Food and Agriculture Organization of the United Nations

SYRIAN ARAB REPUBLIC

Post-earthquake impact assessment on agricultural livelihoods and food security in the northwest

DIEM-Impact report
September 2024

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- Lena Abou Jaoude, Food Security and Agricultural Livelihoods Assessment Specialist

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- Mehmet Ubeytoglu, Agricultural Livelihoods Specialist

FAO Office of Emergencies and Resilience

- Joelle Zeitouny, Regional Food Security and Agricultural Livelihood Assessment Specialist
- Elyse Battistella, Regional Food Security and Agricultural Livelihood Assessment Specialist
- Paige McGreevy, Outreach and Reporting Specialist, Data in Emergencies Information System
- Sabah Heydon, Outreach and Reporting Specialist, Data in Emergencies Information System
- Laetitia Salmson, Outreach and Reporting Specialist, Data in Emergencies Information System
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Abbreviations

DIEM	Data in Emergencies Information System
FAO	Food and Agriculture Organization of the United Nations
FIES	Food Insecurity Experience Scale
HDDS	household dietary diversity score
HHS	household hunger scale
IDP	internally displaced persons
IPC	Integrated Food Security Phase Classification
RFI	recent food insecurity

Key highlights

- The overall prevalence of recent moderate or severe household food insecurity assessed using the Food Insecurity Experience Scale (FIES) was around 16 percent. The prevalence of recent food insecurity (RFI) was considerably higher in Bulbul (35 percent), Salqin (34 percent) and Afrin (31 percent) – about double the average.
- About 86 percent of households adopted coping strategies to meet their food needs. More than half of all households employed either crisis (43 percent) or emergency (10 percent) coping strategies.
- Around 80 percent of respondents reported experiencing shocks that affected their household's ability to raise an income and/or to produce food for self-consumption since the earthquake. High food and fuel prices were the most common shocks, which align with market monitoring for the survey period.
- Nearly 60 percent of households reported a drop in their main source of income since the earthquake. This reached as many as four in five households in Mare' (85 percent) and Jarablus (80 percent).
- Direct damage to planted areas or crop production assets affected 11 and 16 percent of crop producers, respectively. Damaged assets mainly included irrigation systems and other infrastructure such as pumping stations, canals and storage facilities.
- Nearly 8 in 10 crop producers encountered challenges in crop production since the earthquake. The main reason cited was inadequate irrigation or rainfall due to a combination of damage to irrigation assets and lower than normal rainfall.
- Crop producers are facing declining harvests, lower prices and increased production costs. Producers across all crop types reported a decline in harvest size, primarily attributed to the challenge of accessing sufficient water for irrigation. Close to 70 percent indicated challenges selling their crops since the earthquake, mainly due to low selling prices, and three-quarters of crop producers reported increased production costs driven by higher prices for inputs such as seeds and fertilizer.
- Approximately 11 percent of all interviewed livestock producers reported direct animal losses and sixteen percent reported damage to their livestock production assets as a result of the earthquake. Animal losses were mainly due to destocking and livestock pens were the most commonly damaged asset.
- More than 7 in 10 livestock producers encountered challenges in their production since the earthquake. Livestock producers faced multiple challenges including accessing feed, veterinary inputs and services, and water.
- Nearly 92 percent of the surveyed households indicated a need for assistance in the three to six months following the survey.

Context

On 6 February 2023, a powerful earthquake, centred near Gaziantep, Türkiye, affected a wide area of the northwest of the Syrian Arab Republic. This was shortly followed by a powerful aftershock. More than 7 000 people in the Syrian Arab Republic died and over USD 5 billion in damages and losses were estimated due to the initial earthquake and aftershock (The World Bank, 2023).

The northwest of the Syrian Arab Republic already faced numerous challenges before the earthquake due to prolonged conflict and instability since 2011, and severe drought in both 2021 and 2022. The earthquake further exacerbated the region's vulnerabilities. It caused additional damage to already fragile infrastructure and agricultural assets, and intensified the existing food insecurity and humanitarian needs, underscoring the urgent necessity for recovery efforts to support affected communities in rebuilding their livelihoods and restoring agricultural productivity amid the ongoing challenges.

With a significant agricultural population, the region relies heavily on farming as a primary livelihood source. However, the ongoing conflict disrupted agricultural activities, causing displacement, damage to infrastructure, and disruptions in food production and distribution systems. Moreover, the region's agriculture sector is also struggling due to other factors including water scarcity, inflation, and limited access to inputs and markets, exacerbating food insecurity and poverty levels.

Rapid assessments, relying mainly on geospatial data, have confirmed significant damage to agricultural land, assets and infrastructure. Damage and losses to the overall agriculture sector, have been estimated at USD 1.8 billion (The World Bank, 2023). However, no assessment of the impact of the earthquake on agriculture at household level has been conducted.

Objectives and methodology

Objectives

This survey aimed to:

- Take stock of the damages that were inflicted on agricultural inputs, assets, crops and livestock caused by the earthquake.
- Assess the crop and livestock production characteristics (area grown and types of crops, number of animals owned, livestock production and input use), and share of crop and livestock production sales.
- Assess the difficulties and constraints faced by households in crop production and livestock, which are not limited only to the earthquake.
- Understand the shocks affecting rural households and the strategies used to deal with them.
- Assess the food security situation of the rural population.

Methodology

FAO conducted a comprehensive post-earthquake impact assessment in the northwest of the Syrian Arab Republic targeting rural households in 17 subdistricts situated in Aleppo and Idleb governorates, comprising 13 subdistricts from Aleppo and four from Idleb. The specific subdistricts covered included Afrin, Aghtarin, Al Bab, Ar-Ra'ee, Atareb, Bulbul, Dana, Harim, Idleb, Jandairis, Jarablus, Ma'btali, Mare', Raju, Salqin, Sheikh El Hadid and Suran.

The sample design employed a two-stage cluster sampling approach at the subdistrict level. Communities (administrative level 4) served as primary sampling units (clusters). In the first stage, 32 enumeration areas (clusters) were randomly selected from each subdistrict, utilizing a probability proportional to size method. In the second stage, six households were chosen from each selected cluster, employing in-field sampling methods. In each subdistrict, at least 192 households were interviewed.
This methodology was carefully designed to ensure representation at the subdistrict level in the northwest of the Syrian Arab Republic.

Table 1. Number of households surveyed by district and subdistrict

Governorate	District	Subdistrict	Number of households surveyed
Aleppo	Jebel Saman	Atareb	215
	Al Bab	Al Bab	196
		Ar-Ra'ee	192
	Afrin	Afrin	199
		Bulbul	194
		Jandairis	193
		Raju	194
		Sheikh El-Hadid	192
		Ma'btali	192
	A'zaz	Aghtrin	193
		Mare'	193
		Suran	202
	Jarablus	Jarablus	193
Idleb	Idleb	Idleb	195
	Harim	Harim	192
		Dana	192
		Salqin	198

Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Data were collected between 30 August and 16 September 2023 with a total of 3 325 households surveyed. An additional 60 surveys were conducted strategically to enhance geographical representation by targeting areas that were underrepresented in the initial survey sample, aiming to capture a broader range of perspectives and improve the accuracy and reliability of the data.

The data collection modality involved face-to-face household questionnaires administered using KoboCollect software. The survey design, tools and methodology were conducted in accordance with the FAO Data in Emergencies Impact (DIEM-Impact) assessment protocols.

Before launching live data collection, a two-day enumerator training was held to familiarize enumerators with the survey questions and thematic areas, good practices and use of the KoboCollect software. One day of pilot testing was conducted to enable the enumerators to practice with the tool and live testing of the questionnaire. Quality control on the data set was conducted in order to check for coherence of responses, excessive use of "don't know" or "refused" responses, and other quality issues.

Survey limitations

Several survey limitations were encountered related to the timing of the survey and the wording of the questionnaire which may have an impact on overall results.

Survey timing

The survey was originally scheduled to begin in May 2023 however, due mainly to human resource issues, data collection did not begin until August 2023. The delay may have affected the recollections of respondents. Enumerators were sensitized to ensure responses were related to the pre- and post-earthquake period.

Reference period for shocks

Due to an oversight in the finalization of the survey tools, the incorrect reference period was applied to the question of household shocks. Instead of “a normal year”, the survey questions referred to “last year”. If the last year was atypical, this may have caused comparisons to be altered. Investigation into the shocks and unusual factors that might have occurred in 2022 compared to the previous five years, most of the shocks that occurred in the northwest of the Syrian Arab Republic were similar to the previous five years except for inflation which increased significantly in 2022 (SCPR, 2022).

