

Animal Feed/Fodder Manufacturing Facilities Mapping Northwest Syria (NWS)

SEPTEMBER/OCTOBER
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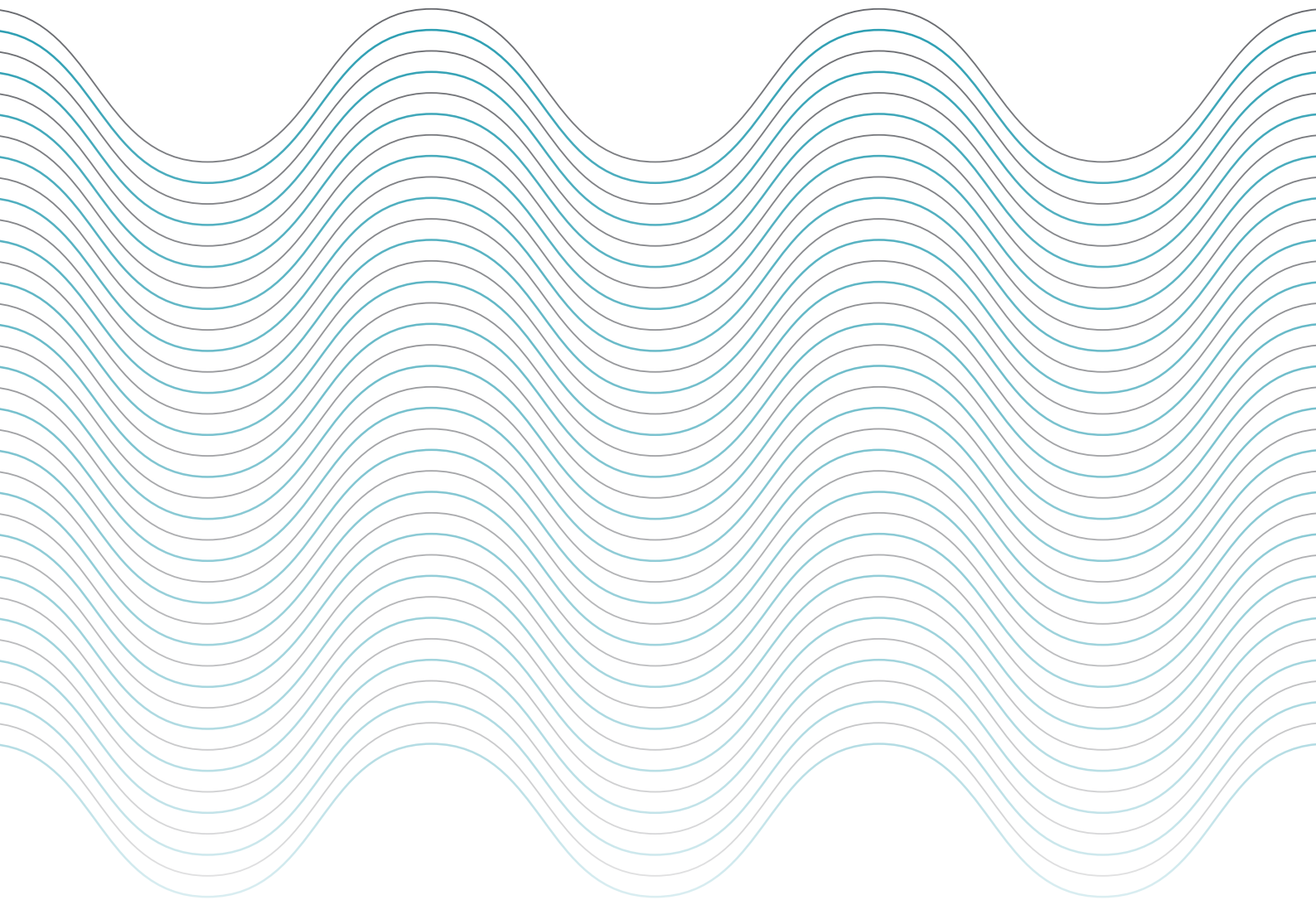


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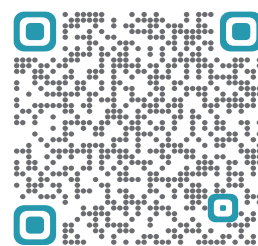
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1. Introduction

Ensuring adequate quality and accessibility of livestock feed holds significant importance in maintaining sustainable livestock production within Syria. This not only enhances the well-being of the livestock but also plays a crucial role in overall food security and the restoration of livelihoods in the country by enhancing the animal feed situation and consequently boosting animal production. The adverse effects of climate-induced shocks, particularly in the semi-arid areas, have led to a growing concern for the availability of feed resources.

Livestock are valuable assets for communities, offering essential resources such as meat, eggs, and highly nutritious milk. Before the crisis in 2011, livestock played a substantial role in Syria's agricultural activities, constituting 40% of the total output and engaging 20% of the rural labor force. Livestock rearing served as the primary source of food and income for 35% of rural households¹.

Despite the prolonged crisis, the livestock sector, along with the broader agricultural sector, remains a pivotal component of the economy, significantly contributing to the food and nutrition security of the rural population. Nevertheless, the livestock sector has encountered severe challenges in recent years. The collapse of government services, combined with the impacts of climate change, has led to a significant decline in livestock numbers.

This decline has far-reaching consequences, potentially impacting both rural and peri-urban livelihoods, as well as overall food security. Challenges such as deteriorating pastures, high costs of processed animal feed and water, limited access to veterinary services, and the prevalence of substandard animal production inputs in local markets pose substantial risks to the livestock sector. Various short-term measures, including free mass treatments against parasites, livestock vaccinations, and limited distribution of fodder and restocking, have been implemented to mitigate these challenges. However, the primary concern remains the availability of animal feed, prompting intervention from humanitarian organizations.

The main sources of animal feed in Syria encompass cultivated green and conserved fodder, along with crop residues and processed by-products. Barley, wheat, and other types of forage crops like legumes are preferred as they are considered rich sources of protein for livestock. Additionally, wheat bran, straw, silage, and feed mixtures comprising various types of green fodders and forage crops, concentrates, minerals, and vitamins are crucial in providing essential nutrients for animal growth and production.

2. Study Objectives

Acknowledging the need to understand the intricacies of the animal feed and fodder market, the Food Security and Livelihood Cluster and its partners in the Northwest Syria region have acknowledged the relevance of evaluating the geographic reach of animal feed, green fodder, and forage crops production and trade facilities/farms and analyzing the dynamics of market actors along the animal feed and fodder value chain and present recommendations to implementing partners. The scope of this study is to provide valuable insights into these aspects, support informed decision-making and enhance interventions within the livestock sector. The study aims to provide valuable insights and recommendations to implementing partners, aligning with the subsequent specific objectives.

1. Map the geographical coverage of animal feed/fodder factory/sales facilities across NWS.
2. Provide new insights and reduce the information gaps on animal feed production and animal feed and fodder markets across NWS.
3. Highlight the current practices and challenges of main business actors in the animal feed and fodder value chain in NWS.

4. Highlight and map the capacity and functionality of animal feed and fodder production facilities in NWS and assess facility building structures affected by the earthquake.
5. Present the seasonal price, availability, and production volume fluctuations pattern for animal feed and fodder in NWS.
6. Explore the sales trend in the business of animal feed and fodder, including trade modalities, supply, and demand in NWS.
7. Assess and compare the percentage of imported fodder versus fodder crops cultivated in NWS in terms of prices and quality.

As animal feed requirements vary based on the livestock category and intended purpose (milk or meat production), this study comprehensively examined a broad spectrum of animal feed categories, classified into four groups:

1. **Green Fodder:** Includes cultivated green and conserved fodder varieties like Alfalfa, Corn Silage, Hydroponic Barley, and Azolla.
2. **Forage Crops:** Includes cultivated forage crops varieties like wheat, barley, corn soya, cotton, lentil, and fava beans.
3. **Animal Feed Pellets:** Includes processed animal feed pellets produced for poultry, cow, and sheep for milk, meat, and egg production purposes.
4. **Animal Feed Mixtures:** Includes grinded animal feed mixtures produced for poultry, cow, and sheep for milk, meat, and egg production purposes.
5. **Raw Materials:** Includes raw materials used in the production of animal feed pellets and mixtures such as Wheat, Barley, Bran, Hay, Corn, Soya, Cotton, Lentil, Fava beans, Animal Vitamins, Minerals, and Straw.

To ensure comprehensive understanding and provide enhanced insights into the diverse study objectives, this study generated three distinct deliverables:

1. **Narrative Report:** The current report offers a comprehensive analysis of various indicators concerning the commercial livestock feed supply chain at the governorate level in Northwest Syria (NWS). It also provides recommendations for future programming based on comprehensive quantitative and qualitative analysis.
2. **Factsheets (Annex A):** Factsheets were created for each governorate and sub-district to summarize the trading and processing activities of animal feed and fodder for different livestock production. This includes functionality, production, input availability, warehousing capacity, as well as the number and types of active market participants.
3. **Interactive Dashboard:** The dashboard provides a summarized view of numerical metrics related to production/sales volumes, production costs, selling prices, and raw material costs for each type of fodder and animal feed.

[Dashboard link](#)

3. Methodology

A. Data collection

The data collection team conducted key informant interviews with various stakeholders in the animal feed and fodder market using a semi-structured data collection tool. The tool was thoughtfully designed to obtain responses aligned with the study's objectives. The study's respondents were chosen from a range of animal feed and fodder facilities, including farmers, retailers, wholesalers, grinding and manufacturing factories. Nine Food Security and Livelihood cluster partner organizations actively participated in this data collection. Enumerators engaged with fodder and forage crop farmers, as well as owners/managers of animal feed facilities, to systematically map out retailers, wholesalers, and factories. The surveys were designed to explore different aspects such as the production capacity of farmers, operational capabilities of functional animal feed and/or fodder facilities, and the commercial aspects of the livestock feed and fodder business.

B. Sampling

To ensure a comprehensive coverage of facilities within the designated study area, the snowball sampling technique was utilized. It's worth noting that while the facility mapping covered 40 sub-districts in Northwest Syria (NWS), it might not include every available facility.

4. Results

A. Animal Feed and Fodder Market Actors and Status

Within this study, a total of 683 animal feed and fodder market actors were mapped and interviewed across 40 sub-districts in NWS. The interviewees were categorized into two primary groups: those in the **animal feed production and trade** sector, and those involved in the **production of green fodder and forage crops**.

Animal Feed Production and Trade:

1) Animal Feed Manufacturers

71 facilities engaged in the manufacturing and production of animal feed pellets and mixtures were mapped across all sub-districts of NWS. The majority of these manufacturing facilities indicated involvement in wholesale trade for their production (68%, n=47), while only 3% did not engage in trade activities and relied on their production for personal consumption for livestock feeding.

Among the 71 identified manufacturers, only two were inactive at the time of data collection, both located in Al Bab sub-district within Aleppo governorate. The primary reason for their non-operation was the increase in the quantities of imported animal feed, resulting in reduced demand for local production in the area.

Conversely, 44% of the mapped manufacturing facilities (n=31) were operating at a partial capacity, while 54% (n=38) were functioning at full capacity. The primary reason cited for partial functionality was the decline in livestock availability, subsequently decreasing the demand for animal feed. This decline, coupled with limited support within the animal feed value chain and constrained financial capacities of market actors, has hindered their production capabilities.

2) Animal Feed Grinders

97 facilities specialized in either producing Animal Feed Mixtures or offering feed/fodder grinding services to customers were identified across all sub-districts of NWS. Among these grinders, 66% categorized their trade activity as retailers (n=64), while 27% engaged in wholesale trade (n=26). A minor percentage of 2% reported not being engaged in any trade activities, as they offered grinding machine rental services.

Moreover, 34% of the respondents mentioned utilizing mobile grinding machines services instead of fixed grinding facilities. Among the remaining 66% of grinders with grinding facilities/shops, 52% were fully operational, while 48% operated at a partial capacity. Comparable to animal feed manufacturers, grinding facilities encountered similar challenges affecting their operational status, in addition to increased prices of essential inputs and raw materials required for production.

3) Animal Feed Traders

222 facilities specializing in the trade of Green Fodder, Animal Feed Pellets, Animal Feed Mixtures, and Raw Materials were identified across all sub-districts of NWS. The majority of these trade facilities categorized their trade activity size as retailers (73%, n=162) or wholesalers (27%, n=60). The traders predominantly focused on trading animal feed pellets and mixtures, as well as essential raw materials needed in the production of animal feed like wheat, barley, bran, and corn. Only a small fraction (3%, n=7) engaged in the trade of green fodder.

Green Fodder and Forage Crop Production:

4) Green Fodder and Forage Crop Farmers

293 farmers who specialize in cultivating green fodder and forage crops were mapped across all sub-districts of NWS. These farmers predominantly focused on growing forage crops like wheat, barley, corn, fava beans, and lentils, with lesser involvement in cultivating green fodder such as alfalfa and corn silage.

Following farmers, traders were the highest represented category of market actors with a total of 222 traders identified across the NWS region. Conversely, the lowest representation was observed among animal feed manufacturers.

A significant proportion, 98%, of the mapped businesses in animal feed manufacturing and trade were privately owned, with the remainder being partnerships between private and public owners. Most of the facilities indicated that their owner managed the local processing or trading aspects of the facilities. In contrast, only 5% of the facilities reported being managed by employees.

In total, 11% of the identified market actors (excluding farmers) reported operating for 15 days or less per month. This decrease in operational frequency was primarily attributed to the destocking trend in NWS, resulting in decreased demand for animal feed. Financial constraints and rising prices also significantly contributed to their limited operation.

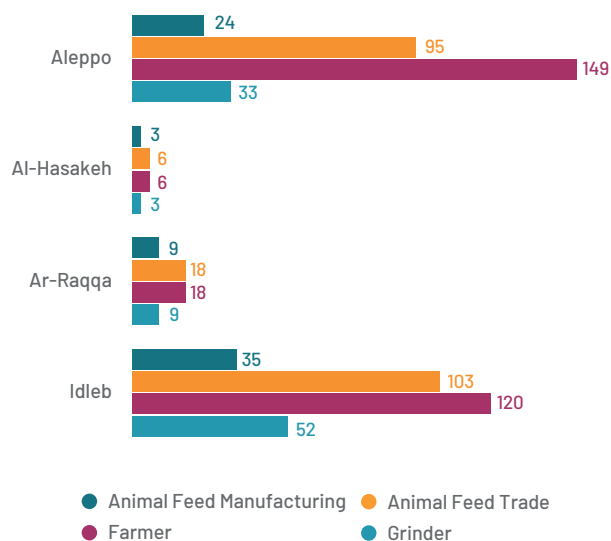


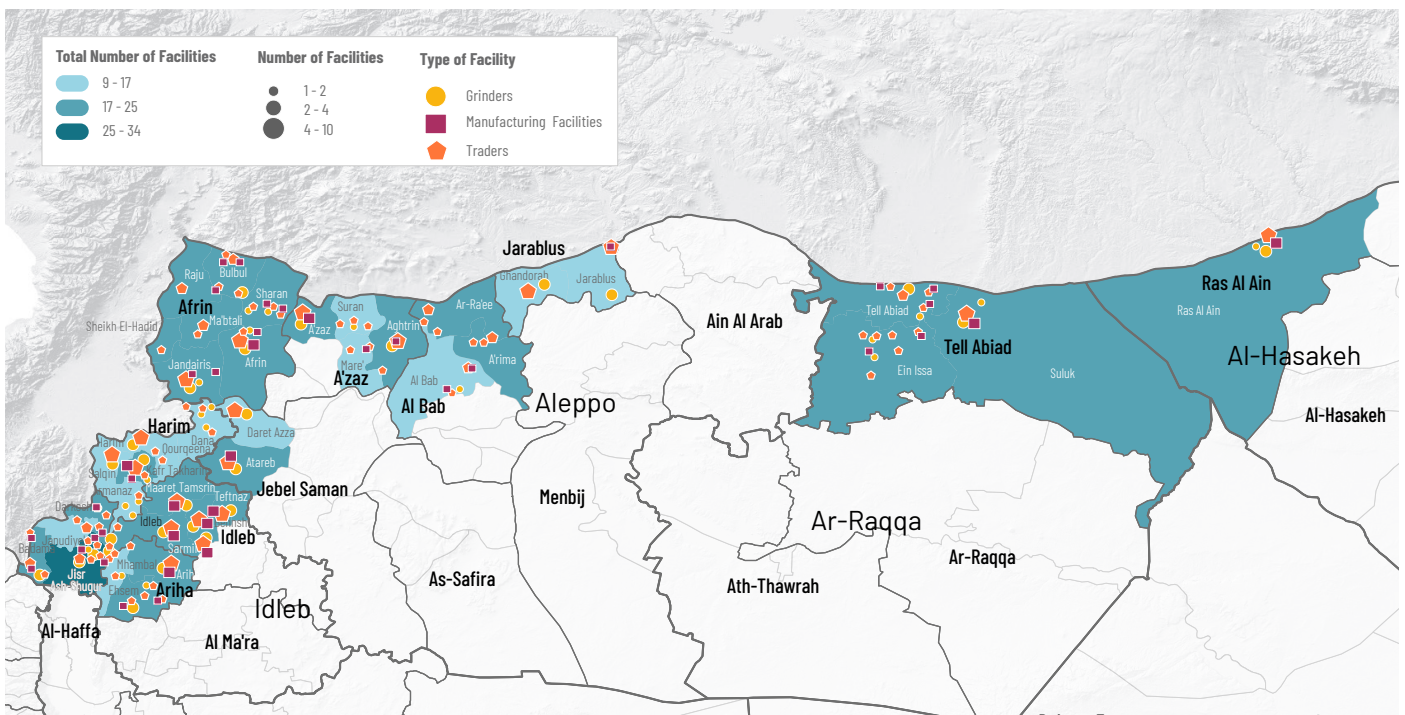
Figure 1: Number and Type of Market Actors Reached per Governorate

Animal Feed/Fodder Manufacturing Facilities Mapping

September/October 2023

Furthermore, within the past three years, 18% of the facilities (n=68) had to temporarily suspend their production and trade of animal feed for an average duration of 10 months (ranging from 1 to 30 months per market actor). The main reason for these interruptions was the instability in the security situation, particularly in specific areas like Ariha sub-district in Idleb governorate, and Arima and Afrin sub-districts in Aleppo governorate. The damages incurred due to earthquakes, particularly in Jandairis sub-district of Aleppo governorate, and limited financial resources were also key factors.

