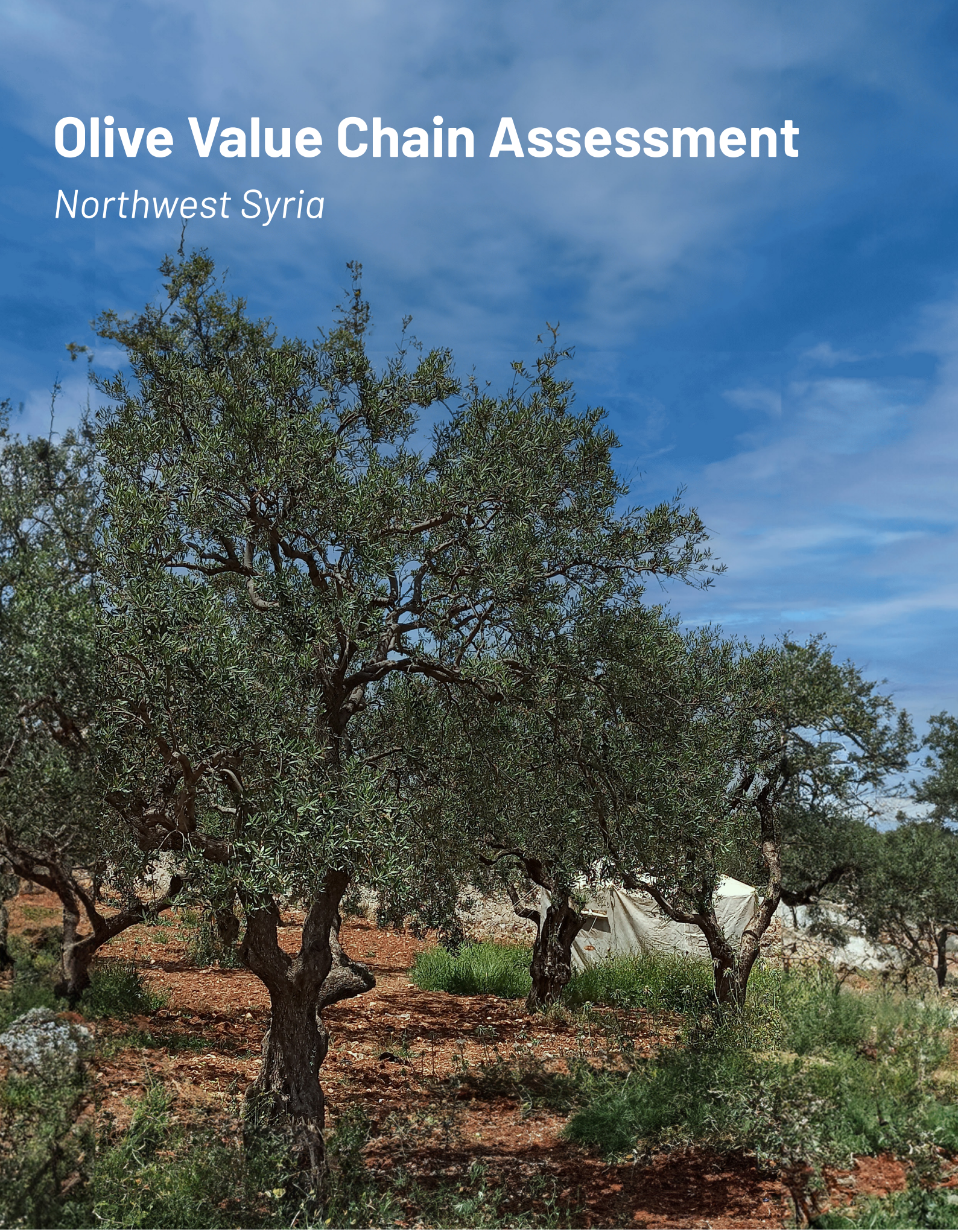
Olive Value Chain Assessment

Northwest Syria



iMMAP

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

AUGUST
2023

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Cover Photo: NWS FSLA Cluster Data collectors, Idlib, May, 2023.

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Executive Summary

This study provides an overview of the olive value chain in Northwest Syria (NWS), assessing the challenges and opportunities faced by stakeholders in the region. The report examines various aspects of the value chain, including input supply chain management, output markets, and the roles of different stakeholders.

The agricultural sector in Syria, including olive production, is a crucial component of the national economy, contributing significantly to gross output, employment, investment, and trade. However, the sector has experienced diminishing returns due to factors such as conflict events, the loss of agricultural institutions, inflation, and extreme weather events.

The study adopts a comprehensive methodology, combining qualitative and quantitative data collection techniques. Interviews were conducted with a diverse range of market actors, including farmers, processors, traders, and consumers. It provides insights into the different phases of the olive value chain, covering cultivation, harvesting, processing, and marketing. Its objectives include understanding the challenges and opportunities faced by olive producers, exploring input sources, studying price trends, examining trading norms and the impact of imports on local production, identifying leverage points along the value chain, and understanding the roles of various stakeholders.

Key findings indicate that the olive value chain in NWS faces several challenges and represents significant opportunities for sustainable growth and expansion. For instance, cultivated areas are widely available yet modern production techniques are lacking. In terms of marketing, indicators reveal the availability of olive oil, olives, olive pickles and soap in the market, indicating diverse consumer demands and market opportunities. While local households and traders in NWS are the primary customers, there is potential for international trade and exports. Climate and natural shocks on the other hand had significant impact on the olive value chain, drought, disrupted rainfall patterns and most recently the earthquake.

The report concludes by highlighting the challenges faced by the olive sector, such as drought, displacement, and infrastructure damage, and the opportunities for growth, such as improving water management practices. Addressing these challenges and capitalizing on opportunities will contribute to the revitalization of the olive value chain in NWS.

Overall, this report offers valuable insights into the current state of the olive value chain in Northwest Syria (NWS), outlining the challenges and opportunities for stakeholders. The report provides recommendations and strategies to support the revitalization of the sector, allowing stakeholders to navigate the challenges and leverage opportunities for sustainable growth.

1. Introduction

1.1. Background and Objectives

A World Bank study published in July 2017 estimates that Syria's gross domestic product (GDP) contracted by 63% between 2011 and 2016. During the war, the governorate spent more money, but investment in businesses decreased. This situation also caused disruptions in the important networks that connect the economy and society, affecting the flow of goods and services in the market. In detail, the agricultural sector in Syria plays a major role in the national economy due to its multiple contributions to the economic and social development process of the country comprising gross output (16–18%), production inputs (13–18%), employment (27% of the total population), investment (8.6%), total trade (11% of total trade), the activities of marketing, processing and providing the raw materials necessary for agro-industries, achievement of food security and environmental sustainability[1]. In addition, it generates income for a principal part of the rural population, which constitutes about 41% of the Syrian inhabitants in the period 2017–2019[2]. Due to its climatic diversity, Syria has a wide variety of agricultural products such as wheat, barley, cotton, pistachio, and olives among others. The olives value chain in Northwest Syria (NWS) is one of the most relevant value chains in Syria; it refers to the various stages and actors involved in the production, processing, and distribution of olives and olive-based products in the region including farmers, processors, distributors, and consumers. The value chain also includes support services such as financing, technical support, and marketing. Syria's olive value chain has suffered severe consequences of the armed conflict. In fact, according to data from agricultural researchers in Turkey and Hungary, Syria lost 795 million (USD) in value from the olive industry between 2012 and 2016[3]. The consequent conflict events, loss of agriculture institutions, inflation, increase in fuel price, currency depreciation, and high frequency of extreme weather events like floods, frost, and drought scenarios, were all major factors that played a role in causing diminishing returns from the local production of olive.

Since 2011, multiple implementing partners have provided olive production support, yet olive trees are widely cultivated across Syria in general and NWS in specific and further support is still needed to revitalize local production.

In that regard, the Food Security and Livelihood Cluster in NWS and iMMAP propose to carry out a value chain assessment focusing on input supply chain management and the output market of olive production in NWS. The study aims to provide insights and recommendations to the implementing partners as per the following objectives:

- Understand the current challenges and opportunities facing olive producers in the NWS region.
- Explore sources of olive production inputs including olive trees, workforce, and agricultural inputs.
- Study price trends of olives and their by-products such as oil, soap, pickles, etc.
- Explore the olive to oil trading norms, and the effect of imports on local production.
- Identify challenges and opportunities in the current system that can encourage or hinder market actors within the olive value chain.
- Identify leverage points along the value chain that have the potential in strengthening the effectiveness and efficiency of local olive/ oil production across the NWS region.
- Understand the role of different stakeholders and market actors (NGOs, Local Councill, Processor, Farmers, and Traders) in the olive market system.

1 Arab Organization for Agricultural Development (AOAD). Accessed 12 Jun 2022. Link

2 National Agricultural Policy Center (NAPC). The State of Food and Agriculture in Syria. 2010. Link

3 Bumper Crop Expected in Syria Amid Ongoing Civil War. By Paolo DeAndreis, Nov. 18, 2022. Link

2. Methodology

2.1. Data Collection and Geographical Coverage

To gain a comprehensive understanding of the olive value chain in Northwest Syria (NWS), a systematic sampling approach was employed, focusing on the specific geographic area of interest. The data collection process involved conducting interviews with a total of 475 market actors, including 156 farmers, 78 sharecroppers, 73 processors (involved in oil, soap, and pickles production), 80 traders, and 88 consumers. Both qualitative and quantitative data collection methods were employed to ensure a thorough examination of relevant information. The interviews encompassed a wide array of topics, from production, to processing and marketing and other pertinent aspects of the olive value chain. By adopting this robust methodology and targeting the specific market actors in NWS, the study aimed to provide precise and comprehensive insights into the dynamics of the olive value chain within the region.

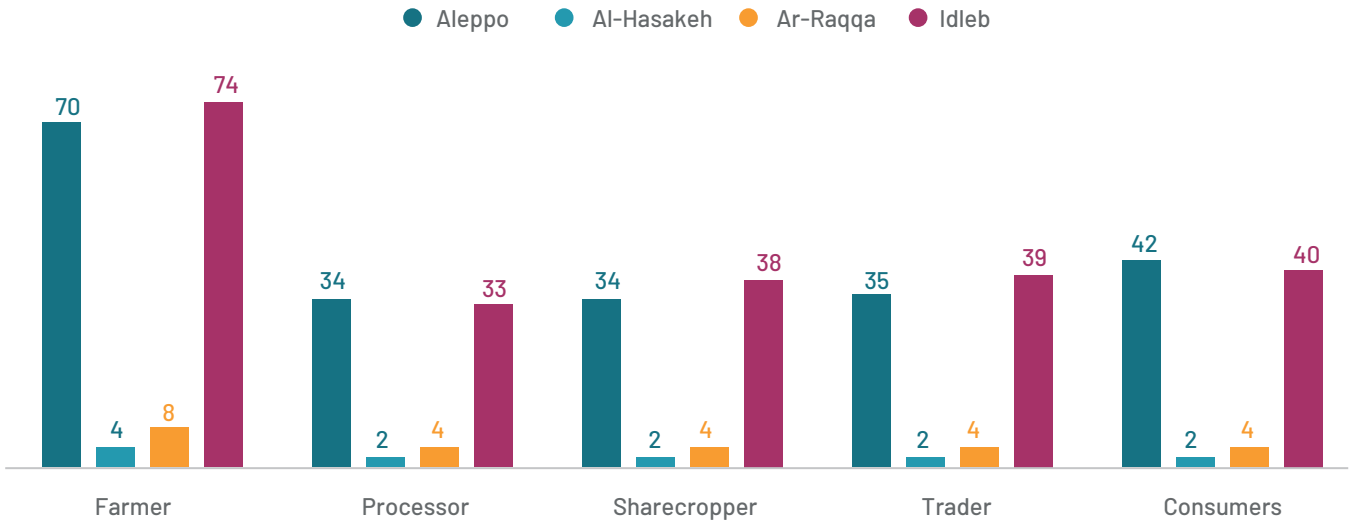
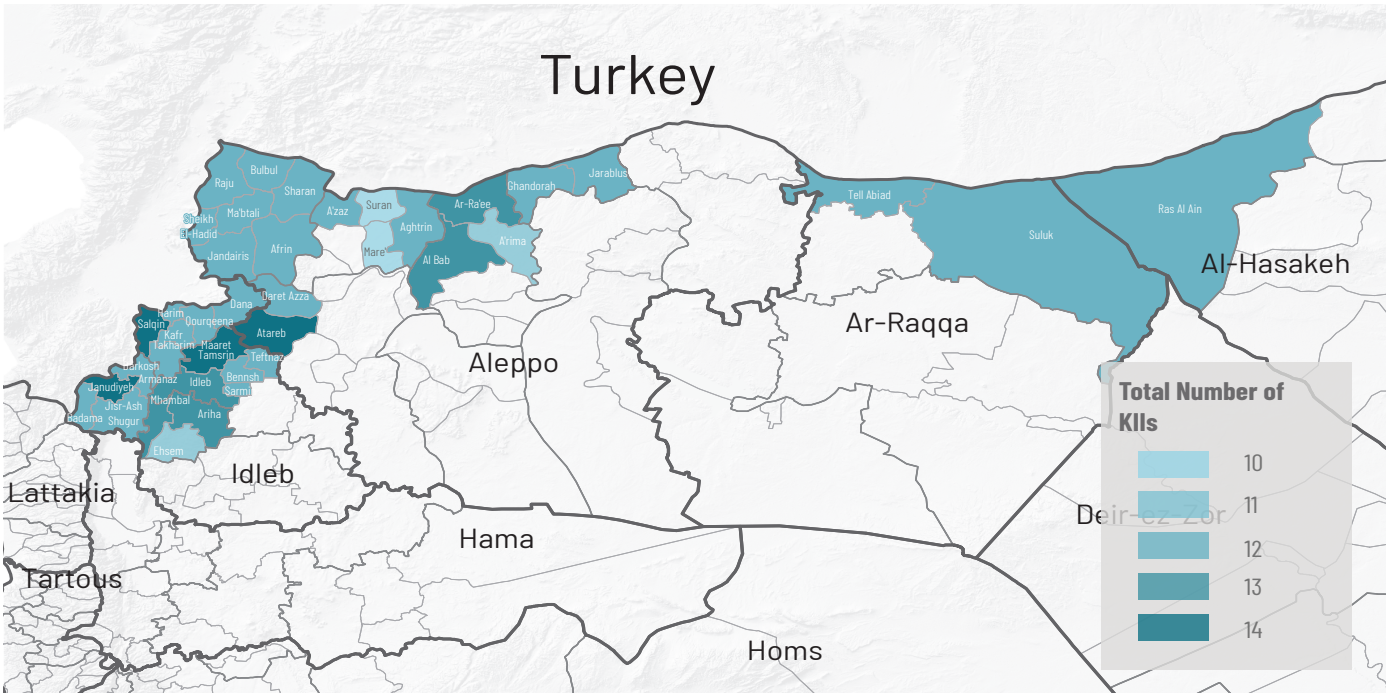


Figure 1: Number of KII per Market Actor per Governorate

The study ensured representation from various locations within the region and covered eleven districts across Aleppo, Al-Hasakeh, Ar-Raqqa, and Idleb governorates. These districts include Afrin, Al-Bab, Ariha, A'zaz, Harim, Idleb, Jarablus, Jebel Saman, Jisr-Ash-Shugur, Ras Al Ain, and Tell Abiad. By including these specific districts, the study captured a broad spectrum of perspectives and experiences within the olive value chain, offering insights into the unique dynamics of each area.

This comprehensive geographic coverage enhances the reliability and validity of the findings, enabling a more accurate and holistic understanding of the olive industry in Northwest Syria (NWS). Nevertheless, it is crucial to emphasize that the number of market actors interviewed in Al-Hasakeh and Ar-Raqqa was notably lower compared to other governorates. This discrepancy is primarily due to the fact that these areas comprise of only 3 sub-districts within the NWS region.

Map 1: Data Collection Coverage Map



3. Climate Factors

Seasonal rainfall patterns and water availability greatly influence the success and productivity of olive cultivation; therefore, it is important for olive farmers to monitor seasonal rainfall patterns, assess water availability, and implement appropriate irrigation practices to ensure optimal water management. Sustainable water use and conservation strategies are becoming increasingly important to mitigate the potential effects of climate events and safeguard the long-term viability of olive cultivation.