Reference period for crop production

For the crop production section, rather than “the ongoing season” the reference period incorrectly provided was “the wet season”, which is not a relevant term used in the northwest of the Syrian Arab Republic. The survey occurred during the post-harvest period of the main crops grown in the northwest of the Syrian Arab Republic (wheat and barley). By applying this reference period, crop producers may not have accounted for their most recent harvest or experiences in the ongoing season, and/or may have referred to occurrences before the earthquake.

Damage to stored inputs/products

Rather than asking how many stored agricultural inputs or products (for example crops, seeds, other inputs, fish feed and fingerlings) were “damaged or destroyed” by the earthquake, the text of the question included only the word “destroyed”. This means damage to these inputs or products cannot be assessed.

Results

Household demographics

Among the surveyed households, 44 percent were involved in crop production only, 22 percent in livestock production only, and 14 percent in both activities simultaneously, while 21 percent were not engaged in agricultural activities. Notably, 6 percent of those not engaged in agriculture prior to the 2011 conflict had begun agricultural activities since then.

A majority (76 percent) of households reported permanent residency, while 22 percent were internally displaced persons (IDPs). Three percent of households accommodated displaced families. Approximately 14 percent of households included disabled individuals. The average household size was between 6–7 members.

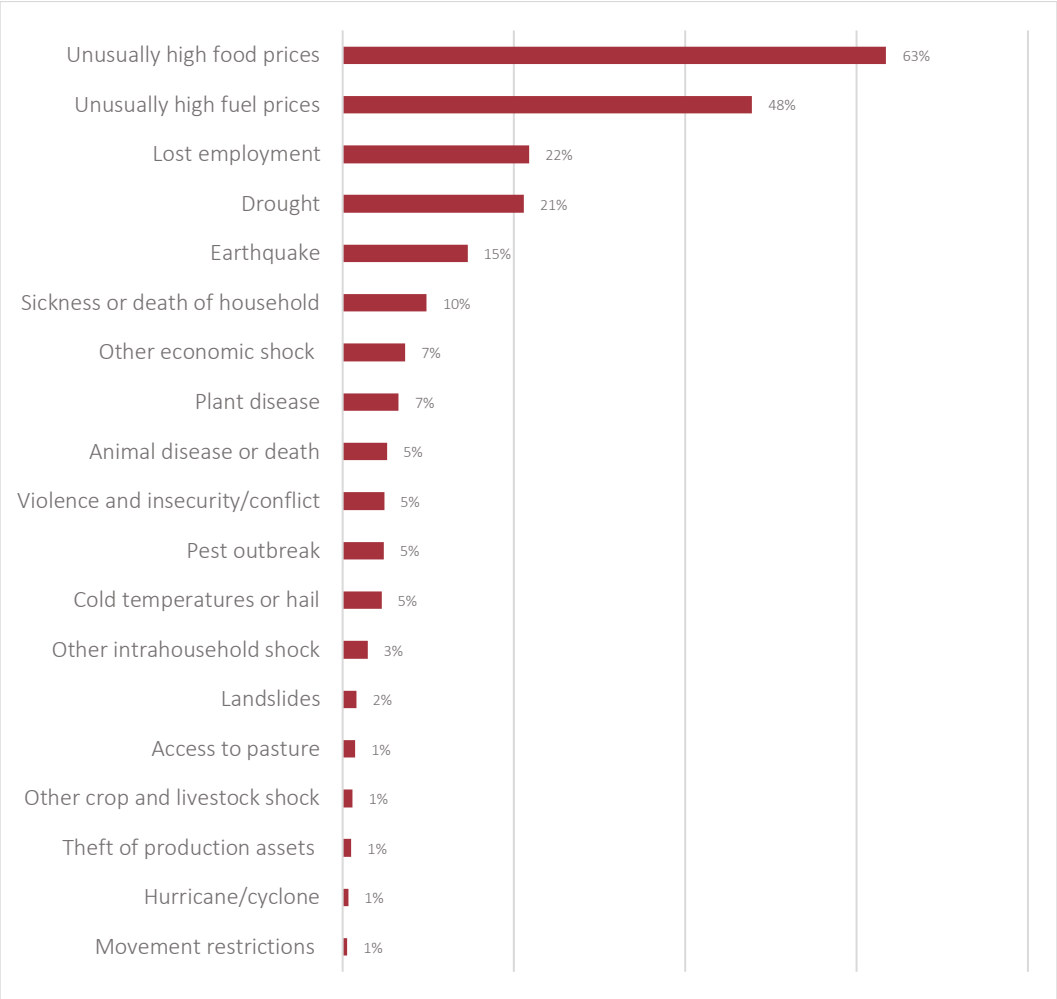
Most heads of household (61 percent) completed primary school, 21 percent reported no education or incomplete primary education, 14 percent completed secondary education and 4 percent attained higher education. The primary sources of drinking water were protected wells (34 percent), bottled water (28 percent), and piped water (20 percent). About one-fifth reported not possessing any productive assets, while around one-quarter lacked transportation assets.

In terms of electricity, 60 percent relied on solar home systems and 36 percent on Turkish grid connections. Forty percent utilized diesel generators as a secondary electricity source. Payment for electricity varied, with 29 percent not having bills to pay for their main electricity source and 38 percent not having bills to pay for their secondary source, while 62 percent paid between USD 1 and 25 for the main source and approximately 59 percent paid the same amount for the secondary source.

Income and shocks

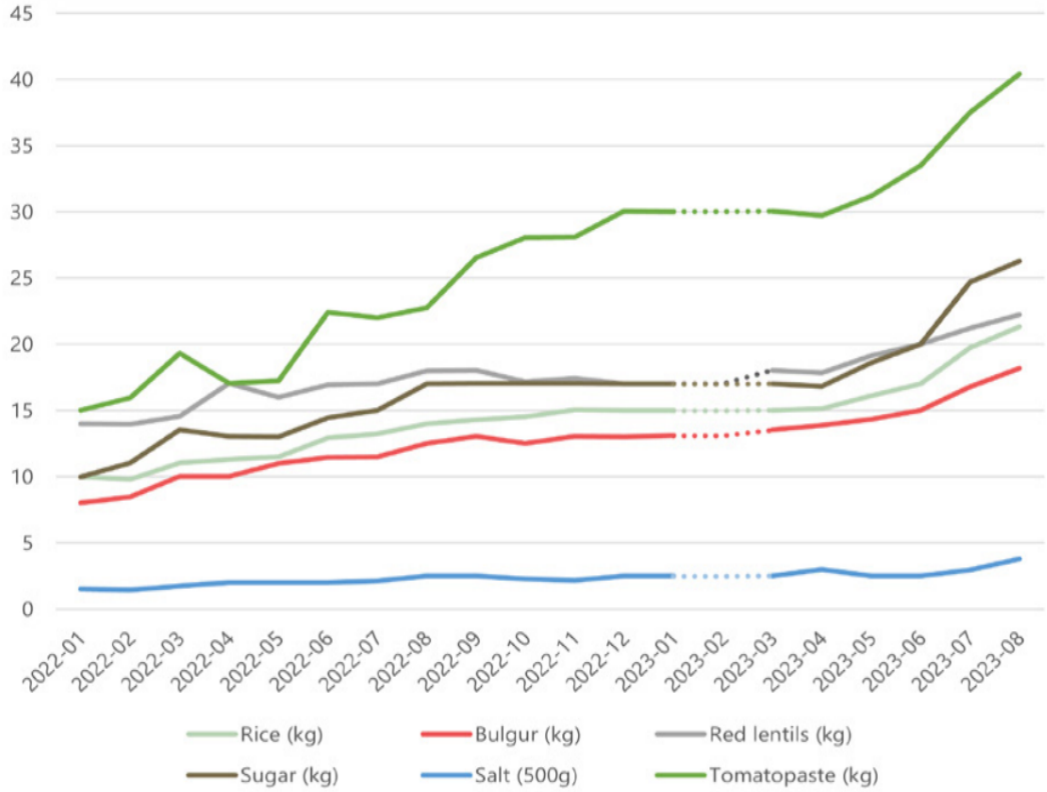
Around 80 percent of respondents reported experiencing shocks that affected their household's ability to raise an income and/or to produce food for self-consumption since the earthquake. High food and fuel prices were the most common shocks cited by 63 percent and 48 percent of the households reporting shocks, respectively (Figure 1). These results were aligned with the survival minimum expenditure basket bulk food from 2022 until August 2023. A 10 percent increase in prices took place between July and August 2023 in the northwest of the Syrian Arab Republic (Figure 2). Moreover, the increase in fuel prices (petrol and diesel) followed a similar upward trend (Figure 3).