Among these facilities that suspended their operations, traders constituted the majority (62%), followed by manufacturers (21%). The market actors were able to resume their operations after facility rehabilitation following earthquakes, ensuring a more stable context and improved security, or by securing financial loans to resume operations.



Map 1: Coverage of Feed and Fodder Market Actors

B. Animal Feed and Fodder Market Actors Business Age

Most of the manufacturing and trade market actors identified (76%, n=296) have been active in the feed and fodder sector for a duration spanning from 1 to 10 years. Figure 2 illustrates a notable rise in the numbers across all categories of market actors engaged in animal feed manufacturing and trade, where it can be noted that more market actors are joining the sector in more recent years. These trends, highlighted by the substantial presence of traders within the value chain, signify a growing demand for local production and trade of animal feed products within the NWS region.

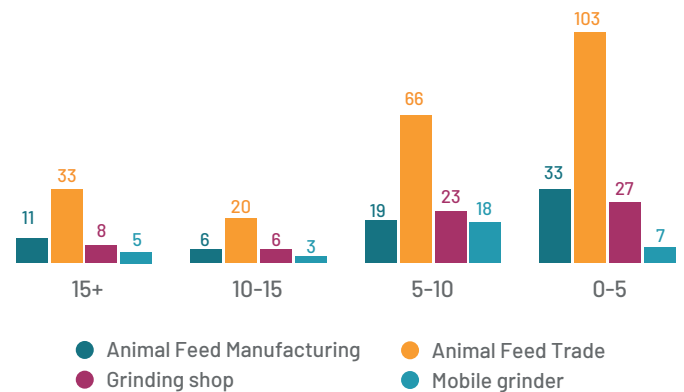


Figure 2: Market Actors Business Age (Years)

C. Market Actor Challenges

Various market actors faced distinct challenges in their operations. Livestock breeders encountered significant obstacles due to escalating prices of both animal feed and fodder, as well as rising medication costs for their livestock. These challenges, coupled with their limited financial resources, have impeded their ability to procure nutritious feed and medication essential for the well-being and health of their livestock.

On the other hand, animal feed manufacturers, green fodder farmers, and animal feed traders experienced similar challenges. These included heightened prices of essential raw materials required for production and trade, instability in the US Dollar exchange rate, and inadequate financial liquidity, constraining their potential for business expansion. Additionally, traders highlighted an additional challenge related to increased transportation costs for their products. In contrast, both manufacturers and farmers emphasized the lack of available support for boosting local production capacities.

D. Earthquake Damages

In general, the earthquake had a notable impact on all market actors within the feed and fodder market, particularly in Aleppo and Idleb governorates. The extent of damage reported by market actors was greater in Aleppo compared to Idleb. Overall, 19% (n=56) of the assessed farmers, 14% (n=42) of the assessed manufacturers and traders, and 7% (n=7) of the assessed grinders reported damages as a result of the earthquake, totaling to 16% of the assessed market actors.

Amongst the market actors involved in animal feed production and trade, the primary type of damage reported was related to the building structure of the facilities, followed by losses in their stock levels. The earthquake caused substantial structural damage, primarily partial (84%), shown through cracks in walls and flooring. Severe cracking and minor structural damage were observed on walls, particularly within warehouse and storage areas. Additionally, various equipment and materials, such as rollers and sieves, incurred partial damage due to collapsing walls. This damage resulted in stock losses, forcing the mixture of various types of feed, subsequently sold at lower prices. The earthquake also led to a temporary halt in business operations and commercial activities, and the feed transportation mechanism also suffered damage. In summary, the earthquake inflicted extensive structural damage and financial losses on animal feed manufacturers and traders.

For farmers, the earthquake led to damage in three main areas: structural damage, crop damage, and damage to irrigation water infrastructure. Structural damage included destruction of barns or storage areas on the farms, destruction of fences, partial collapses, and cracks in walls and ceilings. Additionally, farmers reported a decrease in crop production and quality in the affected areas, including reduced quantities of by-products used as animal feed. Water infrastructure and resources were also impacted, including the need for rehabilitation of water wells, reduced water levels, and compromised water quality.

Overall, market actors estimated their total losses at approximately 268,000 USD, with mobile grinders reporting the least losses. The majority of these losses were attributed to building structure damage requiring rehabilitation, with an estimated rehabilitation cost of 144,000 USD and equipment maintenance costs totaling 7,000 USD.

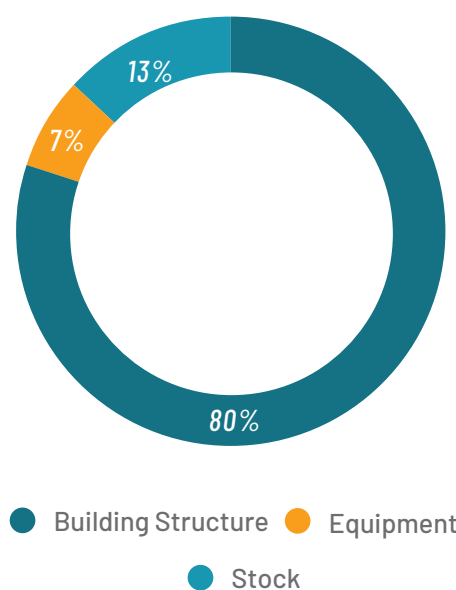


Figure 3: Earthquake Damages - Animal Feed Production and Trade Market Actors

Types of Businesses	Total Losses (USD)	Cost of Building Rehabilitation (USD)	Cost of Equipment Maintenance (USD)
Animal feed manufacturer	\$ 85,200	\$ 71,000	\$ 5,000
Animal feed trader	\$ 75,950	\$ 57,950	\$ 200
Grinding shop	\$ 21,800	\$ 13,800	\$ 0
Mobile grinder	\$ 4,700	\$ 1,300	\$ 1,350
Farmers	\$ 80,100	N/A	N/A
Grand Total	\$ 267,750	\$ 144,050	\$ 6,550

Table 1: Estimated Losses and Costs of Rehabilitation (USD)

E. Animal Feed and Fodder Production and Sales Volumes

Green Fodder Production and Sales Volumes

The number of farmers engaged in the production or trade of green fodder, which includes Alfalfa, Corn Silage, Hydroponic Barley, and Azolla, was relatively low. Within the NWS region, Al-Hasakeh and Ar-Raqqa governorates recorded no production or trade of any green fodder. In total, only 24 farmers were involved in the production of green fodder. Corn silage and alfalfa production had the highest reported involvement among farmers, while azolla was not reportedly produced by any of the farmers. These farmers were mainly located in Ariha, Jisr-Ash-Shugur, Idlib, and Harim districts of Idlib governorate (n=13), and Al Bab and Jarablus districts of Aleppo governorate (n=11).

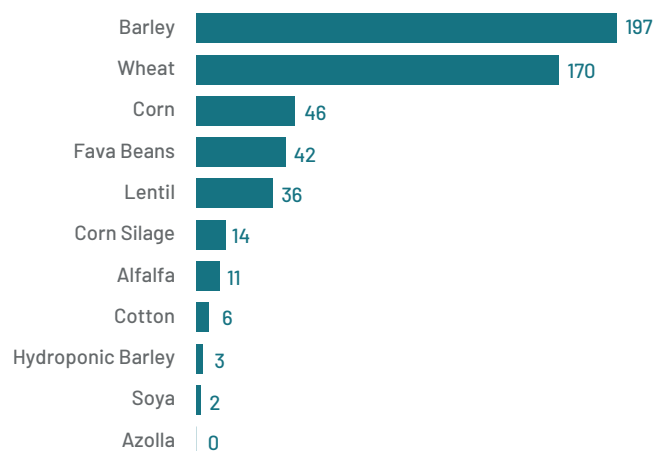


Figure 4: Number of Farmers that Produce Green Fodder and Forage Crops

Regarding forage crops, barley and wheat were the most commonly cultivated crops by farmers, followed by corn, fava beans, and lentils. These crop farmers reported selling 50% to 86% of their production as fodder, either as damaged crops, crop residues, or byproducts of these crops. The primary byproducts reported by these farmers were hay, fava beans hay, and straw, which were sold at relatively low prices of 46 USD/MT, 45 USD/ MT, and 48 USD/ MT, respectively.

Animal Feed Pellet Production and Sales Volumes

The selection and use of animal feed vary based on the livestock type and the purpose of their rearing. In this assessment, animal feed pellets were classified as follows:

1. **Dairy Cows** – Cow/Milking
2. **Beef Cattle** – Cow/Meat
3. **Dairy Sheep** – Sheep/Milking
4. **Mutton** – Sheep/Meat
5. **Layers** – Poultry/Eggs
6. **Broilers** – Poultry/Meat

The number of market actors engaged in the production and trade of animal feed pellets significantly surpassed those involved in green fodder production. The primary market actors in the production and sales of animal feed pellets were animal feed manufacturers and traders. **The animal feed pellets production and trade market was notably dominated by traders, constituting 83% of the market actors involved, while manufacturers accounted for only 17%, indicating higher reliance on trade than local production.** Among the various types of animal feed pellets, those for poultry egg and meat production were the least common, whereas cow and sheep feed for dairy purposes prevailed.

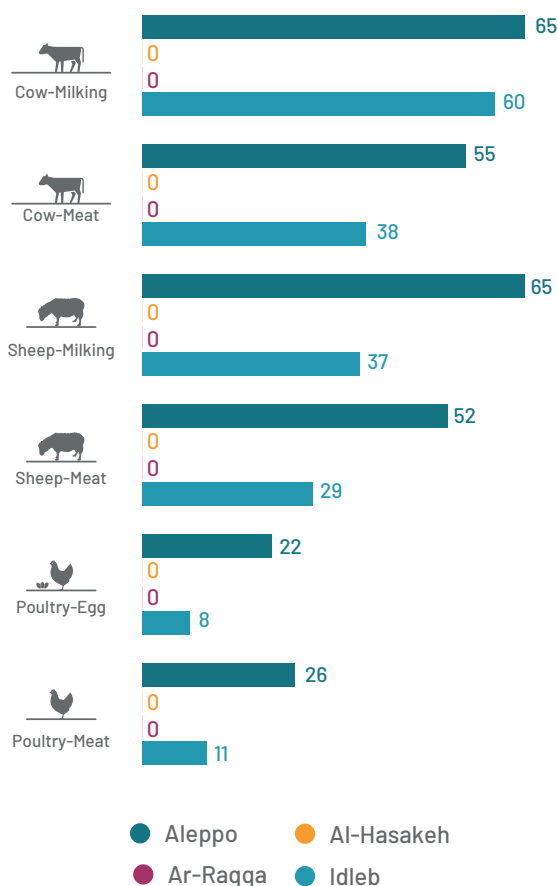


Figure 5: Number of Market Actors that Produce/Sell Animal Feed Pellets

In terms of production and sales volume, there was significant variation across market actors and governorates. Figure 6 summarizes the reported average monthly production or sales for each animal feed product per market actor engaged in its production or trade. Generally, higher production and sales volumes were reported during the winter seasons, particularly for cow and sheep feed for milk and meat production purposes. However, **despite more market actors being involved in trade, the trade volumes were notably lower than the production volumes of manufacturers.** Additionally, animal feed traders reported slightly higher sales volumes across certain types of animal feed in the winter season. Nevertheless, manufacturers displayed the highest variation in production levels between summer and winter, with significantly higher production levels during the winter. Animal feed manufacturers reported the highest average monthly production per market actor for cow feed for dairy production purposes, averaging 225 MT/month during winter. Despite the low number of market actors involved in the production and trade of animal feed for poultry, poultry feed for meat production purposes had the second highest production levels per market actor, averaging 209 MT/month.

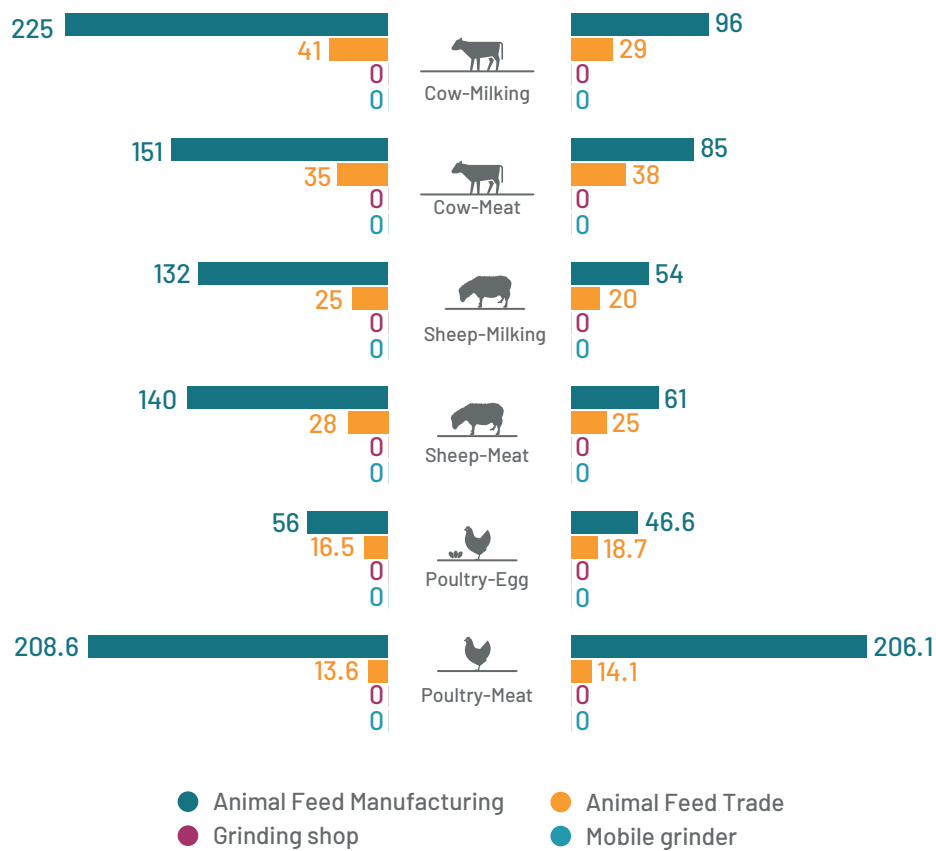


Figure 6: Average Monthly Production or Sales Volumes of Animal Feed Pellets (MT/Month) per Market Actor

At the governorate level, it is evident that Aleppo governorate had higher production volumes for cow and sheep feed for milk and meat production, while Idleb governorate recorded higher production volumes for poultry feed for egg and meat production. Aleppo demonstrated the highest quantities of cow feed for milk production purposes, with an average of 105 MT/month per market actor, whereas Idleb governorate reported the highest production volumes of poultry feed for meat production, with an average of 158 MT/month per market actor. Notably, Al-Hasakeh and Ar-Raqqa governorates within the NWS region, despite having animal feed manufacturers and traders, reported no production or trade of animal feed pellets.

