Area-Based Resilient Agriculture Livelihoods Programming in As-Sweida Governorate

Value Chains performance and their upgrading strategy in As-Sweida Governorate
The Syrian Arab Republic

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Economic and Social Commission for Western Asia

AREA-BASED RESILIENT AGRICULTURE LIVELIHOODS PROGRAMMING IN AS-SWEIDA GOVERNORATE

VALUE CHAINS PERFORMANCE AND THEIR UPGRADING STRATEGY IN AS-SWEIDA GOVERNORATE THE SYRIAN ARAB REPUBLIC

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- There are 210,000 people in need in As-Sweida, with 70,000 in acute need. Humanitarian Response Overviews (HRO) estimated a 100 per cent increase in the number of people in need in As-Sweida Governorate, from 100,000 in 2020 to 200,000 in 2021.
- Since most of the cultivation is rain-fed, climate and topographic characteristics of As-Sweida play an important role in the diversity, productivity and quality of crops.
- Data and calculated relative index (RI) suggest five value chains as important economic leverages to improve socioeconomic livelihood in As-Sweida Governorate, including apple, grapes, small ruminants, and chickpeas.
- Apple is one of the most important rain-fed fruit crops in As-Sweida and in the Syrian Arab Republic, with an overall production for 2019 of more than 21,000 tons, of which about 6,000 tons were exported to Egypt, the Sudan and Yemen. Apple orchards cover about 38.1 per cent of the total cultivated area of As-Sweida and 27.3 per cent of the total apple cultivated area of the country.
- The largest area cultivated with fruit trees was recorded for apple, with about 38.8 per cent, followed by grapes and olive, with about 25 per cent each. Almond is also grown in As-Sweida, with a total production in 2019 of up to 1,114 tons over 2,424 ha.
- Grapes production was about 50,000 tons in 2019, and it is the first in terms of cultivation area with about 9,917 ha. Grapes are the largest fruit production in As-Sweida, with about 4 million vine trees bearing fruits.
- Chickpeas are a chief leguminous product in As-Sweida Governorate, with a good competitive quality. As-Sweida is the biggest producer of chickpeas at both the governorate and national levels. The expected production of chickpeas for 2021 is not more than 5,000 tons, where 23,000 out of 31,000 ha were cultivated.
- Small ruminants, particularly sheep and goats, are important in As-Sweida. The cost of production was greatly affected by the increase in the price of forage and other feeding stuff, which has led to a progressive and massive increase in the price of both milk and meat.
- The greatest number of livestock was recorded for sheep, with 428,643 heads, followed by goats with just over 100,000 heads, and then cows with just under 10,000 heads.
- Agro-food processing is relatively active in As-Sweida and includes olive and olive oil; milk and milk derivatives; fruit juices; wineries and distillates; vinegar; raisin; grape molasses; wheat and derivatives, including pasta products; animal feed milling and formulation; and sorting, grading and cold storage for fruits and vegetables. Generally speaking, the agro-food processing standards are still primitive, based on traditional legacy in term of product diversity (portfolio) and quality.
- Until recently, the agriculture sector was not targeted as it should be, neither by international organizations nor by non-governmental organizations (NGOs), although it is of significant socioeconomic importance to the community of As-Sweida.
- Functional support and services are provided to farmers by the public sector (30 per cent) and NGOs and international organizations (13 per cent), while the remaining farmers (57 per cent) receive no support of any kind.
- The vast majority (about 80 per cent) do not invest due to shortage of money and lack of access to finance.
- Women are heavily involved in agricultural activities (91 per cent), but only few own their own lands (around 7 per cent). About 60 per cent of women in As-Sweida Governorate rely on agriculture for their living and financial resources, whereas only 4.5 per cent are engaged in NGOs and civil organizations activities.
- Certification of products, especially for export, is readily available, but most of the time is unrealistic and therefore batches are sometimes detained by the importing country.
- Added values beyond fresh production is still insignificant and poorly handled, including post-harvest sorting/grading, treatment, packing and storing of fresh produce.
- Dairy products in general are produced under traditional conditions and methodologies, especially that most of the production is established by small-scale producers (called workshops) using traditional processes and primitive equipment, hence unsafe approaches.
- Food safety management systems are not familiar to producers, particularly hygienic rules and regulations, including good hygiene practices/good manufacturing practices that represent the basic ground of safe production of food. Therefore, intensive training courses and workshops should be conducted along the dairy production chain.
- Based upon the strategic vision, encompassing marketing, productivity and production, in addition to the socioeconomic system applied in the Syrian Arab Republic, where the public sector is the main actor, particularly in agriculture, upgrading strategy shall be founded on a public-private partnership.