3.1. Seasonal Rainfall Patterns

The rainy season during the last olive season (2021/2022) was predominantly characterized as below normal, with 62% of respondents reporting lower rainfall levels than average. Only 21% described the season as normal, indicating that it met the expected rainfall levels. On the other hand, 17% reported a very low rainy season, suggesting significantly reduced precipitation compared to normal conditions. The rainfall patterns play a crucial role in olive cultivation as it directly impacts the growth, health, and productivity of the olive trees. A below normal or very low rainy season can result in challenges such as water scarcity, drought stress, and reduced yield.

The description of the rainy season differed among various NWS regions, as illustrated in Figure 2. Ar-Raqqa governorate reported the highest level of stability in rainfall, with 50% of farmers reporting normal rainfall levels, followed by Idleb governorate at 23%, and Aleppo governorate at 17%, whereas none of the farmers in Al-Hasakeh reported normal rainfall levels. On the other hand, Aleppo governorate had the highest proportion of farmers reporting very low rainfall levels (34%), followed by Ar-Raqqa (12%), and Idleb (3%) governorates. Nevertheless, across all governorates, most farmers reported below-normal rainfall levels, with Al-Hasakeh governorate having the most significant change in rainfall levels at 100%. Those findings correlate with precipitation data from 2020 till 2022 (figure 3). In fact, rainfall levels in NWS have been lower than the normal for most of the year except for January 2022. Such a trend can severely affect agriculture practices in general and olives in particular. In fact, many farmers await rainfall before starting olives harvesting between the months of September and November; low precipitation during these months often delay harvest and compromise olives quality consequently their by-products including oil.

The variability in the rainy season's description highlights the importance of rainfall for olive cultivation and the need for adaptation strategies to ensure optimal growth and productivity of olive trees in different regions. Farmers in regions with below normal or very low rainfall may need to implement appropriate irrigation methods to mitigate the potential impact on olive production.

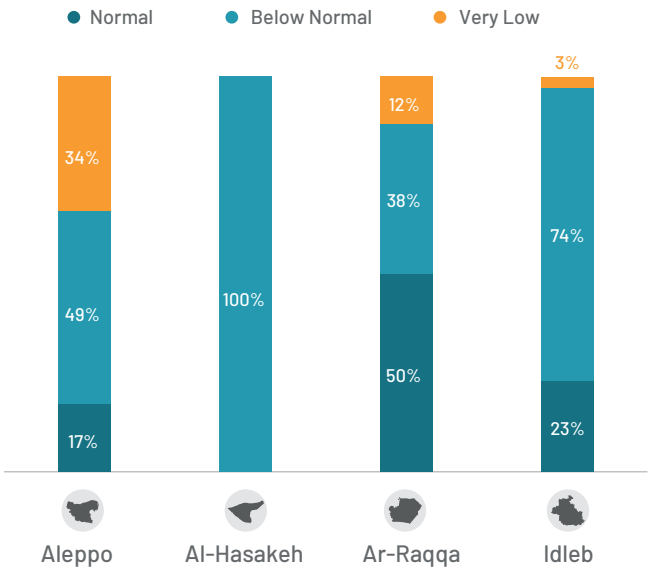


Figure 2: Farmers' Perception of Rainfall per Governorate (2021/2022)

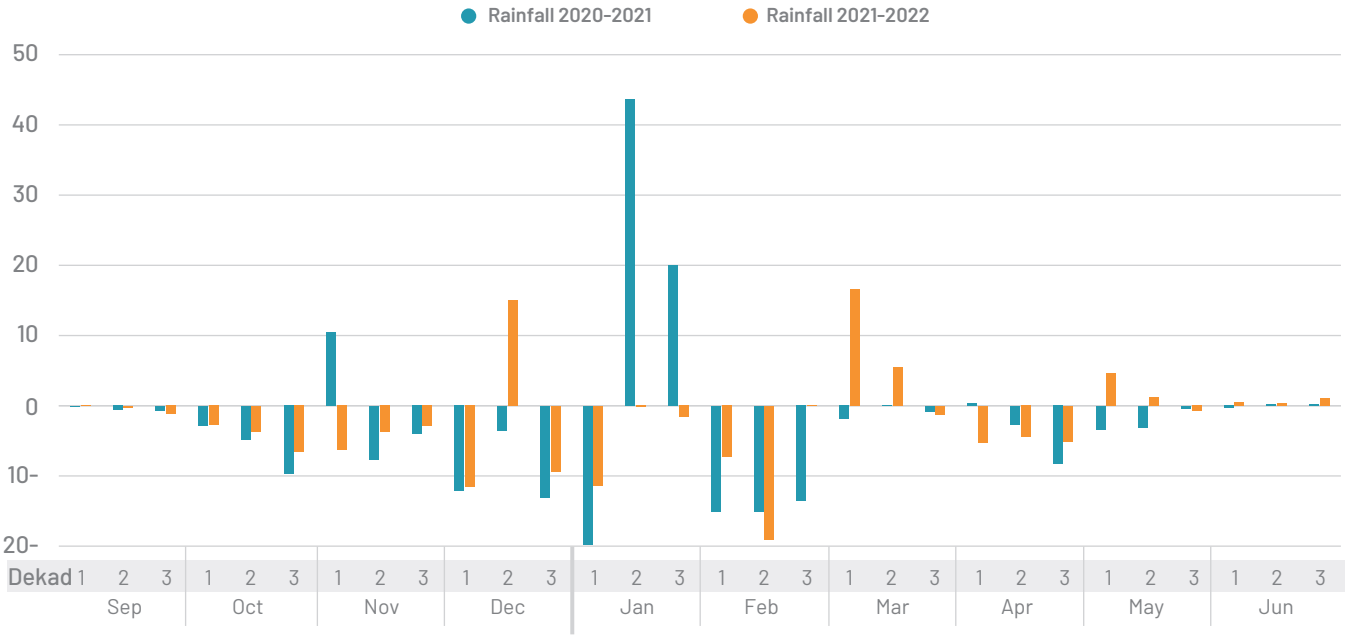


Figure 3: Rainfall Anomalies in mm for the 2020-2021 and 2021-2022 Winter Season – Average of all NWS Districts

3.2. Water Availability

During varying seasonal rainfall patterns, the most reported factor to have significant impact on olive production is low rainfall (74%). Insufficient rainfall directly affects the water supply available to olive trees, leading to reduced growth and productivity. Olive trees require an adequate amount of water for healthy development and optimal fruit production. When rainfall levels are low, it becomes crucial for farmers to ensure alternative sources of water or implement effective irrigation systems to supplement the water needs of the olive trees. Yet 11% of farmers reported problems of water availability and 5% reported accessibility challenges. On the other hand, 10% of farmers reported cost challenges for supplementary irrigation. In fact, as previously reported in the Interrelated Market Monitoring Initiative Study for NW Syria , the cost of diesel used to operate irrigation pumps is becoming a burden on farmers. On average, 1 liter of European diesel costs 1 USD across governorates while local refined diesel costs between 0.52 and 0.66 USD per liter[4]. Fuel is a vital resource for powering irrigation systems, particularly in regions where water scarcity is a concern. When fuel prices rise, the cost of operating irrigation pumps and equipment increases, subsequently impacting farmers' ability to afford and sustain irrigation practices. This can lead to reduced or inadequate irrigation, potentially affecting the health, growth, and productivity of olive trees.

Therefore, managing water sources, addressing low rainfall, ensuring water availability, and considering the economic aspects of irrigation are all crucial factors in mitigating the impact of varying seasonal rainfall patterns on olive production.

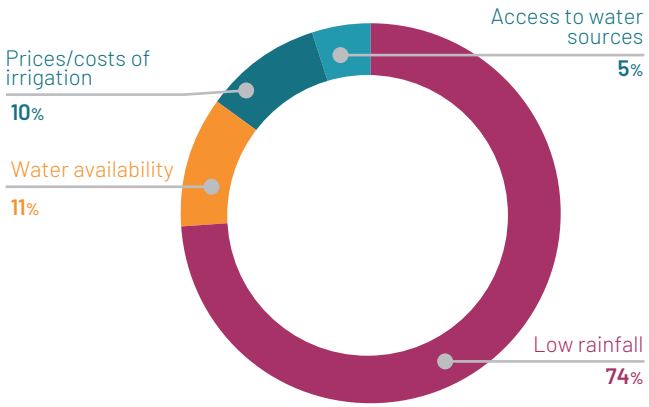


Figure 4: Factors Impacting Olive Production

4. The Olives Value Chain in NWS

4.1. Activities and Stakeholders Distribution

A value chain refers to the full lifecycle of a product or process, including material sourcing, production, consumption, and disposal/recycling processes[5]. The olive value chain refers to the entire process involved in the production, processing, and distribution of olive-based products, from the cultivation of olive trees to the consumption of olive-based products by end-users. It encompasses all the activities, stakeholders, and resources involved in transforming olives into various value-added products, such as olive oil, olives for consumption or any other olive-based product. The value chain includes olives production activities such as planting and tending olive trees, harvesting, and collecting olives, processing them into different products, packaging, marketing, distribution, and ultimately reaching the end consumers. It involves a network of actors, including farmers, sharecroppers, processors, traders, and consumers all contributing to the different stages of the value chain.

Figure 5 provides an overview of NWS various olive value chain activities and the stakeholders conducting them. Throughout the olive value chain, it can be noted that various market actors concurrently play roles in production, processing, and trade of olive and its by-products. This participation of different stakeholders demonstrates their mutual dependency, leading to a more widely distributed market and facilitating easier access for consumers. As shown, olive production is primarily carried out by farmers, sharecroppers, and processors, with 89%, 10% and 1% percentages respectively. Processors and farmers are the main producers of olive oil, while soap and pickles are mainly produced by processors. On the other hand, sales of olives and their by-products are mainly made at trader level (40%), yet also include farmers and processors. Nonetheless, several supporting activities were also identified within this study including transportation, packaging, and the production of Birin (olive waste for heating).

4 iMMAP Integrated Market Monitoring Initiative (IMMI) Spring/Summer 2023. Link

5 UNIVERSITY OF CAMBRIDGE. World Business Council for Sustainable Development (WBCSD). Link

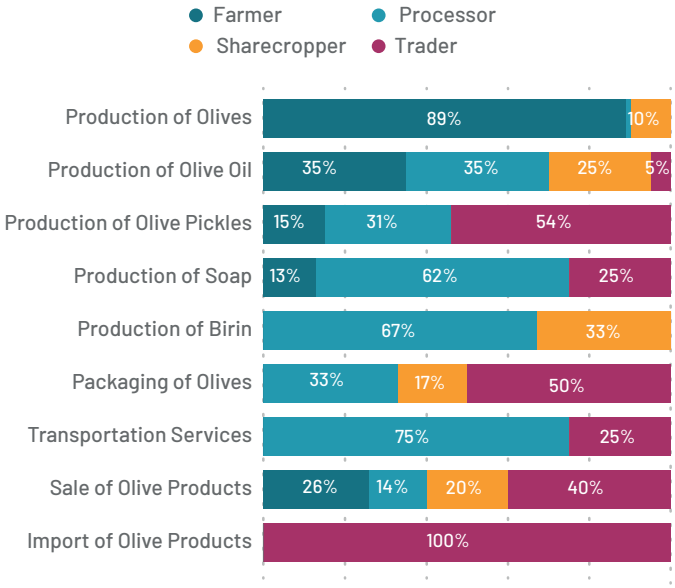


Figure 5: Distribution of Olive Value Chain Activities and Stakeholders

This proves that the olive industry plays a crucial part in generating income, creating employment opportunities, and supporting livelihoods of several stackeholders in the area. In fact, the significance can be measured by its economic output, value-added activities, and its overall impact on the economic growth and stability of the region. This underscores the reliance and dependency of the local community on the olive sector for economic prosperity and development.

4.2. Olives Farmers

Olive farmers are individuals or entities involved in the primary production of olives, cultivating olive trees and harvesting the olives. They are the starting point of the olive value chain, as they are responsible for growing and maintaining the olive trees, ensuring proper agricultural practices, and harvesting the olives when they are ripe. These farmers play a crucial role in the olive value chain as they are responsible for producing the raw material (olives) that will later be processed, traded, and sold to consumers. Their efforts and practices directly impact the quality and quantity of the olives produced, which ultimately influences the entire olive value chain's success and profitability.

The distribution of the survey sample for farmers across the different governorates provides a clear picture of the geographic representation of participants. Idleb constitutes the largest portion, with 47% of the sample followed by Aleppo with 45% of the sample. Al-Hasakeh and Ar-Raqqa, although representing smaller percentages at 3% and 5% respectively, provide valuable insights to the study. This distribution underscores the effort to include a diverse range of governorates, ensuring that the findings reflect the experiences and perspectives of a broad cross-section of the community.

The gender distribution of olive farmers in the community shows that the overwhelming majority, 99%, are male, while only 1% are female. This indicates a significant gender disparity in the olive farming sector, with male farmers dominating the industry. Addressing this gender imbalance could be essential for promoting gender equality and empowering women to participate more actively in agricultural activities, including olive farming. Initiatives aimed at providing equal opportunities, resources, and training for female farmers can contribute to their increased involvement and representation in the olive farming community.

4.2.1. Business Stability and Challenges

In Northwest Syria, olive farmers have reported owning olive lands with varying ages, some dating back to the early 1970s and 1980s, while others have more recently cultivated lands from the early 2000s and 2020s. This wide range of ages, spanning from 4 to 100 years, showcases the longstanding tradition of olive farming in the region, which has made the olive value chain resilient in the face of the challenges that followed the Syrian crisis. In Aleppo and Idleb governorates, around 50% of farmers reported having farms aged between 26 and 50 years old while around 30% reported to have farms aged between 1 and 25 years old. Interestingly, a majority of farmers in Al-Hasakeh and Ar-Raqqa regions own younger olive lands, indicating a growing interest in olive farming in these areas.

The age distribution of farms showcases the continuity and multi-generational nature of olive cultivation, reflecting the agricultural heritage and practices passed down through generations. Yet Al-Hasakeh and Ar-Raqqa findings suggest that olives farms may have been established in recent years in a post-crisis or relative stability contexts.

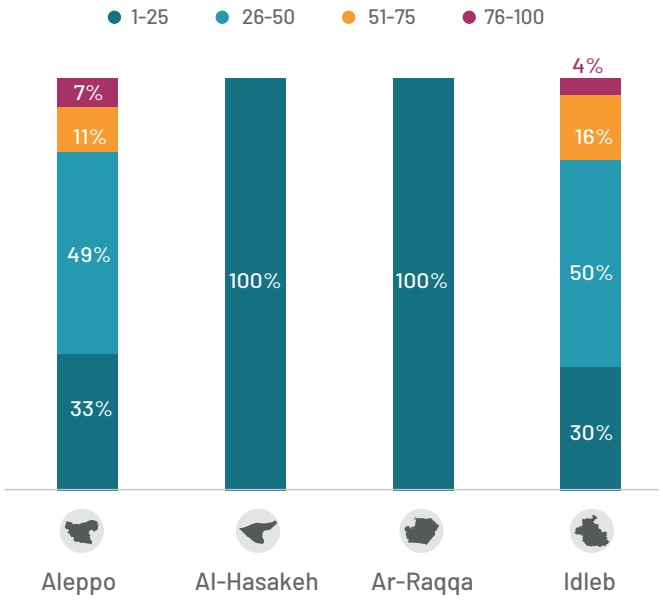


Figure 6: Olive Farms Age per years per Governorate

In the past three years, most olive farmers surveyed (88%) have not had to stop their farming activities for more than one season. However, a small percentage of farmers (12%) reported having experienced halts in their activities during this period. These interruptions were attributed to various reasons, such as external factors as displacement (44%), lack of capital (26%), lack of supply in inputs and raw materials (15%), lack of energy (fuel or electricity) (5%), damage/destruction of land (4%) or facility and damage/destruction of assets (4%).

4.2.2. Farmers Cooperatives

Farmers cooperatives are formed by farmers coming together to address common issues and challenges they face in agriculture and rural livelihoods.