Animal Feed Mixtures Production and Sales Volumes

Animal feed mixtures were also categorized based on their purposes: cow-milk, cow-meat, sheep-milk, sheep-meat, poultry-egg, and poultry-meat. Similar to the production of poultry feed pellets, the engagement of market actors in the production or sales of poultry feed mixtures for egg and meat production purposes was the least common compared to other types of feed mixtures. The key market actors involved in the production and sales of animal feed mixtures were animal feed traders and grinders (both mobile and shop-based). Although the number of market actors engaged in animal feed mixture production or trade exceeded those for animal feed pellets, the reported average monthly quantities for production or sales of animal feed mixtures were notably lower. **The reported low quantities of animal feed mixtures produced or sold were attributed to many grinders utilizing mobile machines to grind raw materials or renting their grinding machines to livestock farmers as a service,** thus hindering their ability to accurately report production volumes or selling prices.

Figure 8 summarizes the reported average monthly production or sales volumes for each type of animal feed mixture per market actor engaged in its production or trade. Overall, the winter season reported slightly higher production and sales volumes across all types of animal feed mixtures than the summer season. Additionally, the average monthly production and sales volumes of feed mixtures were higher for cow and sheep feed compared to poultry feed.

At the governorate level, it's notable that Aleppo governorate recorded the highest production and sales volumes of cow feed mixtures, while Idleb governorate had the highest production and sales volumes of poultry feed mixtures for egg production purposes. Al-Hasakeh and Ar-Raqqa governorates in the NWS region reported the highest production and sales volumes of sheep feed mixtures for milk and meat production purposes.

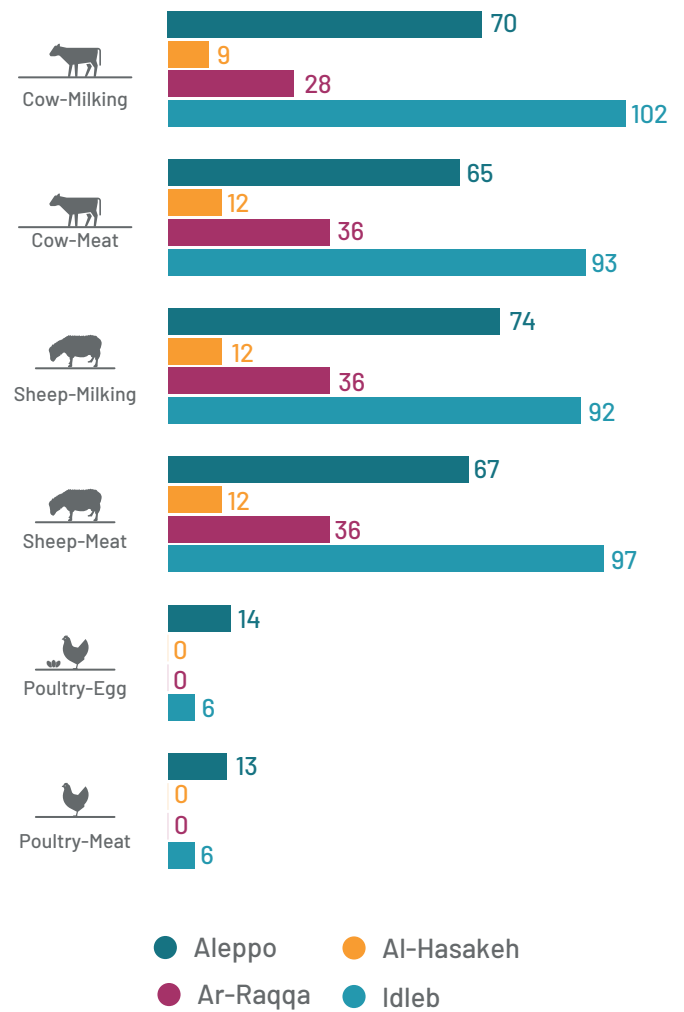


Figure 7: Number of Market Actors that Produce/Sell Animal Feed Mixtures

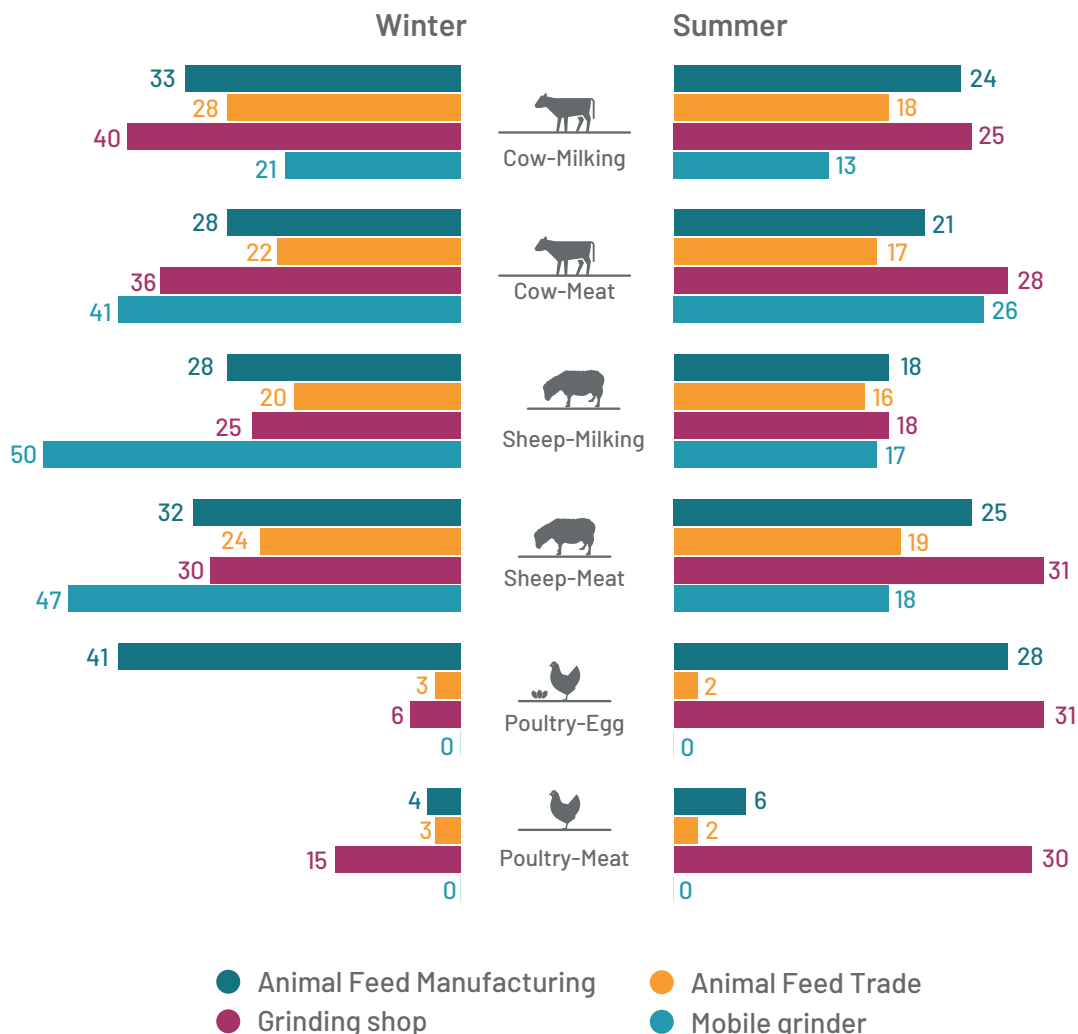


Figure 8: Average Monthly Production/Sales Volumes of Animal Feed Mixtures (MT/Month) per Market Actor

Overall, the variances observed in production and trade volumes across different governorates for both animal feed pellets and mixtures signify the diversity in livestock types present in various regions. For instance, **Aleppo governorate displays significant production volumes of cow feed, whereas Idleb predominantly focuses on the production and trade of poultry feed, highlighting the variation in livestock rearing practices among these areas.** Moreover, the differences in production volumes across various feed types among market actors such as manufacturers, grinders, and traders underscore their independence and reduced reliance on shared services. For example, manufacturers report their own production of feed mixtures, decreasing their dependency on grinders, while also engaging in wholesale trade activities. Conversely, grinders offer direct grinding services to livestock farmers, and traders report the imports of animal feed. These differences in production and sales volumes illustrate the distinctive roles and activities of each market actor. It's important to acknowledge that the facility mapping may not be comprehensive and might not cover all market actors operating within the market.

F. Production Cost per Metric Ton

The average production cost for green fodder, animal feed pellets, and animal feed mixtures was evaluated for each type of market actor. This production cost includes expenses related to raw materials, labor, energy, and any other input costs essential for the production process. In general, the top three contributors to the production cost for all market actors were identified as production inputs like raw materials and fuel, the manufacturing, grinding, or packaging production costs, and the labor wages necessary for operation.

Animal Feed Pellets Production Cost

The average production costs for different types of animal feed pellets were reported to fall within a similar average range, with poultry feed for egg and meat production purposes showing higher production costs. Poultry feed reported higher production costs throughout both seasons compared to the other livestock feed types, while sheep feed displayed the lowest production cost during both seasons. The observed trend of seasonality suggests elevated production costs of animal feed pellets during the winter season in comparison to the summer season. This can be attributed to various factors, including the increased cost of inputs and raw materials during winter months due to their limited availability, causing manufacturers to rely on purchasing local or imported raw materials from market traders at higher prices during this period. Additionally, the post-harvest season in summer results in reduced input and raw material costs, such as wheat, barley, and bran, leading to cost discrepancies between the seasons.

In summary, poultry feed for meat production reported the highest average production cost of 540 USD/MT during the winter season, while sheep feed for meat production reported the lowest average production cost of 300 USD/MT during the summer season.

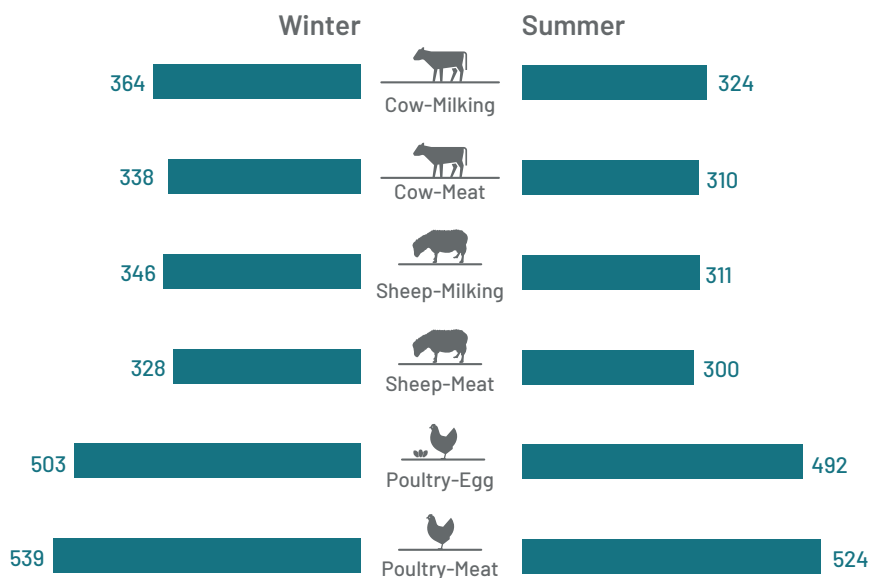


Figure 9: Average Production Cost of Animal Feed Pellets (USD/MT)

Animal Feed Mixtures Production Cost

The average production costs for various types of animal feed mixtures were reported to fall within a relatively similar range, except for poultry feed mixtures. Much like the production costs for poultry feed pellets, poultry feed mixtures also reported the highest production costs during both seasons compared to other livestock feed mixture types. Cow and sheep feed mixtures showed comparable production costs, ranging from 330 USD/MT to 345 USD/MT in the winter season and 280 USD/MT to 290 USD/MT in the summer season. Similar to animal feed pellets production costs, animal feed mixture costs were slightly higher in winter than in summer, indicating the same seasonality trend attributed to the utilization of raw materials like wheat and barley for animal feed mixture production, which have higher prices during the winter season.

In summary, poultry feed mixtures for meat production reported the highest average production cost of 490 USD/MT during the winter season, while sheep feed mixtures for milk production reported the lowest average production cost of 280 USD/MT during the summer season.

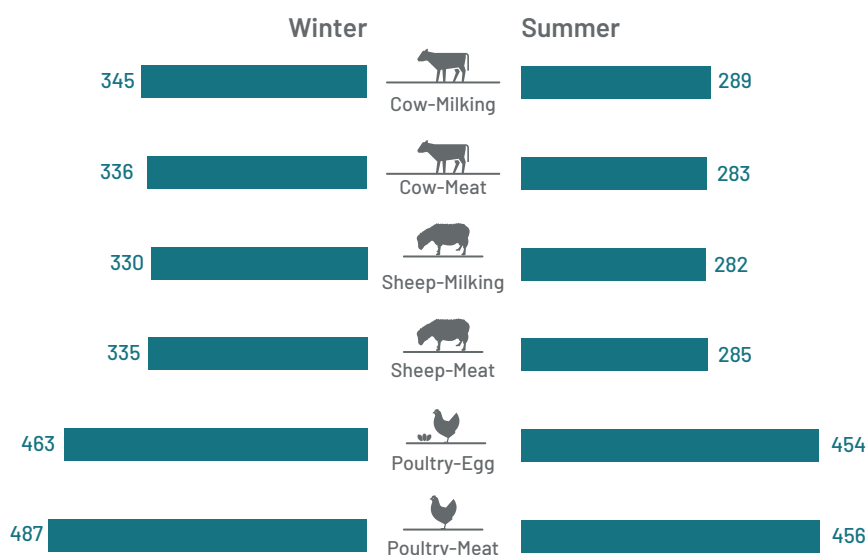


Figure 10: Average Production Cost of Animal Feed Mixtures (USD/MT)

G. Production Change of Animal Feed and Fodder, 2023 vs 2022

In summary, when considering manufacturing and trade market actors, 50% reported a decline in production and trade volumes this year compared to 2022, while 44% indicated stability, and merely 6% noted an increase in production and trade volumes. The percentage of market actors in manufacturing and trade reporting a decline in Animal Feed and Fodder production/sales was notably high in Aleppo governorate (71%), followed by Idleb governorate (45%). Conversely, market actors in Ar-Raqqa and Al-Hasakeh governorates reported the highest stability in production over the past year (94% and 100% respectively).

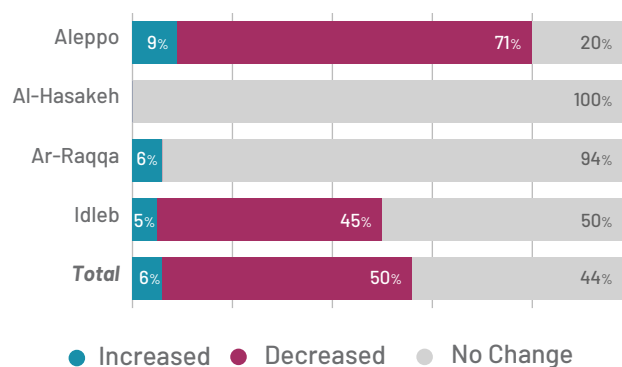


Figure 11: Production Change (2023 vs 2022) - Animal Feed Production and Trade Market Actors

The reasons cited for the decline in animal feed and fodder production/sales were multifaceted. Increased prices of production inputs resulted in higher production costs and subsequently, elevated animal feed prices, and the financial instability among market actors also constrained their capacity to boost production. Moreover, the declining number of livestock breeders and livestock scarcity, coupled with seasonal variations where pasture availability peaks in summer, impacted the demand for animal feed. The earthquake also inflicted damage on business infrastructure and equipment for several market actors, leading to prolonged production halts. Lastly, heavy reliance on imported feed and market competition restricted local animal feed production.