Figure 1. Main shocks experienced since the earthquake (percentage of households reporting a shock)



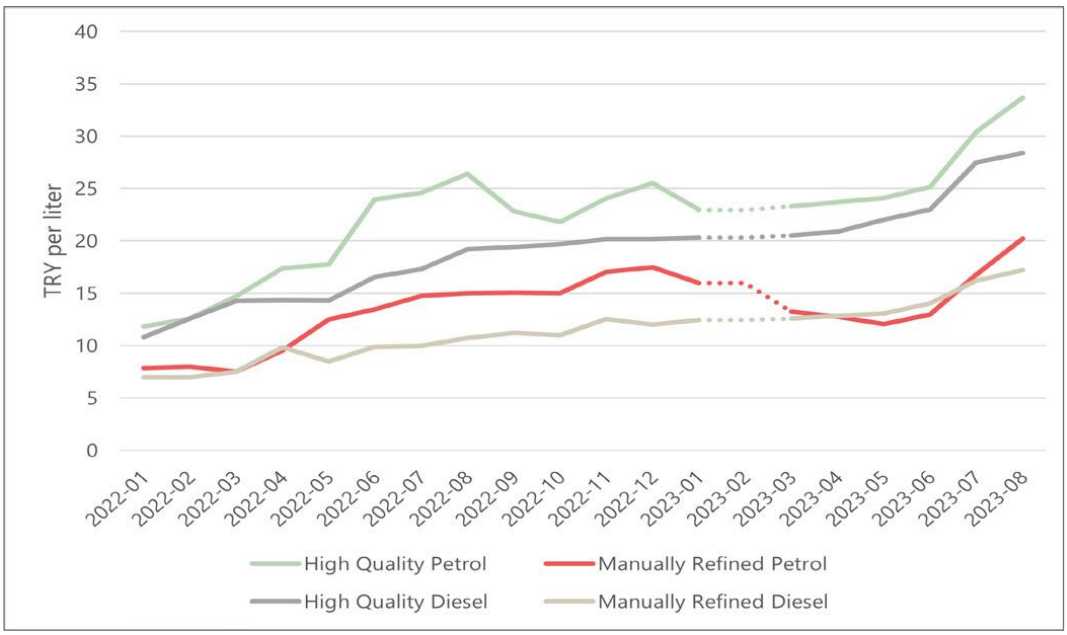
Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Figure 2. Survival minimum expenditure basket bulk food from 2022 until August 2023 in the northwest of the Syrian Arab Republic



Source: REACH. 2023. *Joint Market Monitoring Initiative: August 2023, Northwest Syria.* Geneva. https://reliefweb.int/report/syrian-arab-republic/northwest-syria-joint-market-monitoring-initiative-jmmi-august-2023

Figure 3. Increase in fuel prices (petrol and diesel) from January 2022 to August 2023 in the northwest of the Syrian Arab Republic



Source: REACH. 2023. *Joint Market Monitoring Initiative: August 2023, Northwest Syria.* Geneva. https://reliefweb.int/report/syrian-arab-republic/northwest-syria-joint-market-monitoring-initiative-jmmi-august-2023

Nearly 60 percent of households reported a drop in their main source of income since the earthquake. Almost all regions reported a decrease in income, reaching as many as four in five households in Mare' (85 percent) and Jarablus (80 percent).

Crops

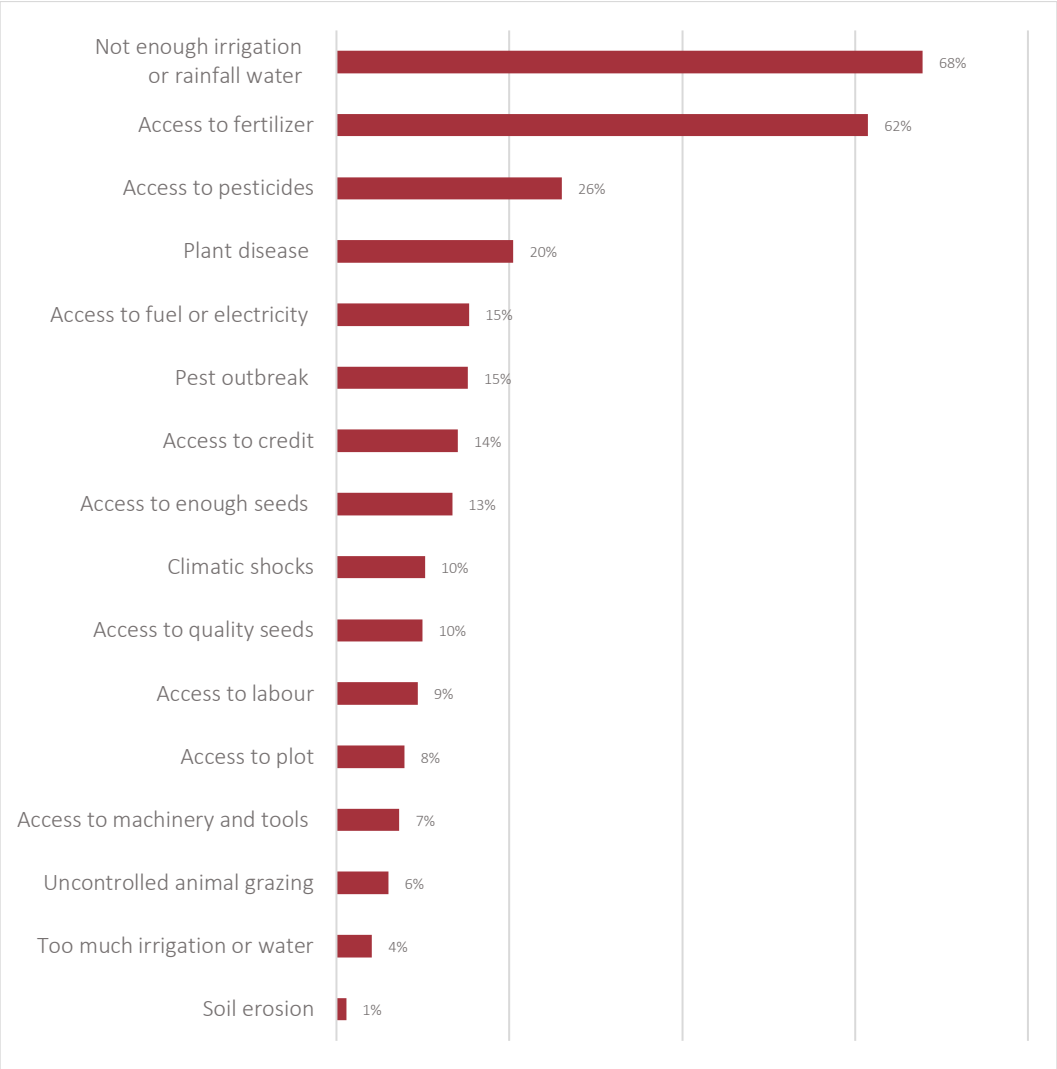
Crop production and sales difficulties

Around 44 percent of the households involved in agricultural activities reported being engaged in crop production mainly producing olives,[1] wheat and barley. Rainfed and groundwater were the most used irrigation sources reported, both before the earthquake (55 percent and 29 percent, respectively) and at the time of data collection (54 percent and 34 percent, respectively).

In general, 78 percent of households encountered challenges in crop production since the earthquake, primarily due to inadequate irrigation or rainfall (68 percent) and difficulties accessing fertilizer (62 percent) (Figure 4). When it comes to accessing seeds and fertilizer, the major difficulties were considerably higher prices than usual (51 percent and 58 percent, respectively) and a lack of financial capacity to purchase them (42 percent for seeds and 40 percent for fertilizer). Around 76 percent of crop producers got their seeds from the local market or agricultural input shops and 20 percent used seeds of their own production to grow crops.

[1] For the purpose of this impact assessment, olives were reported as crops. However, from an agricultural perspective, olives are considered horticulture.

