultry feed for egg purposes but had the second highest average of monthly production of poultry feed for meat purposes with an average of 236 MT/month.

Animal Feed Mixtures Production and Sales Volumes

Animal feed mixtures were also categorized into cow-milk, cow-meat, sheep-milk, sheep-meat, poultry-egg, and poultry-meat purposes. Similar to poultry feed production, the number of market actors engaged in the production or sales of poultry feed mixtures for egg and meat purposes were the least common among other types of feed mixtures. Although the number of market actors engaged in animal feed mixture production or trade was higher than animal feed pellets, the average monthly quantities reported for monthly production or sales of animal feed mixtures was significantly lower. **The low reported quantities of animal feed mixtures produced or sold were due to many grinders using mobile machines to grind raw materials, such as lentil, barley, and wheat, for traders or livestock farmers and charging a service fee per ton of production, rather than producing or selling their own animal feed mixtures**, hence, their inability to report accurate production volumes or selling prices.

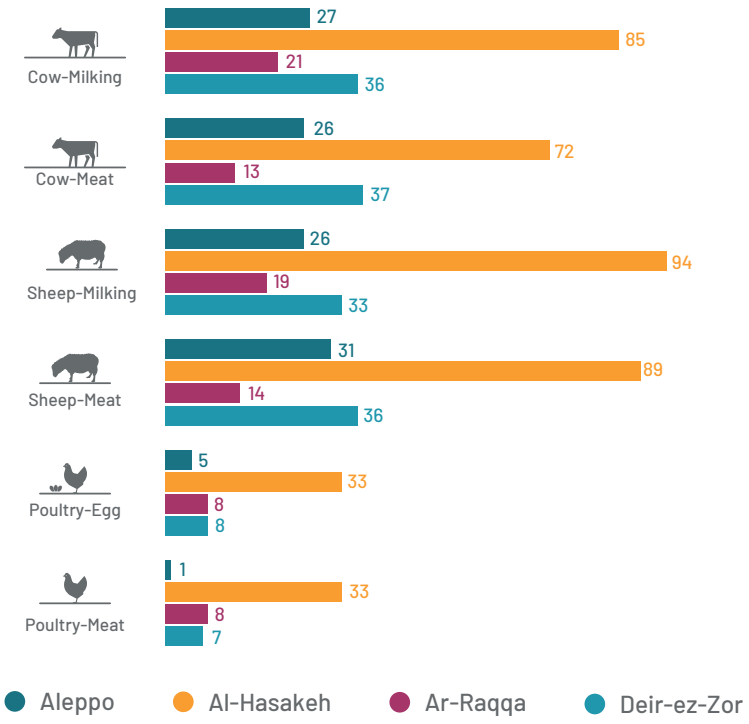


Figure 9: *Number of Market Actors that Produce or Sell Animal Feed Mixtures*

Figure 10 summarizes the reported average monthly production or sales for each animal feed mixture product per market actor engaged in its' production or trade. Overall, winter seasons reported to have slightly higher production and sales volumes across all types of animal feed mixtures. In addition, the average monthly production and sales volumes of feed mixtures were higher for sheep feed than for cow feed and poultry feed.

Overall, the variations in production volumes across different types of feed among market actors such as manufacturers, grinders, and traders demonstrate their independence and lack of reliance on shared services. For instance, manufacturers have reported their own production of feed mixtures, reducing their dependence on grinders, while also engaging in wholesale trading activities. On the other hand, grinders provide direct grinding services to livestock farmers, and traders reported imported animal feed. These differences in production and sales volumes are reflective of the distinct roles and activities of each market actor. It is important to note that the mapping of facilities may not be comprehensive and may not capture all market actors operating in the industry.

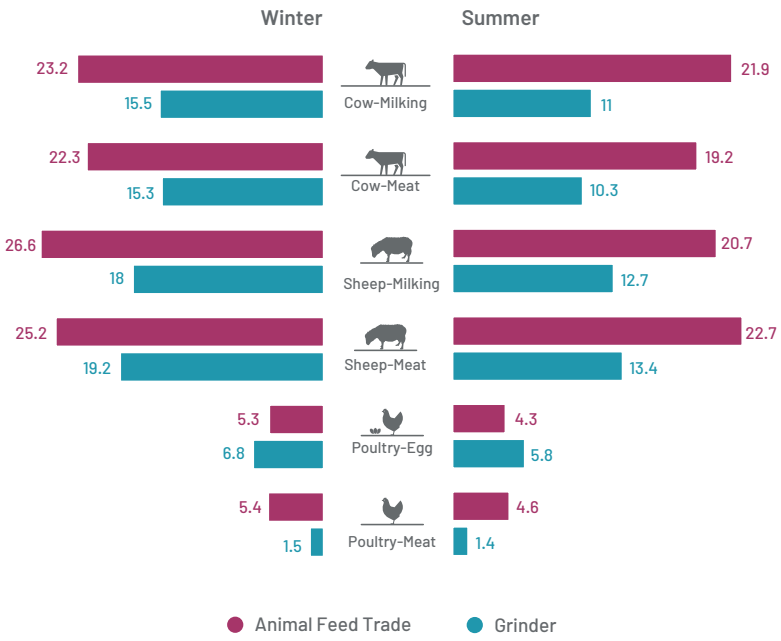


Figure 10: *Average Monthly Production or Sales Volumes of Animal Feed Mixtures (MT/Month) per Market Actor*

E. Production Cost per Metric Ton

The average production cost of green fodder, animal feed, and animal feed mixtures were assessed for each type of market actor. The production cost includes the costs of raw materials, labor, energy, and any other costs of inputs required for production.

Green Fodder Cost

As mentioned in the previous section the number of market actors who produce fodder is relatively low therefore, the reported costs of each type of fodder were retrieved from a low number of respondents. Table 2 summarizes the average cost of the different types of fodder. The seasonality trends of Alfalfa, Azolla, and Corn Silage show that cost during summer is slightly higher compared to winter season, whereas Green Barley numbers show opposite trends.

	Alfalfa		*Corn Silage*		*Green Barley*		*Azolla*	
	Winter	**Summer**	**Winter**	**Summer**	**Winter**	**Summer**	**Winter**	**Summer**
Average Cost (USD/MT)	280	285	228	237	336	302	420	475
Min-Max	100-420	100-450	150-410	125-480	200-600	150-430	475-475	475-475
Number of Respondents		***6***		***13***		***11***		***1***

Table 2: *Green Fodder Average Cost (USD/MT)*

Animal Feed Production Cost

The average animal feed production costs of the different types were reported to be within relatively the same average range. The production cost for poultry feed was reported to be higher during both seasons in comparison to the other livestock feed types, while the production cost for sheep feed was reported to be the lowest during both seasons. It can be observed that the seasonality trend indicates higher production costs of animal feed during the winter season in comparison to the summer season. This can be attributed to several factors, such as the increased cost of inputs and raw materials during the winter months due to their limited availability, where manufacturers might be dependent on purchasing local or imported raw materials from traders in the market at a higher price. Fuel accessibility was also reported as a challenge across market actors, since its limited availability is forcing market actors to purchase fuel from the black market at a higher price, thus increasing the production cost. Additionally, the post-harvest season in the summer leads to lower costs of inputs and raw materials such as wheat, barley, and bran, hence causing the cost discrepancy between the seasons.

Overall, animal feed for poultry-meat production reported the highest average production cost of 398 USD/MT during winter season, and animal feed for sheep-milking production reported the lowest average production cost of 316 USD/MT during summer season.

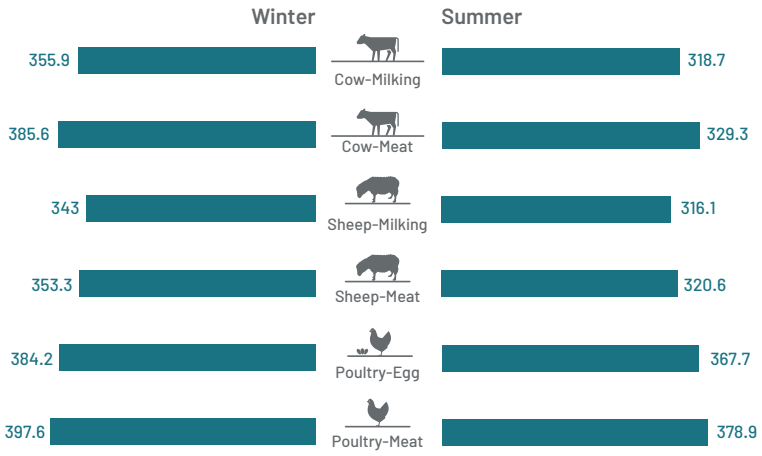


Figure 11: *Average Production Cost of Animal Feed (USD/MT)*

Animal Feed Mixtures Production Cost

The average animal feed mixtures production costs of the different types were reported to be within relatively the same average range, excluding the poultry feed mixtures. Contrary to poultry feed production costs, poultry feed mixtures reported the lowest production costs during both seasons in comparison to the other livestock feed mixture types. Mixtures for cow and sheep milk also reported lower production costs that mixtures for cow and sheep meat. Similar to animal feed production costs, the animal feed mixture production costs were slightly higher in winter than in summer, which also indicates the same seasonality trend due to the use of raw materials such as wheat and barley for animal feed mixture production which have higher prices during the winter season.

Overall, animal feed mixtures for cow-meat production reported the highest average production cost of 372 USD/MT during winter season, and animal feed mixtures for poultry-meat production reported the lowest average production cost of 213 USD/MT during summer season.

Figure 12: *Average Production Cost of Animal Feed Mixtures (USD/MT)*

F. Production Change of Animal Feed and Fodder, 2022 vs 2021

The percentage of market actors that reported a decrease in the production/sales of Animal Feed and Fodder was highest in Ar-Raqqa governorate (65%), followed by Deir-ez-Zor governorate (54%), while market actors in Aleppo and Al-Hasakeh governorates reported the highest levels of stability in production over the last year (60% and 55% respectively). The reported reasons for the decrease in the production/sales of animal feed and fodder were attributed to the overall increase of prices of animal feed, raw materials, and fuel in the market, in addition to the low demand due to the decrease in the livestock count in the areas, high competition with imported products in the market, and the increase in the exchange rate of the US Dollar to Syrian Pound.

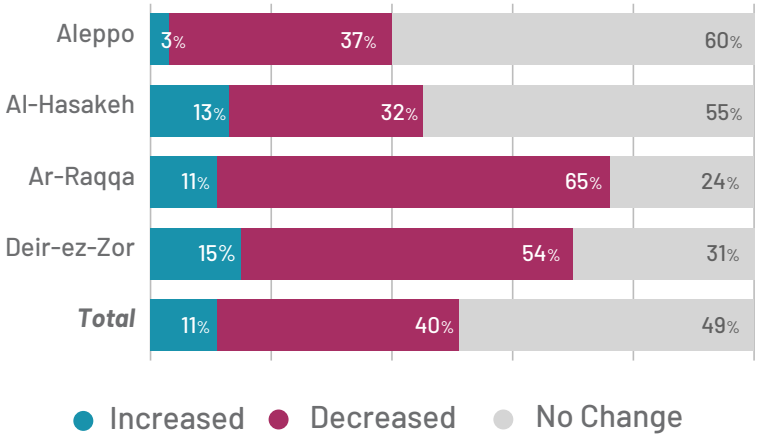


Figure 13: *Production Change 2022 vs 2021*

Overall, the market actors that reported the highest decrease in their sales of animal feed and fodder were animal feed traders (48%), while both market actors involved in manufacturing only and in manufacturing and trade simultaneously reported the highest stability levels in their animal feed production activities (63%). On the other hand, although production levels were mainly stable across the year, 31% of market actors involved in production and trade simultaneously reported a decrease in production. Although the number of market actors that reported a decrease in their production was lower than the number of traders that reported a decline in sales, on average both reported an average of 39% and 41% decrease rate in the quantities of production and sales respectively.