Notably, grinding shops (56%) and animal feed traders (55%) reported the most significant decrease in animal feed production and/or sales, while manufacturers and mobile grinders reported the highest increase in production volumes (10% and 12% respectively). Although production levels remained relatively stable throughout the year, those market actors reporting a decrease in production or trade estimated this decrease to be around 36% of their production and trade volumes. Conversely, although only 6% of market actors reported an increase in production, they estimated the increase to account for 30% of their production and trade volumes.

On the other hand, green fodder and forage crop farmers reported a high level of production stability (43%), with 34% noting a decrease in production and 23% reporting an increase. The majority of farmers reporting an increase in production were primarily located in Aleppo governorate. Lentil and Fava beans producers observed a decrease in production, whereas Alfalfa producers reported an increase. The remaining green fodder and forage crop types displayed higher levels of production stability.

The reduction in farmers' productivity was mainly attributed to rising prices of raw materials like fertilizers and fuel, resulting in increased production costs. Furthermore, the selling prices of the harvest were considerably low in comparison to production costs, resulting in financial losses. Additionally, pests, climate events such as irregular rainfall levels, floods, drought, and earthquake damage affecting irrigation infrastructure such as wells and decreasing groundwater levels contributed to the productivity decline. Conversely, the increase in productivity for other farmers, primarily located in Aleppo governorate, was attributed to favorable climatic conditions, increased rainfall levels sufficient for productivity, and the availability of water and fertilizers.

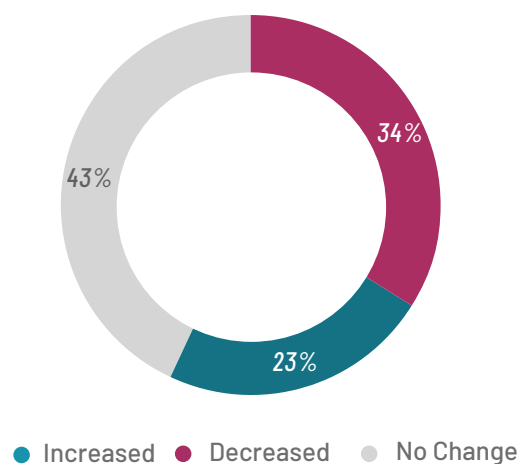


Figure 12: Production Change (2023 vs 2022) - Green Fodder and Forage Crop Farmers

H. Warehousing Capacity

The warehousing facilities of manufacturing and trade market actors were positively evaluated in terms of lighting, ventilation, and sterilization. The majority of study respondents (97%, n=375) reported having a warehouse, either combined within their workplace (58%, n=225) or a separate warehouse (39%, n=150). The remaining 3% of market actors who reported not having a warehouse mentioned that they sell their products directly and thus do not require one. Warehouse sizes varied from 10 to 1500 square meters, with an average of 156 square meters per market actor. The stored quantities ranged between 2 and 400 MT per market actor, with Idleb governorate having the highest total stored quantity of animal feed (14,900 MT), followed by Aleppo governorate (13,600 MT), then Ar-Raqqa governorate (1,150 MT), and lastly Al-Hasakeh governorate (350 MT).

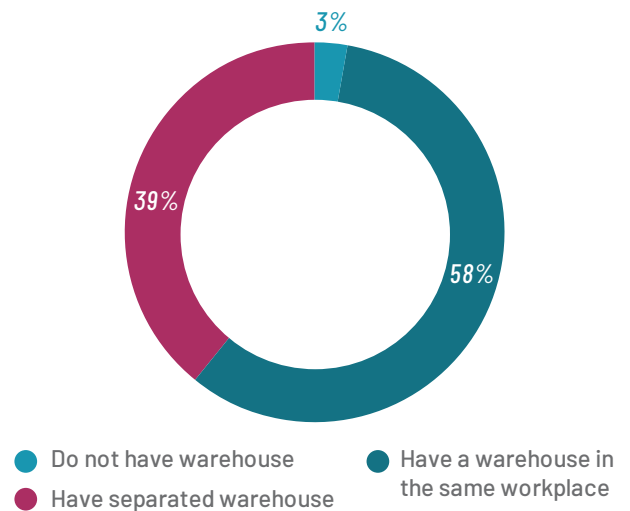


Figure 13: Market Actors Warehouse Availability

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

None of the identified animal feed manufacturing and trade market actors reported receiving support from any local or international entity. This lack of support was identified as a significant challenge by these market actors, as it limits their production and trade capacities. Conversely, a mere 4% (n=13) of green fodder and forage crop farmers in Aleppo and Idleb governorates reported receiving support, primarily from NGOs or local charitable organizations. This support mainly came in the form of production inputs, technical assistance, and rehabilitation support for storage areas. However, this level of support for farmers is deemed insufficient considering the needs of the feed and fodder market in NWS. Additionally, most farmers were unaware of any form of support being provided to the feed and fodder market.

The primary support highlighted as necessary by all interviewed market actors was financial assistance, which could be provided in the form of loans or grants with minimal or zero interest to aid in their business development. Green fodder and forage crop farmers specifically emphasized the need for production inputs and technical support to enhance productivity and strengthen their agricultural activities. Conversely, manufacturers and traders prioritized support in terms of production inputs and marketing to increase productivity and improve market reach in the feed market.

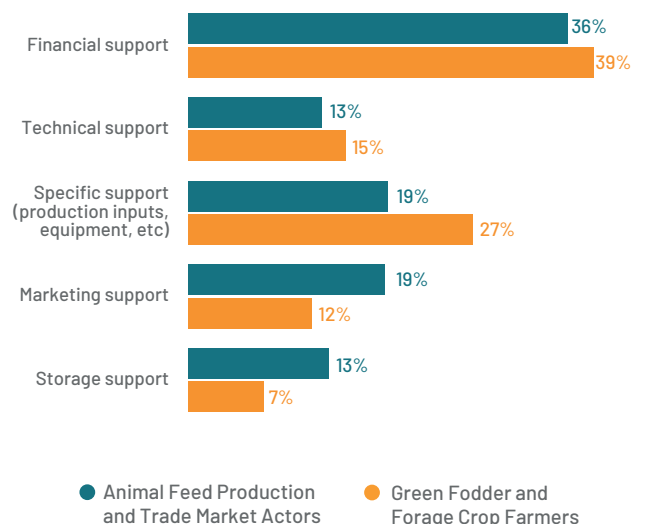


Figure 14: Market Actors Support Needs

Availability and Source of Commercial Products

Availability of Animal Feed Pellets

According to the different types of market actors, Animal Feed Pellets were deemed to be accessible in both winter and summer seasons, with slightly higher availability noted during summer. This is primarily because production costs of animal feed are lower during summer, enabling manufacturers to produce higher quantities. Moreover, reduced demand during summer, attributed to the availability of natural pastures for livestock farmers, results in supply exceeding demand, thus increasing market availability. None of the market actors reported any unavailability of animal feed pellets across products and governorates.

However, despite the availability of animal feed pellets in both seasons, there were certain constraints regarding their accessibility. The primary limitation was attributed to rising import prices and escalating raw material costs, coupled with lower local production levels. Additionally, winter seasons witnessed constraints due to limited pasture lands, while summer seasons experienced decreased demand owing to the sufficient availability of pastures.

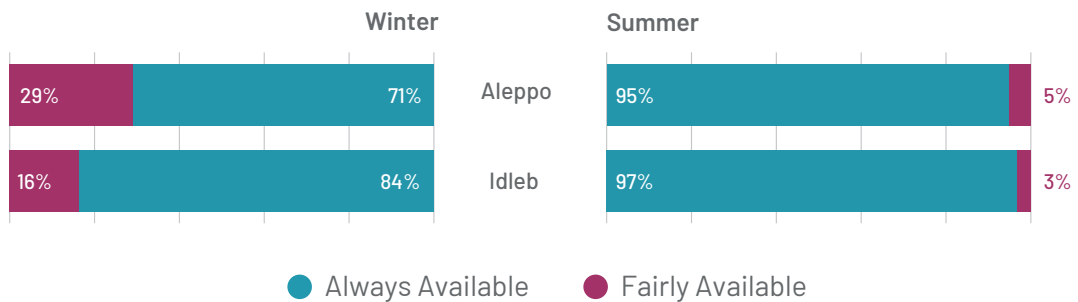


Figure 15: Availability of Animal Feed Pellets

Availability of Animal Feed Mixtures

Animal feed mixtures were also generally available in both winter and summer seasons, with higher availability noted during summer for all types of animal feed mixtures. This increased availability during summer can be attributed to the greater availability of forage crops and raw materials required for animal feed mixtures production during this season. None of the market actors reported any unavailability of animal feed mixtures across all products and governorates.

However, despite the availability of animal feed mixtures in both seasons, there were several challenges affecting their accessibility. The main constraints align with those observed for animal feed pellets, including the increase in import prices, rise in raw material costs, and limited levels of local production.

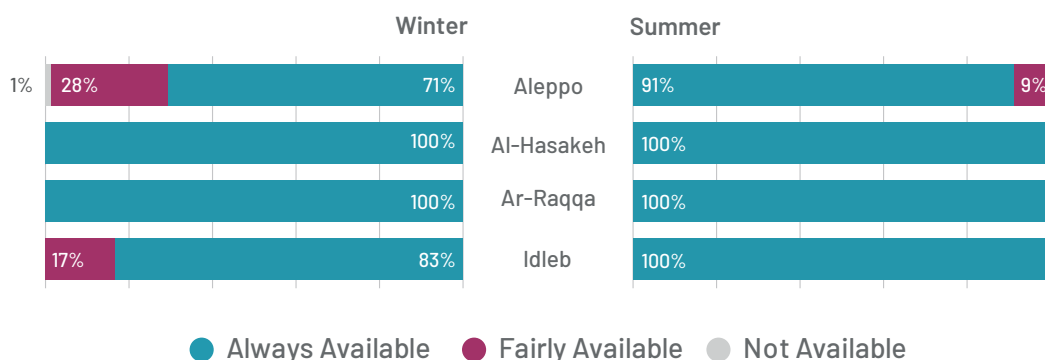


Figure 16: Availability of Animal Feed Mixtures

Availability of Raw Materials

This study examined the availability of primary raw materials crucial for animal feed, including wheat, barley, bran, hay, corn, soya, cotton, lentil, animal vitamins, straw, fava beans, and minerals, within Northwest Syria (NWS). The collected data indicated a widespread availability of raw materials in the region. On average, respondents reported a consistent availability of 76% and a fair availability of 24% for these raw materials. Moreover, all raw materials were observed to be more readily available during the summer season compared to winter.

It is essential to emphasize that the reported availability is relevant to the general market and does not exclusively signify local production. The data represents an overall market perspective, which may include imports to meet the demand for raw materials in the market. Despite the prevalent availability of raw materials, various challenges in accessibility were noted. As observed with animal feed pellets and mixtures, limitations included escalated import and raw material prices, as well as reduced demand during the summer season.

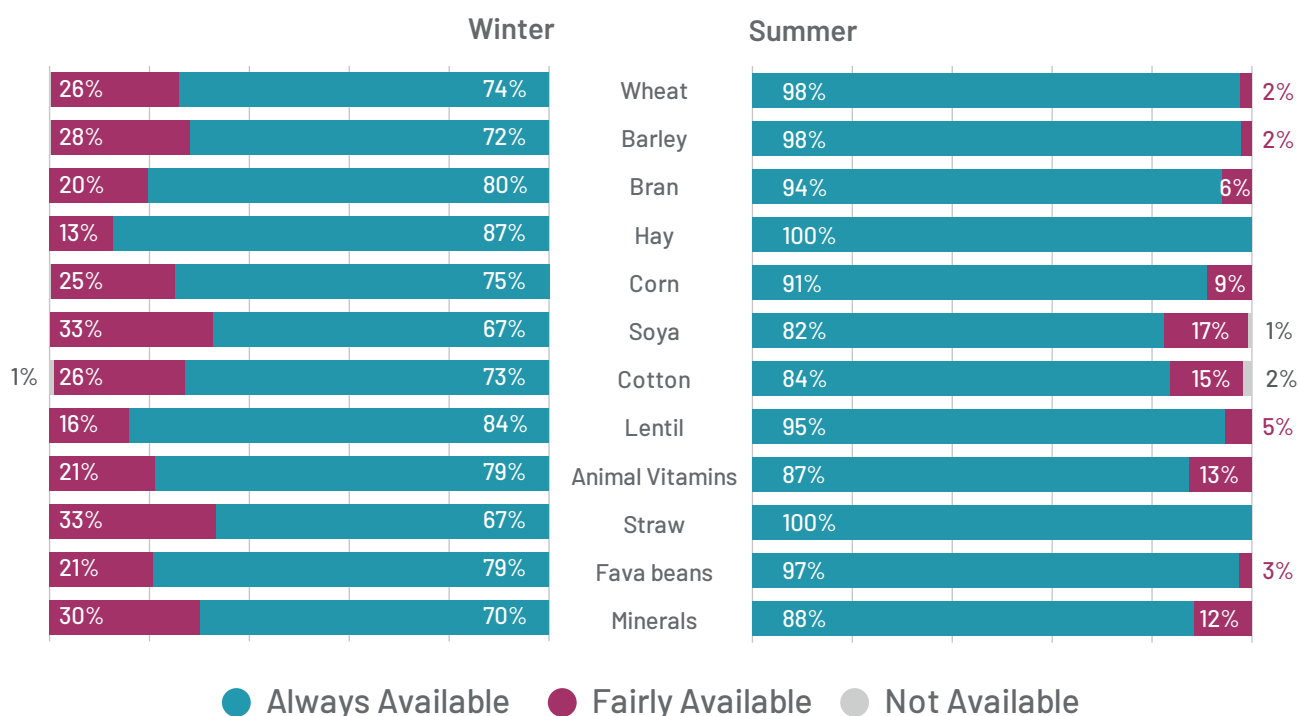


Figure 17: Availability of Raw Materials

Traders Sources of Animal Feed Pellets

The majority of winter-traded animal feed pellets (69%) were purchased from local producers, sourced either within the same area or from different governorates, while the remaining 31% were predominantly imported from Turkey. In terms of local animal feed trade proportion, Idleb governorate stood at 85%, representing a higher percentage, whereas Aleppo reported 59% of the traded feed as local and 41% as imported. During the summer seasons, the local animal feed trade increased to 80% of the total feed trade. Additionally, Idleb governorate also showed a significantly higher percentage of locally traded feed at 94% compared to Aleppo governorate at 72% in the summer season. Among the various types of animal feed pellets, poultry feed for both egg and meat production purposes showed the highest import levels during both winter (38%) and summer (31%).

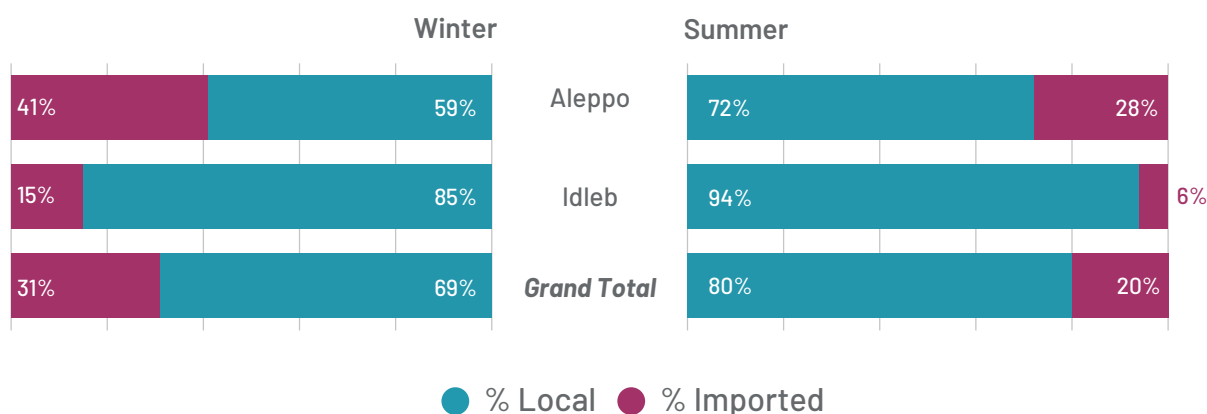


Figure 18: Origin of Animal Feed Pellets Traded

While there was a notable proportion of animal feed pellets being imported, market actors consistently reported that locally produced animal feed pellets were of better quality. Across all types, the quality of locally produced products was rated as good by 84% of market actors, whereas imported products were rated as good by 76% of market actors. Notably, no market actors reported poor quality of animal feed pellets; instead, they either regarded the quality as fair or were uncertain about it.