Figure 4. Crop production difficulties during the winter season (percentage of crop producing households)



Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

In terms of accessing labour, the predominant difficulty reported was insufficient labour, as workers were actively seeking employment in other sectors such as debris management and reconstruction (36 percent).

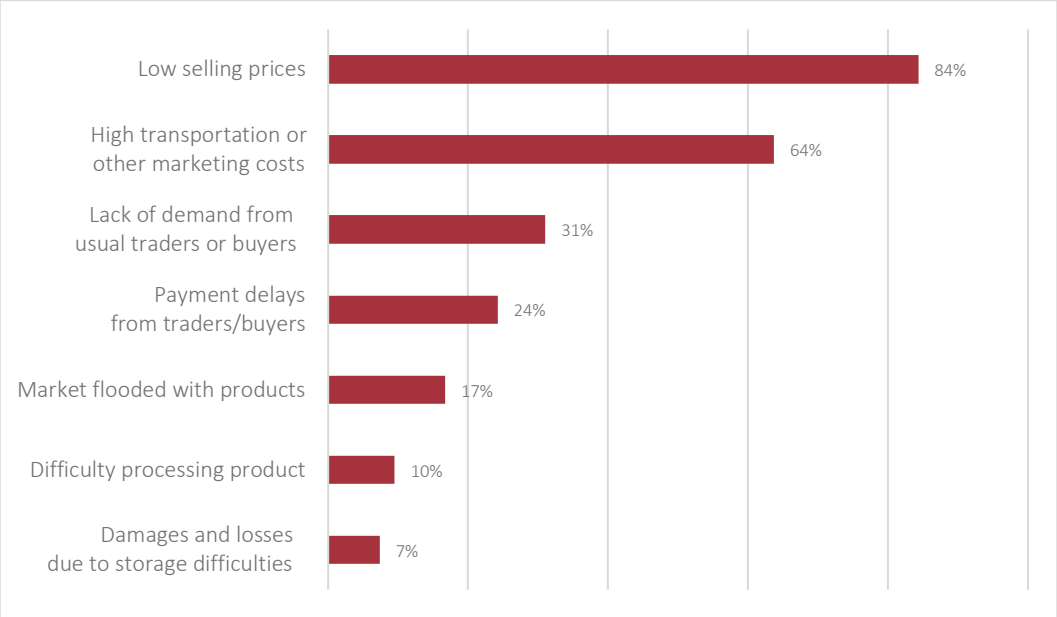
It is noteworthy that approximately 76 percent of households reported an increase in crop production costs in 2023 compared to the same period and the same crops planted in 2022, primarily attributed to heightened input prices.

Around 69 percent of the respondent crop producers indicated challenges in selling their crops since the earthquake. The most frequently cited crop sales difficulties were low selling prices (reported by 84 percent of those reporting difficulties), high transportation and marketing costs (64 percent), and lack of demand (31 percent) (Figure 5).

Lower selling prices for crops were reported by 59 percent of all crop producing households. Based on conversations with the respondents, enumerators indicated that the main reasons for the decline in agricultural crop prices were restrictions on the

export of agricultural crops which have led to an increase in domestic availability, and caused a decline in agricultural crop prices and weak purchasing power among households.

Figure 5. Crop sales difficulties since the earthquake (percentage of crop producing households)



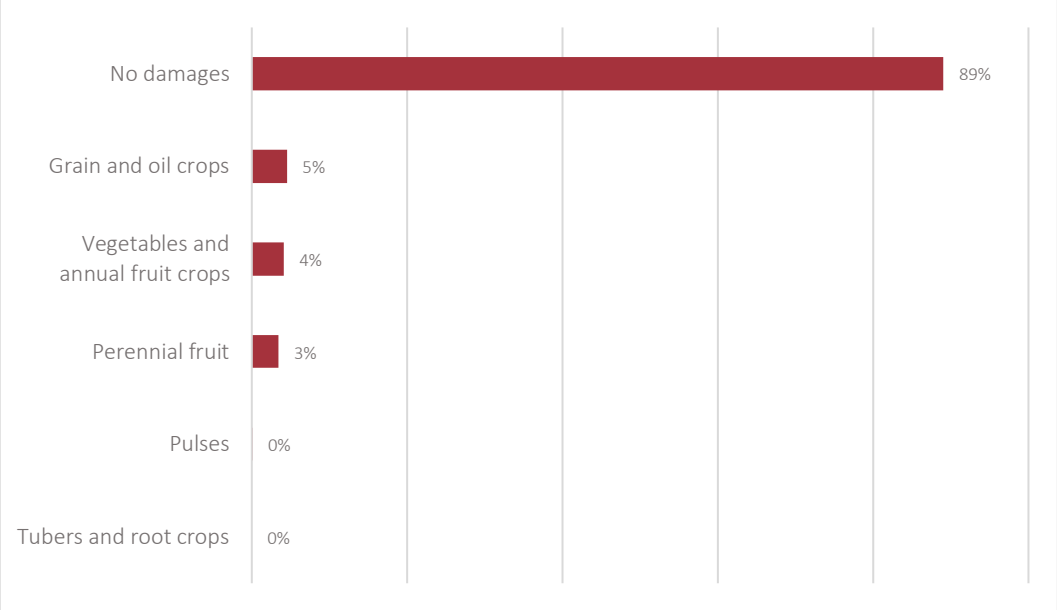
Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Land planted and level of damages to plants

Ninety-three percent of the accessible land was cultivated before the earthquake, with perennial trees and pulses maintaining high planting percentages at 95 and 92 percent of the total accessible land, respectively, compared to the previous year. Tuber producers, however, reported the lowest rate at 81 percent. Notably, vegetable and annual fruit producers reported that their cultivated plant area significantly decreased since the earthquake (15 percent), while perennial tree producers reported the smallest decrease (5 percent). For the households reporting a decrease in planted area, challenges accessing necessary inputs and sufficient water for irrigation were the primary reasons cited for all five planted groups. These findings are aligned with the fact that vegetables and annual fruit require more frequent care and watering than perennial trees, which would have been more challenging to do in the wake of the earthquake.

Concerning damages, approximately 89 percent of households reported no harm to their planted area (Figure 6). Of the 5 percent reporting damages to grain and oil crops, 4 percent to vegetables and annual fruit and 3 percent to perennial fruit, the majority reported a moderate level of damages across these planted area categories. However, tubers were not reported as damaged.

Figure 6. Damaged planted areas caused by the earthquake (percentage of crop producing households)



Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Harvest yield

The majority of producers of perennial fruit, vegetables and annual fruit, and grain and oil crops, reported a change in harvest compared to a normal year. In general, perennial fruit producers reported the highest decrease in harvest in the year of the survey compared to a typical year (68 percent), followed by vegetables and annual fruit producers (65 percent), and grain and oil crop producers (61 percent). About half of pulse producers reported a decline in harvest, whereas tuber harvest remained similar to or more than a normal year for most producers (63 percent). Producers across all crop types reporting a decline in harvests primarily attributed this to challenges accessing sufficient water for irrigation. Difficulty accessing necessary inputs was the second most commonly cited reason.

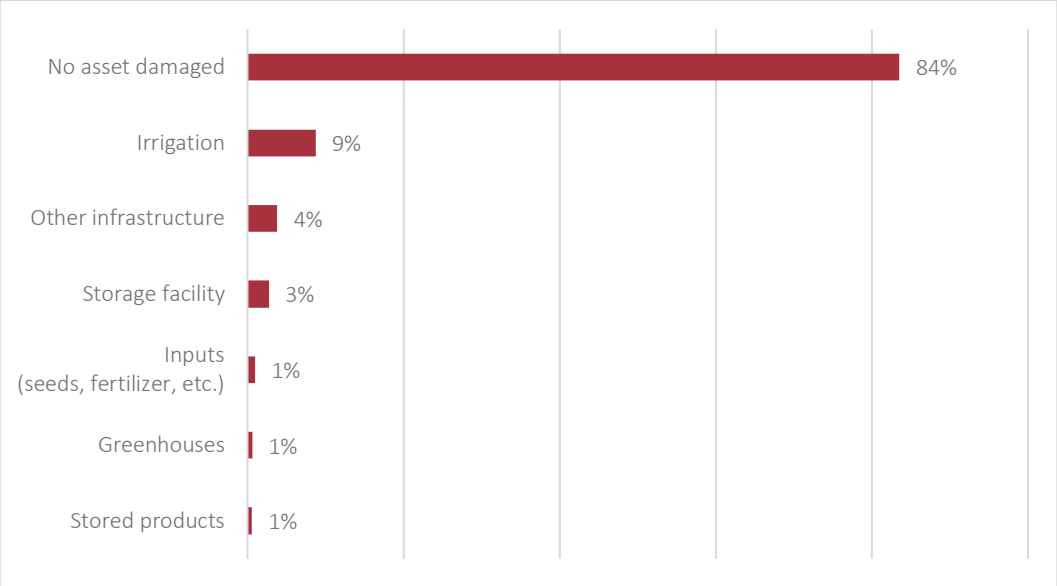
During the most recent rainy season, rainfall was 20–30 percent below average in the northwest of the Syrian Arab Republic (WFP, 2023). This is the lowest total rainfall in the northwest of the Syrian Arab Republic since 2010. The below-average rainfall has had a notable impact on crops in the region, particularly wheat and barley, staple food crops that are widely grown by farmers. This has led to reductions in yields, delayed harvests, and negative impacts on crop quality and sales for wheat and barley. The below-average rainfall is also a concern for olive trees, which are an important source of income for many farmers in the northwest of the Syrian Arab Republic. Olive trees rely on the rainy season to replenish their water supplies, and the lack of rainfall has led to the reduction of fruit production and of oil quantity (Olive Oil Times, 2023).