In Northwest Syria (NWS) and based on the provided data, the number of farmers cooperatives varied among the surveyed governorates. In Aleppo, only 19% of farmers reported the presence of farmers cooperatives with the majority of 81% reporting their absence. Afrin reported the greatest count of these cooperatives, with 7 farmers, whereas the lowest figures were recorded in Al-Bab, involving 2 farmers. On the other hand, Idleb governorate had considerably higher prevalence of farmers cooperatives, with 51% of farmers reporting their existence and 49% reporting their absence. The highest number of reported cooperatives was observed in both the Harim and Idleb districts, with 14 farmers each, while the lowest count was noted in the Ariha district, involving 4 farmers. In general, the lack of farmers cooperatives may indicate a lack of organized farmer representation in these areas, which could potentially affect the ability of farmers to collectively address their challenges and advocate for their interests. It highlights the need for increased efforts to establish and support farmers' unions in these regions to promote collaboration, knowledge-sharing, and representation among farmers.

Farmer cooperatives play various roles in agricultural communities. According to the responses, the most commonly mentioned role is providing technical support and guidance to farmers, as reported by 39% of farmers. These cooperatives help farmers in implementing best practices, improving productivity, and ensuring the proper use of resources. Another significant role is the coordination between farmers and authorities, organizations, and other farmers, which was mentioned by 29% of farmers. Farmer cooperatives act as intermediaries, facilitating communication and collaboration among different stakeholders in the agricultural sector. However, it should be noted that 22% of the respondents perceived the role of farmer cooperatives as inactive. Additionally, a small percentage of farmers (4%) highlighted the role of farmer cooperatives in representing the interests of farmers in the region, and another 4% advocating for their rights, welfare, and addressing common challenges. And the remaining 2% mentioned that prior to 2011, farmer cooperatives also played a role by providing loans, fertilizers, and services until the harvest.

Overall, farmer cooperatives have the potential to contribute to the development and empowerment of farmers by providing support, coordination, and advocacy in agricultural communities.

4.2.3. Cultivated Land Size

The distribution of land dedicated to olive cultivation differs among the NWS regions. Across all of the governorates, most of the interviewed farmers possess land holdings ranging from 5 to 10 dunums (57% of farmers n=89). However, Aleppo was the only governorate with reporting more than 30 dunums of olive cultivation. This suggests that farmers in Aleppo governorate are more actively engaged in the olive farming value chain, as a larger number of them own larger lands and potentially yield more olives. Consequently, they could play a more influential role in initiating the distribution of olives across the market.

Figure 7 provides an overview of the land distribution among the farmers and highlights the predominant presence of smaller-scale olive cultivators in the region.

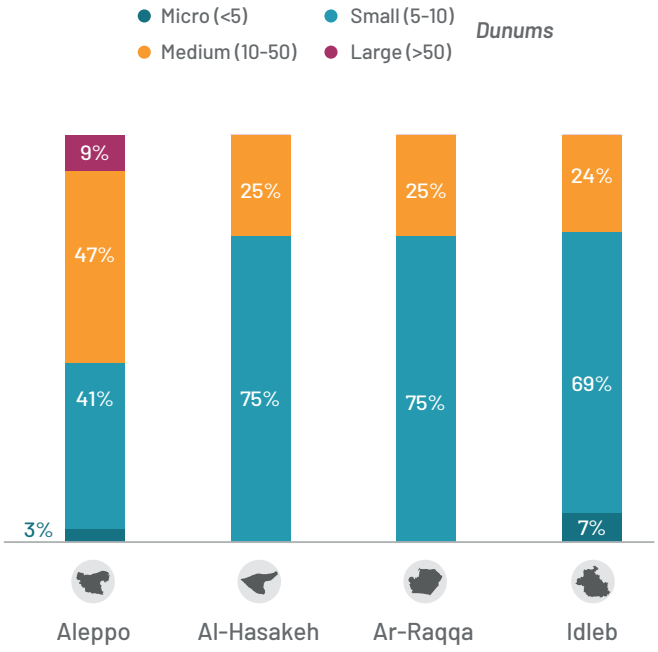


Figure 7: Percentage of Olive Cultivated Land by Land Size per Governorate

As for the tree populations, the ongoing crisis in Syria has had a profound impact on the olive tree population. While only 5% of the assessed farmers stated that they did not own a land before 2011, most of the remaining farmers with older lands (67%) stated that the number of olive trees on their land has remained unchanged since before the crisis, whereas a significant portion (28%) did witness a change in the olive tree population. Among those who experienced a change, the overwhelming majority (86%) reported a decrease in the number of trees. This decrease in olive tree population can be attributed to a range of factors including cutting olive trees for heating (24%), the impact of pests and diseases (23%), the bombing or shelling of orchards (20%). Additionally, 13% of interviewed farmers reported that olive orchards were cut down to establish camps for internally displaced persons (IDPs); 91% in Idleb and 9% in Aleppo. On the other hand, 12% reported loss of olives cultivated lands due to wildfires, 4% for urban expansion, 2% for other crops cultivation and 2% due to extreme weather conditions.

However, it is worth noting that a small percentage of farmers (14%) reported an increase in the number of olive trees cultivated. This increase was mainly attributed to the low operational costs and maintenance efforts of olive trees (57%), and suitability to the local climate and soil conditions (43%), making them a profitable and sustainable crop. Despite the challenges posed by the crisis, the resilience of olive trees and the potential profitability they offer have motivated some farmers to invest in their cultivation and even expand their olive groves. These farmers recognize the long-term benefits of olive cultivation and are making efforts to maintain and grow their olive tree population.

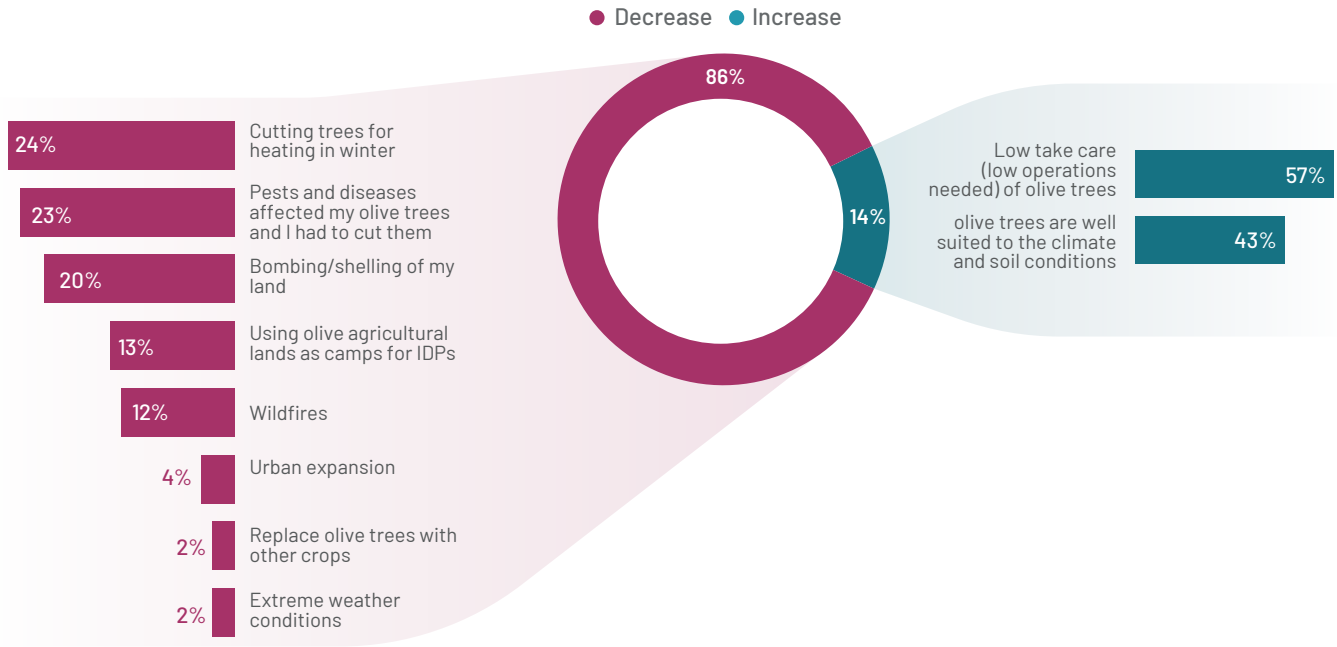


Figure 8: Impact of the Syria Crisis on the Olive Tree Population

4.2.4. Olive Production and Agricultural Practices

According to farmer reports, the average number of cultivated olive trees per dunum in Northwest Syria (NWS) is approximately 16 trees, which varies across different governorates. In Aleppo, the average is 19 olive trees per dunum, while in Al-Hasakeh and Ar-Raqqa, it is 16 olive trees per dunum. In Idleb, the average number of olive trees per dunum is slightly lower, at 13. The average total production of olives per dunum for the current season in Northwest Syria (NWS) is around 500 kilograms. Similarly varies among different governorates. In Aleppo, the average is 406 kilograms of olives per dunum. Al-Hasakeh has a higher average production of 769 kilograms per dunum, while Ar-Raqqa follows closely with an average of 715 kilograms per dunum. In Idleb, the average total production per dunum is 551 kilograms.

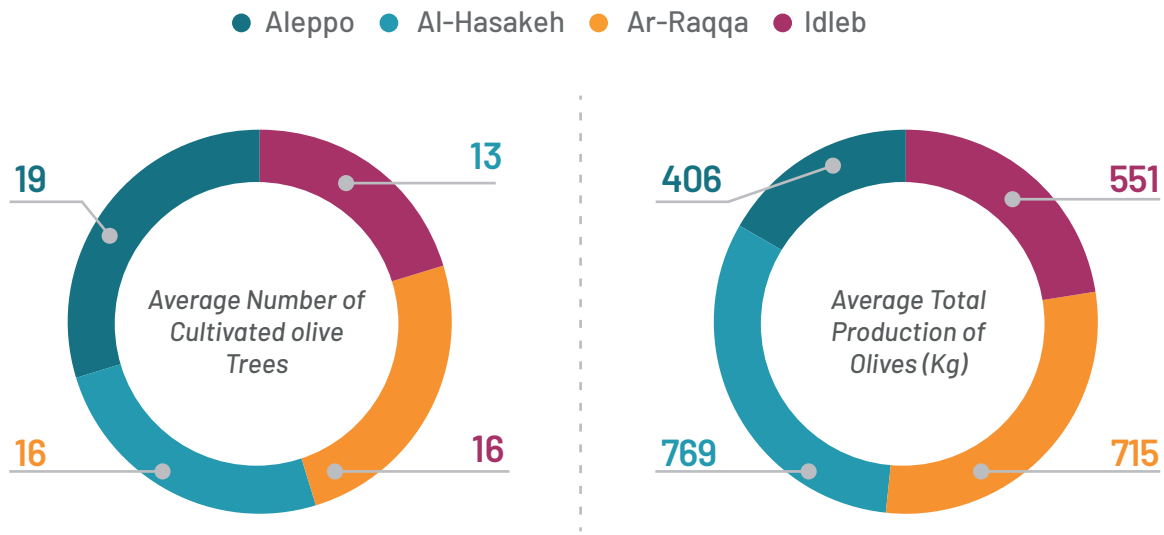


Figure 9: Average Number of Cultivated olive Trees and Average Total Production of Olives (per Dunum)

The agricultural practices employed by olive producers significantly impact the overall yield and quality of the olive crops. Modern agricultural techniques such as the utilization of mechanical machinery, pruning, pest control, and harvesting play a pivotal role in maintaining healthy orchards and achieving high productivity.

Another crucial aspect are the methods used for plowing or tilling the soil in olive fields. Most of the farmers (96%) opt for mechanical tilling, employing specialized machinery to loosen and prepare the soil. Mechanical tilling facilitates efficient soil preparation, promoting better root development and nutrient absorption, ultimately enhancing olive tree growth and productivity. While only 1% opt for animal-drawn tillage and the remaining 3% opt for both methods.

The application of fertilizers to olive trees is another crucial factor. A significant majority of farmers (68%) utilized fertilizers during the 2022/2023 season. The majority of them (55%) mentioned using CO(NH2)2, commonly known as Urea (46% Nitrogen), as a fertilizer for their olive trees. Compound fertilizer was the second most commonly used type chosen by 25% of the farmers, while 19% opted for organic fertilizer. Only one farmer mentioned using foliar fertilizers. Fertilizers provide essential nutrients to olive trees, ensuring their optimal growth, health, and fruit production. Proper fertilizer use improves the nutrient balance of the soil, resulting in increased olive yield and improved fruit quality.

Additionally, 58% of the farmers evaluate the quality of the fertilizer they use as fair. While a significant portion considered the fertilizer to be of good quality (40%). However, a small percentage of the farmers reported that the fertilizer they use is of poor quality (2%).

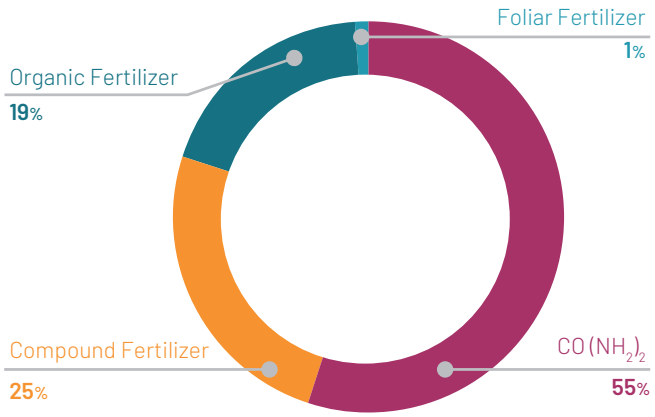


Figure 10: Types of Fertilizers

Regarding pruning, farmers varied in their approach, with 41% opting for annual pruning, 3% conducting multiple pruning cycles per year, and 56% practicing pruning once every two years. Pruning aids in maintaining the health of olive trees, encouraging better light penetration and airflow within the canopy, and stimulating the production of high-quality fruit.

A notable proportion of farmers (55%) applied pesticides (insecticide or fungicide) during the 2022/2023 season to protect their olive trees from pests and diseases. However, 45% of farmers did not report any pesticide application. Neglecting pest and disease management can significantly impact production yields and reduce farmers' income.

In terms of harvesting, all surveyed farmers employ handpicking as the preferred method. Farmers believe that handpicking ensures gentle handling of the olives, minimizing damage and preserving their quality. However, it is important to note that manual harvesting is a slow and labor-intensive technique that requires a significant amount of manpower, potentially increasing production costs.

By considering and adopting effective farming practices such as mechanical tilling, regular pruning, appropriate fertilizer application, and pest management, olive producers can improve their overall yield, enhance fruit quality, and optimize their production processes.

4.2.5. Agriculture Inputs Availability and Sourcing

Agricultural inputs and costs play a crucial role in the olive value chain, influencing the overall productivity and profitability of olive farming. Farmers invest in various inputs, including fertilizers and pesticides, to enhance the health and yield of their olive trees. The cost of agricultural inputs can vary depending on factors such as farm size, location, and the specific needs of the olive trees. Efficient management of inputs can lead to improved crop health, increased yield, and ultimately, higher profits for farmers. However, balancing the cost of inputs with the potential returns poses a challenge for farmers, especially during seasons of fluctuating market prices. Effective utilization of agricultural inputs is essential to ensure sustainable and economically viable olive farming practices.

As per table 1, the cost of fertilizer varied significatly among governorates specially among Aleppo and Idleb on one hand and Al-Hasakeh and Ar-Raqqa on the other. $CO(NH_2)_2$ prices for instance had an average of 0.9 and 1.2 USD per kg in Aleppo and Idleb governorate respectively while in Al-Hasakeh and Ar-Raqqa governorates reported average prices were significatly higher with 7 and 6.7 USD per Kg. The same trend was also observed for the coumpound fertelizers. This could be related to the lack of availability and accessibility of those fetilizers in Al-Hasakeh and Ar-Raqqa governorates.