Key messages

- Public institutions need rehabilitation, reforms and upgrading to be capable of handling constraints and pairing with the private sector at all levels, especially in cooperative production and processing units.
- Specialized advisory, technical and market development and financial assistance services, including access to available funding instruments for working capital and investment needs that cannot be covered by the government resources, are needed.
- Service and information support systems, can serve as specialized hubs for the agribusiness to coordinate and assist on collective supply, technical, marketing, commercial and financial operations.
- Minor supplies for more vulnerable groups, particularly with relevance to technology transfer and know-how, are needed.
- Encouraging start-ups, innovation applications, especially organic production, and emerging agro-tech is extremely important to sustain and improve agriculture production and quality of end products. This will also reduce production and marketing cost and improve the profit margin and livelihood of the community.
- Total governance through the enforcement of laws and regulations is a milestone in achieving success, controlling the smooth flow of products and information along the chain, ensuring transparency, and deepening trust.
- As rangeland is a major source of feed for the animal production sector in As-Sweida, and due to the semi-arid nature of the grazing area, it is envisaged to establish comprehensive plans for rangeland management.
- Empowering women, youth and farmers necessitates their engagement in a grouping approach that is complementary and supportive to their main roles and responsibilities.
- The programme can easily empower the whole community, both urban and rural, through the formulation of cluster approaches of main line streams and their needed supply that may be acquired from local resources.
- The collective and wide-sector approach and livelihood resilience will provide the foundation for sustainable management and continuous monitoring and evaluation to ensure the continuity of profits gained.

Executive summary

Agriculture is the most important livelihood source in As-Sweida Governorate. Multiple and continuing shocks, including a financial crisis, currency devaluation, instability and conflict events, climate shocks and COVID-19 have depleted farmers' resilience. In line with the Humanitarian Response Plan (HRP) strategic objectives, the Economic and Social Commission for Western Asia (ESCWA) works to promote the establishment of a broad participatory framework to discuss options and scenarios for guiding Syrian stakeholders through the critical post-conflict process. Along this approach, the livelihood resilience in As-Sweida Governorate was assessed, and a strategic area-based resilience programme is proposed with the objective "To guide and structure the rehabilitation and upgrade of main selected agriculture value chains through inclusive and participatory mechanisms driven by market demands and capacities of main actors". The study also aims to understand the context of agriculture livelihoods in As-Sweida in terms of livelihood assets, vulnerabilities and barriers for recovery, and institutions and processes.

The methodology included screening and evaluating agriculture production of economic importance and potential to develop holistic and integrated market-driven value chains in a conflict setting. Selection criteria were pre-determined, and surveys were conducted through detailed questionnaires customized to achieve the required results. Four value chains (apple, grape, chickpeas and small ruminants) were prioritized and selected for detailed mapping and further analysis in this study. The field work included interviewing 27 key informants and conducting 19 focus group discussions and 44 household surveys, mainly with farmers representing different selected value chains (annex 4).

Farmers household characteristics were also analyzed, with particular emphasis on agricultural engagement

and associated activities. The majority of respondents (65 per cent) have barely sufficient means and requirements to respond to their living needs, and about 14 per cent have less than enough or not sufficient means to meet living requirements. Those having sufficient means and assets represented 19 per cent of total respondents, and only 2 per cent of respondents stated to have means that are more than sufficient for their living requirements.