Assets damaged due to the earthquake

A significant majority – 84 percent of crop producers – reported no damages to their crop production assets and inputs (Figure 7). The most cited damaged assets included

irrigation systems, other infrastructure (pumping stations and canals, for example) and storage facilities. The majority of damages reported were considered “minor” or “moderate”.

Figure 7. Damaged assets and inputs used for crop production (percentage of crop producing households)



Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Among damaged tools, low tunnels and machinery, 75 percent, 68 percent and 53 percent, respectively, had undergone partial or full repairs. However, a significant portion of these items remain unrepaired.

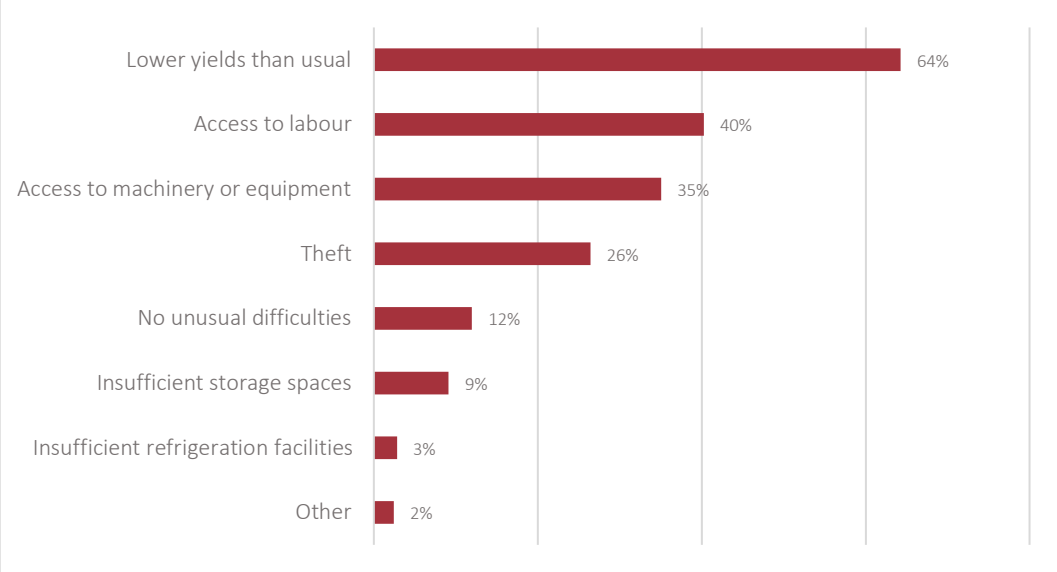
Similarly, damaged stored seeds (50 percent), stored crop production (54 percent) and other inputs (67 percent) were reported as destroyed or damaged and not replaced.

Expected difficulties for crop production, harvesting and marketing

Nearly all crop producers anticipated difficulties in crop production over the six months following the survey. The most cited anticipated challenges in crop production included access to fertilizer or pesticides due to high prices (61 percent), bad weather conditions (such as drought, heavy rains, hail and frost) (50 percent) and access to water for irrigation (38 percent).

Furthermore, 88 percent of crop producers anticipated significant challenges in the six months following the survey during the harvesting and/or processing of their crops. These challenges included lower yield than usual (64 percent), difficulty accessing labour (40 percent), and challenges accessing necessary machinery or equipment (35 percent) (Figure 8).

Figure 8. Major difficulties that the households expected to face with crop harvesting and/or processing over the six months following the survey



Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Marketing difficulties were anticipated by 69 percent of crop producing households. The most common sales difficulties expected by households were lower selling prices (84 percent), high transportation and other marketing costs (64 percent), and a lack of demand from traders or buyers (31 percent).

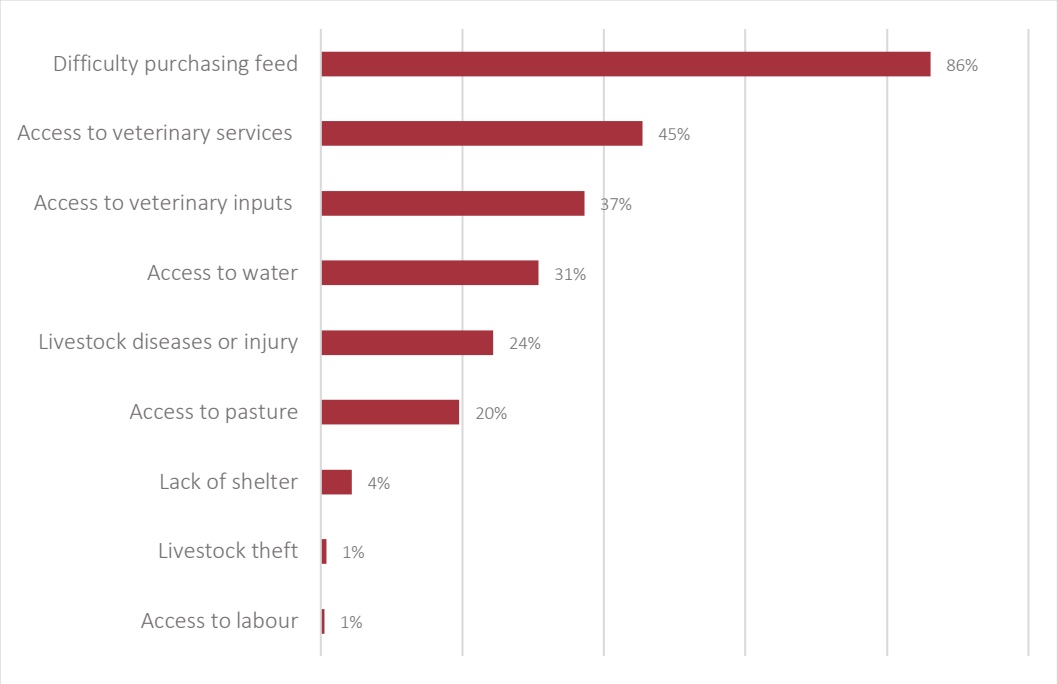
Livestock

Livestock production and sales difficulties

Thirty-six percent of respondents were engaged in livestock production (including 22 percent engaged only in livestock production, and 14 percent engaged in livestock and crop production simultaneously). The main livestock reared by the respondent households were sheep and goats. Water trucking and groundwater were the most frequently utilized watering sources both before the earthquake (48 and 35 percent, respectively) and at the time of the survey (47 and 36 percent, respectively). Approximately 96 percent of livestock producers purchased livestock feed from the market, while only 14 percent of livestock producers still had access to communal pastures.

Since the earthquake, 73 percent of households encountered challenges in livestock production, primarily due to the difficulty of purchasing feed (86 percent), followed by difficulties accessing veterinary services (45 percent), veterinary inputs (37 percent) and water (31 percent) (Figure 9). The main hindrances to purchasing feed and accessing veterinary services were attributed to a lack of financial capacity (39 and 56 percent, respectively) and higher than usual prices (43 and 49 percent, respectively). Notably, no difficulties were reported by households related to access to labour.