G. Warehousing Capacity

The warehousing capacity was reported to be good, where the majority (85%, n=326) of the study respondents reported that they had a warehouse either in the same workplace (49%, n=187) or a separated warehouse (36%, n=139). The space of the warehouse ranged between 10 and 1500 square meters, with an average of 233 square meters. The stored quantity ranged between 2 and 400 MT per study respondent, and the total stored quantity of animal feed was highest in Al-Hasakeh governorate (20,538 MT), followed by Aleppo governorate (2,852 MT), then Deir-ez-Zor governorate (2,810 MT), and finally Ar-Raqqa governorate (1,444 MT).

H. Support Status and Needed Support to Sustain or Improve Business Operations

A minority of 4% (n=16) of market actors surveyed reported receiving support in Aleppo and Al-Hasakeh governorates, whereas none of the market actors interviewed in Ar-Raqqa and Deir-ez-Zor governorates reported receiving any support. Out of the 16 entities receiving support, 56% (n=9) in Aleppo governorate and 44% (n=7) in Al-Hasakeh governorate reported that they receive support from the Local Self Administration in the form of subsidized fuel. Only one grinder in Tal Hamis sub-district in Al-Hasakeh governorate reported receiving support from UN Agencies in 2021 in the form of a grinding machine.

The primary challenge reported by the different market actors across all governorates was the low financial liquidity. Respondents highlighted the need for business capital support and financial loans with small or zero interest to support business development. Furthermore, they reported a lack of availability of inputs such as raw materials and fuel in the market, leading to increased costs of production and transportation as they had to purchase fuel from the black market at higher prices. To alleviate these challenges, market actors suggested reducing the imposed taxes on imported raw materials, opening borders and crossings to facilitate trade transactions, and stabilizing the exchange rate of the US dollar to the Syrian Pound. They also stressed the importance of extending support to the livestock production market, specifically since the feed and fodder sector is highly dependent on it.

I. Availability and Source of Commercial Products

Availability of Animal Feed Pellets and Mixtures

As reported by the different types of market actors, Animal Feed Mixtures are relatively more available than Animal Feed Pellets in both winter and summer seasons, with the availability slightly higher in the summer season for both types of animal feed. This can be attributed to the lower production costs of animal feed in the summer season, allowing manufacturers to produce a higher quantity of animal feed, in addition to the decreased demand due to the availability of natural pastures for livestock farmers. A number of market actors reported the unavailability of Animal Feed Pellets in both winter and summer seasons, mainly in Al-Hasakeh and Ar-Raqqa governorates; 60% of the market actors reporting unavailability are involved in animal feed trade. The main reasons attributed to the unavailability of animal feed pellets was the lack of local production, the decrease in demand for animal feed, and the increase in the prices of imported animal feed.

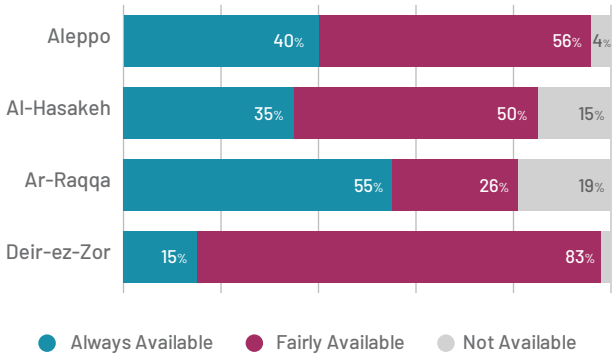


Figure 14: *Availability of Animal Feed - Winter Season*

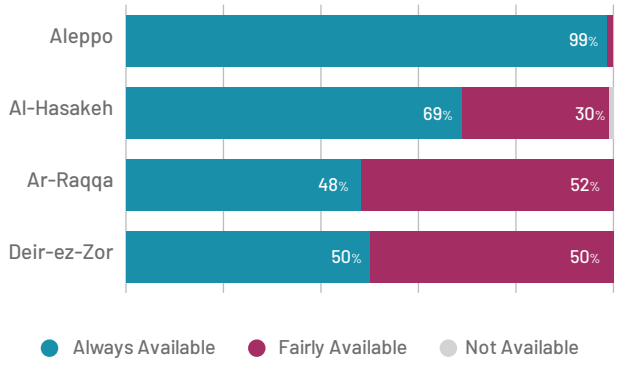


Figure 15: *Availability of Animal Feed Mixtures - Winter Season*

Availability of Green Fodder

The availability of green fodder (including Alfalfa, Corn Silage, Green Barley, and Azolla) was reported to be limited in both winter and summer seasons across the assessed sub-districts where green fodder was reported to be 37% (n=141) unavailable in winter and 31% (n=115) unavailable in summer. In general, the availability of green fodder was higher in the summer season than in the winter season, which can be due to the crop harvest season during summer. The highest reported unavailability of green fodder was in Deir-ez-Zor, mainly attributed to the lack of local production due to the climatic conditions. Overall, many reported factors contributed to the lack of availability of fodder such as the decrease in demand for green fodder, increase in prices of imports of green fodder, and the limited access to water for irrigation needs.

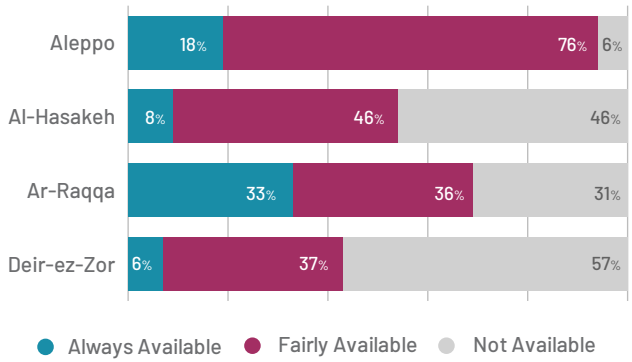


Figure 16: *Availability of Green Fodder - Winter Season*

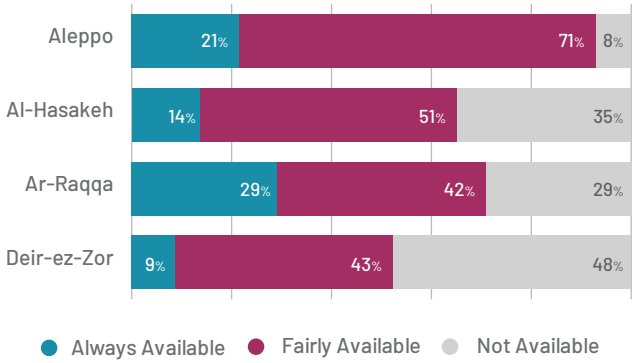


Figure 17: *Availability of Green Fodder - Summer Season*

Availability of Raw Materials

This study focused on the availability of the main raw materials for animal feed such as wheat, barley, bran, hay, corn, soya, cotton, lentil, animal vitamins, and silage. Collected data showed that raw materials were widely available in Northeast Syria (NES). On average, the study respondents reported 77% constant availability and 22% fair availability of raw materials. Only a few study respondents reported unavailability mainly of soya, cotton, and lentil due to their limited production and low demand. The majority of raw materials was reported to be more available in the summer than in the winter season, except for soya and cotton which could be due to their harvest in late summer or early fall seasons, hence their higher availability in early winter.

Overall, while raw materials are reported to be generally available across market actors, it is important to note that this does not necessarily reflect local production. Instead, the reported data refers to general market availability, which may also include imports to meet raw materials market demand.

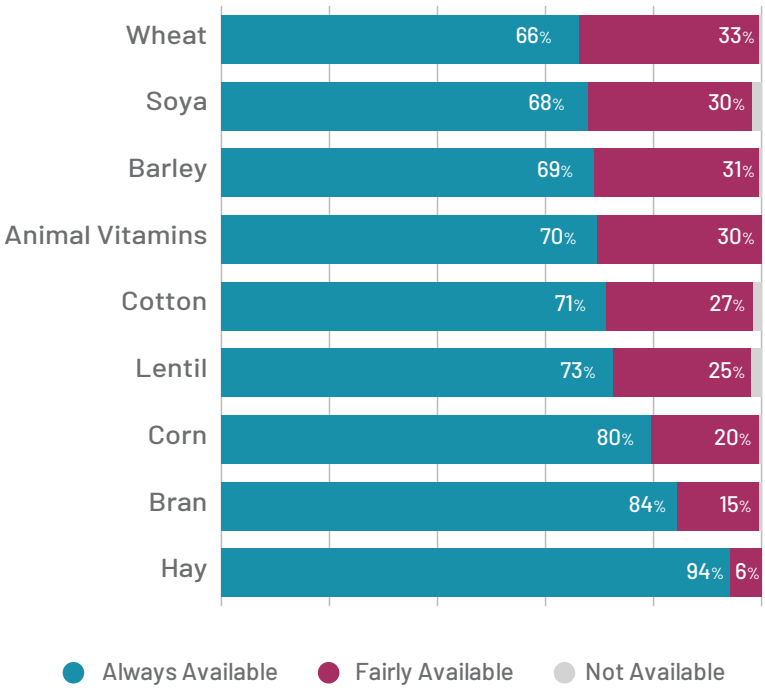


Figure 18: *Availability of Raw Materials - Winter Season*

Sources of Animal Feed

The majority of interviewed traders (83%) reported sourcing commercial animal feed from local producers either in the same area or from other governorates, and the remaining 17% were imported from Turkey. The reported sources mostly remain the same across the two seasons (winter and summer), with only two traders in Al-Hasakeh governorate that reported shifting from importing from Turkey to local sources during the summer season.

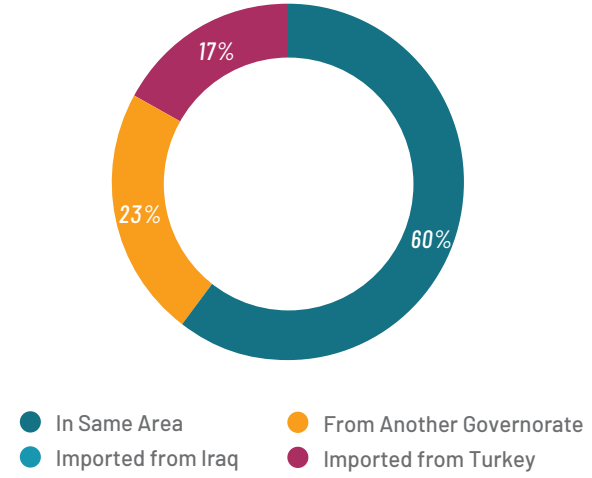


Figure 19: *Reported Sources of Animal Feed*

Sources of Green Fodder

Similar to animal feed, traders mostly reported sourcing commercial green fodder from local producers either in the same area or from other governorates (87%). However, a higher number of traders reported importing green fodder from Iraq (7%), followed by Turkey (5%). The reported sources mostly remain the same across the two seasons (winter and summer), with only four traders in Al-Hasakeh and Ar-Raqqa governorates that reported shifting from importing from Iraq/Turkey to local sources during the summer season.