Traders Sources of Animal Feed Mixtures

The majority of animal feed mixtures traded during winter (83%) were sourced from local producers either within the same area or from other governorates, while the remaining 17% were primarily imported from Turkey. Idleb and Aleppo governorates displayed a similar percentage of reliance on locally produced animal feed mixtures (78%), whereas Al-Hasakeh and Ar-Raqqa governorates in the NWS region demonstrated a complete dependence (100%) on locally manufactured animal feed mixtures. During the summer seasons, the trade of locally produced animal feed mixtures increased, reaching 96% of the trade feed, with a mere 4% being imported. Notably, poultry feed mixtures for both egg and meat production purposes showed the highest import levels during both winter (18%) and summer (7%), particularly shown in Aleppo governorate, which recorded low production levels of poultry feed.

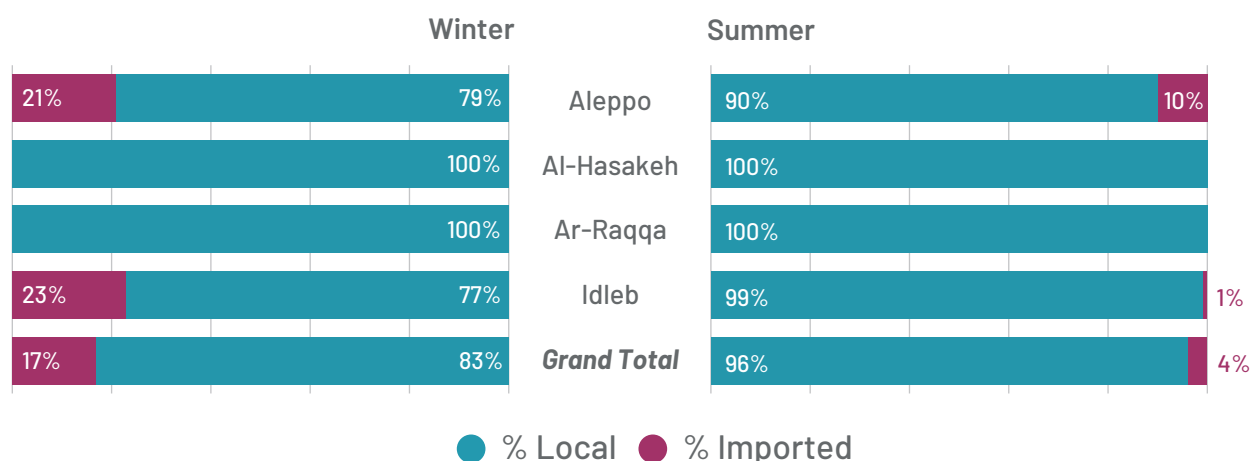


Figure 19: Origin of Animal Feed Mixtures Traded

Furthermore, the market actors reported higher quality in locally produced animal feed mixtures. Across all types, local production was perceived to have a good quality rating by 88% of market actors, while 73% of market actors reported good quality of imported products. Other market actors either reported fair quality or were uncertain about the product quality, with no reports of poor quality of animal feed mixtures.

Manufacturing and Trade Market Actors Sources of Raw Materials

The majority of raw materials utilized in production and trade by market actors are locally sourced from local producers and traders, constituting 66% in winter and 83% in summer. Local sourcing of raw materials is more prominent during the summer season due to the harvest period and increased availability of inputs such as hay, straw, fava beans, barley, and wheat, all of which show over 95% of local sourcing in the summer. In winter, certain raw materials, such as minerals (85%), animal vitamins (66%), Soya (62%), and Cotton (58%), are imported from Turkey. These raw materials witness high levels of imports in both winter and summer, with only slightly lower percentages during the summer season. Corn and lentils also display high import levels in winter, while in summer, the percentages of imports are significantly lower. Moreover, on a governorate level, Aleppo governorate generally demonstrates a higher reliance on imported raw materials compared to Idleb governorate, particularly for Soya and Cotton, during both winter and summer seasons.

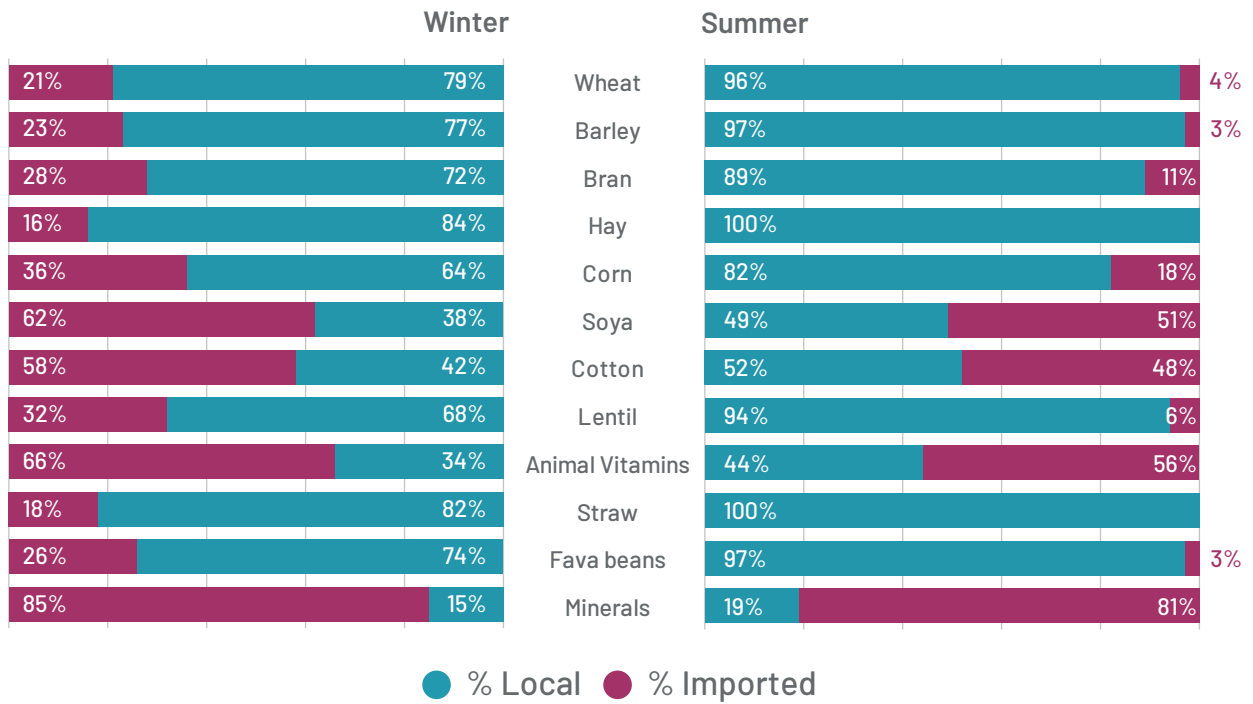


Figure 20: Origin of Raw Materials

In terms of quality, market actors reported a superior quality of locally produced raw materials. Across all types, local production was regarded as good quality by 88% of market actors, while imported products had a good quality rating by 81% of market actors. The remaining market actors either reported fair quality or were uncertain about the product quality. A small proportion of market actors reported poor quality in the imported raw materials (n=9), mainly noting poor quality in the imported raw materials (n=9), mainly noting poor quality in the imported raw materials (n=9), mainly noting poor quality in the imported raw materials (n=9), mainly noting poor quality in the imported raw materials (n=9).

Sources of Green Fodder and Forage Crop Seeds

Green fodder and forage crop seeds were obtained from various sources. Most crop types primarily relied on traders, whether for local or imported seeds. Specifically, hydroponic barley, lentil, alfalfa, and fava beans predominantly used local seeds procured from traders. On the other hand, cotton and soya mainly utilized imported seeds purchased from traders. Additionally, wheat, barley, lentil, and fava bean seeds were also exchanged internally among traders. Moreover, wheat and barley demonstrated a high proportion of using retained seeds consistently across seasons. Notably, alfalfa and wheat were the top crops reported to be also sourced from the Local Council.

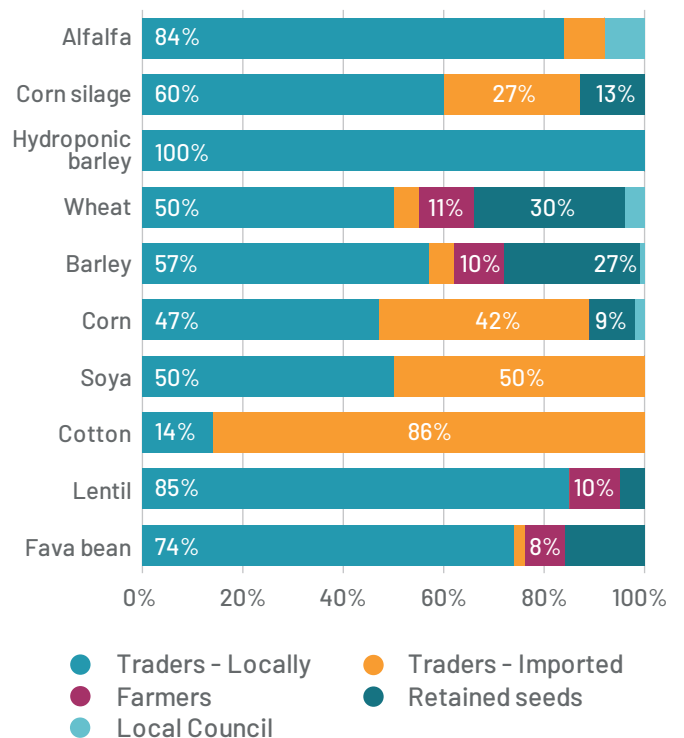


Figure 21: Sources of Green Fodder and Forage Crop Seeds

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

Green Fodder and Forage Crops

The production costs and selling prices of green fodder and forage crops varied across different crop types. Alfalfa, corn silage, and hydroponic barley reported the lowest production costs, and their sale prices per metric ton were also relatively low. However, distinctions in prices were observed among farmers producing these types of green fodder for either trade or personal use. For example, 8 out of 11 Alfalfa farmers reported minimal production costs and a selling price of 0 USD/MT, directing their production for personal use rather than trade.

Regarding forage crops, fava beans and lentils reported the highest production costs per metric ton, but they also had high selling prices, with fava beans yielding a high profit margin compared to lentils. On the other hand, cotton had a low production cost of 128 USD/MT but a high selling price of 600 USD/MT, making it the crop with the highest reported profit margin. Wheat, barley, and corn shared similar production costs and selling price ranges and presenting comparable profit margins.

At the governorate level, Al-Hasakeh and Ar-Raqqa governorates consistently recorded the lowest selling prices for forage crops. In contrast, Aleppo and Idleb had higher selling prices, with Aleppo governorate reporting slightly higher prices than Idleb.

	Alfalfa	Corn Silage	Hydroponic Barley	Wheat	Barley	Corn	Cotton	Lentil	Fava Beans
Production Cost (USD/MT)	290	87	58	228	184	157	128	448	406
Selling Price (USD/MT)	280	103	7	275	238	261	600	538	663
Number of Respondents	11	14	3	170	197	46	6	36	42

Table 2: Production Costs and Selling Prices of Green Fodder and Forage Crops (USD/MT)

Animal Feed Pellets

The average selling prices of animal feed were only recorded in Aleppo and Idleb governorates, given their dominance in animal feed pellet production within the NWS region. Generally, prices in Aleppo governorate were lower compared to Idleb governorate, varying by approximately 3% to 9% across various types of animal feed pellets. Although no significant price variations were noted among different market actors, traders generally had slightly higher selling prices than manufacturers. This difference could be attributed to retail sales or the sale of imported products, potentially priced higher than wholesale trade and local products.

Moreover, the selling prices of animal feed pellets were generally higher in the winter compared to the summer season across all types. This can mainly be attributed to the availability of raw materials and lower production costs during the summer. The price discrepancy between the seasons was most notable for cow and sheep feed pellets, ranging from an 8% to 11% decrease in price during summer. Conversely, poultry feed pellets showed lower price differences, with a 2% to 4% decrease in price during summer. Poultry feed, overall, reported the highest selling prices in both seasons, reaching 534 USD/MT for poultry feed for egg production and 571 USD/MT for poultry feed for meat production. In contrast, cow and sheep feed had relatively lower prices but within the range of 350 USD/MT to 380 USD/MT.

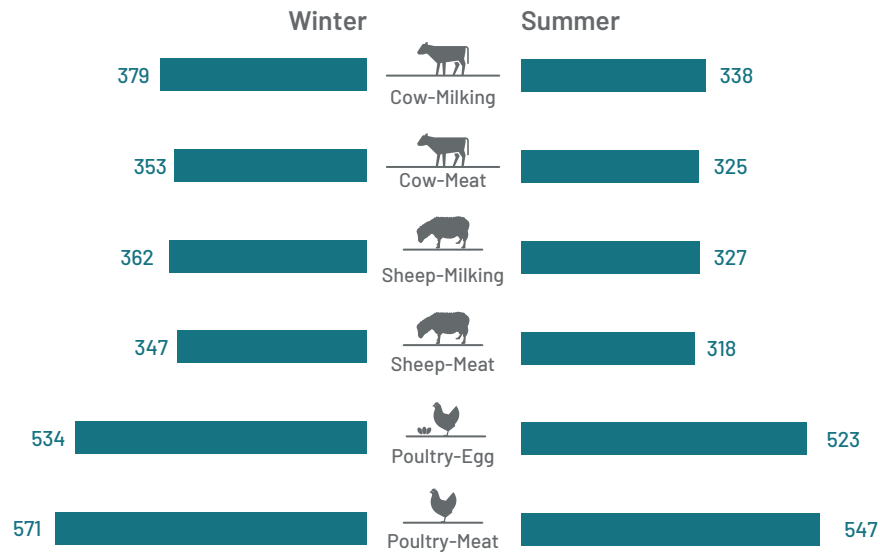


Figure 22: Average Selling Prices of Animal Feed Pellets (USD/MT)

On average, considering all animal feed pellet types and market actors involved in production or trade, the profit margin remained generally slim, ranging between 4% and 6%. Among the various market actors, manufacturers reported a lower profit margin of 3% to 4%, whereas traders had a slightly higher profit margin of 4% to 6%. Overall, the distinct animal feed types displayed similar profit margins, with poultry feed showing the highest margin at 6%.

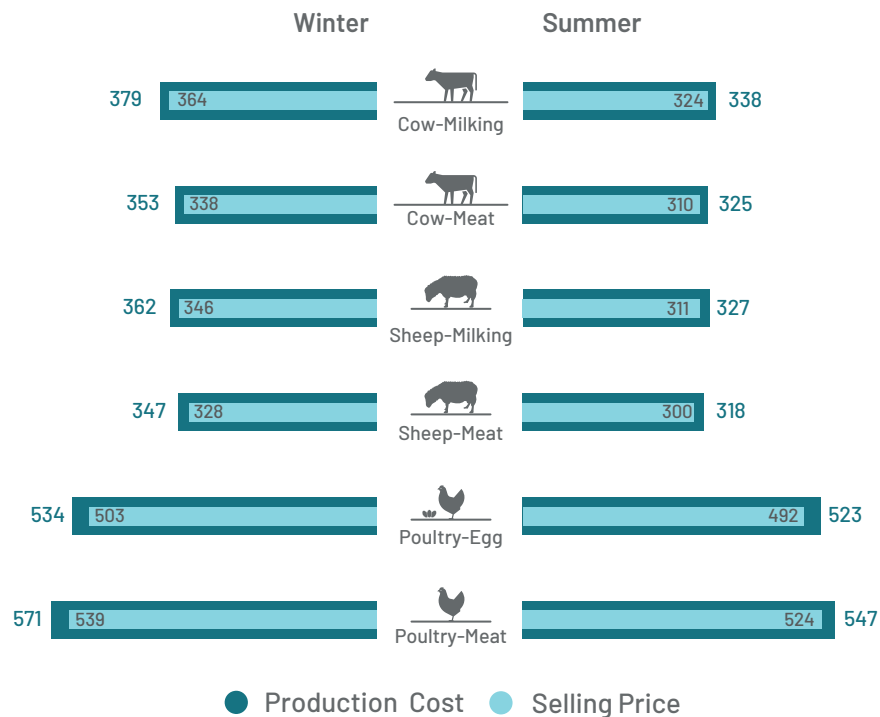


Figure 23: Average Selling Prices vs. Production Cost of Animal Feed Pellets (USD/MT)

Animal Feed Mixtures

Selling prices of animal feed mixtures were similar to those of animal feed pellets across most feed types. The average selling prices of animal feed mixtures were predominantly reported across all governorates of the NWS region, except for poultry feed mixtures which were not produced in Al-Hasakeh and Ar-Raqqa governorates. Prices in Al-Hasakeh and Ar-Raqqa were significantly low in comparison to other governorates, being at least 40% lower than Aleppo and Idleb governorates. Additionally, animal feed mixture prices in Aleppo governorate were generally lower than in Idleb governorate by approximately 9% to 15% across the various types of animal feed mixtures. However, there were no significant price differences observed among different market actors. Grinding shops reported the highest selling prices, followed by manufacturers, traders, and mobile grinders, who reported the lowest prices. Mobile grinders tended to have lower prices as they primarily provided grinding services, reducing their production cost and subsequently their selling prices. Traders, on the other hand, had lower selling prices than manufacturers, in contrast to animal feed pellets, which could be due to less dependence on imported animal feed mixtures than animal feed pellets in the market.