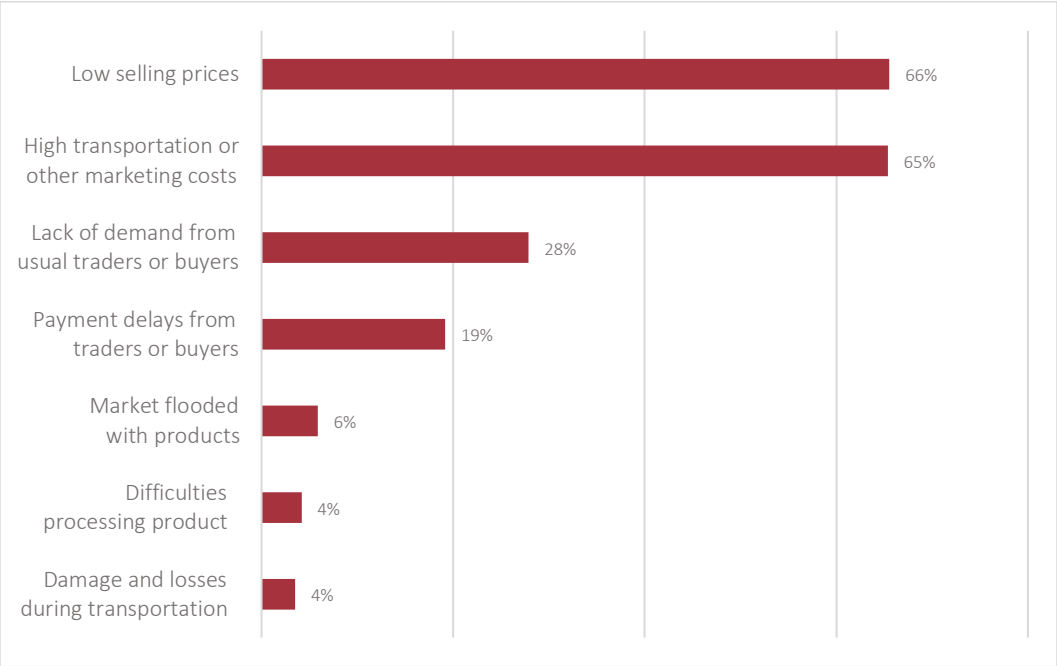
Figure 9. Livestock production difficulties since the earthquake (percentage of livestock producing households)



Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

In total, 40 percent of livestock producers faced challenges selling their products, with the most prevalent difficulties being low selling prices (66 percent) and high transportation costs (65 percent) (Figure 10).

Figure 10. Livestock sales difficulties since the earthquake (percentage of livestock producing households)



Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Decrease in animal numbers

A total of 56 percent of livestock producers reported a reduction in the number of animals compared to the previous year. Overall, the primary reasons for the decrease in all types of animals were due to distress sales, reported by 67 percent, and animal deaths attributed to diseases, parasites, and/or injuries (11 percent). Conversely, the most frequently cited reason for an increase in the number of animals was more animals being born, accounting for 19 percent of responses.

The current percentage of households keeping animals, particularly sheep and goats (small ruminants), poultry and cattle, has slightly decreased compared to the pre-earthquake figures. The decline in the number of sheep, goats and cattle since before the earthquake was primarily attributed to distress sales (84 percent for small ruminants and 54 percent for cattle).

In the case of beehives, the decrease was predominantly due to animal deaths resulting from malnutrition, drought and lack of feed, accounting for 61 percent. Conversely, the reduction in poultry was most commonly attributed to animal deaths caused by other factors (33 percent). The decrease in other livestock, including horses, donkeys, rabbits and pigeons, was primarily due to selling more of them at favourable prices, with 49 percent of respondents citing this as the main reason.

Animals lost, injured and destocked due to the earthquake

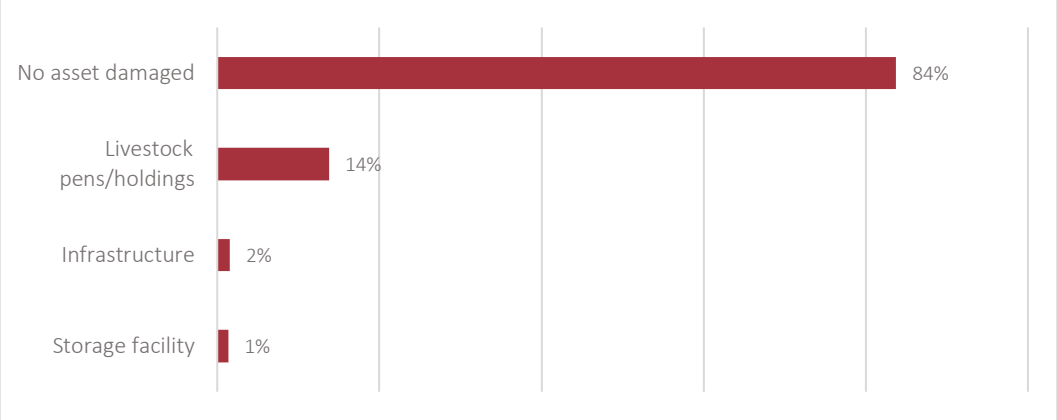
Approximately 11 percent of all interviewed livestock producers reported direct animal losses attributed to the earthquake. Among the 11 percent of households reporting losses, about 7 percent indicated injuries to their animals, while 45 percent reported destocking, which involves the slaughtering, selling or giving away of animals. These actions were often driven by challenges such as lack of feed, shelter or forced displacement.

The highest percentages of animal losses were reported among sheep and goat producers. Additionally, among the 7 percent of households reporting animal injuries, 93 percent were sheep and goat producers, 73 percent were cattle producers, 67 percent were beehive producers and 47 percent were poultry producers. However, despite these reports, the overall decrease in animal numbers caused by the earthquake was not significant.

Livestock assets damaged

Sixteen percent of livestock producers reported damage to their livestock production assets as a result of the earthquake. The most commonly cited damaged assets were livestock pens and sheds (14 percent), infrastructure (2 percent) and feed storage facilities (1 percent) (Figure 11). Some damaged and destroyed items were reported to be already repaired or replaced. Storage facilities and animal sheds were most frequently reported as damaged and left unrepaired (42 and 46 percent, respectively).

Figure 11. Damaged assets for livestock production (percentage of livestock producing households)