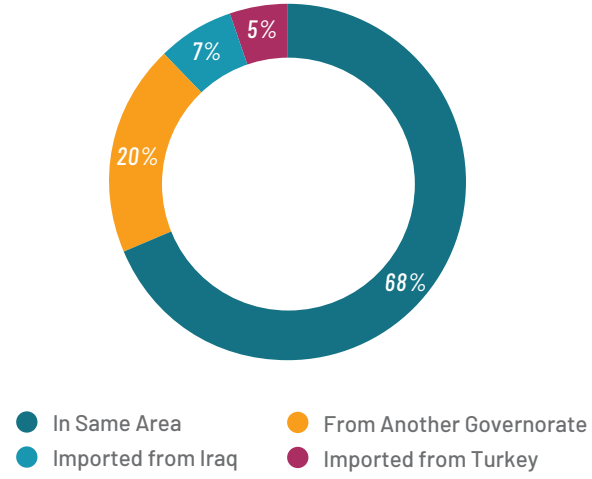


Figure 20: *Reported Sources of Green Fodder*

Sources of Raw Materials

The majority of raw materials used in production by market actors are sourced from local producers and traders. A number of raw materials reported being sourced from Turkey, such as animal vitamins (46%), Soya (30%), Cotton (14%), and Lentil (14%). The sources of raw materials remained consistent across both the winter and summer seasons, with only a few changes in sourcing, particularly for Barley. Eleven respondents reported switching from importing Barley from Turkey to sourcing it from local production in the summer season.

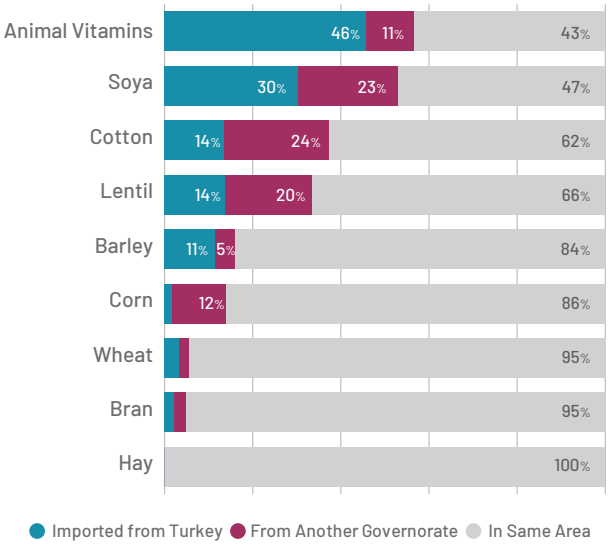


Figure 21: *Reported Sources of Raw Materials*

J. Seasonal Prices of Feed, Fodder, and Raw Materials

Animal Feed

Cow-milking purpose

The overall average selling price of 1 MT of cow feed for milking purposes was 377 USD/MT during the winter season, and it ranged between 200 USD and 650 USD. The overall average price during the summer season was reported to be lower by 14% (344 USD/MT). The lowest reported average price of 1 MT of cow feed for milking purpose was in Ar-Raqqa governorate at 358 USD/MT during the winter season, and in Al-Hasakeh governorate at 323 USD/MT during the summer season, whereas the highest reported average price was reported in Aleppo governorate for winter and summer seasons at 475 USD/MT and 487.5 USD/MT respectively.[4] On a sub-district level and excluding the sub-districts with a low number of respondents, Amuda sub-district in Al-Hasakeh governorate reported the highest average price for winter and summer seasons at 442 USD/MT and 358 USD/MT respectively, while the lowest average prices were recorded in Hole sub-district at 306 USD/MT in winter and Quamishli sub-districts at 267 USD/MT in summer.

Furthermore, across the different types of interviewed market actors, Animal Feed Manufacturers and Traders reported the highest selling price of 1 MT of cow feed for milking purposes, at 401 USD/MT in winter and 371 USD/MT in summer. This was followed by Animal Feed Traders, Animal Feed Manufacturers, and finally, reporting the lowest average prices were Grinders at 334 USD/MT in winter and 288 USD/MT in summer.

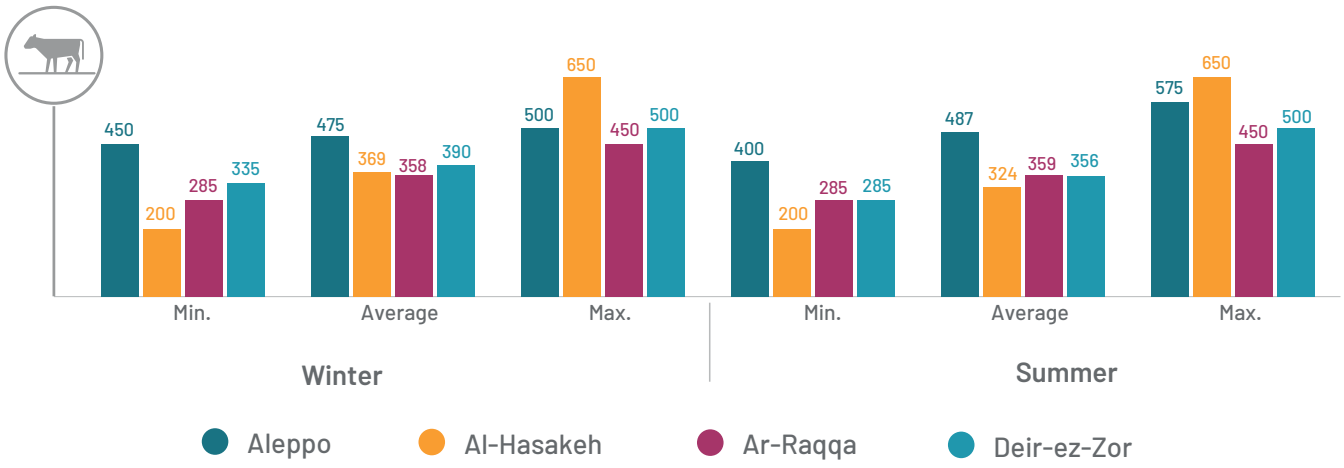


Figure 22: *Price of 1 MT of Cow-Milking Purpose Feed in USD - Q4 2022*

Cow-meat purpose

The overall average selling price of 1 MT of cow feed for meat purposes was 401 USD/MT during the winter season, and it ranged between 160 USD and 550 USD. The overall average price during the summer season was reported to be lower by 12% (352 USD/MT). The lowest reported average price of 1 MT of cow feed for meat purpose was in Ar-Raqqa governorate at 366 USD/MT during the winter season, and in Al-Hasakeh governorate at 334 USD/MT during the summer season, whereas the highest reported average price was reported in Aleppo governorate for winter and summer seasons at 500 USD/MT and 570 USD/MT respectively.

4 It should be taken into consideration that the number of respondents in Aleppo governorate that reported the production and trade of animal feed is low, therefore, the prices reported in Aleppo governorate are not necessarily representative due to the limited number of market actors interviewed.

On a sub-district level and excluding the sub-districts with a low number of respondents, Hole sub-district in Al-Hasakeh governorate reported the highest average price for winter and summer seasons at 519 USD/MT and 392 USD/MT respectively, while the lowest average prices were recorded in Basira sub-district in Deir-ez-Zor governorate for winter and summer seasons at 347 USD/MT and 299 USD/MT respectively.

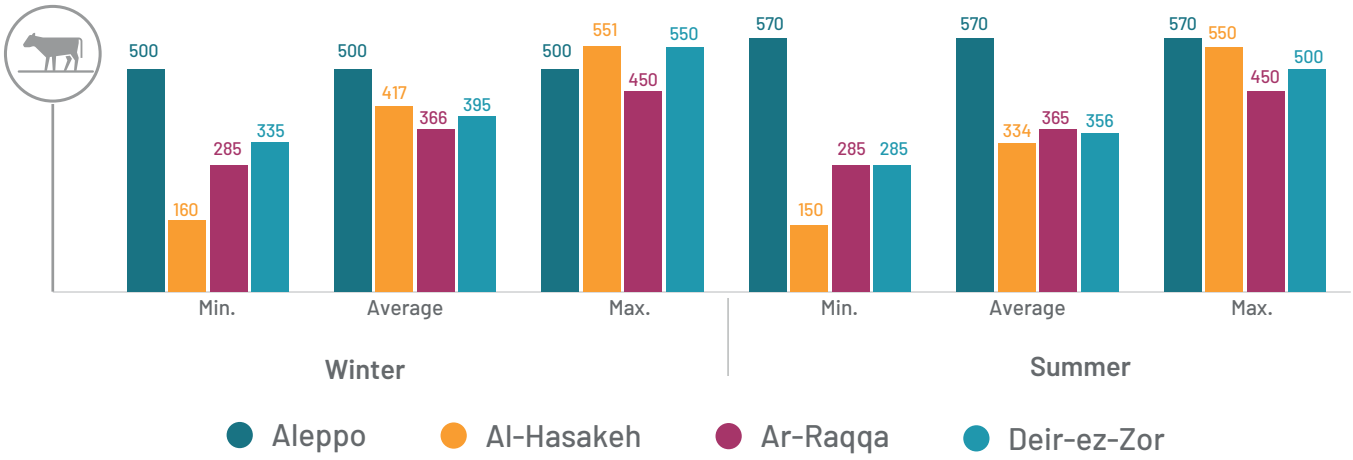


Figure 23: *Price of 1 MT of Cow-Meat Purpose Feed in USD - Q4 2022*

Sheep-milking purpose

The overall average selling price of 1 MT of sheep feed for milking purposes was 376 USD/MT during the winter season, and it ranged between 275 USD and 650 USD. The overall average price during the summer season was reported to be lower by 11% (335 USD/MT). The lowest reported average price of 1 MT of show feed for milking purpose was in Al-Hasakeh governorate during the winter and summer season, at 357 USD/MT and 314 USD/MT respectively, whereas the highest reported average price was reported in Aleppo governorate for winter and summer seasons at 450 USD/MT and 400 USD/MT respectively. On a sub-district level and excluding the sub-districts with a low number of respondents, Qahtaniyyeh sub-district in Al-Hasakeh governorate reported the highest average price for winter and summer seasons at 379 USD/MT and 337 USD/MT respectively, while the lowest average prices were recorded in Amuda sub-district in Al-Hasakeh governorate for winter and summer seasons at 305 USD/MT and 267 USD/MT respectively.