Table 1: *Table 1 Fertilizers Price (USD per Kilogram) in NWS Governorates*

Governorates	Types of Fertilizers	Min	Avg.	Max	# of Interviewed Farmers
$CO(NH_2)_2$	Aleppo	0.5	0.9	5	**31**
	Al-Hasakeh	7	7	7	**1**
	Ar-Raqqa	6	6.7	7	**3**
	Idleb	0.5	1.2	11	**23**
Compound Fertilizer	Aleppo	0.5	0.8	1	**10**
	Al-Hasakeh	10	10	10	**3**
	Ar-Raqqa	9	9.8	10	**4**
	Idleb	0.25	0.9	3	**10**
Organic Fertilizer	Aleppo	0.02	0.8	2	**8**
	Al-Hasakeh	N/A	N/A	N/A	**0**
	Ar-Raqqa	N/A	N/A	N/A	**0**
	Idleb	0.1	0.8	5	**12**
Foliar Fertilizer	Aleppo	5	5	5	**1**
	Al-Hasakeh	N/A	N/A	N/A	**0**
	Ar-Raqqa	N/A	N/A	N/A	**0**
	Idleb	N/A	N/A	N/A	**0**

While 80% of the farmers stated availability and accessibility to fertilizers, a smaller portion of respondents mentioned accessibility challenges in Aleppo and Idleb governorates. Those who indicated difficulties in accessing fertilizers cited several contributing factors including the high prices or importing challenges.

The availability and affordability of fertilizers are critical for farmers to optimize their olive tree growth, yield, and overall productivity. Efforts to address the challenges faced by farmers in accessing fertilizers, such as exploring options for local production or facilitating cost-effective imports, can have a positive impact on the sustainability and profitability of olive cultivation.

In terms of pesticide expenses, diverse patterns emerge across different regions. Yet it is worth mentioning that interviewed farmers were asked about the total costs for pesticides usage including insecticides and fungicides. In Aleppo, the average cost is 18 USD per dunum. Similarly, in Idleb, expenses were reported with an average of 16 USD per dunum. Notably, no pesticide expenses were reported in Al-Hasakeh and Ar-Raqqa. This diversity in pesticide application and associated costs underscores the distinct agricultural practices and economic factors prevalent in each region.

The use of pesticides in olive farming is a significant aspect of ensuring crop health and yield. However, the cost variability indicates the need for farmers to carefully consider their pesticide options and find the most suitable solutions that align with their budget and environmental concerns. Additionally, it emphasizes the importance of sustainable and integrated pest management practices to minimize the environmental impact while effectively controlling pests.

4.2.6. Packaging and Preserving Olive Fruits

Olive packaging, refers to the facilities and methods used for storing olives after they have been harvested. Proper storage is important to maintain the quality and freshness of the olives until they are processed or sold.

In this study the main methods mentioned for packaging and preserving olives before pressing are: Plastic Bags (51%), regrettably, many farmers still rely on plastic bags for packaging and preserving olive fruits, despite the fact that this practice is considered detrimental.

On the other hand, 41% of farmers reported using Burlap Bags, known for their breathability, allowing air circulation, and preventing moisture buildup. This method may help maintain the quality of the olives by preserving their natural moisture and preventing spoilage. The remaining farmers rely on storing the olive fruits in an open space until the time of pressing (8%). This method suggests that the olives are left exposed to the air, possibly to allow some natural drying or ripening process before pressing. However, it is worth noting that prolonged exposure to the open air may lead to a loss of moisture and potential quality degradation.

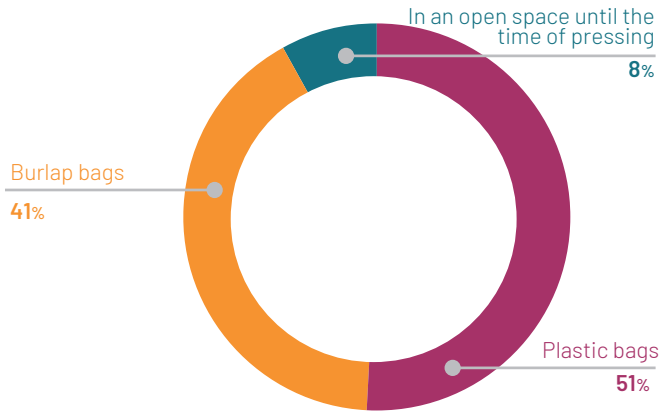


Figure 11: Methods of Packaging and Preserving Olive Fruits

Farmers have reported various practices when it comes to storing olive fruits, each with its own specifications and conditions. The majority (58%) mentioned storing the fruits in a shaded and ventilated area, indicating the importance of maintaining suitable environmental conditions. This approach ensures protection of the olives by shielding them from direct sunlight while allowing for adequate air circulation. Conversely, a smaller percentage of farmers (25%) reported storing the fruits before pressing them in open air, which could have implications for the quality of the olives as they would be exposed to sunlight and contaminants. A smaller proportion mentioned storage within room conditions (15%), which implies utilizing indoor spaces that can be regulated for temperature and potentially offer additional protection in comparison to open spaces. A minority of the farmers (2%) mentioned storing the fruits in front of the house until the harvesting process is complete (2%). Although this method may only be for short periods, it still poses a risk to the quality of the olives.

Overall, these specifications and conditions highlight the significance of providing appropriate ventilation, maintaining favorable temperatures, and considering factors such as shade and protection to ensure optimal storage conditions for the olive fruits.

4.2.7. Economic Performance

The selling prices of olives vary across different governorates. In Aleppo, the minimum selling price is 0.5 USD per kilogram, with an average of 1 USD per kilogram and a maximum of 3 USD per kilogram. Al-Hasakeh maintains a consistent selling price of 0.4 USD per kilogram. In Ar-Raqqa, the minimum selling price is 0.4 USD per kilogram, and the maximum reaches 0.8 USD per kilogram. Idleb presents a selling price range of 0.5 USD per kilogram as the minimum, and a maximum of 4 USD per kilogram.

These variations in selling prices could be attributed to factors such as the quality of the olives, market demand, and bargaining power of the farmers, emphasizing the importance of effective market strategies and efficient supply chain management in the olive industry.

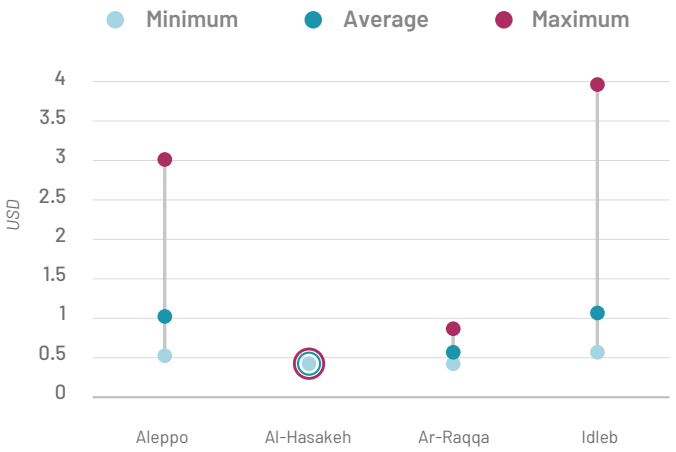


Figure 12: Selling Price for Olive (USD per Kilogram) per Governorate

It's important to highlight that the primary currency utilized by farmers for selling their products is the US Dollar (USD) (61%). A significant portion of farmers (22%) opt for the Turkish Lira, while 17% employ both currencies. This strategic approach is driven by the aim to mitigate risks associated with exchange rate fluctuations. Farmers choose to avoid using the Syrian Pound (SYP) due to its susceptibility to variations in exchange rates. Instead, they rely on USD and TL to minimize potential losses. This choice is predominantly influenced by the substantial impact of these fluctuations on the value of the Syrian Pound.

The profit margin varies across different governorates. In Aleppo, the average profit margin is 69%. Al-Hasakeh demonstrates a similar average with 68%, Ar-Raqqa follows suit with an average of 71%. Idleb, on the other hand, exhibit a higher average profit margin of 75%, which can potentially be attributed to the comparatively higher selling price of olives in this specific governorate. These variations highlight the diverse economic landscapes and conditions that olive producers operate within, influencing their potential profitability.

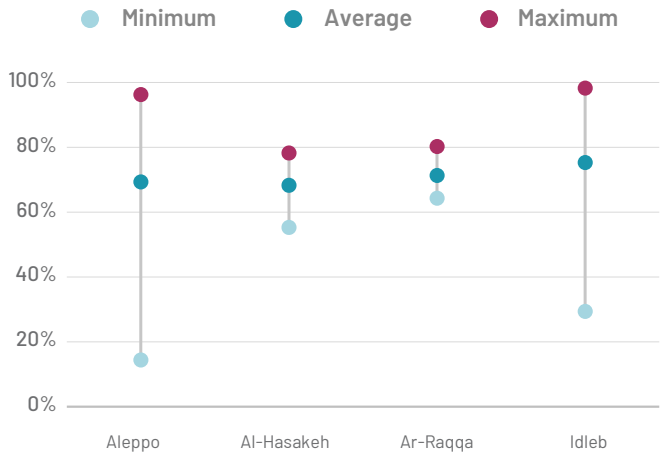


Figure 13: Farmers Profit Margins per Governorate

4.2.8. Impact of Earthquake

On 6 February 2023, a large earthquake of 7.8 magnitude struck southern Türkiye and Northern Syria, followed by hundreds of aftershocks. Thousands of lives were lost in the initial earthquake and thousands more are at risk given the destruction of infrastructure in the affected areas. [6]

Housing is the most severely affected sector (24% of total damages), followed by transport, environment (the associated cost of clearing the rubble) and agriculture. In terms of losses, the agriculture sector incurred the heaviest toll with the gap in access to food estimated at 1.3 billion USD (83% of total losses). The governorate of Aleppo suffered the greatest damages (44% of total damages, predominantly in housing then agriculture), followed by Idlib (21%). The city of Aleppo also topped the list of mostly affected cities with almost 60% of total damages, followed by Latakia (12%) and Azaz (10%).[7]

The impact of the earthquake on farmers varied, with the majority reporting no significant damage (96%) and only a small percentage reported some form of damage (4%) (7 farmers). The types of damage experienced were evenly distributed among the farmers, revealing the diverse nature of the earthquake's impact on the agricultural sector.

6 World Health Organization (WHO) Situation Overview - Earthquake Türkiye and the Syrian Arab Republic, 2023 Link

7 OCHA Syria Earthquake 2023 Rapid Damage and Needs Assessment (RDNA) Link

Among those reporting damages, approximately 60% (6 farmers) reported damage to their land, indicating potential structural or landscape changes caused by the earthquake. This phenomenon was most frequently observed in Aleppo governorate, particularly in A'zaz district, as well as Idleb governorate, specifically in Harim and Idleb districts. This type of damage could entail alterations in the topography, soil stability, or overall land quality, which may pose challenges for future cultivation and agricultural activities. While most farmers noticed weak cracks in the ground, indicating some level of structural instability, the remaining farmers reported strong cracks, suggesting more severe land damage. These cracks have the potential to affect the stability and productivity of the olive orchards, requiring additional measures for land restoration and stabilization.

Furthermore, 30% reported damage to their planted trees (3 farmers), which could affect their overall olive production. This was primarily documented in the Idleb governorate, specifically within the Harim district. In fact, the damage to the trees could result in reduced productivity, loss of harvest, and the need for extensive recovery efforts to restore or replace the affected trees. As for the severity of tree damage, most farmers reported complete tree falls, indicating significant loss and potential and long-term effects on olive production. The remaining farmers mentioned severe breakage of tree branches, which also implies substantial damage and a considerable setback for the affected farmers.

Only one farmer reported equipment damage, similarly within the Idleb governorate, specifically in the Harim district, indicating that their harvesting operations faced disruptions as the equipment suffered partial damage, making it unusable.

According to the farmers' estimates, the total cost of losses resulting from the earthquake ranged from 80 USD to 3000 USD, with an average of 1,454 USD per farmer. These cost estimates encompass the expenses associated with repairing or replacing damaged equipment, undertaking restoration efforts, and addressing the impacts on trees and land damage.

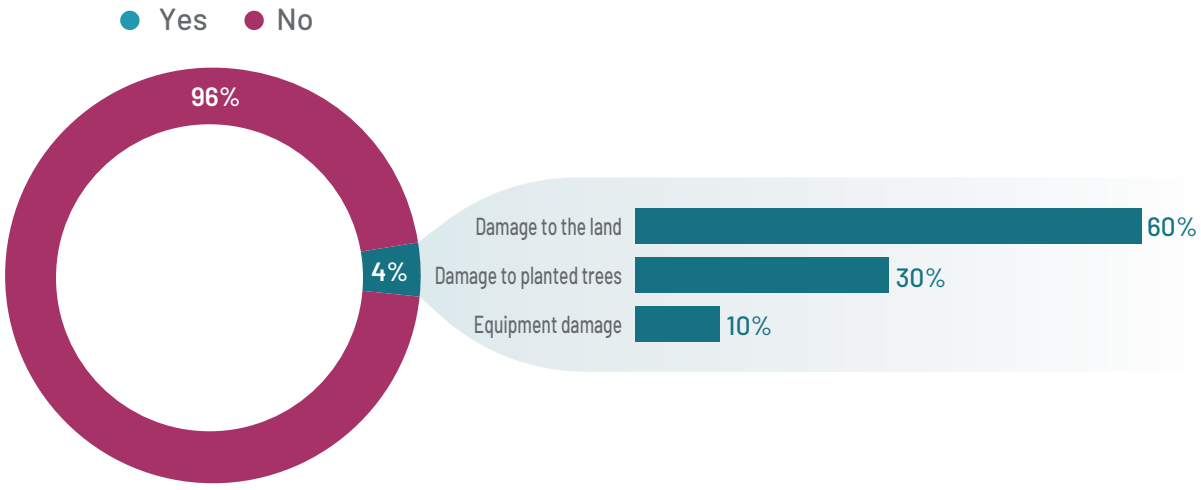


Figure 14: Types of Damage Inflicted by the Earthquake on Olive Farmers

4.3. Olive Sharecroppers

Within the olive value chain, sharecroppers are widely available and are responsible for cultivation of olive trees in a piece of land owned by someone else, known as the landowner. The sharecropper and the landowner enter into an agreement, where the sharecropper provides the labor and agricultural expertise to grow olives on the land, and in return, they receive a share of the harvest or the profit. The sharecropper does not own the land but operates it as if it were their own, bearing the cost of inputs, such as seeds, fertilizers, and pesticides. The arrangement allows landowners to utilize their land efficiently while providing opportunities for sharecroppers to engage in agricultural activities without owning the land outright.

The distribution of olive sharecroppers across different governorates in the NWS region is as follows: Idleb has the highest representation with 48% of olive sharecroppers (n=38), Aleppo has 44% of olive sharecroppers (n=34), Ar-Raqqa has 5% (n=4), and Al-Hasakeh has 3% (n=2). This data reveals that Idleb has the largest percentage of olive sharecroppers among the governorates, indicating that sharecropping arrangements are more prevalent in this region compared to others. Understanding the regional distribution of olive sharecroppers is essential for recognizing the various patterns of land cultivation and agricultural practices in each area. It provides valuable insights into the socio-economic dynamics and land tenure systems related to olive farming, enabling policymakers and stakeholders to devise targeted strategies to support and improve the livelihoods of sharecroppers in different regions.

Similar to farming activities, the gender distribution of sharecroppers in the community indicates that 100% of the sharecroppers are males. This data highlights a gender disparity in the practice of sharecropping, with men being the sole participants in this agricultural arrangement. Understanding such gender imbalances is crucial for identifying potential challenges or opportunities that women might face in accessing land and participating in agricultural activities as sharecroppers. Promoting gender equality and women's empowerment in agriculture can lead to more inclusive and sustainable development in the community. Policymakers and stakeholders can use this information to implement targeted interventions that promote women's participation in agricultural activities and ensure equitable access to resources and opportunities in the sector.

4.3.1. Business Stability and Challenges

In Northwest Syria (NWS), the sharecroppers surveyed have varied starting dates for their sharecropping activities, dating back to the 1980s, while others have more recent initiatives of sharecropping in 2023. These sharecroppers' decision to engage in sharecropping might have been influenced by factors such as available opportunities, land availability, and their expertise in olive farming. Despite the differences in their starting dates, these sharecroppers play a crucial role in the olive value chain, contributing to olive production and making valuable contributions to the overall olive industry in their region.

Most of sharecroppers surveyed, accounting for 74% of respondents, have not had to stop their business for more than one season in the past three years. This indicates that a significant portion of sharecroppers have maintained continuity in their olive farming activities, likely contributing to consistent olive production and supply within the region. On the other hand, 26% of sharecroppers reported experiencing interruptions in their business operations for more than one season during the same period.