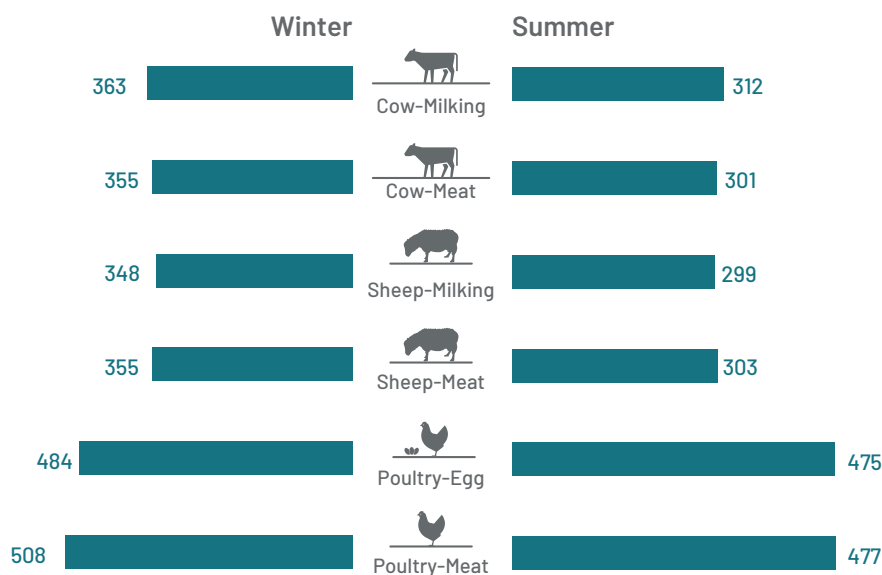


Figure 24: Average Selling Prices of Animal Feed Mixtures (USD/MT)

Moreover, the selling prices of animal feed mixtures were generally higher in winter compared to the summer season across all types. This could mainly be attributed to the availability of raw materials and lower production costs during the summer season. The price difference between the seasons was most noticeable for cow and sheep feed mixtures, with a 15% to 16% price decrease in summer. Conversely, poultry feed mixtures showed lower price differences among the seasons, ranging from a 2% to 6% price decrease in summer. Poultry feed mixtures had the highest selling prices in both seasons, being higher in the winter season at 484 USD/MT for poultry feed for egg production and 508 USD/MT for poultry feed for meat production. Meanwhile, cow and sheep feed mixtures had lower prices but remained within the same range of 350 USD/MT to 360 USD/MT.

On average, considering all animal feed mixture types and all market actors involved in their production or trade, the profit margin also remained generally slim, ranging between 4% and 7%. Among the different market actors and the various types of animal feed mixtures, similar profit margins were observed, with mobile grinders reporting the highest profit margin ranging from 6% to 11%.

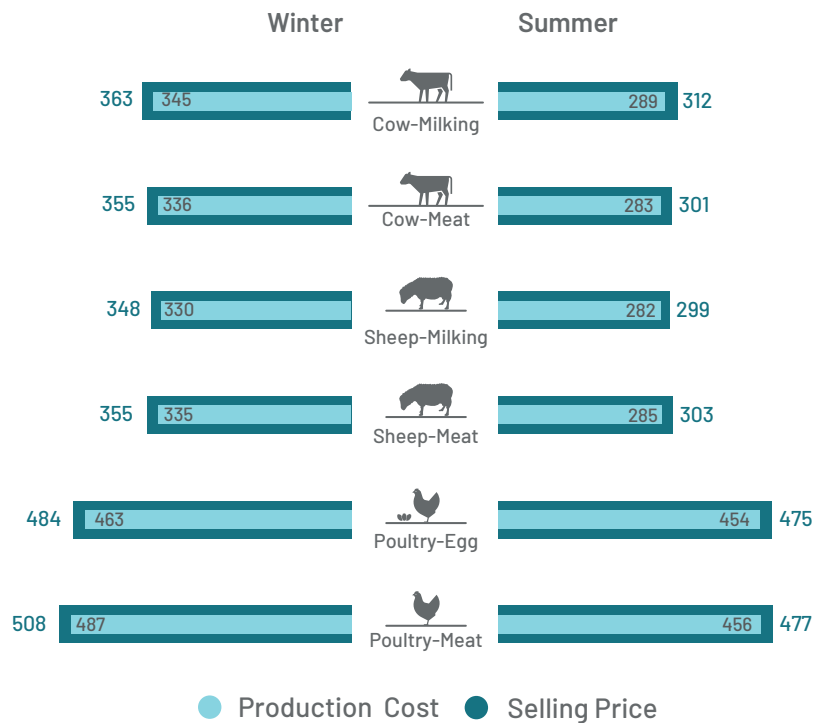


Figure 25: Average Selling Prices vs. Production Cost of Animal Feed Mixtures (USD/MT)

Raw Materials

Regarding raw material prices, this study focused on the primary raw materials used in the production of animal feed, including both pellet and mixture types. The key raw materials examined in this study included wheat, barley, bran, hay, corn, soya, cotton, lentil, animal vitamins, straw, fava beans, and minerals. Across various market actors, as depicted in figure 26, barley, wheat, corn, and bran were the most frequently reported raw materials, with over 60% of market actors indicating their usage in either production or trade activities. Overall, the cost of raw materials was higher in the winter season compared to the summer season for all raw material types. Particularly, hay, straw, wheat, and barley experienced the most significant price reductions, ranging from a 25% to 50% decrease in the summer season, primarily attributed to the harvest season and increased availability of raw materials during the summer.

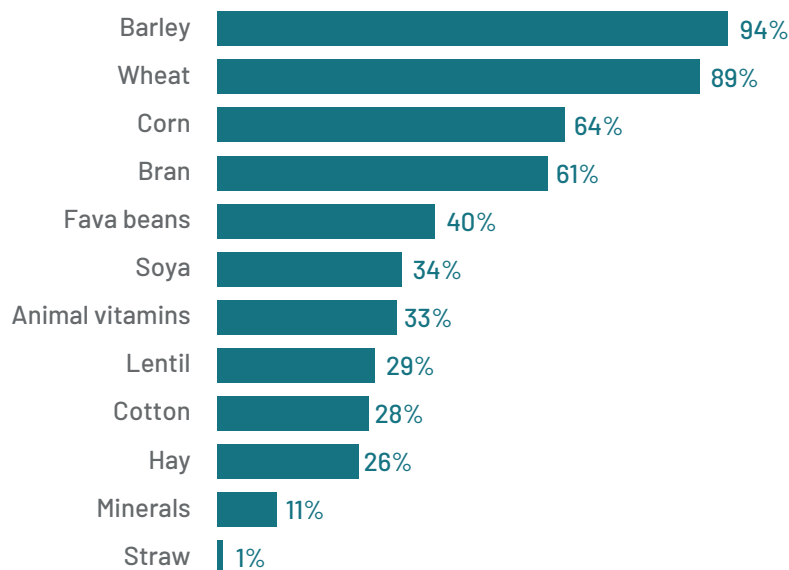


Figure 26: Percentage of Market Actors Usage of Raw Materials in Animal Feed Production/Trade

Animal Feed/Fodder Manufacturing Facilities Mapping

September/October 2023

Across the different raw material types, minerals reported the highest costs at 2,185 USD/MT in winter and 2,035 USD/MT in the summer. This was followed by animal vitamins, ranging from 1,100 to 1,200 USD/MT across seasons, and soya, ranging from 580 to 620 USD/MT across seasons. These elevated prices can be attributed to their sources, as these raw materials were heavily imported from Turkey, as indicated by high import percentages for minerals (85%), animal vitamins (66%), and soya (62%).

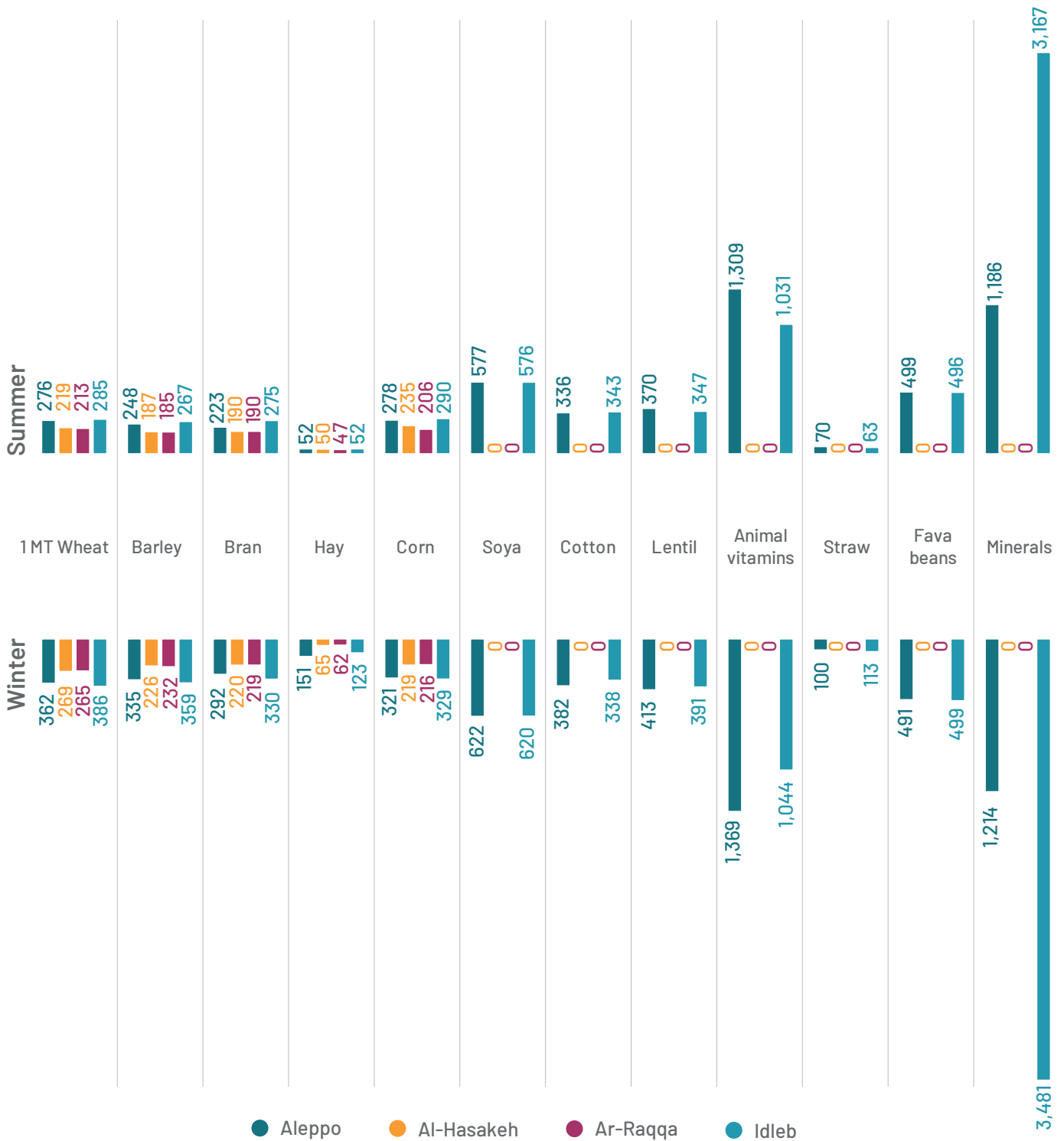


Figure 27: Average Prices of Animal Feed Raw Materials (USD/MT)

K. Selling Modality, Supply, and Demand

The data collected indicates that both cash and credit payment modalities were frequent in the NWS region. The proportion of animal feed manufacturing and trade market actors utilizing exclusively cash transactions was highest in Idleb governorate (29%), while only one market actor reported utilizing solely credit transactions in Idleb governorate. Overall, the majority of market actors (76%) reported utilizing both cash and credit modalities, whereas 24% used only cash. Many sellers offering credit as a payment option imposed specific conditions on their customers. For instance, market actors in Idleb reported having formal contracts outlining monthly or seasonal payment terms, whereas those in Aleppo had more informal selling arrangements, such as selling on credit to familiar customers, including promissory notes and witnesses, and setting a payment period.

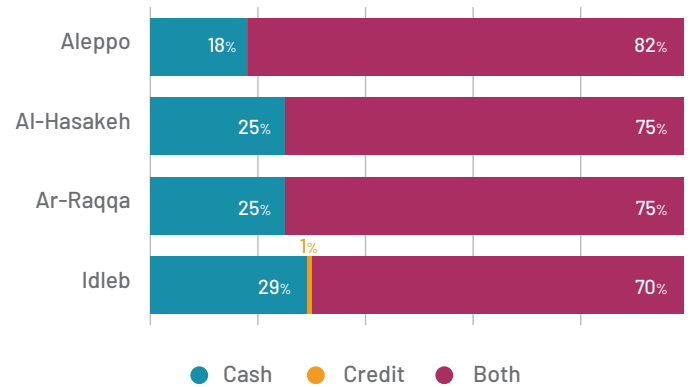


Figure 28: Selling Modalities of Market Actors

In contrast, farmers involved in green fodder and forage crop cultivation reported a higher preference for cash transactions (83%), with only 14% indicating the use of both cash and credit modalities. Given the infrequent use of credit transactions among farmers, they relied on informal agreements, including payment timelines and predetermined USD payments.

Overall, among animal feed manufacturing and trade market actors, the US Dollar emerged as the dominant currency for purchasing raw materials in most NWS governorates (67%), followed by the Turkish Lira (27%). The Syrian Pound was the least common currency (6%), reported solely in Al-Hasakeh and Ar-Raqqa governorates within the NWS region. Similarly, the US Dollar was prominently used for selling animal feed production in NWS across most governorates (59%), and the Turkish Lira was more prevalent in the selling of products than in purchases (36%).

Green fodder and forage crop farmers demonstrated similar currency usage patterns for both raw material purchases and sales of their products. The US Dollar was the primary currency for both types of transactions (74% and 71%, respectively), with the remaining payments made in Turkish Lira. Notably, the Syrian Pound was not utilized by farmers, even in Al-Hasakeh and Ar-Raqqa governorates of the NWS region, where it was used by animal feed manufacturing and trade market actors.