The source of income for As-Sweida community is diverse and mainly composed of agricultural activities, employment in the public sector, the private sector, crafts and freelance businesses. About 30,000 families are benefiting from agriculture sources, about quarter of whom are living on agricultural sources only, whereas about 75 per cent support their welfare from agro-food activities.

About 20 per cent of respondents have no access to basic needs and services such as clean water, power supply, wastewater management, etc. The community is struggling hard to maintain what it had before the conflict because it cannot afford renovation and replacement anymore. It was observed that the community of As-Sweida was engaged in agriculture during the conflict more than before. The range of involvement in agricultural activities for over 90 per cent has increased by about 15 per cent, and for 40 per cent to 60 per cent has increased by over 20 per cent. Yet, about half of As-Sweida families rely on personal external remittances to sustain their living requirements.

Regarding agricultural activities, about 18 per cent are in need of water irrigation supplements, whereas technical support is limited to general extension and training, although only about 41 per cent of respondents stated that they receive such type of assistance. Support and services are provided by the public sector (30 per cent), and non-governmental organizations (NGOs) and international organizations (13 per cent), while the remaining (57 per cent) receive no support of any kind.

Apple is one of the most important rain-fed fruit crops in As-Sweida and in the Syrian Arab Republic, with an overall production for 2019 of more than 21,000 tons, of which about 6,000 tons were exported to Egypt, the Sudan and Yemen. Apple orchards cover about 38.1 per cent of the total cultivated area of As-Sweida and 27.3 per cent of the total apple cultivated area of the country. The standard deviation for apple production for all Syrian districts was estimated at 72,000 tons, with a coefficient of variance equivalent to 20.34 per cent, as calculated from data by the Ministry of Agriculture and Agrarian Reform, (MAAR) of 10 years of apple production in the country. The majority of land cultivated with apple is located in the administrative As-Sweida City, with about 13,410 ha, whereas the remaining is mostly in Salkhad (about 1,084 ha) and Shahba (about 485 ha).[1]

Agriculture inputs management was found to be decisive in the final quality and quantity of apple end product. Farmers who produced first grade apple were aware of the tree needs through soil analysis and the addition of organic and synthetic fertilizers, professional pruning practices and good management of winter water collection, and by following an integrated pest management approach.[2] In addition, the environmental conditions are favourable for apple cultivation, especially at altitudes higher than 1,000 m and a minimum precipitation of 350 mm. Since the beginning of the conflict, the production cost is progressively increasing with the dramatic increase of inflation and the devaluation of the Syrian Pound (SYP). For example, production cost has increased by 50 per cent from 2018 to 2019.[3]

Farmers complain about unfair support from the Government in subsidizing apples, in the same way it supports citrus fruits. The governor has promised to improve regulations in 2020 and announced plans to open external markets, such as Iraq and Russia. The Chairman of the Marketing Committee stated that farmers are making only 15 SYP/kg.[4] The Chairman of the Farmers Union declared that the average apple price

1 Safadi 2016. Climate and its impact on the cultivation of apple and grapes in As-Sweida.
2 Safwan Abu Assaf and others. (2016). Economic study on variability of apple productivity, As-Sweida farmers are the winners. Jordan Journal of Agricultural Sciences.
3 https://npasyria.com/blog.php?id_blog=2350&sub_blog=11&name_blog.
4 https://syrianexpert.net/?p=52463.

for the 2020 season to be between 500 and 650 SYP kg (farm-gate).[5] However, opening new markets, especially in European Union countries, requires the accreditation and certification of the produce.[6]

Major constraints include increased cost of production, low volume of exportable quality, safety issues, especially pesticide residues, and post-harvest practices, particularly sorting/grading and cold storage. Cold storage of apple as a strategic tool to control its marketing is also suffering from major issues, although there are about 600 storage units in As-Sweida, with a capacity of 50,000 tons. Among these issues are the post-harvest operations, especially sorting, grading and packing, which are still applied mostly manually or through old technologies. Marketing is carried out mainly by wholesalers and traders (over 90 per cent) through informal and unidentified distribution channels. Apple processing is still negligible, with the production of small amounts of dried chips and apple molasses.