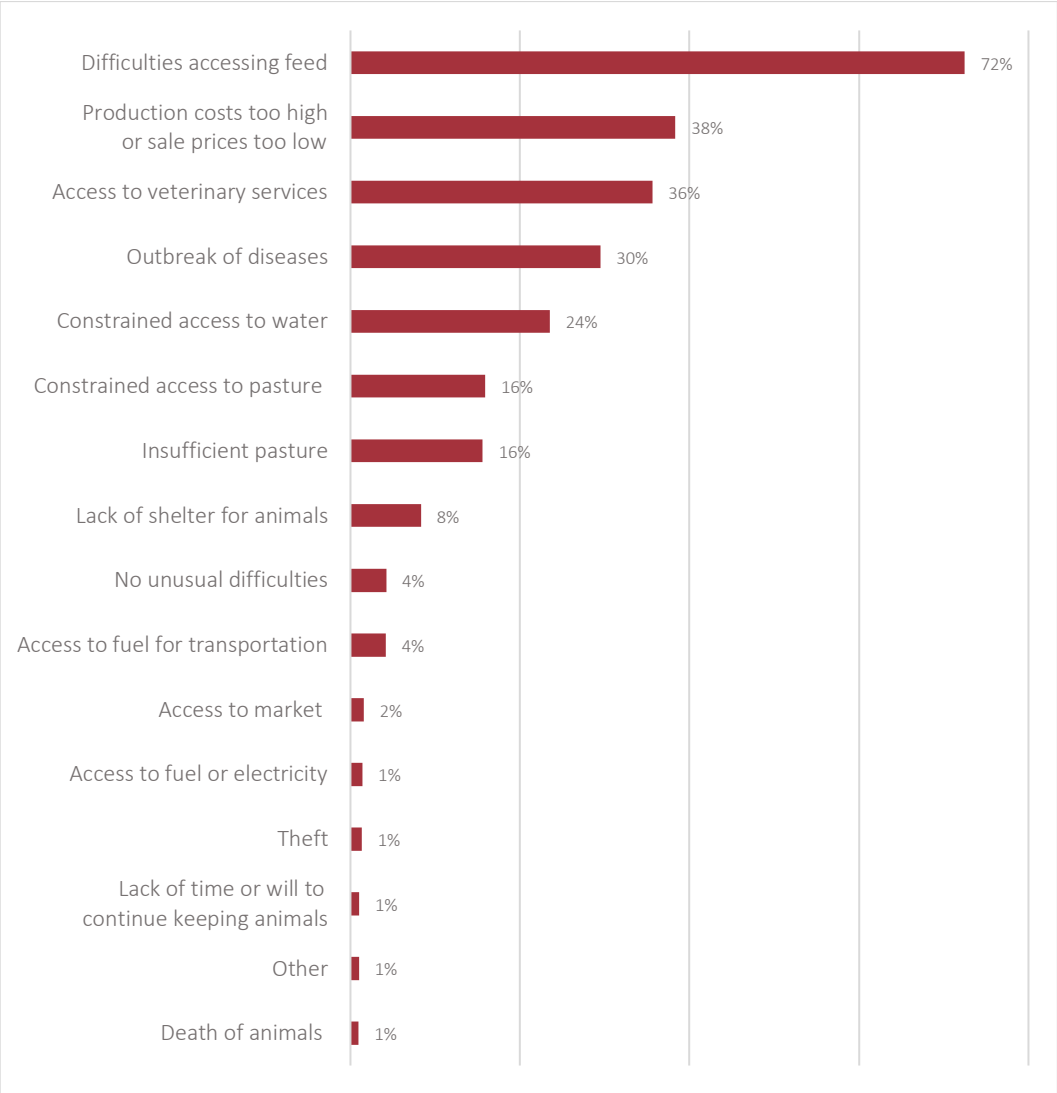


Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Expected difficulties

The vast majority (96 percent) of livestock producers expected to face challenges in their production in the six months following the survey. Concerning the significant challenges anticipated by households in livestock production over the six months following the survey, the main issues expected included difficulties accessing feed (72 percent), concerns about high production costs or low sale prices (38 percent) and anticipated difficulty accessing veterinary services (36 percent) (Figure 12). Outbreak of disease (30 percent) and access to water (24 percent) were also key concerns for many livestock producers.

Figure 12. Major livestock production difficulties expected in the six months following the survey (percentage of livestock producing households)

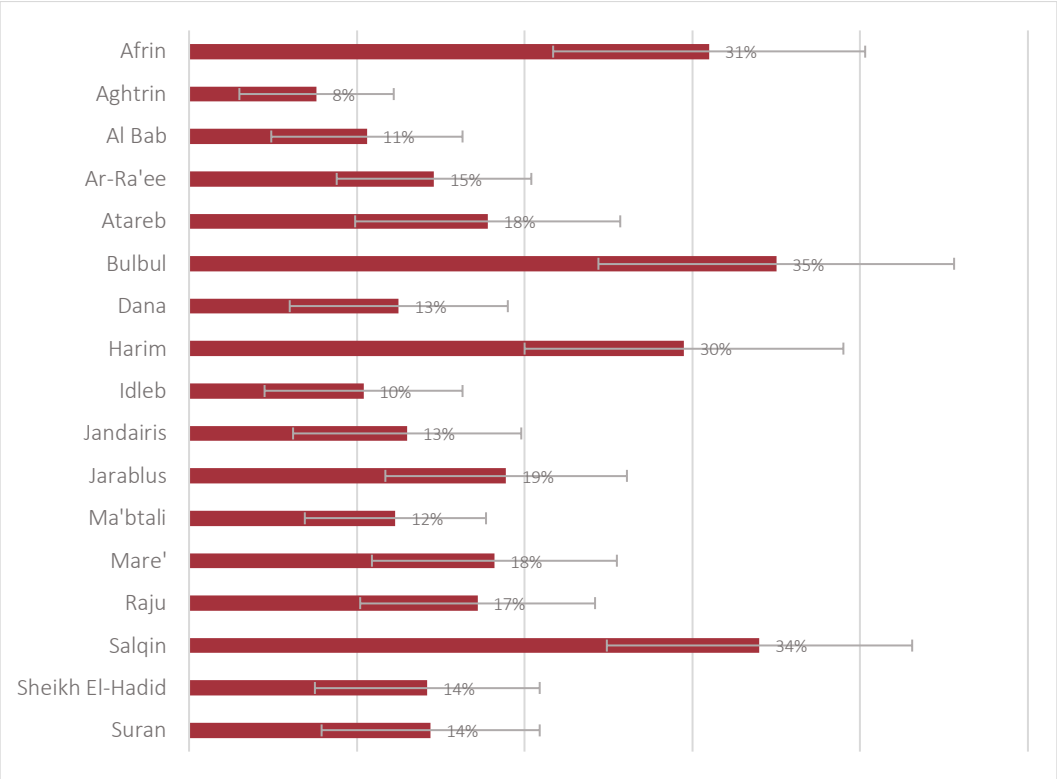


Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Food security

The prevalence of recent moderate or severe household food insecurity assessed with FIES was around 16 percent. The prevalence of RFI was considerably higher in Bulbul (35 percent), Salqin (34 percent) and Afrin (31 percent), at about double the average. Overall, most of the subdistricts were experiencing a prevalence of recent moderate or severe RFI above 10 percent (Figure 13).

Figure 13. FIES over the thirty days preceding the survey by subdistrict (percentage of households)



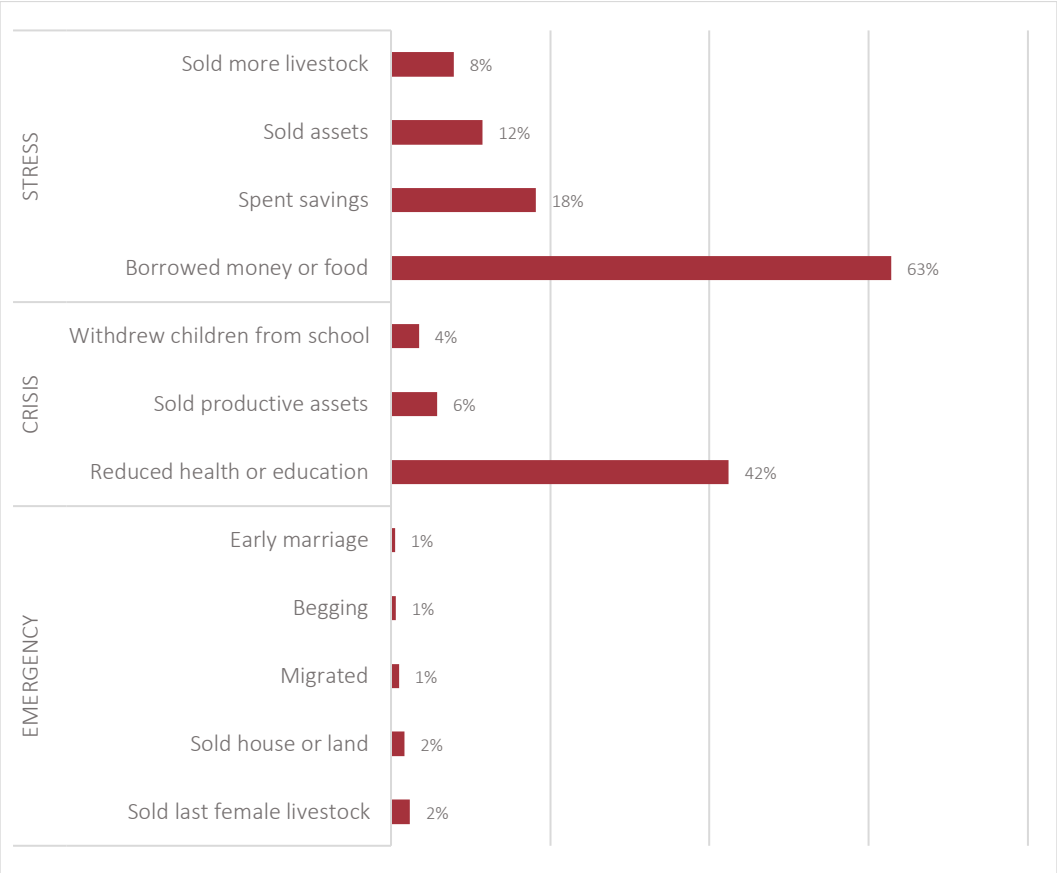
Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

In total, 41 percent of the surveyed households demonstrated a low to medium household dietary diversity score (HDDS), with 32 percent experiencing medium HDDS and 9 percent with low HDDS. Conversely, approximately 59 percent of households achieved high HDDS.