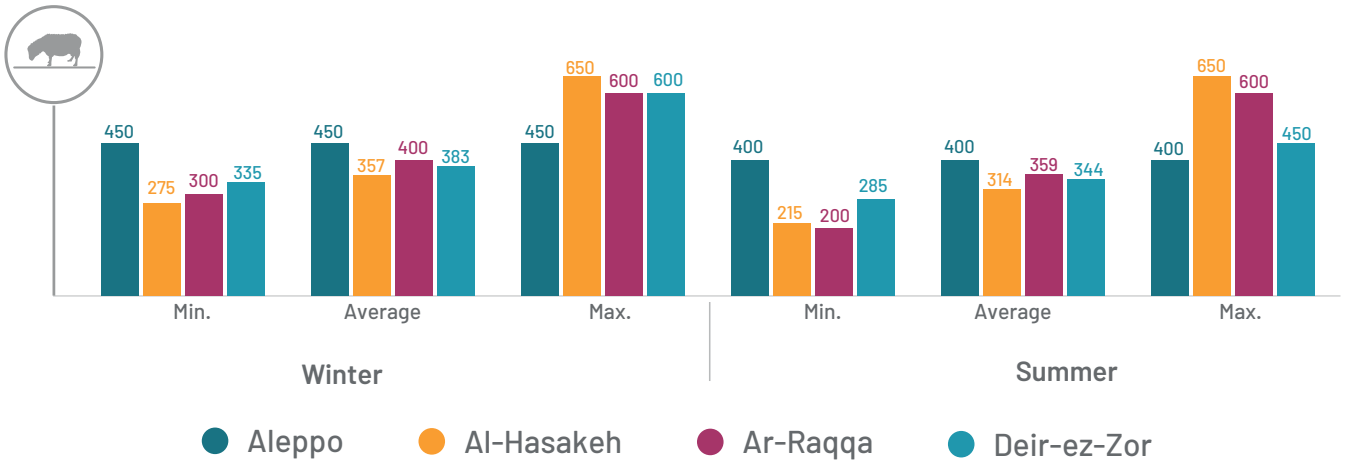


Figure 24: *Price of 1 MT of Sheep-Milking Purpose Feed in USD - Q4 2022*

Sheep-meat purpose

The overall average selling price of 1 MT of sheep feed for meat purposes was 386 USD/MT during the winter season, and it ranged between 200 USD and 600 USD. The overall average price during the summer season was reported to be lower by 9% (349 USD/MT). The lowest reported average price of 1 MT of sheep feed for meat purpose was in Al-Hasakeh governorate during the winter and summer season, at 377 USD/MT and 337 USD/MT respectively, whereas the highest reported average price was reported in Aleppo governorate for winter and summer seasons at 427 USD/MT and 480 USD/MT respectively. On a sub-district level and excluding the sub-districts with a low number of respondents, Ar-Raqqa sub-district in Ar-Raqqa governorate reported the highest average price for winter and summer seasons at 447 USD/MT and 430 USD/MT respectively, while the lowest average prices were recorded in Amuda sub-district in Al-Hasakeh governorate for winter and summer seasons at 317 USD/MT and 286 USD/MT respectively.

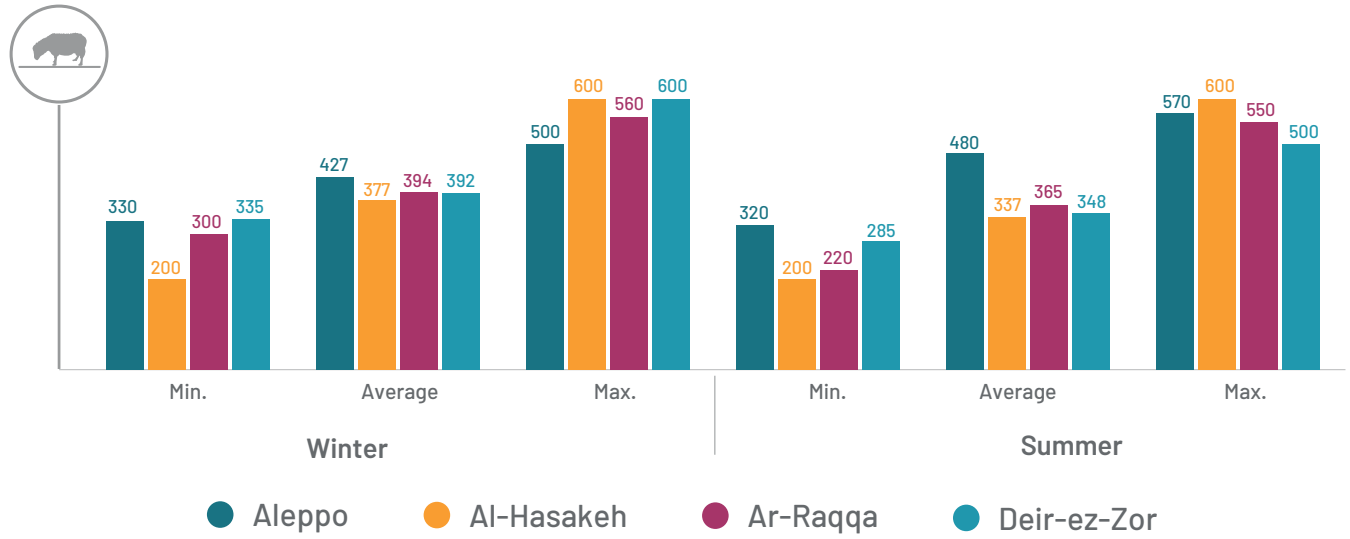


Figure 25: *Price of 1 MT of Sheep-Meat Purpose Feed in USD - Q4 2022*

Poultry-egg purpose

The overall average selling price of 1 MT of poultry feed for egg purposes was 397 USD/MT during the winter season, and it ranged between 180 USD and 600 USD. The overall average price during the summer season was reported to be lower by 5% (378 USD/MT). The lowest reported average price of 1 MT of poultry feed for egg purpose was in Al-Hasakeh governorate during the winter and summer season, at 312 USD/MT for both seasons, whereas the highest reported average price was reported in Ar-Raqqa governorate for winter and summer seasons at 425 USD/MT and 440 USD/MT respectively.

On a sub-district level and taking into consideration the low number of respondents for poultry feed, Khasham sub-district in Deir-ez-Zor governorate reported the highest average price for winter and summer seasons at 567 USD/MT and 533 USD/MT respectively, while the lowest average prices were recorded in Hole sub-district in Al-Hasakeh governorate for winter and summer seasons at 180 USD/MT for both seasons.

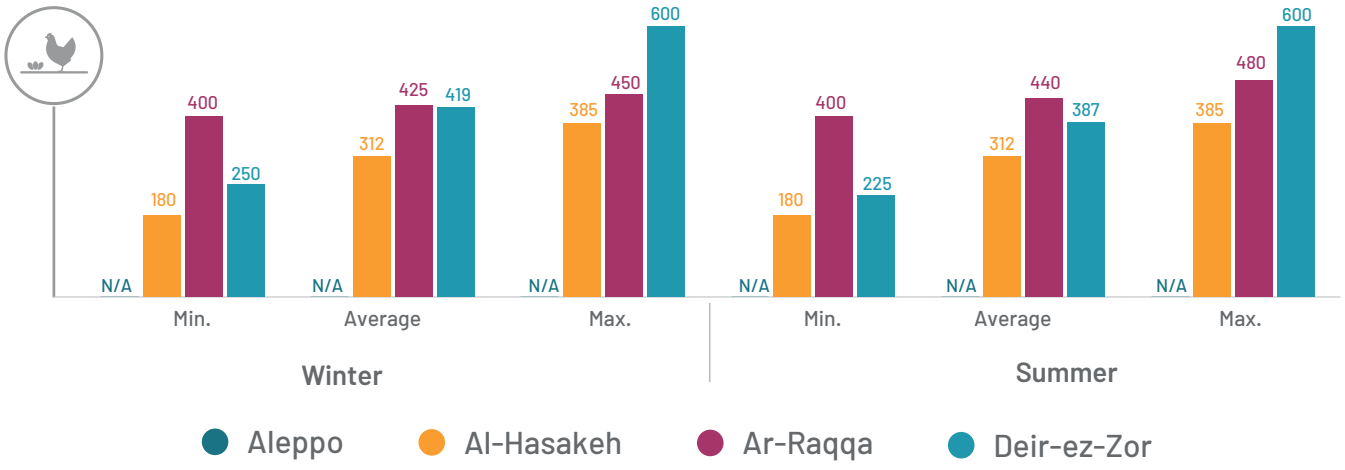


Figure 26: *Price of 1 MT of Poultry-Egg Purpose Feed in USD - Q4 2022*

Poultry-meat purpose

The overall average selling price of 1 MT of poultry feed for meat purposes was 440 USD/MT during the winter season, and it ranged between 170 USD and 600 USD. The overall average price during the summer season was reported to be lower by 4% (422 USD/MT). The lowest reported average price of 1 MT of poultry feed for meat purpose was in Al-Hasakeh governorate during the winter and summer season, at 382 USD/MT and 350 USD/MT respectively, whereas the highest reported average price was reported in Aleppo governorate at 571 USD/MT for both seasons. On a sub-district level and taking into consideration the low number of respondents for poultry feed, Khasham sub-district in Deir-ez-Zor governorate reported the highest average price at 600 USD/MT for both seasons, while the lowest average prices were recorded in Hole sub-district in Al-Hasakeh governorate at 170 USD/MT for both seasons.

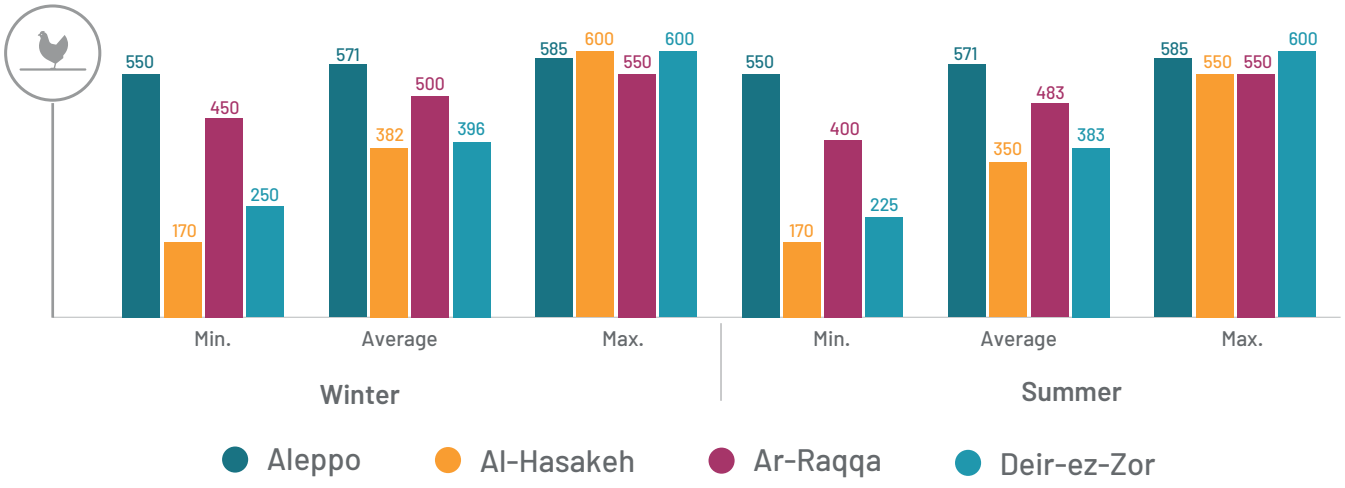


Figure 27: *Price of 1 MT of Poultry-Meat Purpose Feed in USD - Q4 2022*

In summary, poultry feed for meat production had the highest average price per 1 MT among animal feed types, followed by cow feed for meat production. Conversely, sheep feed for milk production had the lowest average price. Moreover, all types of animal feed had lower average prices during the summer compared to the winter. This is mainly due to the availability of raw materials and lower costs of production.