The decision to stop their business for more than one season among the sharecroppers was primarily influenced by three key factors. The largest contributing factor, affecting 46% of the sharecroppers, was displacement. This indicates that a significant number of respondents had to halt their olive farming activities due to forced displacement, likely resulting from the ongoing conflict or other social and political instabilities in the region.

The second major factor, affecting 42% of sharecropper, was a lack of capital. This highlights the financial challenges faced by a considerable portion of sharecroppers, which hindered their ability to sustain their business operations over consecutive seasons.

An additional 8% of sharecropper cited damage or destruction of land or facilities as the reason for stopping their business. This indicates the adverse impact of physical damages caused by various factors, such as natural disasters or conflict-related incidents, on the ability to continue olive farming.

Lastly, 4% of sharecroppers mentioned a lack of demand from clients as the reason for stopping their business. This suggests that some sharecroppers faced difficulties in finding buyers for their olive produce, potentially due to changes in market dynamics or other economic factors.

Overall, the survey data reveals the complex challenges faced by sharecroppers in the region, ranging from social and political issues to financial constraints and market dynamics, all of which have contributed to the temporary suspension of their olive farming activities.

4.3.2. Price Mechanisms in Olive Sharecropping

The agreed price mechanism with the landowner in the olive value chain varied across the interviewed sharecroppers. A significant percentage of agreements (49%) are based on the quantity of olives harvested, calculated per kilogram. This means that the sharecropper receives payment based on the weight of the olives produced during the season. This was followed by determining the price mechanism by the number of olive trees cultivated on the land (36%), or per dunum of land (15%). The choice of price mechanism may depend on various factors, such as the size of the land, the productivity of the olive trees, and the preferences of both the sharecropper and the landowner.

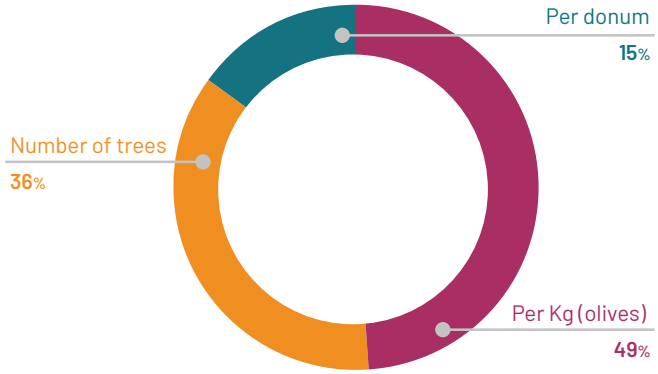


Figure 15: Pricing Modalities of Olive Sharecroppers

4.3.3. Economic Performances

The costs spent by sharecropper on various aspects related to olive production during the last season (2022/2023) varied in US dollars. The expenses were distributed across a range of values, with the lowest being 50 USD, while the highest reached 30,000 USD, which were reported mainly in Aleppo. These costs encompassed expenditures on essential components such as manpower, tools, loading, packaging, transportation, and other necessary resources required throughout the olive cultivation process. The diverse range of expenses reflects the varying needs and practices of sharecropper in managing their olive farms efficiently and ensuring a successful and fruitful harvest.

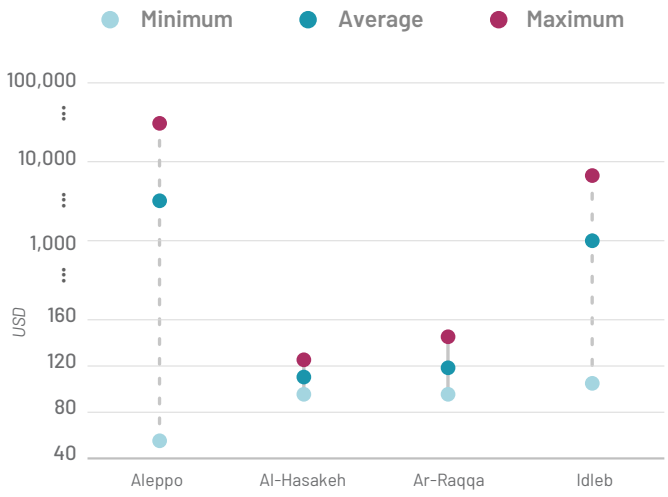


Figure 16: Sharecropping Costs per Governorate

The average payment rate for a sharecropper varies depending on the unit of measurement. The average payment rate is 15 USD per tree, or 0.5 USD per kilogram of olives. Sharecroppers in the olive value chain may negotiate different rates and payments modalities based on their agreements with landowners and the specific terms of their contracts. These varying charges reflect the flexibility and diversity in the arrangements between sharecroppers and landowners in the context of olive cultivation.

Sharecroppers profit margins varied from a minimum of 14% as in Aleppo, and reached a maximum of 97%, reported in both Aleppo and Idleb. It is noteworthy that Al-Hasakeh and Ar-Raqqa governorates recorded high profit margins, a phenomenon that can be attributed to the relatively lower costs incurred by sharecroppers in these mentioned governorates.

These figures depict the diversity in the financial outcomes of sharecroppers based on their specific agreements with landowners and the overall performance of their olive farming endeavors.

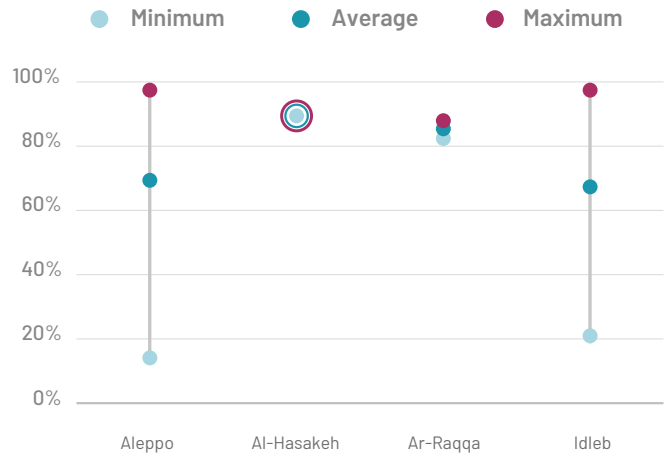


Figure 17: Sharecroppers Profit Margins per Governorate

4.4. Olive Processors

In the olive value chain, a processor is a key actor responsible for handling and transforming olives into various olive products, such as olive oil, olive pickles, and other processed olive goods. Processors play a crucial role in the value chain by using different techniques and technologies to extract oil from olives, preserve them, and produce value-added products. They may own processing facilities, such as olive oil mills or pickling factories, where they receive raw olives from farmers and then process, package, and distribute the final products to retailers, wholesalers, or consumers. Processors often ensure that the olive products meet quality and safety standards before they are released into the market.

Their activities contribute significantly to the overall olive industry, providing consumers with a wide range of olive products derived from the harvested olives.

The data shows the distribution of olive processors across different governorates in the community. Aleppo has the highest percentage of olive processors, accounting for 47% of the total processors in the community. Idleb follows closely with 45% of the olive processors. On the other hand, Ar-Raqqa and Al-Hasakeh have a smaller presence in olive processing, with 5% and 3% of the processors, respectively. Understanding the distribution of olive processors among the governorates can help in identifying regional differences in olive processing capacity and potential opportunities for collaboration and development in the olive industry. This information can be valuable for policymakers, agricultural authorities, and olive industry stakeholders to address challenges and promote the growth and sustainability of olive processing in the community.

The data indicates that the majority of olive processors in the community are males, accounting for 99% of the total processors. On the other hand, female processors represent only 1% of the total. This gender disparity in olive processing reflects a common trend in many agricultural communities, where certain tasks or industries are traditionally dominated by one gender. Encouraging more gender diversity in olive processing could have potential benefits, such as promoting equal opportunities for women in the agricultural sector and leveraging a broader range of skills and perspectives. Creating an inclusive and supportive environment for female processors could lead to enhanced productivity and innovation within the olive processing sector.

In regard to the service type, 85% of processors primarily provide or work with olive oil. However, 15% of processors are involved in other aspects of the value chain. These activities include the production of olive pickles, the production of soap using olive-related materials, as well as the sale of various olive products, such as olives, olive oil, pickles, soap, and leftover olive grinding products. These diverse roles and services contribute to the overall value chain, ensuring a variety of olive products are available to consumers and supporting the olive industry's growth and sustainability.

4.4.1. Business Stability and Challenges

The processors who participated in the survey have a wide range of business establishment dates, reflecting their diverse histories in the olive value chain. Some of the earliest processors started their business as far back as 1956, indicating their long-standing presence in the industry. As the data shows, a significant number of processors established their businesses during the late 1970s and 1980s, pointing to a period of growth and development for olive processing activities in the region. Throughout the following decades, more processors joined the market, with some establishing their businesses during the 1990s, 2000s, and up to the present time in the 2020s. This diversity in establishment dates highlights the continuous evolution and adaptability of olive processors in response to various challenges and opportunities.

Most of processors, comprising 79% of the respondents, have not faced the need to stop their businesses for more than one season in the past three years. This indicates a relatively stable operational environment for most processors in the olive value chain. However, it is worth noting that a notable 21% of processors did experience business stoppages during this period, reflecting the potential challenges and disruptions that some processors may have encountered. Nonetheless, the majority of processors have managed to maintain continuous operations, contributing to the overall resilience of the olive processing sector in the region.

When processors had to stop their businesses, various factors contributed to these disruptions. The most prevalent reason, accounting for 33% of the cases, was displacement, which could be a result of conflicts or other security-related issues in the region. Additionally, 25% of processors reported that the damage or destruction of assets played a significant role in halting their operations, possibly due to natural disasters, or armed conflicts. Damage or destruction of land or facilities was also cited as a reason in 15% of the cases, highlighting the vulnerability of the physical infrastructure required for olive processing.

Moreover, 9% of the processors experienced a stoppage due to a lack of demand from clients, suggesting that changes in consumer preferences or market dynamics influenced their business continuity. Financial constraints were also a factor for some, with 6% attributing their business stoppage to a lack of capital. Similarly, 6% faced challenges with the availability of inputs and raw materials, impacting their production processes. Lastly, another 6% reported a stoppage due to a lack of energy sources, including fuel or electricity, which might have hindered their operational capacities.

Overall, these findings highlight the various challenges and vulnerabilities that processors in the olive value chain may encounter, impacting the continuity of their businesses. Addressing these issues can contribute to enhancing the resilience and sustainability of the olive processing sector in the region.

4.4.2. Processors Cooperatives

Processors cooperatives, also known as processing industry associations, are formed by processors coming together to address common issues and challenges they face in the processing industry.

In Northwest Syria (NWS), only 4 processors stated that Idleb governorate has processors cooperatives in Ariha, Idleb, and Jisr-Ash-Shugur districts. However, no processors' cooperatives have been reported in Aleppo, Al-Hasakeh, or Ar-Raqqa.

Processors' cooperatives are essential organizations that represent the interests of businesses involved in the processing of agricultural products. The presence of processors' cooperatives can foster collaboration and knowledge-sharing among processors, contributing to a more robust and competitive processing industry in the region.

Processors cooperatives in Idleb play a vital role in the community, with coordination being the primary function. Through effective coordination, these cooperatives bring together processors and facilitate communication and cooperation among them. This fosters a conducive environment for sharing knowledge, best practices, and industry-related information. Additionally, the cooperatives act as a medium effect for processors, indicating that they have a significant impact on the processors' activities and decision-making processes. They can advocate for favorable policies, address challenges faced by the processors, and represent their collective interests to relevant authorities. However, one processor stated that the processors' cooperatives do not play any role, which suggests that there might be room for improvement in the effectiveness and visibility of these cooperatives.

Overall, a well-functioning processors' cooperative can contribute to the growth and sustainability of the processing sector, enhancing its competitiveness and resilience in the face of various challenges.

4.4.3. Olive Press

The olive press, also known as an olive oil mill or olive oil press, is a facility or machine used to extract oil from olives. It is a crucial component of the olive oil production process. The olive press typically involves a series of mechanical steps that crush and press the olives to separate the oil from the solid components, such as the pulp and pits. Olive presses can vary in size and complexity, ranging from small-scale traditional presses to large-scale modern presses facilities, depending on the volume of olives being processed.

In this study, 92% of the processors indicated that the olive press facility they are associated with is a modern press, followed by a smaller percentage associated with mixed press (6%) and traditional press (2%).

According to the survey results, 56% of respondents stated that their olive press requires maintenance or rehabilitation, while 44% reported that it does not. In situations where there is a need to repair or fix machines in the olive press, 57% of the processors stated that they have to contract external technicians to carry out the required repairs, whereas the remaining 43% reported having a staff member who can handle such repairs. Despite having the option to rely on external technicians or internal skilled personnel for repairs, processors still encountered several challenges related to equipment maintenance.

The main challenge reported regarding maintenance was the high prices of materials and parts (26%), high maintenance wages (labor)(19%), unavailability of materials and parts (17%), increase in the exchange rate of the SYP compared to the USD (13%), lack of technicians in the area (13%), and borders and road closures (12%).

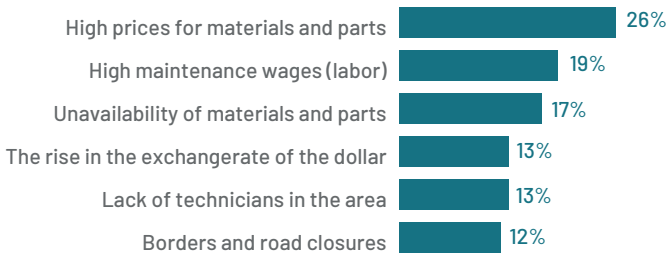


Figure 18: Processors Maintenance Challenges

4.4.4. Types of Olive Oil

After the olive oil is processed in the oil press, it becomes critical to conduct a thorough quality check to classify oil as Extra Virgin Olive Oil, Virgin Olive Oil or Olive Oil. However, despite the importance of this step, 16 processors (26%) reported that they do not perform any quality tests. This finding raises concerns about the potential implications for the overall quality and consistency of the olive oil produced by those who overlook this crucial quality control process.

Among those conducting quality checks, the majority conduct these checks directly at the press, with a cost ranging from 5 USD to 20 USD. For those conducting quality tests in a quality control lab, the reported cost ranges from 5 to 10 USD.

On the other hand, the processors that reported not performing any quality tests attributed this to several factors such as the lack of available labs or devices (63%), the reliance on buyers to handle the testing (31%), and the high cost of quality tests (6%).

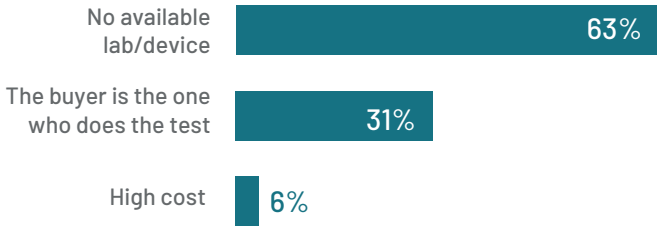


Figure 19: Quality Checks Challenges

The collected data showed that 33% of produced olive oil was classified as Extra Virgin Olive Oil whereas 37% was Virgin Olive Oil and 30% as low-quality Olive Oil. The selling prices of different types of oil varied based on their quality. For Extra Virgin Olive Oil, the prices range from a minimum of 2 USD per liter to a maximum of 3 USD per liter. Virgin Olive Oil, another high-quality option, shares similar price ranges, with a minimum of 2 USD per liter, and a maximum of 3.5 USD per liter. As for Olive Oil, the prices start at 1 USD per liter, and go up to 3.75 USD per liter at maximum. It's notable that the higher prices are typically associated with extra virgin olive oil, yet the collected data suggest that prices of olive oils in NWS might not be influenced by the oil quality but rather by the local demand.