Regarding the household hunger scale, 96 percent of households reported little to no hunger, while only 3 percent experienced slight hunger and 1 percent faced moderate hunger, with no reports of severe hunger.

About 86 percent of households adopted coping strategies to meet their food needs, with the most common being borrowing money or food (63 percent), and reduced expenditure on health or education (42 percent). More than half of all households were employing either crisis (43 percent) or emergency (10 percent) coping strategies. Emergency coping strategies, such as selling house, land or last female livestock (breeding animals), are usually undertaken when the household is under immense economic pressure. They are usually difficult to reverse and may impact a household's ability to meet their food needs in the future (Figure 14).

Figure 14. Coping strategies adopted by households (percentage of households employing coping strategies)



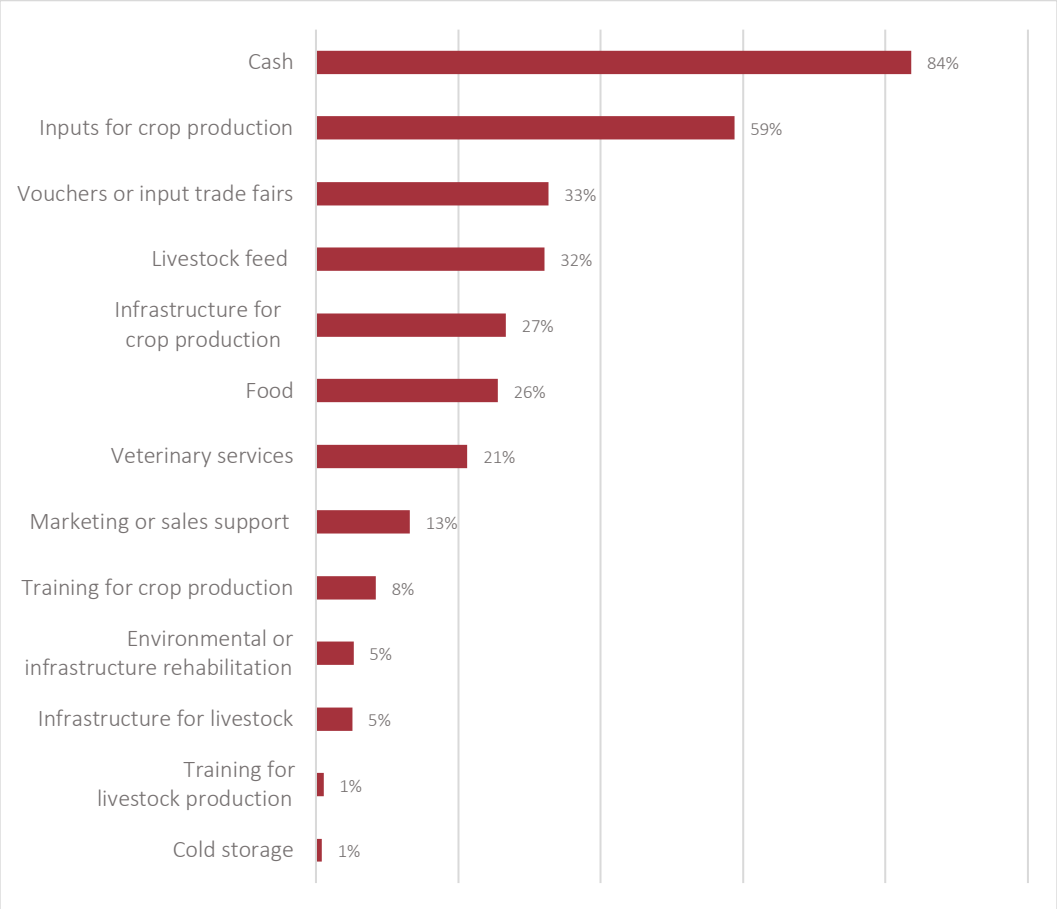
Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Needs

Nearly 92 percent of the surveyed households indicated a need for assistance in the three to six months following the survey. Overall, households expressed a top need for cash support (84 percent) followed by 59 percent reporting a need for inputs for crop production, and 33 percent reporting a need for vouchers and input trade fair (Figure 15).

Approximately 19 percent of households reported receiving assistance in the three months preceding the survey, mainly food (10 percent) and cash support (6 percent).

Figure 15. Needs for assistance over the three to six months following the survey (percentage of households)



Source: FAO. 2024. The Syrian Arab Republic: DIEM-Impact assessment results (September 2023). In: *FAO Data in Emergencies Hub*. Rome. [Cited 10 July 2024]. https://data-in-emergencies.fao.org

Recommendations

The below recommendations have been developed in response to the evidence presented and represent a holistic approach to recovering and restoring agricultural livelihoods in the post-earthquake context.

Preserving livelihoods	Recovering livelihoods	Building back better and sustainable livelihoods
Crop production and sales		
Support the cultivation of vegetables and fruit (annual and perennial) by increasing access to seeds and inputs through cash and voucher assistance or distributions particularly in the subdistricts of Afrin, Dana, Harim, Jarablus, Mare' and Salqin.	Develop cash for work, schemes in agriculture to improve access to labour.	Provide trainings and support to crop producers to improve preservation methods of crops after harvest to minimize pests, rotting and mold.
	Provide agricultural inputs and smart agricultural practices that can help with the recovery of livelihoods through related technical trainings.	
	Support the rehabilitation and maintenance of the common public resources such as irrigation channels, irrigation water stations and wells.	Support the transition of farmers from traditional irrigation methods to modern irrigation systems (such as sprinkler or drip irrigation systems).
	Support the rehabilitation of perennial trees (particularly olives), by replacing equipment that was damaged or destroyed, and supplying crop producers with new trees to replace damaged or broken ones.	Provide training or technical assistance to crop producers to enable them to produce their own seeds or to create seed banks especially for strategic crops (wheat, barley and olive) and local plants.
	Develop direct support to small-scale farmers due to several factors related to the decline in agricultural production, such as climate change and other natural phenomena with related technical trainings.	Conduct studies on the conditions of wells, which are the primary sources of irrigation for farmers in many areas of the northwest of the Syrian Arab Republic, to assess the impact of earthquakes on these wells.
	Develop direct support and technical assistance programmes for small-scale crop producers to improve marketing practices and increase income while supporting all value-chain phases (including production, processing and marketing) for main crops such as wheat, barley, vegetables, olives, etc. with related technical trainings.	

Preserving livelihoods	Recovering livelihoods	Building back better and sustainable livelihoods
Livestock production and sales		
Improve access to livestock production inputs and services (feed, veterinary medications, vaccines and veterinary services) through cash and voucher support programmes or direct distributions.	Continue to support and improve the health of animals with feed distribution and veterinary services.	Improve veterinary services, training and capacity building on livestock production.
Provide producers with assistance to manage pests and diseases by helping livestock producers with pest and disease monitoring, identification, treatment and prevention (including vaccination campaigns).	Develop direct support and technical assistance programmes for small scale livestock producers to improve marketing practices and increase income.	Design programmes to support fodder crop production (and processing of animal feed), and to support the restoration of pasture lands to reduce livestock production difficulties related to purchasing feed, and to ensure availability of affordable animal feed and pastures at community level.
Agricultural infrastructure		
Support the rehabilitation of damaged agri-food facilities (for example low tunnels and storage facilities/warehouses).	Support the recovery of the agriculture sector by replacing or rehabilitating damaged machinery, tools and livestock pens/holdings.	Improve the efficiency of agricultural infrastructure and reduce reliance on traditional energy sources and water.
Support adapted climate smart agricultural practices according to the context of the northwest of the Syrian Arab Republic (including intercropping agriculture, fodder crops and drip irrigation).	Support the rehabilitation of damaged processing facilities (crop or livestock products).	Support the implementation of projects to mitigate the negative effects of climate change on the agriculture sector.
Food security		
Closely monitor the food security status of agricultural households, especially in Afrin, Bulbul, Harim and Salqin.		Support the development of a food security surveillance system, including the regular monitoring of food security and livelihood information at household and sector levels.
Provide food and cash assistance to agricultural households experiencing moderate to severe food insecurity, and households using crisis or emergency coping strategies to prevent the deterioration of the food security situation of agricultural households.		

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Contact

FAO Representation in the Syrian Arab Republic
FAO-SY@fao.org | fao.org/syria
Damascus, the Syrian Arab Republic

Office of Emergencies and Resilience
data-in-emergencies@fao.org | data-in-emergencies.fao.org
Rome, Italy

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