On average, across all the animal feed types and all market actors involved in their production or trade, the margin of profit was generally slim between 3% and 10%. Among these feed types, poultry feed intended for egg production recorded the lowest profit, while poultry feed for meat production was the highest.

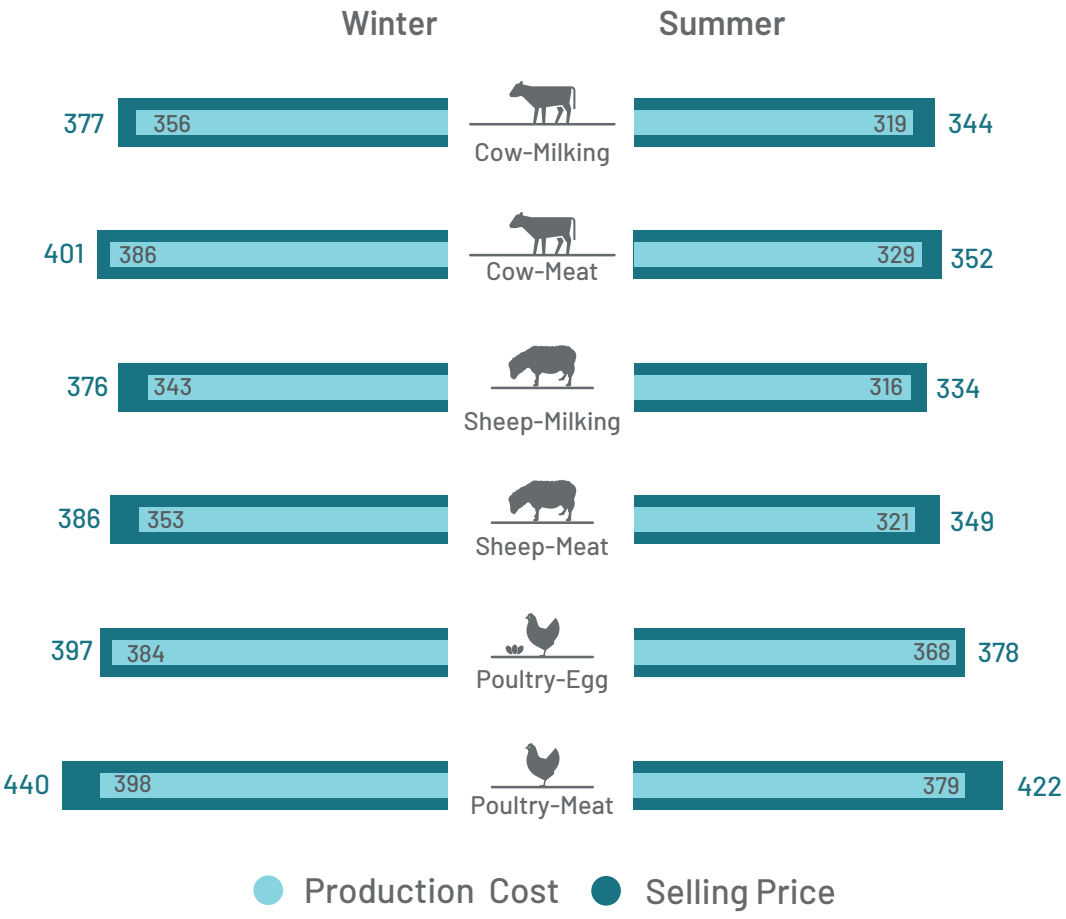


Figure 28: *Average Selling Prices vs. Production Cost of 1 MT of Animal Feed in USD*

Animal Feed Mixtures

Animal feed mixtures selling prices were similar to animal feed pellets across the cow and sheep types of feed. On the other hand, poultry feed mixtures reported the lowest selling prices across all feed mixture types, in contrast to poultry feed pellets.

The highest selling prices of feed mixtures were reported for cow and sheep feed mixtures for meat at 408 USD/MT and 398 USD/MT respectively in winter, while the lowest were for poultry feed mixtures for egg and meat production at 252 USD/MT and 256 USD/MT respectively in winter. Moreover, all types of animal feed mixtures had lower average prices during the summer compared to winter.

The margin of profit among animal feed mixtures varied between 7% to 10%, generally higher than of animal feed profit reported above. Similar to animal feed, poultry feed intended for egg production recorded the lowest profit, while poultry feed for meat production recorded the highest.

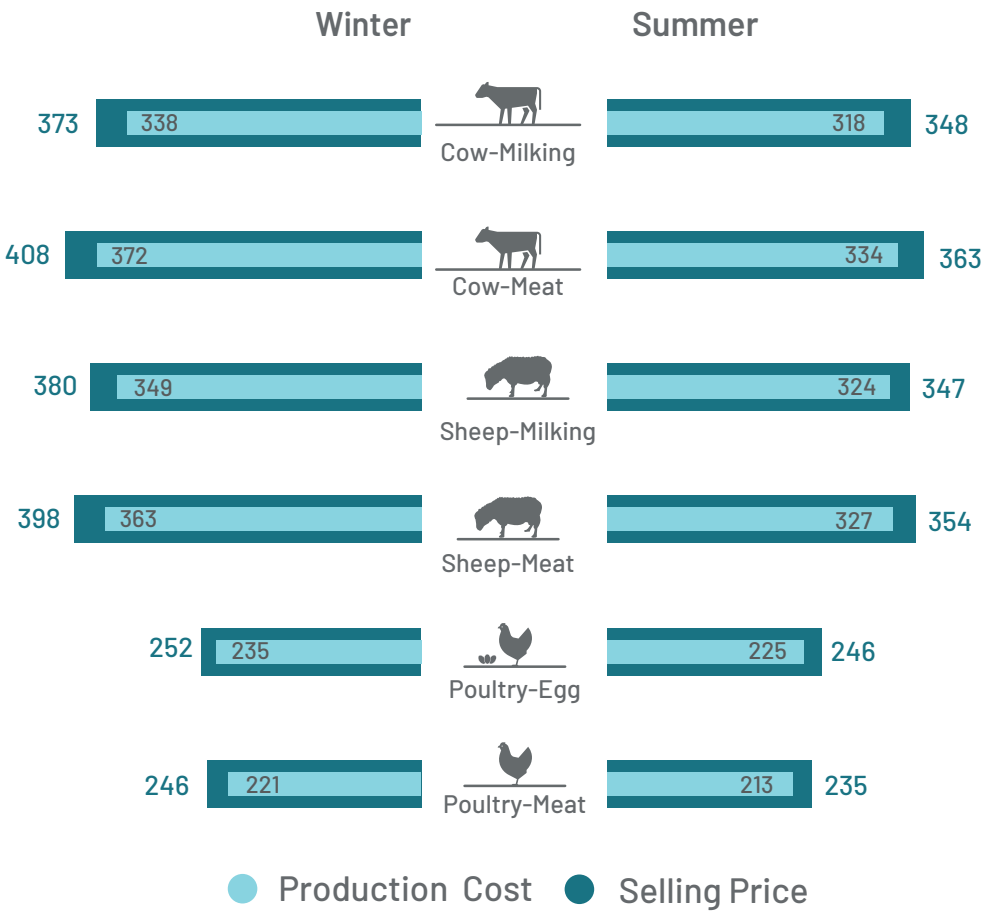


Figure 29: *Average Selling Prices vs. Production Cost of 1 MT of Animal Feed Mixtures in USD*

Green Fodder

As mentioned above the availability of green fodder is very limited across the assessed sub-districts, prices of fodder were reported only at four sub-districts, (Al-Hasakeh and Jawadiyah sub-district in Al-Hasakeh governorate, Ar-Raqqa sub-district in Ar-Raqqa governorate, and Khasham sub-district in Deir-ez-Zor governorate). Also, sub-districts in Al-Hasakeh governorate were the only ones that reported production or trade of all four types of green fodder.

Green Barley recorded the highest price at 548 USD/MT during winter season, followed by Alfalfa at 347 USD/MT, then Corn silage at 294 USD/MT, and Azolla recorded the lowest price at 250 USD/MT. **Overall, green fodder prices increased from summer to winter season;** Green Barley recorded a 15% price increase (468 USD/MT in summer), followed by Corn silage with 13% price increase (257 USD/MT in summer), then Azolla with 8% price increase (230 USD/MT in summer), and finally, Alfalfa with 7% price increase (324 USD/MT in summer).

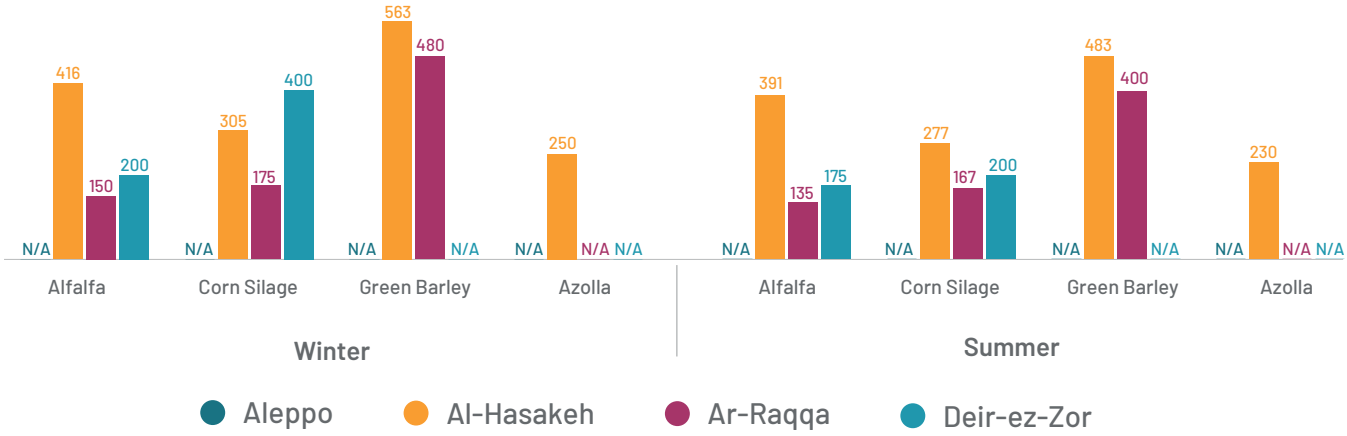


Figure 30: *Average Price of 1 MT of Green Fodder in USD - Q4 2022*

Cost of Raw Materials

In terms of cost of raw materials, this study looked at the main types of raw materials that were being used for producing animal feed (both Pellets and Mixture types). The main raw materials included in the study were wheat, barley, bran, hay, corn, soya, cotton, lentil, animal vitamins, and silage. Overall, the cost of raw materials was reported to be higher in the winter season in comparison with the summer season for most types of raw materials. Although Hay recorded the lowest cost within the raw materials group (93 USD/MT in winter and 81 USD/MT in summer), it recorded the highest cost increase of 12% along with Barley from summer to winter, which can be attributed to their higher local production and availability in the summer season. Conversely, corn was the only type of raw material that recorded a cost decrease of 20% from summer to winter, which can be attributed to its harvest season in the fall, hence, its higher availability in the winter season.