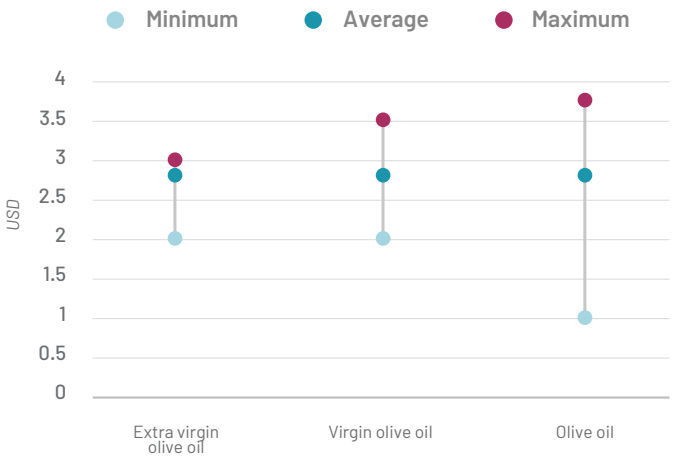


Figure 20: Olive Oil Selling Prices (USD per Liter)

4.4.5. Olive Oil By-products

The survey results revealed an array of practices surrounding the utilization of olive grinding leftovers highlighting the resourcefulness and adaptability of processors to maximize the value and utility of those by-products.

One common practice observed was selling the leftover olive grinding for heating purposes (79%). The remnants were valued as a valuable fuel source, finding use in heating applications within the local community. This utilization not only provided an alternative energy resource but also contributed to sustainability by minimizing waste and maximizing the value derived from the grinding.

Another prevalent was the exchange of leftover olive grinding for the cost of pressing olives (14%). This created a bartering system within the value chain, where the remnants served as a form of payment for the pressing services provided. It was a mutually beneficial arrangement, allowing stakeholders to efficiently manage costs while effectively utilizing the by-products.

Additionally, a smaller percentage reported selling the leftover grinding to extract terminal oil (4%). This highlighted a secondary commercial use for the by-product, where specialized processes were employed to extract further value from the remnants. It showcased resource optimization within the value chain, as stakeholders sought opportunities to derive additional economic benefits from the by-products.

Finally, and in a unique application, few stakeholders mentioned using the leftover grinding specifically for soap making (3%).

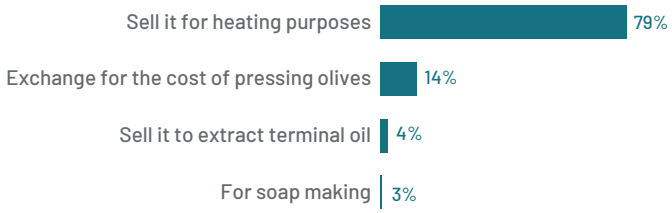


Figure 21: Olive Grinding By-Products

4.4.6. Economic Performances

Among the processors involved in the olive value chain, a significant majority (94%) stated that their primary service or product is olive processing. Olive processing entails various activities, including pressing olives to extract oil and transforming them into market-ready products.

On the other hand, the remaining 6% of processors reported that their role in the value chain revolves around purchasing olives from farmers or traders. These stakeholders act as intermediaries, facilitating the procurement of olives from the primary producers and supplying them to the processing facilities.

These distinct roles within the olive value chain highlight the interdependence and collaboration between different stakeholders. The processing sector relies on the consistent supply of quality olives, while the purchasers ensure the availability of raw materials by sourcing them directly from farmers or traders. This synergy between the processing and purchasing stakeholders enables the efficient functioning of the value chain and the production of olive oil that meets market demands.

Different payment methods for olive processing services were reported. The most common method is receiving payment in the form of olive oil (53%) or the byproducts of the olive press (29%). This alternative allows individuals or businesses to directly benefit from the final products or byproducts generated during the processing process. Another option is cash payments based on the weight of olives pressed (11%) or the volume of oil produced (7%), providing immediate financial compensation to the processing stakeholders. The choice of payment method may vary depending on several factors, including individual preferences or business agreements.

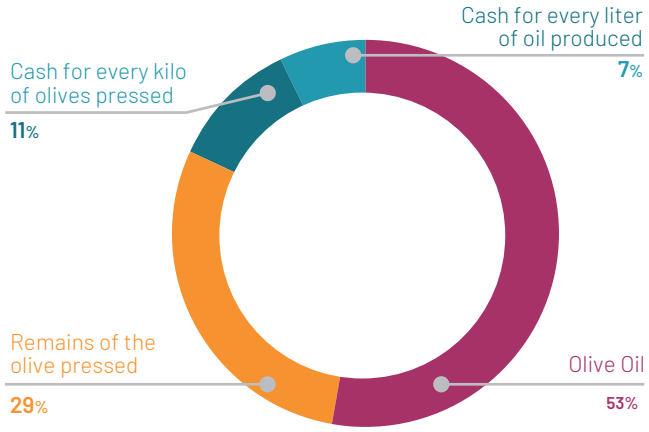


Figure 22: Processors Payment Modalities

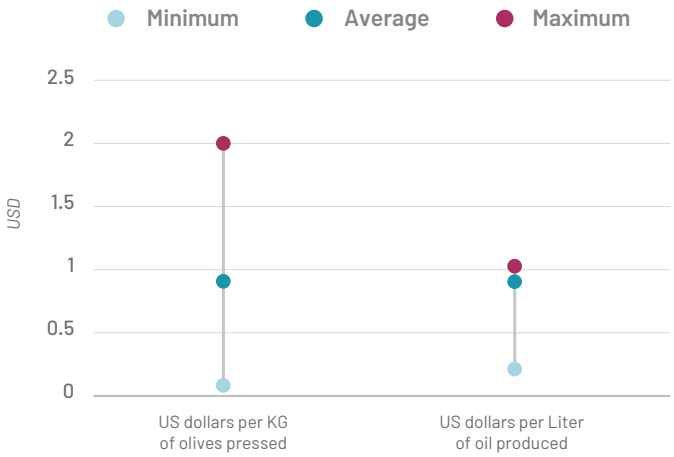


Figure 23: Processors Payments Rates

The total volume of olives used in the production of olive oil in the 2022/2023 season varied among processors and ranges between 7,000 to 500,000 kilograms. The diversity in the volume of olives utilized highlights the variations in olive oil production scale and demand among different actors in the olive value chain.

It is worth noting that the total cost of one kilogram of olives purchased to produce olive oil in the 2022/2023 season varied among processors. The minimum reported cost was 0.01 USD per kilogram, and the maximum cost was 1 USD per kilogram, as observed in Idleb. This variation in costs may be influenced by factors such as the quality of olives, the region of production, and the volume of olives purchased. It also reflects the different strategies and practices employed by various actors in the olive value chain in obtaining their raw materials for olive oil production.

The amount paid to processors per kilogram of olives pressed varied in the olive value chain. The minimum payment reported was 0.07 USD per kilogram, and the maximum payment was 2 USD per kilogram. Similarly, the payment per liter of olive oil produced also showed variability. The minimum reported payment was 0.2 USD per liter, the average payment was 0.9 USD per liter, and the maximum payment was 1 USD per liter. These payment rates depend on various factors, including the quality of olives or olive oil, the type of product produced, the region, and the agreements between different actors along the value chain. The range in payment rates highlights the diversity of the olive value chain and the various economic arrangements that exist within it.

The proportion of oil quantity provided to processors as a form of payment varies among different processors in the olive value chain. The lowest percentage recorded is 0.07%, while the highest reported was 10%. This variability in charging percentages can be attributed to factors such as business size, market dynamics, and negotiation strategies employed by different actors.

4.4.7. Impact of Earthquake

In Northwest Syria (NWS), only 33% of processors reported experiencing some form of damage following the earthquake. Among those who encountered damage, 79% stated that their building suffered partial damage (n=19), while 17% mentioned partial damage to their machinery (n=4), and only one processor reported complete destruction of his processing facility (4%); a circumstance that will likely present challenges for him in the upcoming 2023/2024 season.

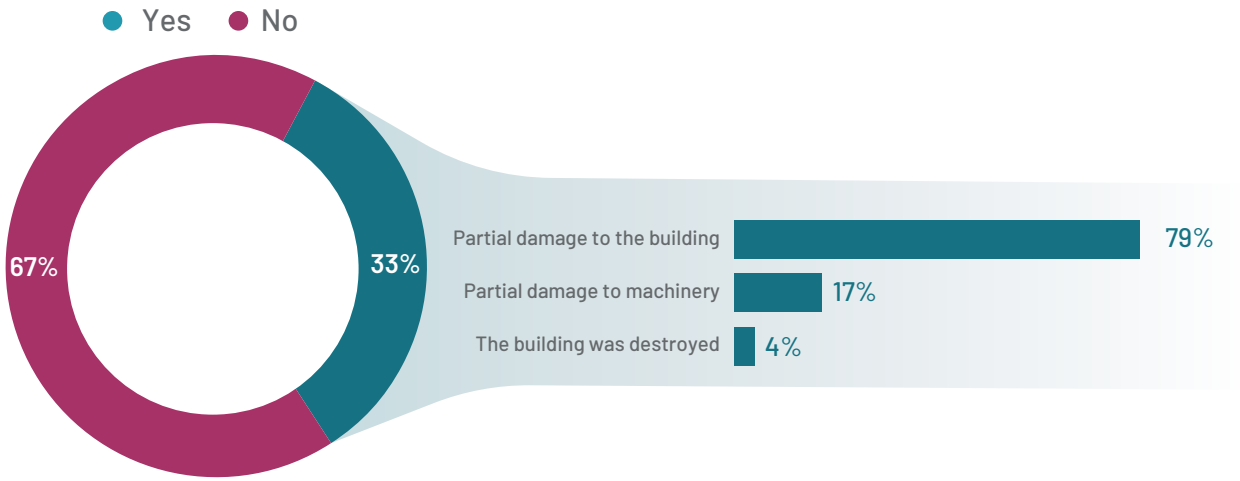


Figure 24: Types of Damage Inflicted by the Earthquake on Olive Processors

The estimated total cost of losses resulting from the reported damage varied among processors, with estimates ranging from 25 USD to 17,000 USD per processor. These cost estimates encompass the expenses associated with repairs, replacement of damaged equipment, and restoration of processing facilities.

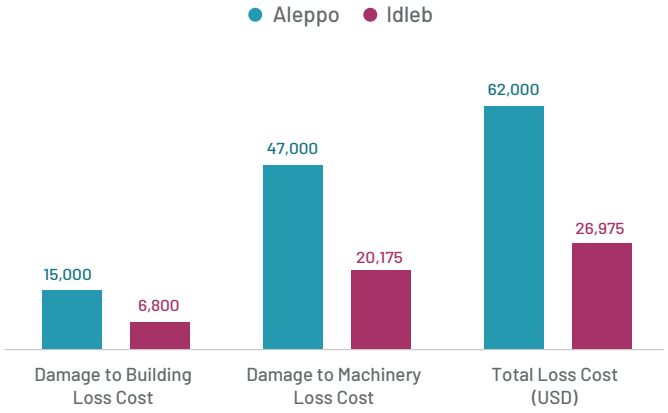


Figure 25: Total Loss Cost Caused by the Earthquake per Governorate

4.5. Olive Traders

The olive traders in the community are individuals or businesses engaged in buying and selling olives and olive products. Based on the available data, the distribution of olive traders across the different governorates is as follows: Idleb appears to have the highest concentration of olive traders, representing 49% of the total traders in the community. Meanwhile, Aleppo has 43% of the traders, while Ar-Raqqa 5% and Al-Hasakeh 3%.

Based on the available data, all olive traders in the community are males, representing 100% of the traders. There are no female olive traders reported in the surveyed population. This gender distribution suggests that olive trading in the community is predominantly carried out by men]. The lack of female representation in the trading sector could be influenced by various social, cultural, or economic factors that may impact women's participation in certain economic activities. Efforts to promote gender inclusivity and women's empowerment in the olive trade and other sectors can contribute to more diverse and equitable economic opportunities in the community.

In Northwest Syria (NWS), the trading landscape for olive products is divided between retailers and wholesalers. Among the olive traders surveyed, 56% identified themselves as retailers, while the remaining 44% were wholesalers. Retailers in the region are businesses or individuals that directly interact with consumers, offering a wide range of olive products such as olives, olive oil, pickles, and soap. They play a vital role in catering to the local community's olive product demands and ensuring that consumers have access to high-quality and diverse olive goods.

On the other hand, wholesalers in the area act as intermediaries, connecting olive producers with retailers and other large-scale buyers. They purchase olive products in bulk from farmers, processors, or other producers and then distribute these products to various retailers and businesses. By efficiently managing the distribution process, wholesalers contribute to the seamless flow of olive products across the market and help producers reach a wider customer base without the burden of individual retail negotiations.

4.5.1. Business Stability and Challenges

In NWS, traders involved in the olive value chain have a wide range of business ages, starting as early as 1980s and 1990s, whereas others had more recent starting dates. The timeline reveals a diverse range of starting dates, highlighting the long-standing history of olive trading in the region.

Most of the traders in the olive value chain, comprising 84%, have not experienced the need to stop their businesses for more than one season in the past three years. This indicates the relative stability and continuity of their trading activities despite potential challenges and fluctuations in the market. On the other hand, a smaller portion of traders, accounting for 16%, reported having to halt their businesses for more than one season during the same period. Nonetheless, the majority of traders have managed to sustain their businesses, showcasing the resilience and adaptability of this crucial component of the olive industry.

When traders were asked why they had to stop their businesses, two primary reasons emerged as the leading factors. The first major challenge was displacement, which affected 46% of traders, likely due to the instability and conflicts in the region. The second major reason, also affecting 46% of traders, was the lack of capital, indicating financial constraints that hindered their operations. These two factors, displacement, and lack of capital played significant roles in disrupting the trading activities of a considerable portion of traders in the olive value chain. Additionally, a smaller percentage of traders, 8%, mentioned that the lack of supply in inputs and raw materials contributed to their business stoppage, which highlights the interconnectedness of various elements within the olive industry. Overall, these findings shed light on the challenges faced by traders and emphasize the importance of addressing these issues to ensure a stable and thriving olive market.

4.5.2. Traders Cooperatives

Trader cooperatives, also known as merchant associations, are organizations formed by traders and merchants within a specific industry or market to represent their collective interests and address common issues.

In Northwest Syria (NWS) and based on the provided data, the number of traders cooperatives varied in the surveyed governorates. In Aleppo, only 11% (n=4) of traders indicate the presence of traders cooperatives in Afrin district. On the other hand, Idleb demonstrates a higher prevalence of traders cooperatives, with 18% (n=7) of traders affirming their existence, the highest number of such cooperatives were reported in Idleb district.

However, there are no traders' cooperatives reported in Al-Hasakeh and Ar-Raqqa, which is most likely also attributed to their relatively smaller presence and weaker association within the NWS region. These traders' cooperatives likely play a significant role in representing the interests of traders within their respective regions and may contribute to coordinating activities and advocating for favorable trading conditions in the market.

The traders' cooperatives have diverse roles and functions. The majority, 40% of traders, indicate that these cooperatives primarily provide guidance and directions to traders, helping them navigate through market challenges and make informed decisions. Additionally, 20% of traders highlight the cooperatives' role in organizing and coordinating trading activities, fostering a more efficient and collaborative business environment. Another 20% of traders believe that the traders' cooperatives are actively involved in various aspects of trade, including transportation, freight import, and export, with merchants taking charge of these operations. However, there is a segment, comprising 20% of traders, who perceive that the traders' cooperatives do not play a significant role in the community. Despite this, the existing traders' cooperatives likely contribute to fostering better trade practices, providing support and representation to traders, and collectively addressing issues affecting the trading community.

4.5.3. Products Type and Trading

Traders are involved in selling and buying various types of products. The majority of traders (75%) reported selling or buying olive oil, indicating its significant presence in the market. Additionally, olives themselves are another prominent product, with 28% of traders involved in selling or buying them. Olive pickles, a popular culinary item, were reported by 13%, suggesting a niche market for this product. Furthermore, only 9% of traders mentioned selling or buying soap, potentially made from olive oil or other olive-related ingredients. The diversity of products in the olive value chain reflects the range of consumer demands and market opportunities within the sector.