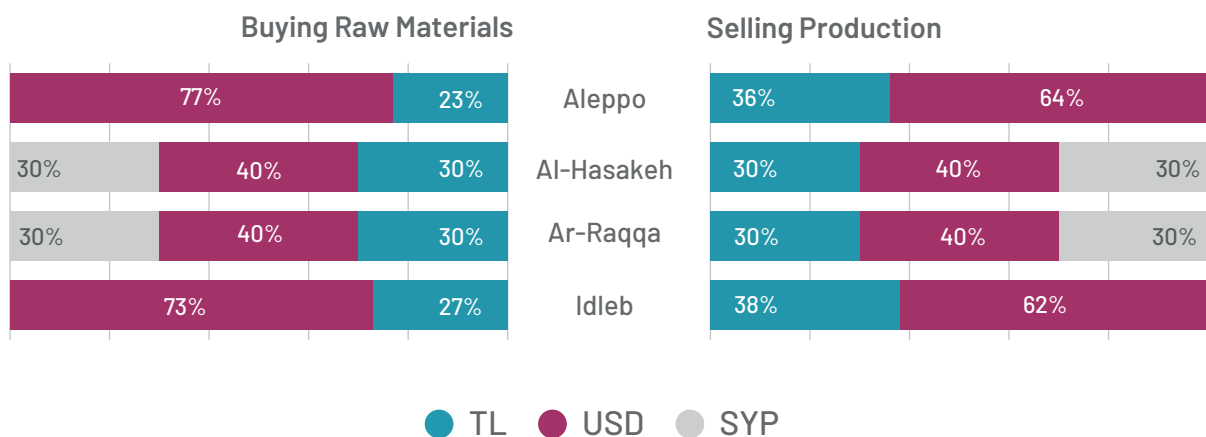


Figure 29: Currency Used in Animal Feed Transactions

Demand and Supply – Manufacturing and Trade Market Actors

The reported changes in the customer base between 2022 and 2023 remained largely stable across the various governorates (53%, n=206). Notably, Al-Hasakeh and Ar-Raqqa governorates of the NWS region reported the highest stability rates at 100% and 97%, respectively, followed by Idleb governorate at 58%. Conversely, Aleppo governorate recorded the lowest stability rate at 33%. In Aleppo governorate, a substantial decrease in the number of customers was observed, reported by 64% of market actors, estimating the decrease at approximately 38%. The key reasons cited for this decline were the rising prices of animal feed, diminished livestock numbers, and the financial instability of both market actors and customers, collectively resulting in reduced demand for animal feed.

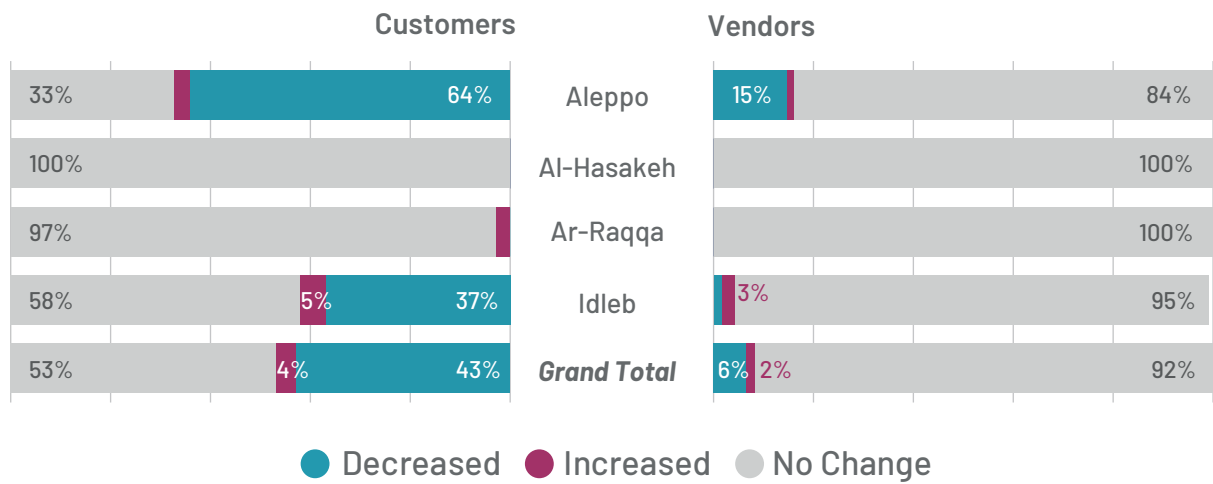


Figure 30: Change of Supply and Demand Between 2022 and 2023

In contrast, the number of vendors in the animal feed sector presented greater stability within the market when compared to the demand side. The majority of market actors reported stability in the number of vendors between 2022 and 2023, with all governorates indicating stability rates exceeding 95%, except Aleppo governorate, which reported a stability rate of 84%. Notably, Aleppo governorate witnessed the highest decrease in the number of vendors between 2022 and 2023, as reported by 15% of market actors, estimating the decrease at approximately 39%. The reasons for this decline are similar to those identified for the decrease in the number of customers.

Demand and Supply – Green Fodder and Forage Crop Farmers

The primary customers for farmers were traders (79%), followed by livestock farmers (13%), and included various others such as grinders, manufacturers, the local council, and personal use. Across the NWS region, farmers reported that barley, wheat, and corn were the most demanded crops. Additionally, they highlighted that barley, wheat, and fava bean crops yielded the highest profit margins among all the assessed green fodder and forage crops, influencing their preference for cultivating these crops.

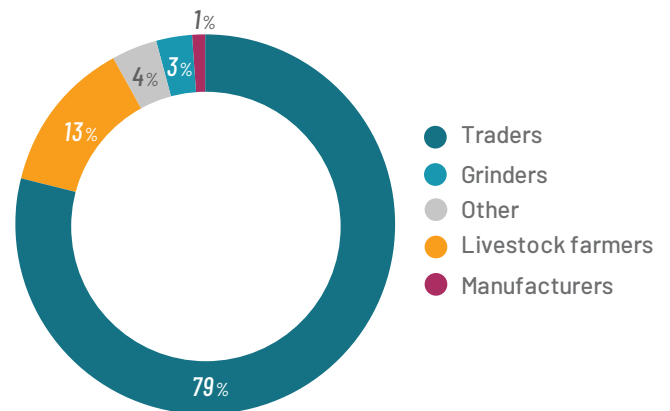


Figure 31: Customers of Green Fodder and Forage Crop Farmers

In contrast, 34% of farmers expressed intentions to change the types of crops they cultivate in the upcoming season. These farmers were predominantly cultivating wheat, barley, lentil, corn, or fava beans. The decision to change crops was due to their objective to implement crop rotation for land improvement or to address financial losses incurred in the previous season due to low selling prices. Many farmers that are considering a change in cultivation mentioned plans to transition to cash crops like cumin or black cumin seeds, while others expressed interest in shifting to chickpeas, coriander, or peas. Farmers who did not have plans to change their crop types cited reasons such as a lack of expertise, suitability of the current crops for their land type, and limited access to water sources and financial resources that hindered their ability to expand or alter their crop cultivation. However, despite not changing their crop types, many indicated their practice of implementing crop rotation within their land area.

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

The majority of market actors in animal feed manufacturing and trade (93%) stated that there were no animal feed testing laboratories available in their area. Only 7% of market actors reported access to testing facilities, specifically in Daret Azza and Afrin sub-districts of Aleppo governorate, and Mhambal and Teftnaz sub-districts of Idlib governorate.

In addition, 34% of the interviewed market actors (n=132) reported conducting quality tests for their animal feed production despite the lack of quality testing facilities. This was evenly distributed between Aleppo and Idlib governorates. All of these market actors performed physical tests on their production or trade products. A few mentioned conducting chemical (11%) and microbial tests (4%). Typically, these tests were carried out within their manufacturing or storage facilities, or they ensured the tests were conducted by traders during the purchase process. Some reported sending their samples to quality labs in Turkey or to the Ministry of Agriculture in Idlib governorate.

Furthermore, 30% of these market actors reported a fair or insufficient availability of expert labor for feed manufacturing or trade. The most significant challenge reported was the lack of availability of lab testing facilities (28%). Other challenges included a lack of experience in green fodder manufacturing, the absence of nutrition experts and veterinarians, and a scarcity of experts in producing feed mixtures according to nutritional ratios.

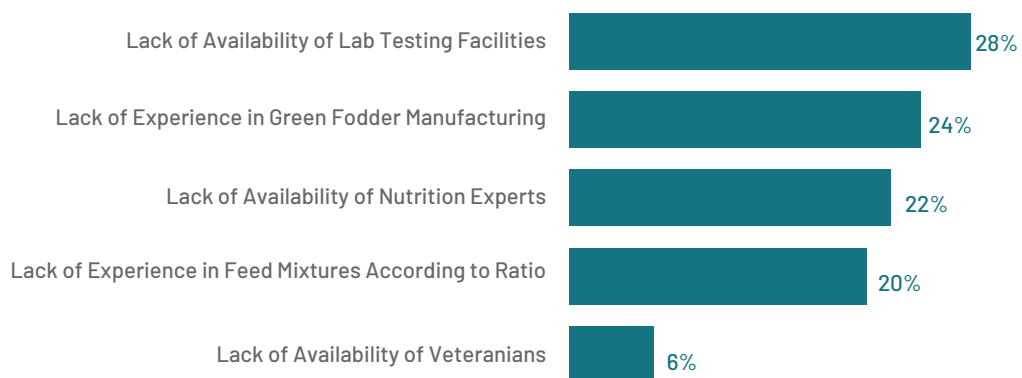


Figure 32: Market Actors Challenges in Availability of Expert Labor

M. Taxes

Only 11% of market actors in the animal feed manufacturing and trade sector (n=44) reported making tax payments to local authorities, primarily directed to the Local Council and the Chamber of Commerce and Industry. The highest percentage of tax-paying market actors was observed in Aleppo governorate at 25%, with an average annual payment of 180 USD. On the other hand, Idlib governorate had the lowest percentage of market actors paying taxes (3%), yet those who did had the highest yearly average payment of 570 USD. On the other hand, Al-Hasakeh and Ar-Raqqa governorates of the NWS region did not report any tax payments.

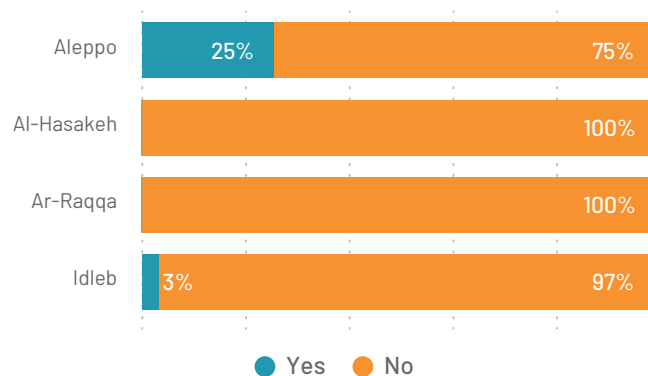


Figure 33: Percentage of Market Actors Paying Taxes per Governorate

Furthermore, while animal feed traders were the group with the highest percentage of tax payments (14%), animal feed manufacturers were the ones making the highest tax payments on average, with an average of 890 USD per year. In contrast, traders reported an average tax payment of 110 USD per year. Despite only 10% of manufacturers reporting tax payments, the comparatively higher tax burden on manufacturers could potentially limit their productivity.

5. Recommendations

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

- **Improve Market Linkages and Collaboration Across Market Actors and Governorates:**

It is important to recognize the distinct animal feed pellet and mixture specializations across various governorates within the NWS region, such as the higher poultry feed production in Idlib governorate and elevated cow and sheep feed volumes in Aleppo governorate while relying on imported poultry feed. Improving collaborative relationships and market connections among feed producers and livestock farmers across different governorates presents an opportunity to streamline the supply chain, extend market reach, enhance resilience by minimizing reliance on external markets and reducing import dependency. This engagement ultimately supports the livelihoods of local producers, thus ensuring enduring sustainability.

- **Establish or support laboratories for feed and fodder quality testing:**

It is crucial to address the pressing issue of inadequate testing laboratories, which was a notable challenge faced by manufacturing and trade market actors. A significant majority of market actors lack access to such testing facilities and resort to physical quality tests either within their facilities or tests conducted by traders before purchase. Enabling dependable and precise testing services for feed and fodder producers as well as livestock farmers is pivotal in verifying product quality. This, in turn, mitigates the risks associated with adulteration, chemical contaminants, and pest infestations that could risk livestock health or compromise the quality of produced meat, milk, or eggs.

- **Promote cultivation of climate-resilient crops:**

Currently, the highly demanded forage crops in the NWS region include wheat and barley, which are extensively cultivated by farmers. However, encouraging diversification in green fodder and forage crop production to cater to the demands of fodder for livestock is essential. Promoting sustainability in the feed and fodder sector necessitates a strategic focus on increasing local raw material production. This can be achieved by advocating for the cultivation of climate-resilient crops, adapted to local conditions and resilient to climate fluctuations. A rise in local raw material availability reduces dependence on imports and subsequently reduces production costs.

- **Provide technical support to farmers and feed and fodder producers:**

Farmers were reluctant to switch to other crop types due to their lack of experience in cultivating varied crops crucial to the feed and fodder market. Additionally, manufacturers and traders reported a lack of expertise in nutrition and mixture production within the feed and fodder sector. Offering technical support to farmers and feed/fodder producers includes providing training, education, and practical guidance on optimal agricultural practices and feed production. The objective is to empower farmers and animal feed producers, supporting them in enhancing productivity, reducing manufacturing costs, and strengthening their competitiveness in the market.

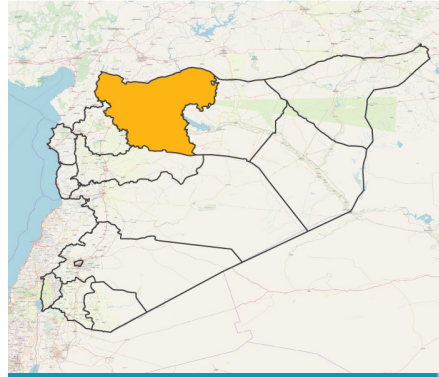
- **Enhance access to financial services to local market actors:**

The existing financial limitations were reported as a major challenge across all market actors, significantly impeding their capacity to enhance production, upgrade facilities, purchase essential inputs, or streamline operations. Financial assistance emerged as a critical requirement across the different types of market actors. Facilitating accessible and low-interest loans for local market actors can support in managing and mitigating financial risks within the feed and fodder market. Such financial support is beneficial, particularly for small and medium market actors, enabling them to expand operations, modernize facilities, and invest in innovative technologies and production methodologies.

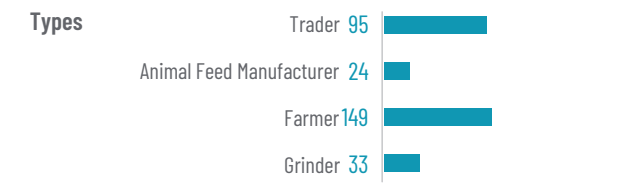
- **Provide rehabilitation support to manufacturing facilities:**

The adverse impact of the earthquake on animal feed production facilities, causing significant damage amounting to an estimated total loss of 267,750 USD, highlights the urgent need for rehabilitation. These damages include structural, equipment, and land damage or destruction. Extending vital support for equipment maintenance and building rehabilitation to animal feed manufacturing facilities stands as a critical intervention to enhance their operational efficiency and production levels. This initiative is pivotal in enhancing the availability and affordability of feed and fodder, crucial for sustaining the livelihoods of livestock farmers, ultimately promoting sustainability and resilience in the long run.