Across the raw material types, Animal Vitamins[5] reported the highest cost at 974 USD/MT in winter and 990 USD/MT in summer. The highest prices of animal vitamins reported were mainly in Mansura and Ar-Raqqa sub-districts of Ar-Raqqa governorate, and Basira and Deir-ez-Zor sub-districts of Deir-ez-Zor governorate, while the lowest prices of animal vitamins reported were in Hole and Jawadiyah sub-districts of Al-Hasakeh governorate. As indicated in the raw materials sources section, Animal Vitamins had the highest percentage of imports from Turkey at 46%, which can be linked to the high prices reported in these areas.

Overall, and following animal vitamins, Lentil recorded the highest cost, followed by Soya, Barley, Wheat, Cotton, Silage, Bran, Corn, and finally Hay recording the lowest cost.

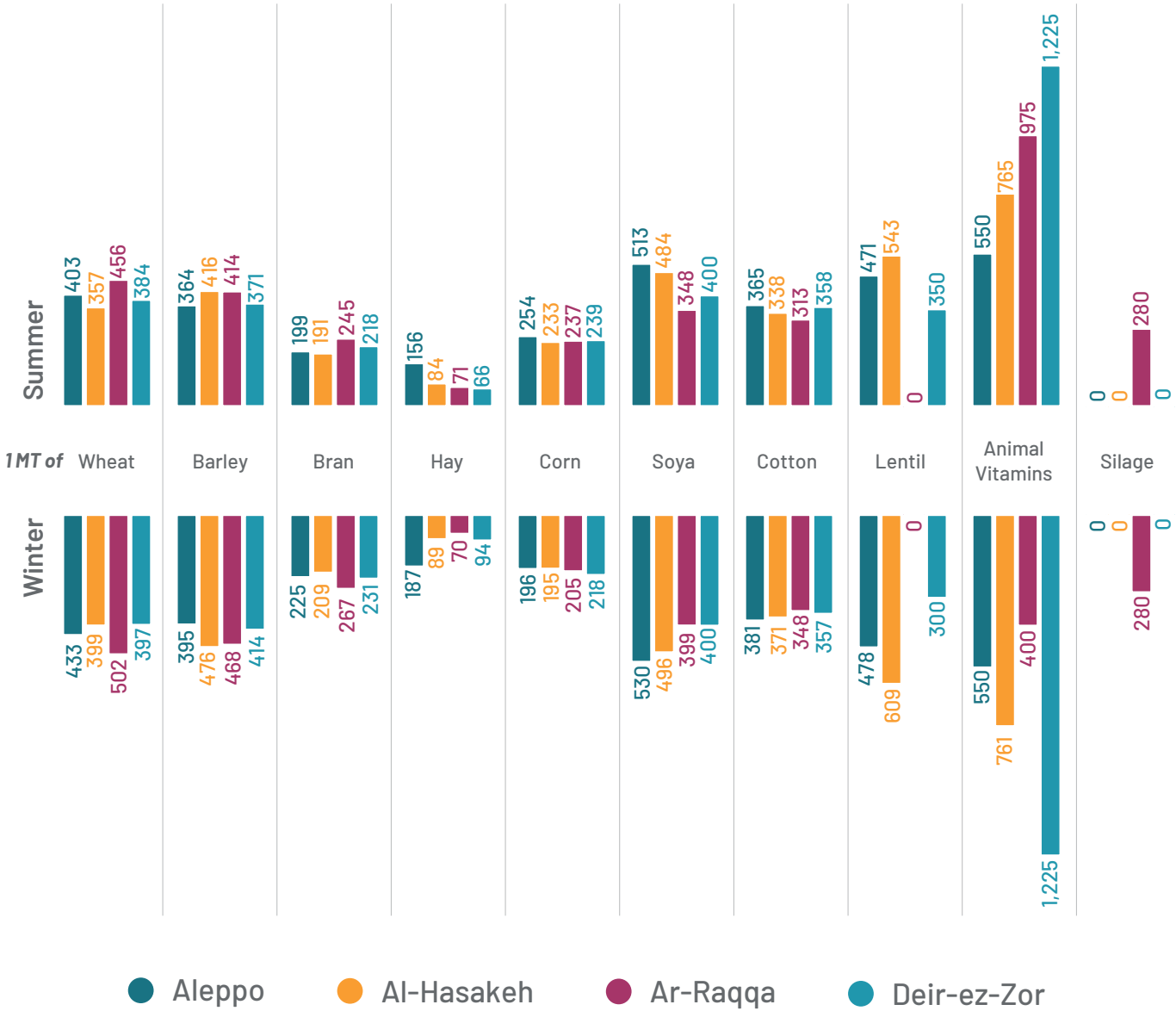


Figure 31: *Average Price of Raw Materials in USD - Q4 2022*

5 Median prices of Animal Vitamins were reported due to the high variability in prices reported across respondents.

K. Selling Modality, Supply, and Demand

Data recorded that selling using both cash and credit modalities were commonly used at the assessed sub-districts. The percentage of respondents who reported using only cash modality was higher in Aleppo and Al-Hasakeh governorates (50% and 55% respectively), whereas the highest percentage of market actors who reported using only credit modality was in Ar-Raqqa governorate at 27%. Overall, the use of both cash and credit modalities were reported together by most market actors at 51%, followed by using only cash at 45%, and finally only credit at 5%. Most sellers who use credit as a payment option do not impose any conditions on their customers, but some reported that they only sell on credit to familiar customers, require payments to be made in USD, have an agreed upon time frame for payments (ex. after the sale of livestock), or charge higher prices.

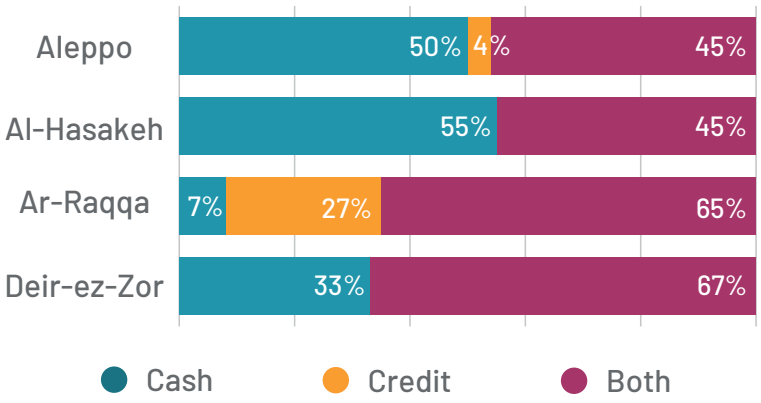


Figure 32: *Selling Modalities of Market Actors*

Overall, **the US Dollar was reported to be the dominant currency in buying the raw materials in NES across most of the governorates** (68%), excluding Aleppo which reported higher use of the Syrian Pound for buying raw materials (69%). On the other hand, **the Syrian Pound was reported to be the dominant currency in selling the production of animal feed in NES across most of the governorates** (54%), with Aleppo governorate reporting the highest use of Syrian Pound (71%) and Ar-Raqqa governorate reporting the highest use of US Dollar (56%).

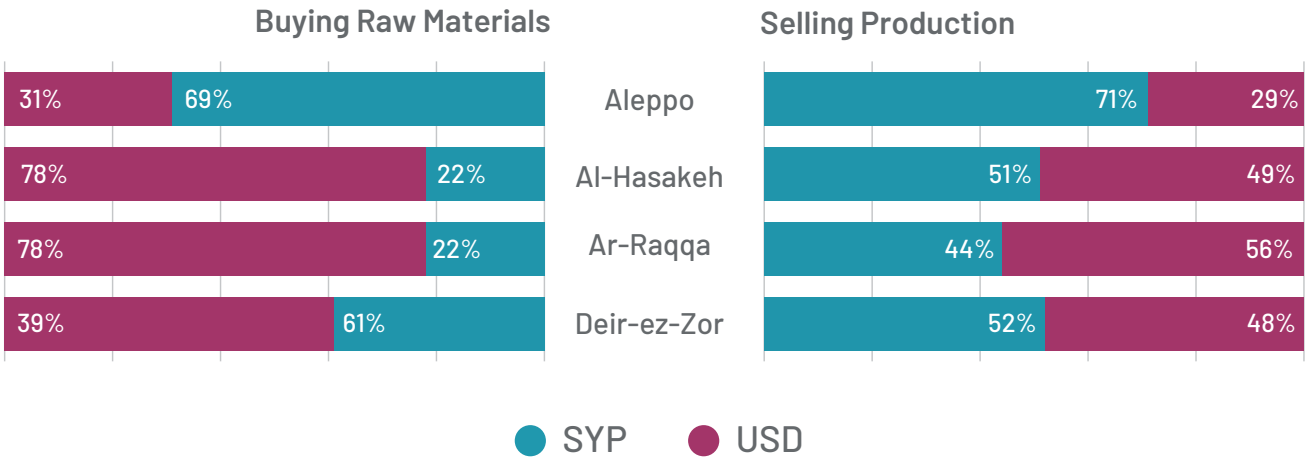


Figure 33: *Currency Used in Animal Feed Transactions*

Demand and Supply

The reported change in the number of customers between 2021 and 2022 was mainly stable across the governorates at 48% (n=184), with Aleppo governorate reporting the highest stability rate at 62%, followed by Al-Hasakeh governorate, Deir-ez-Zor governorate, and finally Ar-Raqqa governorate with the lowest stability rate at 33%.

Compared to the findings on the demand side, the number of vendors for the animal feed sector showed higher stability within the market. **The majority of market actors reported a stability in the number of vendors between 2021 and 2022, with all governorates recording a stability rate higher than 90%, excluding Ar-Raqqa governorate which reported the lowest stability rate of 62%**.