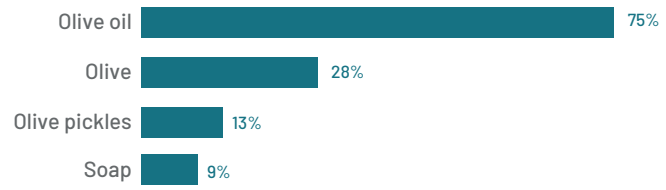


Figure 26: Traded Products in NWS

Furthermore, the survey indicates that 75% of traders in the olive value chain trade in oil by category, while 25% do not. Among those who engage in categorized trading, three types stand out as the most traded. Virgin olive oil leads the way with 39%, followed closely by olive oil at 32%, and extra virgin olive oil at 29%. These findings highlight the significance of these specific olive oil types in the market and emphasize their prominence in the trading activities within the olive value chain.

4.5.4. Suppliers for Olive Products

The suppliers within the olive value chain vary depending on the specific product category, with different stakeholders playing key roles. The survey results provided valuable insights into the main suppliers for each product category, highlighting the following patterns:

For olives, 50% of traders identified local farmers in Northwest Syria (NWS) as the primary suppliers, demonstrating significant dependence on them to meet the demand for olives. This was followed by 34% of the traders that reported engaging in trade with olive farmers in Northeast Syria (NES), suggesting a reliance on olive farmers in Northeast Syria (NES) as well. The data indicates a notable reliance on local farmers within both NWS and NES regions to fulfill the olive demand. In contrast, fewer traders mentioned depending on other traders within the same regions for olive supply.

This implies that the majority of traders prefer direct transactions with farmers, resulting in fewer trade cycles for olives among the traders themselves.

Similar to olives, most olive oil traders (68%) identified local olive farmers in Northwest Syria (NWS) as their main suppliers. The second main source of supply of olive oil for traders in Northeast Syria (NWS) (22%) is from other local traders within the region. A smaller percentage of traders reported engaging with suppliers (traders or farmers) in Northeast Syria (NES), highlighting the existence of a cross-regional supply chain. This suggests that the olive oil trade involves a larger number of traders who engage in cross-trade cycles with each other, in contrast to olives, which heavily relies on direct transactions with farmers.

Similar to olives, traders predominantly rely on farmers for the supply of olive pickles. Local farmers in Northwest Syria (NWS) played a significant role as suppliers of olive pickles, as reported by 73% of traders. This was followed by 18% of traders that mentioned relying on local traders in NWS as their suppliers. This indicates the potential involvement of other stakeholders in the supply chain for olive pickles. On the other hand, there were fewer traders (a smaller percentage) involved in the trade of olive pickles with the NES region, indicating that the olive pickles market primarily depends on actors within NWS.

The main suppliers for soap were local traders in Northwest Syria (NWS), as reported by 43% of traders. Additionally, 29% of traders relied on local olive farmers in NWS to supply soap. Interestingly, soap was the only product within the olive value chain for which traders (14%) reported importing from other countries. This highlights the involvement of both local and external sources in supplying soap within the value chain, indicating a higher reliance on cross-trade cycles for this product.

The results did not indicate any specific suppliers outside of Syria for any product category, except for soap, implying a stronger reliance on local sources. This reflects the importance of establishing relationships with primary producers (farmers) and intermediaries (traders) to ensure a consistent supply of olives for various operations within the olive value chain.

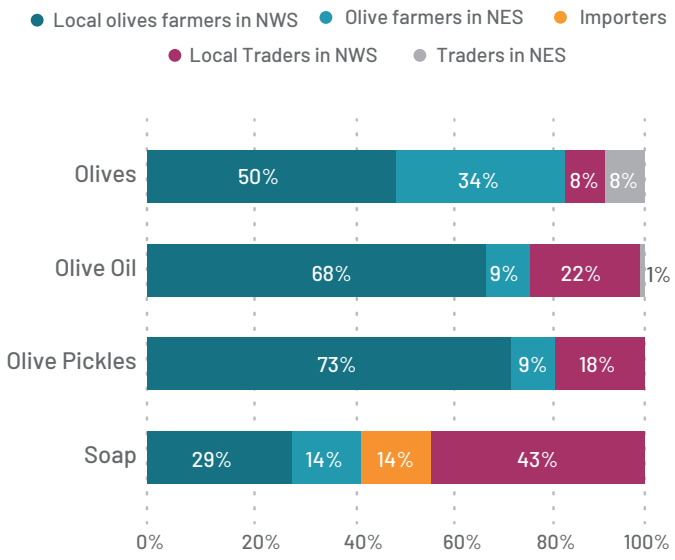


Figure 27: *Main Suppliers of Olive Products*

4.5.5. Customers for Olive Products

The main customers in the olive value chain reveal some interesting trends shedding light on the dynamics of the market. The study findings provided valuable insights into the following key observations:

In general, local households in NWS constitute the primary consumers of the various types of olives and their by-products, accounting for the majority (47%) of the market. Following closely are local traders (23%), and households in NES and GOS (9%). A smaller proportion of traders reported exporters (8%) as their customers, traders in NES and GOS (8%), and local olive processors in NWS (5%). It can be noted that the customer base of these different products is wide, as it includes cross-region and cross-country trade.

However, it is important to note that soap is considered an exception, being exclusively sold to customers within the NWS region and the only product that was reported to be imported by traders. This could indicate that soap lacks a local production base and has high demand, which restricts its availability in larger quantities, hence limiting the ability to sell it externally.

In contrast, the remaining products indicate having higher production capacities, enabling producers and traders to engage in exports across a broader regional customer base. Importantly, there are also customers located outside of Syria, representing customer base for olives (Lebanon), and for olive oil (Turkey). These finding are consistent with those of the WITS in 2019[8].

To capitalize on these opportunities, traders in the olive value chain should prioritize the improvement of product quality, packaging, and international relations. Simple as it seems this could be very challenging within the NWS context yet with the support of development actors, the international market could be an important source of income for NWS.

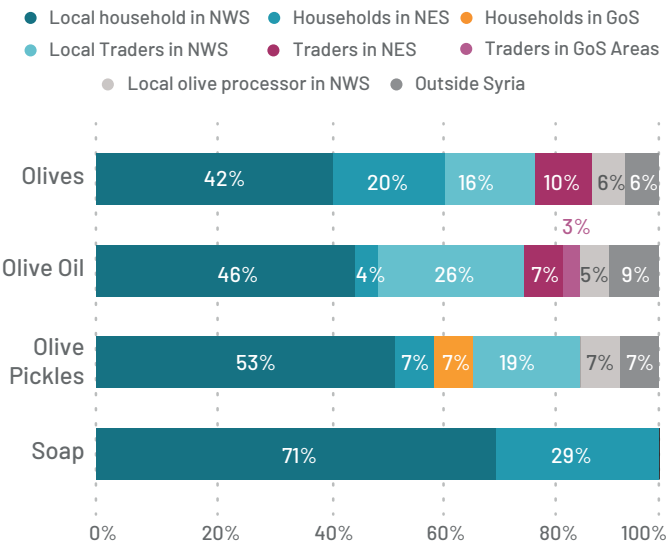


Figure 28: *Main Customers for Olive Products*

4.5.6. Contracts and Terms

In this study most of the traders reported not having any contracts with their suppliers nor customers, indicating a lack of formalized agreements in their business relationships. However, a small percentage indicated having contracts with their suppliers (8%). The type of contracts mentioned were sales and purchase invoices, suggesting basic documentation of the transaction. The terms of these contracts typically include an invoice that specifies the agreed weight, quality, and price of the olive products being exchanged. As for the period of the contracts, it was stated to be an indefinite period, indicating that there is no specific duration or fixed timeline outlined in these contractual arrangements. The absence of contracts among most respondents suggests a more informal and perhaps traditional approach to conducting business in the olive industry, with transactions based on mutual understanding and basic invoicing documentation.

8 World Integrated Trade Solution_Imports from Syrian Arab Republic in 2019. Link

4.5.7. Availability of Olive Products in the Market

The availability of various olive products in the market has been assessed over two consecutive seasons, 2021/2022 and 2022/2023. In the 2021/2022 season, olives products were reported as sometimes available by 86% of traders, while 9% reported them as always available, and 5% said they were never available, as observed in Idleb district. However, in the 2022/2023 season, the availability of olives improved, with 18% of traders rating them as always available and 82% as sometimes available. This pattern of availability aligns with the natural growing cycles of olives, where they are harvested during specific seasons, leading to variations in their availability in the market.

In 2021/2022 season, 75% of traders reported olive oil as always available, while 23% reported it as sometimes available, and only 2% as never available as observed in Idleb district as well. The following season, 87% of traders found olive oil always available, and 13% perceived it as sometimes available.

Olive pickles were generally more available, with 80% of traders stating they were always available and 20% sometimes available in the 2021/2022 season. In the 2022/2023 season, their availability increased further, with 90% always available and 10% sometimes available.

For soap, the availability remained consistent across both seasons, with 86% of traders reporting it as always available and 14% as sometimes available. Overall, it can be noted that across the different types of olive-related products there was an improvement in the 2022/2023 season in comparison to the 2021/2022 season.

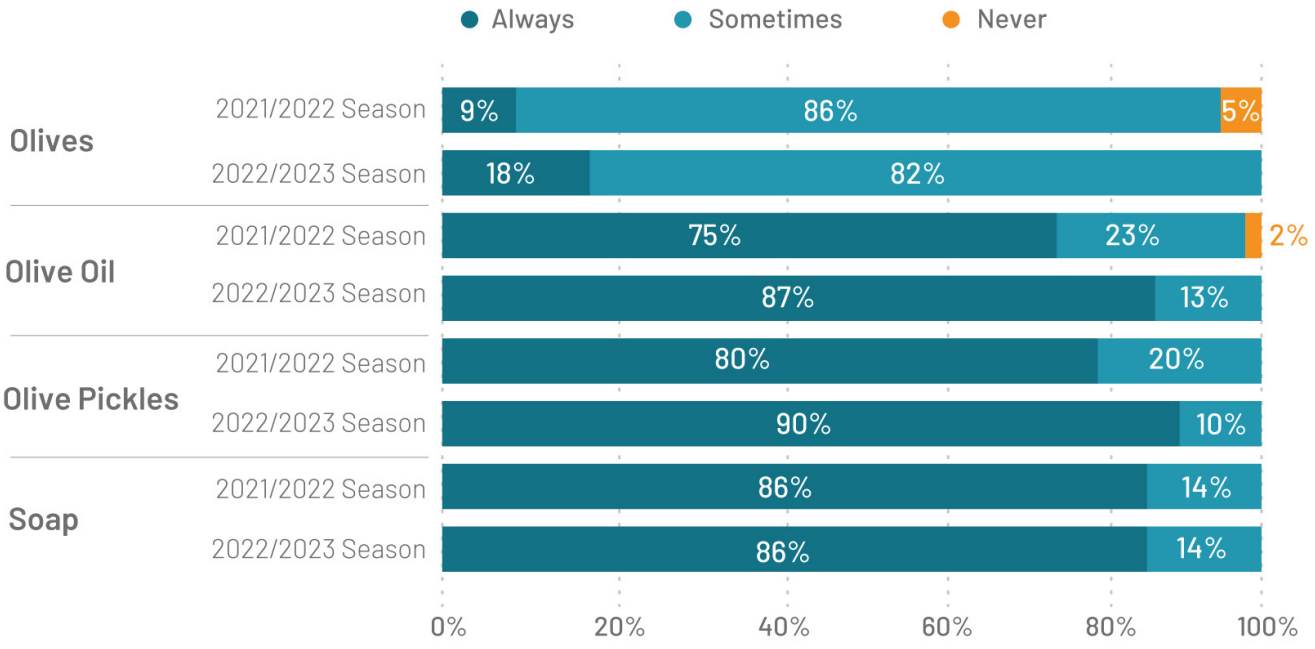


Figure 29: Availability of Olives Products

4.5.8. Economic Performances

Table 3 indicates the range of selling prices and profits for each product. It shows that the selling prices vary across the different products, with some products having a wider range compared to others. It's important to note that these values represent the minimum, average, and maximum, providing an overview of the pricing dynamics for each product category.

The selling prices for various olive products varied. For olives, the minimum selling price is 0.7 USD per kilogram, and reached a maximum of 1.5 USD per kilogram. Similarly, olive oil had a minimum price of 2.5 USD per kilogram, and a maximum price of 4 USD per kilogram. Olive pickles were sold at a range of 0.9 to 2.3 USD per kilogram. Soap, another product derived from olives, had a minimum price of 2 USD per kilogram, and a maximum price of 3 USD per kilogram. These variations in selling prices reflect market dynamics, including factors such as supply and demand, production costs, and quality considerations.

It is worth noting that the profit margin for different olive products displayed notable variations throughout the analyzed period. For olives, the average profit for traders is 24% with variation ranging from a minimum of 4% to maximum of 67%. Similarly, olive oil had an average profit of 15% with variation ranging from 1% to 71%. Olive pickles exhibited a profit variation ranging from 4% to 88%, with an average of 38%. As for soap, the profit variation ranged from 11% to 36%, with an average of 22%. These profit percentages reflect the profitability potential and market dynamics of each product. It is essential for traders to consider factors such as production costs, market demand, and pricing strategies to maximize their profitability within the olive industry.

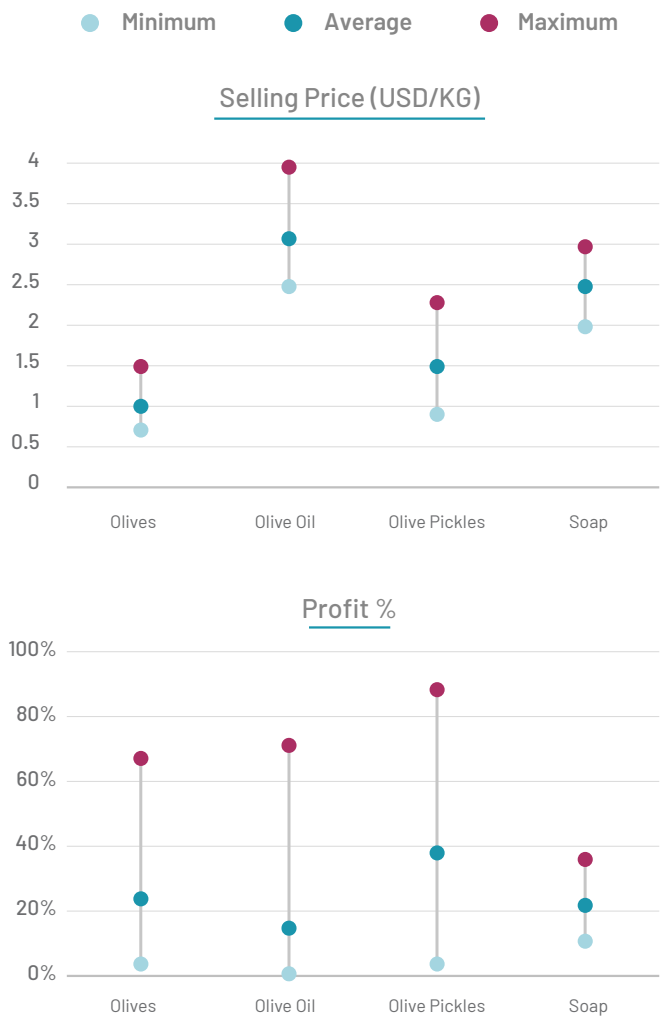


Figure 30: Olive Products Selling Prices and Profit Margins

4.5.9. Impact of Earthquake

The collected data from traders indicate that a majority (76%) reported no damage to their facilities or stock of olive products due to the earthquake. However, a notable proportion (24%) experienced some form of damage. Among those who encountered damage, the most common type reported was partial damage to the building, accounting for 53% of the traders. Additionally, 37% of traders reported losing part of their stock of olive products, while 10% unfortunately lost their entire stock.

According to the responses provided, traders estimated the total cost of their losses resulting from the damage caused by the earthquake. The reported estimates exhibited significant variation, ranging from 150 to 27,000 USD, with an average of 3,710 USD per trader. These cost estimates encompass the financial losses associated with repairs, replacements, and replenishment of lost stock.