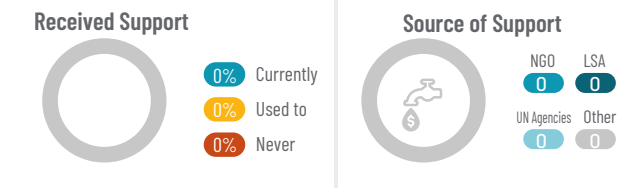
Annex A: Governorate Factsheets - Aleppo



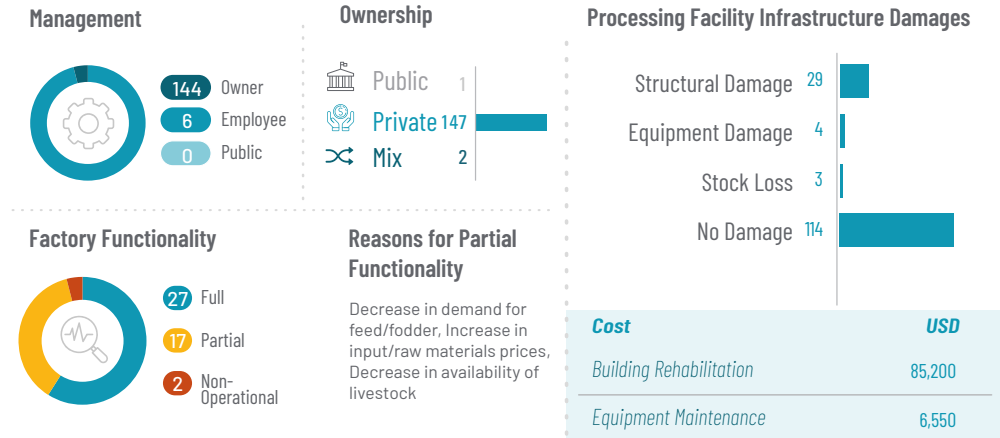
Business Type



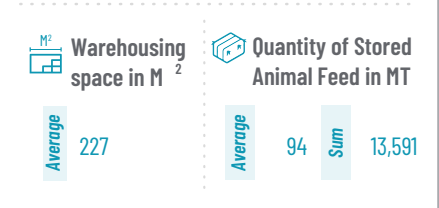
Support Status



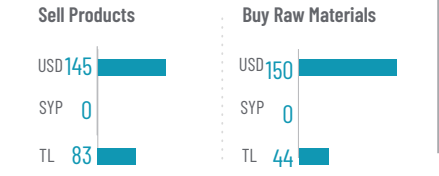
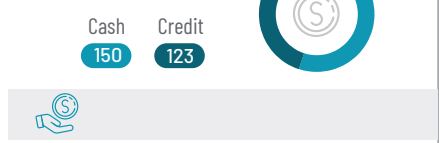
Business Status



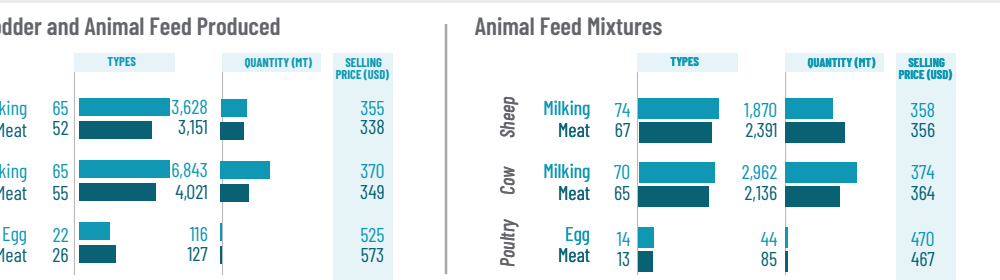
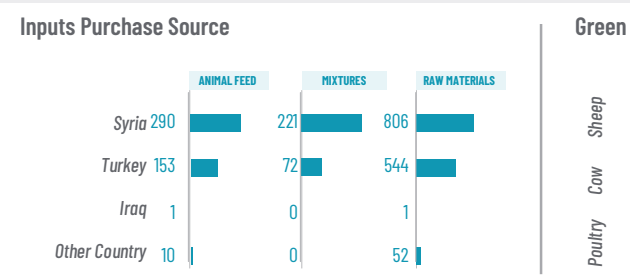
Warehousing



Selling Modalities

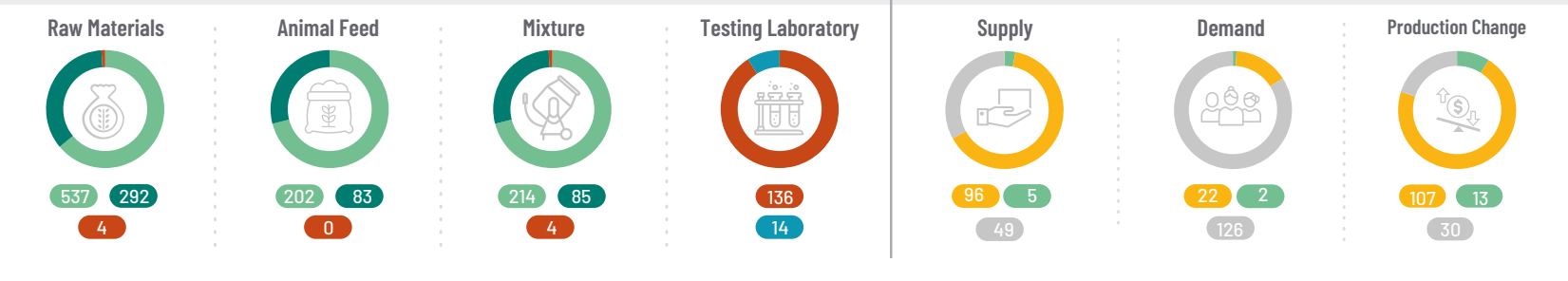


Production

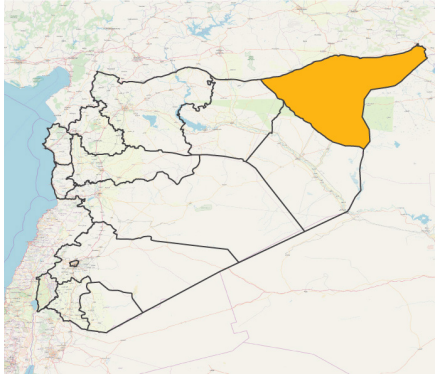


Availability

Legend: Always Available (Green), Available (Blue), Fairly Available (Dark Green), Not Available (Red)



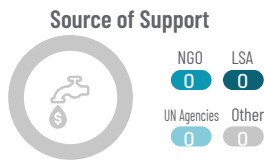
Al-Hasakeh



Business Type

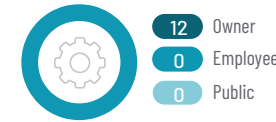


Support Status

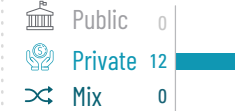


Business Status

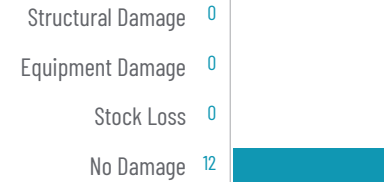
Management



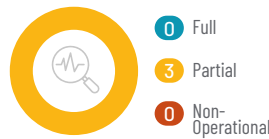
Ownership



Processing Facility Infrastructure Damages



Factory Functionality



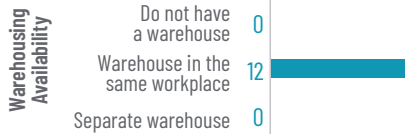
Reasons for Partial Functionality

Low financial liquidity, No support available for local production, Instability of exchange rate of the USD

Cost

Building Rehabilitation	USD	N/A
Equipment Maintenance	USD	N/A

Warehousing



Warehousing space in M²

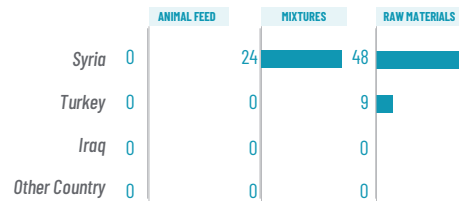


Quantity of Stored Animal Feed in MT



Production

Inputs Purchase Source



Green Fodder and Animal Feed Produced

	TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking Meat	0	N/A
	Meat	0	N/A
Cow	Milking Meat	0	N/A
	Meat	0	N/A
Poultry	Egg Meat	0	N/A
	Meat	0	N/A

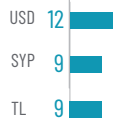
Animal Feed Mixtures

	TYPES	QUANTITY (MT)	SELLING PRICE (USD)
Sheep	Milking Meat	12	385
	Meat	12	385
Cow	Milking Meat	9	145
	Meat	12	325
Poultry	Egg Meat	0	0
	Meat	0	0

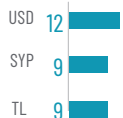
Selling Modalities



Sell Products



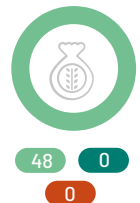
Buy Raw Materials



Availability

Always Available Available Fairly Available Not Available

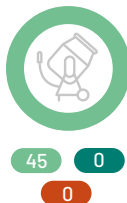
Raw Materials



Animal Feed



Mixture



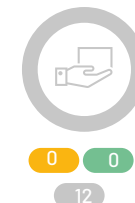
Testing Laboratory



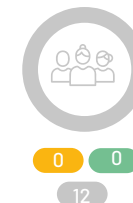
Change between 2022 & 2023

Increase Decrease No Change

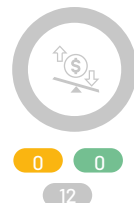
Supply



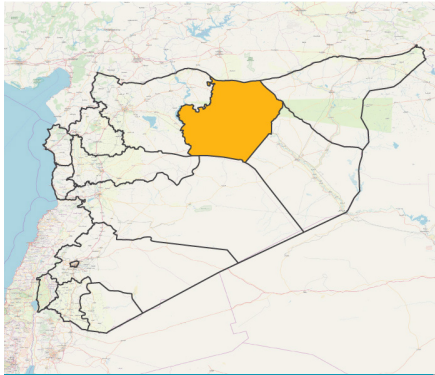
Demand



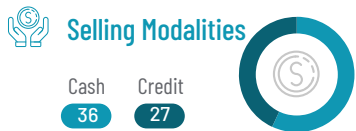
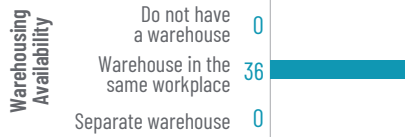
Production Change



Ar-Raqqa



Warehousing

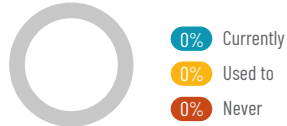


Business Type



Support Status

Received Support

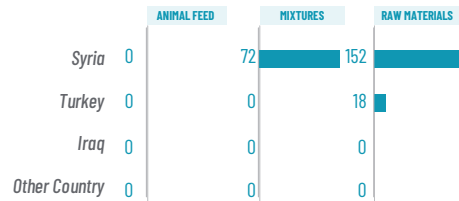


Source of Support

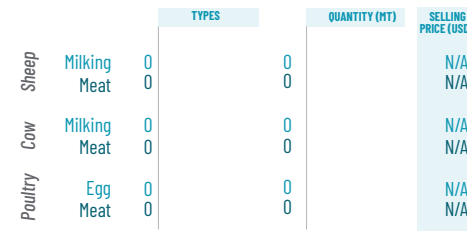


Production

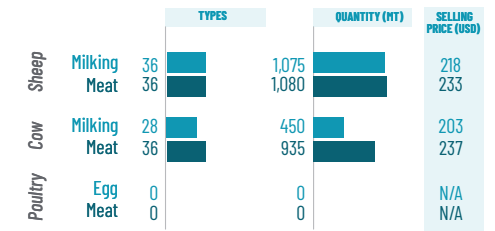
Inputs Purchase Source



Green Fodder and Animal Feed Produced



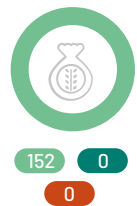
Animal Feed Mixtures



Availability

Always Available Available Fairly Available Not Available

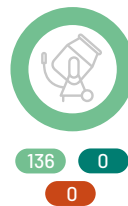
Raw Materials



Animal Feed



Mixture



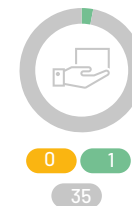
Testing Laboratory



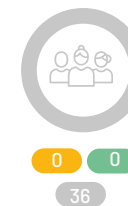
Change between 2022 & 2023

Increase Decrease No Change

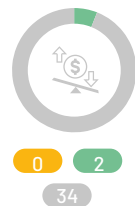
Supply



Demand

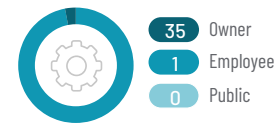


Production Change



Business Status

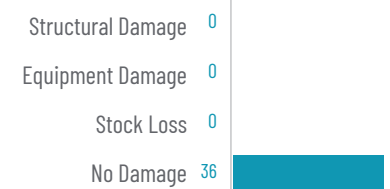
Management



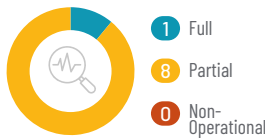
Ownership



Processing Facility Infrastructure Damages



Factory Functionality



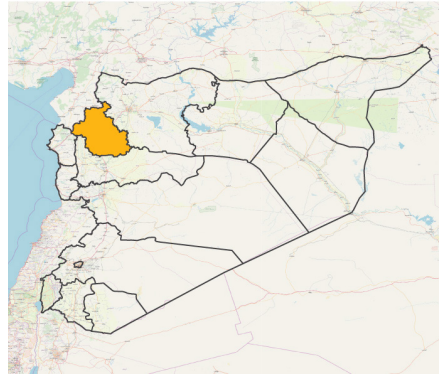
Reasons for Partial Functionality

Low financial liquidity, No support available for local production, Instability of exchange rate of the USD

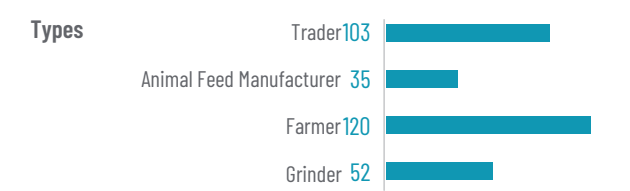
Cost

Building Rehabilitation	USD N/A
Equipment Maintenance	USD N/A

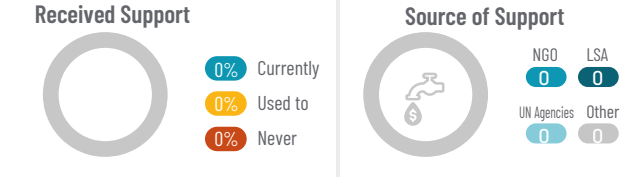
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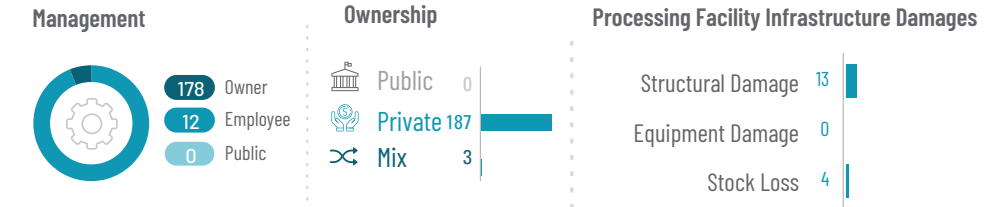
Business Type



Support Status



Business Status



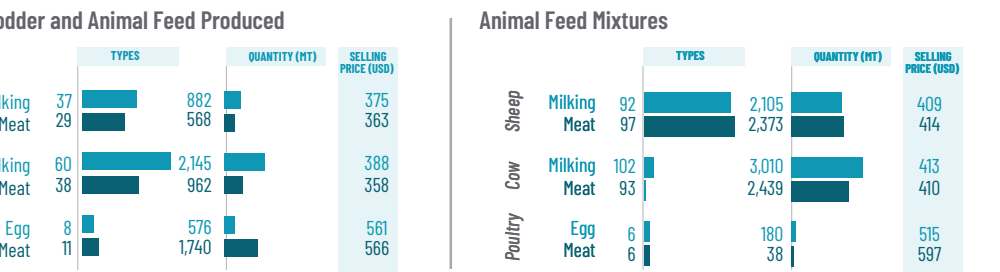
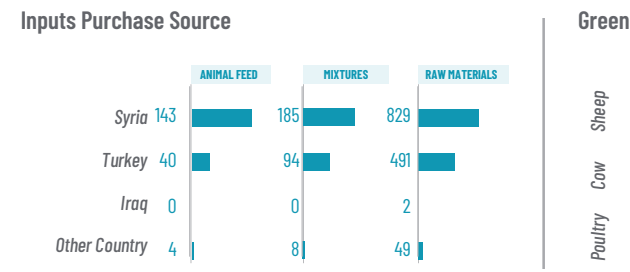
Factory Functionality



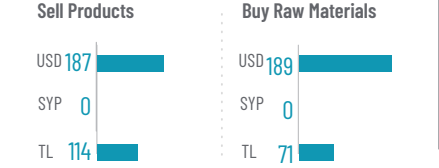
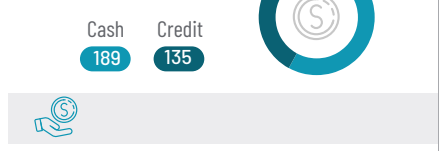
Warehousing



Production



Selling Modalities



Availability

● Always Available ● Available ● Fairly Available ● Not Available