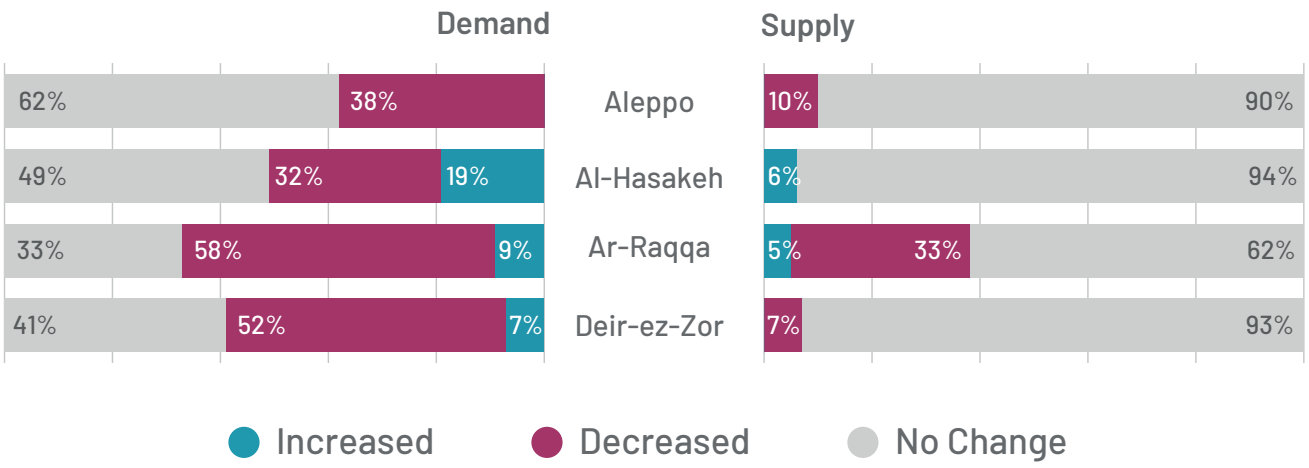


Figure 34: *Change of Supply and Demand Between 2021 and 2022*

L. Quality Control Across the Fodder/Animal Feed Value Chain

The majority of the interviewed market actors (99%) reported that animal feed testing laboratories are not available in their area, with only two market actors that reported accessibility to testing facilities in Hole sub-district in Al-Hasakeh governorate. These laboratories provided free tests on the quality of animal feed grains. Furthermore, only 2% of the interviewed market actors (n=7) reported conducting quality tests for their animal feed production, where three market actors were operating in Qahtaniyyeh sub-district in Al-Hasakeh governorate, two were operating in Hole sub-district in Al-Hasakeh governorate, and the remaining market actors were in Kisreh and Deir-ez-Zor sub-districts of Deir-ez-Zor governorate.

Market actors operating in Qahtaniyyeh sub-district reported conducting their lab tests in Kurdistan – Iraq, where they send off samples of their production and receive the results online. These tests focus on protein, energy, and carbohydrate levels, and range in cost between 50-100 USD. The remaining market actors in Al-Hasakeh and Deir-ez-Zor governorates reported testing their production within their factories for quality, moisture content, and insects and parasite presence in their animal feed and fodder production.

Market actors reported the fair or lack of expert labor available for feed manufacturing or trade, where the highest challenge faced was the lack of availability of lab testing facilities (27%). Other reported challenges were the lack of experience in green fodder manufacturing, lack of nutrition experts and veterinarians, and the lack of experts in producing feed mixtures according to a nutritional ratio.

M. Taxes

More than half of the respondents (54%, n=205) reported paying taxes to local authorities, with Deir-ez-Zor recording the highest percentage at 83%, with a yearly average of 176 USD. Conversely, Ar-Raqqa governorate recorded the lowest percentage of market actors paying taxes, but with the highest yearly average payment of 625 USD. Al-Hasakeh recorded 50% of tax payments within market actors with a yearly average of 255 USD, and Aleppo governorate reported 59% of tax payments within market actors with the lowest yearly average of 117 USD. Overall, the market actors reported paying taxes to the Local Self Administration, the Chamber of Commerce and Industry, Municipalities, or Economic Committees.

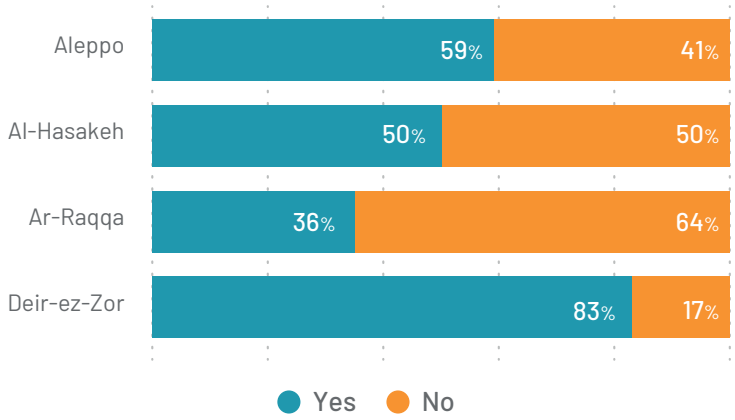


Figure 35: *Percentage of Market Actors Paying Taxes per Governorate*

5. Summary and Discussion

Animal Feed and Fodder Market Actors Status

Data recorded that several factors influenced the supply chain of feed and fodder, hence, impacting the livestock production due to the lack of adequate nutrition available for livestock in Northeast Syria. The low availability and the unaffordability of animal feed and green fodder were reported to be of high concern to livestock farmers in 2021, which increased farmers dependency on imported feed and fodder at higher prices[6].

Based on the above, collected data shows that most of the feed and fodder market actors are traders followed by grinders, out of which 30% have opened in the last 5 years. This could indicate a shift towards a greater reliance on trading and grinding services rather than local production of animal feed.

As for the operational status of facilities, 17% of feed manufacturers and feed manufacturers/traders and 36% of grinders reported were found to be partially operational. When asked, most of the entities reported that increased input prices and operational costs coupled with lower demand are the main reasons. Such findings justify the shift from production to trade highlighted above, especially that when asked about their infrastructure status almost 70% of entities did not require any structural rehabilitation or equipment. Moreover, it indicates that many livestock farmers could be relying on natural pasture due to the increase of feed and fodder costs.

Despite the reported decrease in demand for animal feed and the reduction in the number of livestock, data shows an increase in the number of traders operating in the market. This increase is not necessarily proportional with the feed and fodder supply as the volumes are more likely to be divided across a larger number of traders. The ease of market access for traders, compared to the high costs associated with local production and manufacturing, suggests that trading is a more attractive option. Traders have also been noted to have the highest import record of feed, fodder, and raw materials, which helped them diversify their product offerings and stay competitive despite the reported decrease in demand.

Animal Feed Pellets and Mixtures

Production:

Data shows that the production and trade of animal feed, specifically pellets and mixtures, involves a higher number of market actors than green fodder. Poultry feed production and trade has the lowest number of market actors, but the highest monthly production and sales volumes among all types of animal feed. The Livestock Market Systems Rapid Assessment conducted by iMMAP in August 2021 also found that poultry was expected to have the highest stability rate in terms of count per household in the upcoming six months. On the other hand, sheep feed has a higher demand and production than cow feed, indicating a higher availability of sheep in the region. The average monthly production of animal feed for meat purposes is higher in winter, while the production of animal feed for milk and egg purposes is higher in summer. Such findings could be due to crops seasonality and raw materials availability.

6 iMMAP Livestock Market Systems Rapid Assessment – Northeast Syria, August 2021. Link

Cost and Selling Price:

Poultry feed has the highest production cost and selling price among all livestock feed types, likely due to its high demand among farmers. On the other hand, animal feed used for milk production has the lowest production costs and selling price, likely because its main raw materials, bran and straw, are relatively inexpensive. Overall, livestock feed mixtures generally have lower production costs compared to animal feed pellets, particularly for poultry and cow feed, because pellets production can be costly.

Availability and Seasonality

In terms of availability, most mapped market actors reported higher availability of animal feed mixtures than feed pellets, a finding that be justified by fewer producers and production of feed pellet. Moreover, both feed mixtures and pellets are more available in summer than in winter season, which could be related to the availability of raw materials and lower production costs. In fact, higher demand of fuel during winter seasons generally affects the fuel prices and availability driving producers to purchase fuel from black markets.

On the other hand, green fodder availability was relatively low across all governorates compared to feed mixture and feed pellets. In general, green fodder is more available during the summer season rather than in winter which could be related to the seasonality of green fodder crops. Moreover, green fodder is less available in Deir-ez-Zor governorate compared to the rest of governorates which is due to the unfavorable climatic conditions for green fodder production.

Quality Control

Most market actors in the feed and fodder industry reported a lack of access to testing laboratories for feed and fodder analysis, with only a small minority conducting quality control tests at their facilities. Furthermore, some market actors reported conducting quality control tests in Kurdistan - Iraq. This highlights a significant gap in quality control within the feed and fodder industry, as untested products can potentially be adulterated or a source of contaminants, pests, and diseases. The lack of access to testing laboratories and quality control measures poses a risk to the industry and to the performance, productivity, and health of the livestock consuming the feed and fodder.

Currency

The findings indicate that the use of both cash and credit as payment options for animal feed is common in the assessed sub-districts. While most sellers who offer credit purchases do not impose any conditions on their customers, some have reported that they only sell on credit to familiar customers, require payments in USD, have a set time frame for payments, or charge higher prices. Additionally, it was reported that the US Dollar is the dominant currency for buying raw materials in the region, while the Syrian Pound is the dominant currency for selling animal feed production in most of the governorates (54%). However, using the Syrian Pound for sales exposes market actors to the risk of exchange rate fluctuations between the USD and SYP, and in turn lead to financial losses.

6. Recommendations

Based on the findings of the "Animal Feed/Fodder Manufacturing Facilities Mapping" study, iMMAP Food Security and Livelihood unit suggests the following recommendations:

- **Promote climate smart crops cultivation:**
  To promote sustainability in the feed and fodder sector, it is important to focus on increasing local production of raw materials. This can be achieved through advocating for the cultivation of climate-smart crops, which are adaptive to local conditions and are more resistant to climate shocks. By increasing the availability of local raw materials, the feed and fodder industry can become less reliant on imports and reduce production costs.

- **Provide technical support to farmers and feed and fodder producers:**
  Providing technical support to farmers and feed and fodder producers involves offering them training, education, and practical assistance on the most suitable agricultural and production practices. The goal is to help farmers and animal feed producers improve their productivity, reduce their manufacturing costs, and increase their competitiveness in the market. Moreover, local production increases feed and fodder availability, hence, prevents animal destocking.

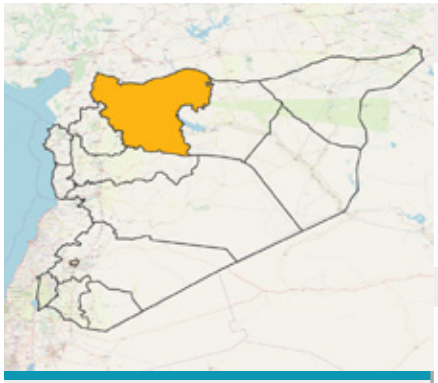
- **Promote market linkages and collaboration between feed producers and livestock farmers:**
  Promoting market linkages and collaboration between feed producers and livestock farmers has the potential to ensure a more efficient supply chain. It would also improve resilience by reducing the dependence on external markets, strengthening the livelihood of local producers, and reducing the risk of supply chain disruptions, in turn ensuring long-term sustainability.

- **Establish or support testing laboratories for feed and fodder analysis:**
  By having access to reliable and accurate testing services, feed and fodder producers, as well as livestock farmers, can ensure the quality of the used products. This can help prevent the risk of adulteration, and chemical and pest contaminations that can harm animals or compromise the quality of their meat, milk, or eggs.

- **Enhance access to financial services to local market actors:**
  The provision of facilitated and low-interest loans to local market actors can help them manage and mitigate financial risks in the feed and fodder market. This type of financial support can also help small and medium market actors to expand their operations, upgrade their facilities, and invest in new technologies and production methods.