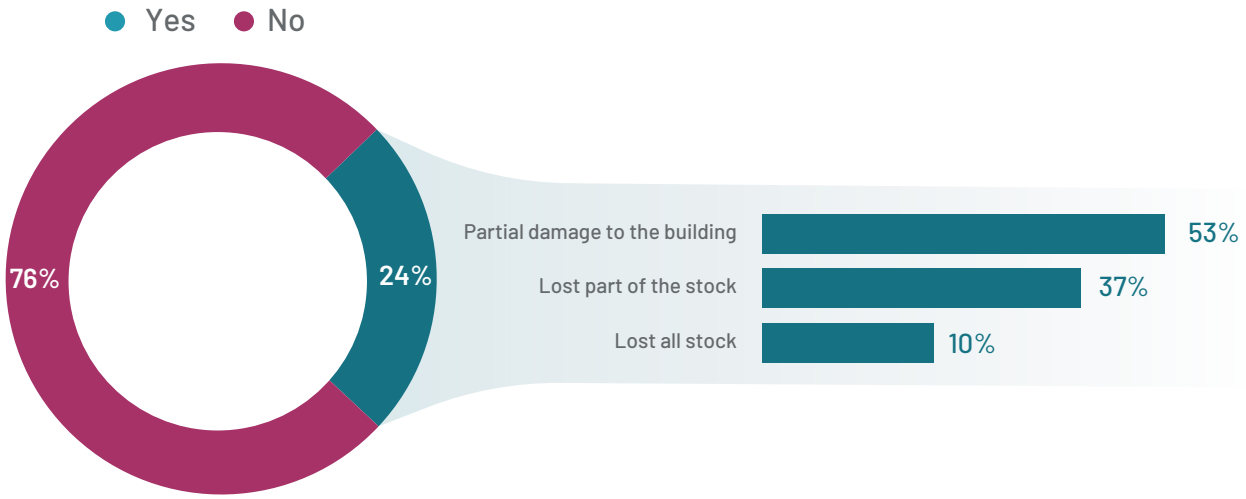


Figure 31: Types of Damage Inflicted by the Earthquake on Olive Traders

4.6. Olive Consumers

Olive consumers are individuals or households who regularly purchase, and use products made from olives, such as olives, olive oil, and olive-based products like pickles or soap. Olive consumers can be found in both rural and urban areas, and their preferences for olive products may vary depending on factors such as cultural traditions, dietary habits, and availability of olives in their region. Additionally, olive consumers may include individuals who use olive products for cooking, skincare, medicinal purposes, or as part of their daily diet.

Aleppo emerges as the most prominent governorate for olive consumption, accounting for 48% of the total. Notably, Idleb follows closely behind Aleppo as the second highest governorate in terms of olive consumption (45%). Ar-Raqqa and Al-Hasakeh account for 5% and 2% of the olive consumers, respectively. These findings shed light on the geographical distribution of olive consumption and the gender differences in olive product preferences among the surveyed population.

4.6.1. Household Consumption

Collected data shows that olive-based products are widely consumed at household level in NWS, with varying percentages for each product category. Olive oil is the most consumed product, making up to 100% of households' usage. Olives are the second most popular, consumed at 84%, followed by soap at 68%, and olive pickles at 43%. This shows that a significant portion of the surveyed households include olive and olive-based products in their regular consumption, with olive oil being the most widely consumed among the listed items. Olive pickles, on the other hand, seem to be less commonly consumed compared to the other products.

The data provides valuable insights into the preferences and consumption patterns of households regarding these olive-related products.

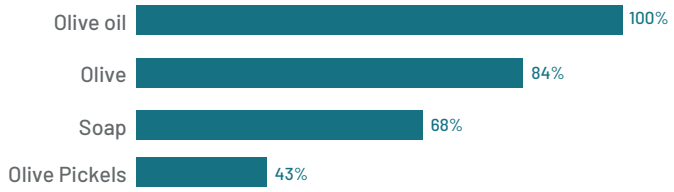


Figure 32: Olive Products Consumed by Households

4.6.2. Sources of Olive Products

The survey asked the households about the sources from which they obtain their olive products. The data reveals that 38% of households get olives from retailer shops, 30% from farmers, 24% own production, and 8% from wholesaler shops.

Regarding olive oil, 41% of households obtain it from retailer shops, 20% from farmers, another 20% produce the oil on their own, 10% from olive oil processors 8% from wholesaler shops, and a small percentage of 1% rely on monthly food assistance.

For olive pickles, the majority, 60% of households, consume olive pickles sourced from their own production, indicating a preference for homemade options, while 29% purchase them from retailer shop, 8% from wholesaler shops, and only 3% from productive kitchen.

As for olive oil soap, 82% of households procure it from retailer shops, 10% from wholesaler shops, and 8% produce them on their own.

This data highlights the various channels through which households access olive products, with a significant number of households relying on olive oil processors and retailers for their needs. Additionally, a noteworthy proportion of households produce their olive pickles, indicating some level of self-sufficiency in this aspect. The diverse range of sources for olive products allows households to choose products based on their preferences and convenience, households have the flexibility to select the most suitable channels for acquiring the olive-based products they desire.

Figure 33: Consumers Sources of Olive Products

4.6.3. Quality and Availability of Olive Products

Based on household consumption, the quality of olive products during the 2022/2023 season is rated positively. A majority of 69% of consumers have classified the quality as "Good," indicating a satisfactory experience with the olive products they consumed. Additionally, 31% of consumers considered the quality as "Fair," suggesting that while some households might have encountered minor issues, the overall quality remained acceptable. This positive feedback from consumers is essential for producers and processors to maintain high standards and continue providing olive products that meet consumer expectations. It also reflects the efforts made in olive farming, processing, and distribution to ensure a favorable consumer experience during the mentioned season.

Again, based on household consumption, the availability of olive products during the past season in the market has been consistently high, with an overwhelming 97% of consumers reporting that these products were always available. This indicates a stable and reliable supply of olive products throughout the market, ensuring that consumers have easy access to them whenever they desire.

Only a small minority of 3% of consumers mentioned that olive products were rarely available during the past season. This could be attributed to isolated cases of supply chain disruptions or specific local market conditions that temporarily affected the availability of these products in certain areas.

Overall, the high percentage of consumers reporting consistent availability demonstrates the resilience and robustness of the olive product market, providing consumers with a steady and dependable supply of these products throughout the season.

4.6.4. Economic Performances

The price of olive products that households pay for olive products varies depending on the type of product. For olives, the minimum price recorded per unit is 0.5 USD per kilogram, as observed in Aleppo and Ar-Raqqa Governorates, the average price is 1 USD per kilogram, and the maximum price goes up to 3.5 USD per kilogram as observed in Aleppo Governorates.

When it comes to olive oil, the price range is higher, with a minimum of 2.8 USD per kilogram as observed in Aleppo and Idleb Governorates, an average of 3 USD per kilogram, and a maximum of 4 USD per kilogram.

Olive pickles fall within a moderate price range, starting at 1.5 USD per kilogram, as documented in Aleppo, Idleb and Ar-Raqqa Governorates, averaging at 2 USD per kilogram, and reaching a maximum of 3.5 USD per kilogram in Idleb Governorates.

Lastly, soap, which is another product consumed by households, has a price range of 1 USD, as reported in Aleppo Governorates, to 5 USD per kilogram, as reported in both Aleppo and Idleb Governorates, showing a more significant price variation. These prices are crucial for consumers to make informed choices and manage their budgets effectively, considering their preferences and financial capabilities.

5. Women Participation

Collected data reveals a significant gender disparity within the olive value chain, with only a small number of respondents (n=11) identifying as female. This indicates a significant gender disparity within the sample, with males being the dominant gender group.

Despite the limited representation, the data suggests that women do have an active role in the olive value chain, according to 72% of respondents. This finding indicates that most respondents perceive women as actively involved in the various stages of the olive value chain through their work and contributions.

When asked about the specific roles women play in the olive value chain, the data reveals that the most commonly mentioned role is olive harvesting, with 77% of respondents acknowledging this involvement. This suggests that women are primarily engaged in the critical task of harvesting olives, which is an essential and labor-intensive activity within the value chain. Other roles mentioned include packaging (9%), sifting olive seeds (5%), manufacturing of olive products such as olive pickles and soap (4%), tree pruning (3%), and clearing the land of weeds (2%).

However, it is crucial to recognize the limitations of the sample size for women in the study. The small number of female respondents undermines the representativeness and may not fully capture the diverse experiences and contributions of women in the olive value chain.

6. Challenges and Opportunities

Study findings suggest that olive cultivation in the region has encountered several challenges in recent times, primarily due to the impact of climate change and the consequences of armed conflict. These challenges have disrupted the olive value chain and pose significant hurdles for all stakeholders involved. Below some of the key challenges recorded:

- **Climate Change and Extreme Weather Events:** Olive farming is heavily dependent on adequate rainfall for successful growth and productivity. However, climate change has brought about irregular weather patterns, including prolonged droughts and unexpected frosts, resulting in reduced rainfall. These environmental factors had a profound impact on olive cultivation, affecting the quality and quantity of the olive crop and leading to potential yield losses.
- **Increasing Operational Costs:** The costs associated with farming activities, such as cultivation, harvesting, and pressing, have been steadily increasing. Factors such as rising labour costs, fuel prices, and the need for advanced machinery and equipment contribute to the financial burden on olive farmers.
- **High Expenses for Production Necessities:** Olive farmers face high expenses related to essential production necessities, including purchasing healthy plants, acquiring quality agriculture inputs such as pesticides and fertilizers, and obtaining protective materials. These costs further strain the financial resources of farmers and limit their ability to invest in their olive orchards.
- **Impediments to Orchard Rejuvenation:** The need to protect young trees from grazing and other risks during their initial stages presents a significant challenge for olive farmers. The lack of effective options for rejuvenation hampers the ability of farmers to revitalize their orchards and maintain sustainable production levels.
- **Adverse Conditions and Inadequate Crop Protection:** Some olive farmers are compelled to harvest premature fruits due to unfavorable conditions, such as limited resources and insufficient crop protection measures. This premature harvesting results in diminished oil quantity and quality, impacting the overall profitability of olive farming.
- **Impact of Armed Conflict Circumstances:** The consequences of armed conflict, including the establishment of camps in olive groves, have severely affected olive cultivation. The presence of IDP camps reduced the total planted area and poses threats such as tree cutting, insect infestations, grazing by livestock, and challenges faced by orchard owners in conducting necessary operations.
- **Contamination from Open Sewage Channels:** The presence of open sewage channels poses a significant risk to olive trees, contaminating them with harmful chemicals. This contamination not only affects the health of the trees but also poses risks to the quality and safety of the olive produce.
- **Improper Waste Management:** Improper waste disposal practices in the region contribute to the spread of tree diseases and the proliferation of insect populations, particularly fruit worms. These factors negatively impact the health and productivity of olive orchards.
- **Limited Projects and Initiatives:** The olive sector in these areas lacks adequate projects and initiatives specifically targeting its development and support. The limited focus on the sector hampers progress and leaves farmers without sufficient resources and guidance to overcome challenges and improve their practices.
- **Insufficient Awareness Among Farmers:** A lack of technical support and awareness among farmers regarding necessary agricultural practices and requirements hinders progress in the sector. Effective extension services and awareness campaigns are needed to educate farmers about best practices, new techniques, and available support mechanisms.
- **Flooding Risks:** The proliferation of vehicles among tent dwellers in the region can contribute to the creation of impermeable ground surfaces, exacerbating the risk of flooding in nearby areas during heavy rainfall. This poses additional challenges and risks to olive orchards and agricultural activities in the region.

On the other hand, and based on this study, several opportunities can be identified in relation to olive products. These opportunities include:

- **Market Expansion:** There is untapped potential for expanding the market for olive products, including olives, olive oil, olive pickles, and soap. By targeting new markets, developing effective marketing strategies, and enhancing product visibility, producers can seize this opportunity to expand their customer base and increase income.
- **Increased Own Production:** The fact that some households source olive products from their own production signifies a viable opportunity for others to engage in small-scale olive farming. This presents a particularly advantageous prospect for farmers with prior experience in cultivating olives, as they can leverage their existing knowledge and resources to enhance their own production and cater to the local market. By encouraging and supporting farmers to increase their olive farming activities, the overall supply of olive products can be boosted, meeting the growing demand.
- **Value Addition:** Olive oil processors can explore value-added products and diversify their offerings to stay competitive in the market. By experimenting with different flavours, infusions, or specialized blends, processors can cater to specific consumer preferences and create unique selling propositions. This approach not only enhances product variety but also allows processors to capture niche markets and increase their market share.
- **Sustainable Farming Practices:** There is a growing emphasis on environmental sustainability and a rising demand for organic and sustainably produced goods. This presents an opportunity for olive farmers and processors to adopt and promote sustainable farming practices. Embracing sustainable farming methods, implementing water conservation techniques, and practicing responsible waste management can contribute to reduce production costs and increase income.
- **Product Innovation:** The versatility of olives and olive oil extends beyond culinary applications, offering room for product innovation. Exploring and developing new products that utilize olives and olive oil, such as skincare and beauty products, health supplements, and alternative uses in household cleaning products, can open up new avenues for growth. By diversifying their product categories and catering to different consumer needs, producers can expand their market reach and attract new consumer segments, while also leveraging the health and wellness trends associated with olive-based products.

By capitalizing on market expansion opportunities, increasing own production, exploring value addition, embracing sustainable farming practices, and fostering product innovation, the olive industry in Northeast Syria (NES) can achieve sustained growth and meet evolving consumer demands. These strategic approaches will not only benefit producers but also contribute to the economic development of the region and enhance the reputation of NES as a hub for high-quality olive products.

7. Recommendations

The olive value chain plays a vital role in the socio-economic fabric of Northwest Syria (NWS), serving as a significant source of income and employment for local communities. The region's fertile lands and favorable climatic conditions have made olive cultivation a cornerstone of agricultural activities, with a diverse range of stakeholders involved in the production, processing, and trade of olive-based products. Recognizing the importance of this value chain, it is crucial for the humanitarian sector to support and enhance its sustainability and resilience. By implementing targeted interventions and recommendations, the sector can contribute to the empowerment of small-scale farmers, improve market access, foster sustainable practices, and promote economic development within the olive sector. These efforts will not only enhance the livelihoods of individuals directly involved in the value chain but also contribute to the overall resilience and well-being of communities in Northwest Syria (NWS). For this iMMAP strongly advise humanitarian actors across NWS to take into consideration the following recommendation:

- **Access to Inputs and Resources:** Humanitarian actors and local authorities can facilitate access to high-quality and affordable inputs such as seeds, fertilizers, irrigation systems, and machinery. This can be done through humanitarian assistance programs, partnerships with agricultural suppliers, providing subsidies or grants for inputs, and establishing seedling nurseries to ensure the availability of healthy and disease-resistant olive trees.
- **Technical Training and Capacity Building:** Offer comprehensive training programs to farmers, processors, and traders, focusing on modern agricultural practices, post-harvest handling, quality control, and marketing strategies. Capacity-building initiatives will enhance skills, knowledge, and competitiveness within the olive value chain.
- **Infrastructure Development:** Invest in infrastructure improvements to strengthen the olive value chain, including upgrading irrigation systems, establishing processing facilities, and enhancing storage and transportation networks. Improved infrastructure will enable efficient production, processing, and market access, reducing post-harvest losses and enhancing the overall competitiveness of the sector.
- **Market Development and Linkages:** Humanitarian actors and local authorities can support the establishment of market linkages, both domestically and internationally, to create new opportunities for olive producers and processors. This can involve facilitating participation in trade fairs and exhibitions, promoting branding and marketing initiatives, and connecting them with potential buyers, distributors, and export markets.
- **Value Addition and Product Diversification:** Encourage the development of value-added products derived from olives, such as olive oil-based cosmetics, olive-based snacks, or olive-derived health products. This diversification will open new markets, increase product value, and create additional income streams for stakeholders along the olive value chain.
- **Sustainable Farming Practices:** Promote the adoption of sustainable agricultural practices, including climate smart farming methods, efficient water management, soil conservation, and integrated pest management. Encouraging environmentally friendly practices will enhance the quality of olive products, protect natural resources, reduce production costs and increase income.
- **Collaboration and Networking:** Foster collaboration and cooperation among farmers, processors, traders, and relevant stakeholders in the olive sector. This can involve establishing farmer cooperatives, organizing knowledge-sharing platforms, and facilitating partnerships to leverage collective strengths, share resources, and address common challenges.
- **Policy Support and Advocacy:** Advocate for policies and regulations that prioritize the olive sector, provide support mechanisms, and address sector-specific challenges. Engage with relevant governmental bodies to create an enabling environment for the growth and development of the olive value chain.