- **Provide rehabilitation support to manufacturing facilities:**
  Providing feed manufacturing facilities with the necessary equipment maintenance or building rehabilitation is a critical intervention for improving their performance and production levels. This can lead to increased availability and affordability of feed and fodder, which is essential for the livelihoods of livestock farmers, promoting sustainability and resilience in the long term.

Annex A: Governorate Factsheets - Aleppo



Business Type

Types

Trader	27
Animal Feed Manufacturer	0
Animal feed Manufacturer & Trader	16
Grinder	28

Support Status

Received Support

13%	Currently
0%	Used to
87%	Never

Source of Support

NGO	0	LSA	9
UN Agencies	0	Other	0

Business Status

Management

70	Owner
0	Employee
0	LSA

Ownership

Public	0
Private	70
Mix	0

Factory Functionality

62	Full
8	Partial
1	Non-Operational

Reasons for Partial Functionality

Low availability of raw materials, Decrease in availability of livestock, Increase in input/raw materials prices

Processing Facility Infrastructure Needs

In Good Condition	37
Minor Rehabilitation	1
Major Rehabilitation	0
Equipment Maintenance	4
New Equipment	1

Cost	USD
Building Rehabilitation	2,000
New Equipment	40,000
Equipment Maintenance	5,000

Warehousing

Warehousing Availability

Do not have a warehouse	22
Warehouse in the same workplace	30
Separate warehouse	18

Warehousing space in M²

Average
60

Quantity of Stored Animal Feed in MT

Average	Sum
20	5,849

Selling Modalities

Cash	Credit
67	35

Currency

Sell Products		Buy Raw Materials	
USD	20	USD	22
SYP	50	SYP	48

SY02

Production

Inputs Purchase Source

	ANIMAL FEED	GREEN FODDER	RAW MATERIALS
Syria	30	40	185
Turkey	12	0	18
Iraq	0	0	0
Other Country	0	0	0

Green Fodder and Animal Feed Produced

		TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking	1	4	450
	Meat	3	95	450
Cow	Milking	2	105	475
	Meat	2	50	500
Poultry	Egg	0	0	N/A
	Meat	5	1,181	575
Green Fodder		0	0	-

Animal Feed Mixtures

		TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking	26	384	350
	Meat	31	448	355
Cow	Milking	27	322	370
	Meat	26	336	390
Poultry	Egg	5	60	388
	Meat	1	0	480

Availability

Always Available · Available · Fairly Available · Not Available

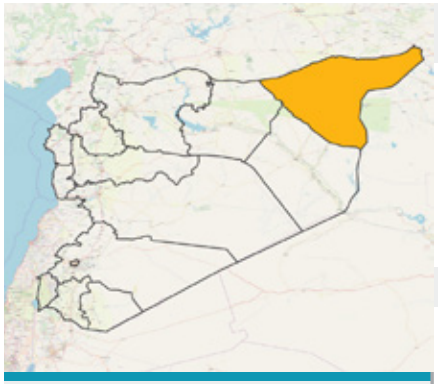
Green Fodder			Animal Feed			Mixture			Testing Laboratory	
13	53	4	28	39	3	69	1	0	70	0

Change between 2021 & 2022

Increase · Decrease · No Change

Supply			Demand			Production Change		
26	0	43	7	0	62	26	2	42

Al-Hasakeh



Warehousing

Warehousing Availability

Do not have a warehouse	24
Warehouse in the same workplace	108
Separate warehouse	80

Warehousing space in M²

Average 152

Quantity of Stored Animal Feed in MT

Average 40 Sum 20,538

Selling Modalities

Cash	Credit
212	95

Currency

Sell Products		Buy Raw Materials	
USD	103	USD	166
SYP	109	SYP	46

SY08

Business Type

Types

Trader	83
Animal Feed Manufacturer	32
Animal feed Manufacturer & Trader	45
Grinder	54

Support Status

Received Support

4%	Currently
0%	Used to
96%	Never

Source of Support

NGO	0	LSA	7
UN Agencies	1	Other	0

Business Status

Management

200	Owner
12	Employee
0	LSA

Ownership

Public	0
Private	212
Mix	0

Factory Functionality

160	Full
52	Partial
2	Non-Operational

Reasons for Partial Functionality

Decrease in demand for feed/fodder, Increase in input/raw materials prices, Decrease in availability of livestock

Processing Facility Infrastructure Needs

In Good Condition	88
Minor Rehabilitation	13
Major Rehabilitation	2
Equipment Maintenance	15
New Equipment	11

Cost	USD
Building Rehabilitation	1,500
New Equipment	5,750
Equipment Maintenance	5,000

Production

Inputs Purchase Source

	ANIMAL FEED	GREEN FODDER	RAW MATERIALS
Syria	110	67	468
Turkey	9	6	50
Iraq	0	13	0
Other Country	0	0	0

Green Fodder and Animal Feed Produced

		TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking	32	2,511	320
	Meat	44	2,996	370
Cow	Milking	44	2,675	328
	Meat	42	2,753	382
Poultry	Egg	3	34	370
	Meat	9	1,289	380
Green Fodder		29	5,334	-

Animal Feed Mixtures

		TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking	94	2,044	375
	Meat	89	1,846	375
Cow	Milking	85	1,593	325
	Meat	72	1207	368
Poultry	Egg	33	96	180
	Meat	33	70	173

Availability

Always Available · Available · Fairly Available · Not Available

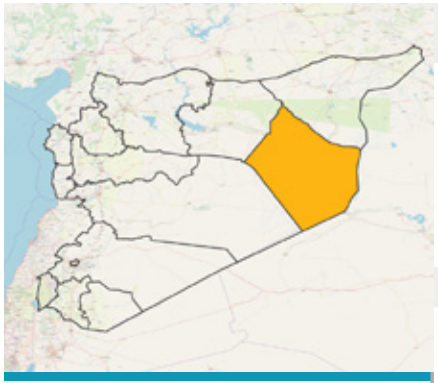
Green Fodder	Animal Feed	Mixture	Testing Laboratory
18	73	146	210
94	102	64	2
94	31	2	

Change between 2021 & 2022

Increase · Decrease · No Change

Supply	Demand	Production Change
68	1	67
40	12	28
104	198	117

Deir-ez-Zor



Business Type

Types

Trader	36
Animal Feed Manufacturer	2
Animal feed Manufacturer & Trader	2
Grinder	6

Support Status

Received Support

0%	Currently
0%	Used to
100%	Never

Source of Support

NGO	0	LSA	0
UN Agencies	0	Other	0

Business Status

Management

46	Owner
0	Employee
0	LSA

Ownership

Public	0
Private	46
Mix	0

Factory Functionality

33	Full
13	Partial
0	Non-Operational

Reasons for Partial Functionality

Low financial liquidity, Instability of exchange rate of the USD, Decrease in availability of livestock

Processing Facility Infrastructure Needs

In Good Condition	5
Minor Rehabilitation	1
Major Rehabilitation	0
Equipment Maintenance	1
New Equipment	3

Cost	USD
Building Rehabilitation	1,500
New Equipment	20,000
Equipment Maintenance	3,000

Warehousing

Warehousing Availability

Do not have a warehouse	1
Warehouse in the same workplace	25
Separate warehouse	20

Warehousing space in M²

Average 200

Quantity of Stored Animal Feed in MT

Average 15 Sum 2,810

Selling Modalities

Cash	Credit
46	31

Currency

Sell Products

USD	22
SYP	24

Buy Raw Materials

USD	28
SYP	18

SY09

Production

Inputs Purchase Source

	ANIMAL FEED	GREEN FODDER	RAW MATERIALS
Syria	30	18	91
Turkey	8	0	2
Iraq	0	0	0
Other Country	0	0	0

Green Fodder and Animal Feed Produced

		TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking	26	2,235	350
	Meat	26	2,247	350
Cow	Milking	30	2,396	362
	Meat	30	2,558	362
Poultry	Egg	9	2,032	450
	Meat	7	2,012	300
Green Fodder		2	22	-

Animal Feed Mixtures

		TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking	33	248	450
	Meat	36	242	450
Cow	Milking	36	401	450
	Meat	37	285	450
Poultry	Egg	8	12	300
	Meat	7	8	300

Availability

Always Available · Available · Fairly Available · Not Available

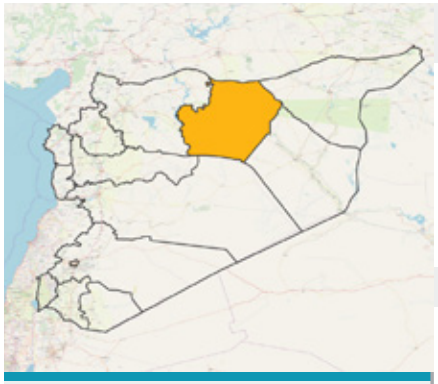
Green Fodder	Animal Feed	Mixture	Testing Laboratory
3	7	23	46
17	38	23	0
26	1	0	

Change between 2021 & 2022

Increase · Decrease · No Change

Supply	Demand	Production Change
24	3	25
3	0	7
19	43	14

Ar-Raqqa



Warehousing

Warehousing Availability

Do not have a warehouse	7
Warehouse in the same workplace	24
Separate warehouse	21

Warehousing space in M²

Average 200

Quantity of Stored Animal Feed in MT

Average 20 Sum 1,444

Selling Modalities

Cash	Credit
40	51

Currency

Sell Products		Buy Raw Materials	
USD	31	USD	43
SYP	24	SYP	12

Business Type

Types

Trader	36
Animal Feed Manufacturer	4
Animal feed Manufacturer & Trader	5
Grinder	11

Support Status

Received Support

0%	Currently
0%	Used to
100%	Never

Source of Support

NGO	0	LSA	0
UN Agencies	0	Other	0

Business Status

Management

51	Owner
4	Employee
0	LSA

Ownership

Public	0
Private	55
Mix	0

Factory Functionality

22	Full
33	Partial
1	Non-Operational

Reasons for Partial Functionality

Decrease in demand for feed/fodder,Instability of exchange rate of the USD, Increase in input/raw materials prices

Processing Facility Infrastructure Needs

In Good Condition	5
Minor Rehabilitation	0
Major Rehabilitation	2
Equipment Maintenance	5
New Equipment	7

Cost	USD
Building Rehabilitation	2,500
New Equipment	4,000
Equipment Maintenance	800

Production

Inputs Purchase Source

	ANIMAL FEED	GREEN FODDER	RAW MATERIALS
Syria	24	28	202
Turkey	10	3	23
Iraq	0	0	0
Other Country	0	0	0

Green Fodder and Animal Feed Produced

		TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking	15	201	400
	Meat	13	875	375
Cow	Milking	15	251	375
	Meat	19	624	385
Poultry	Egg	2	25	425
	Meat	3	600	500
Green Fodder		6	447	-

Animal Feed Mixtures

		TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking	19	159	450
	Meat	14	205	312
Cow	Milking	21	81	425
	Meat	13	115	335
Poultry	Egg	8	1	350
	Meat	8	18	425

Availability

Always Available · Available · Fairly Available · Not Available

Green Fodder	Animal Feed	Mixture	Testing Laboratory
18	29	26	55
20	14	28	0
17	10	0	

Change between 2021 & 2022

Increase · Decrease · No Change

Supply	Demand	Production Change
32	18	36
5	3	6
18	34	13

SY11