Grapes production was about 50,000 tons in 2019, and is the first in terms of cultivation area, with about 9,917 ha. Grapes represent the largest volume of fruit tree production in As-Sweida, with about 4 million vine trees bearing fruits. The governorate is the second largest grape producer in the country, producing from 35,000 to 58,000 tons/year. The largest variety produced is known as grape juice, also called Salti, with over 70 per cent of total production. Grapes occupy about 25 per cent of total fruits area of As-Sweida Governorate, where 67.1 per cent is grown in As-Sweida City, 23 per cent in Salkhad and 9.9 per cent in Shahba. In particular, most of vineyards are spread over high lands (mountains and hills), especially in Kafr, Sahwat El Kheder, Hubran, Arman, Maimas and Dahr El Jabal.

Like apple farmers, grape farmers suffer from increased cost of production, particularly related to plants protection, because grapes are susceptible to infestation and diseases and are especially attacked by phylloxera. The production system is still mostly traditional, with a large part of orchards still following the creeping-system, i.e. ground-laying vine (goblets-like), rather than growing vertically. This system makes plants and fruits vulnerable to infestation and physical damages, and therefore increasing losses and reducing quality of end product. Processing of grapes also follows traditional methods, and most of the grape juice is transformed into molasses, raisin and alcoholic drinks. **About half of the total grape production is processed into various derivatives, including raisin (about 10 per cent), grape syrup (about 50 per cent) and alcoholic drinks and methanol distillate (about 25 per cent)**. The most important and potential product derived from grape is molasses (*Debs* in Arabic دبس) which is sold at about 65,000 SYP/tin (25 kg), whereas the home-made variety is at about 70,000 SYP/tin.[7] About 1,500 tons of syrup was produced during the 2020 season, with each tin (25 kg) costing the farmer about 15,000 SYP paid to manufacturers. Raisin is another main grape product, creating about 10,000 job opportunities in As-Sweida.

Marketing of grapes, particularly the table varieties, is still facing major challenges. The greatest portion of grapes is sold directly to wholesalers who take advantage of farmers. The Government has worked on opening new internal markets (platforms) to facilitate the distribution and presentation of grapes to consumers, as enlarging and developing the local industry will certainly improve marketability of grapes in As-Sweida. The Governor of As-Sweida has announced that there is an opportunity to produce organic grapes and derivatives. Also, local experts have urged the Government to open external markets by satisfying international standards and certification.

Chickpeas are a chief leguminous product in the As-Sweida Governorate with a good competitive quality. As-Sweida is the biggest producer of chickpeas in the governorate and nationally. In 2019, the governorate produced around 6,000 tons of chickpeas, while the expected production for this year (2021) is not more than 5,000 tons, where 23,000 ha out of 31,000 ha was cultivated.

Like other produce, the cost of production is a major issue, especially with products that need

5 http://thawra.sy/index.php/economy/economy-local/245970-2020-09-15-08-09-55.
6 http://newspaper.albaathmedia.sy/2020/10/15.
7 7al.net/2019/11/05.

heavy handling and labour. The limited availability of technology in the production of chickpeas makes handling difficult and costly. Seeding and harvesting machinery will certainly facilitate production and reduce its cost. In addition, chickpeas need extra charges for post-harvest cleaning, sorting, grading and packing, which is normally called marketing expenditures. Spring white *Biadi*, (بياضي) and *Ajaylati* (عجيلاتي) are the two main varieties cultivated in As-Sweida, although public research institutions are proposing new winter varieties such as Ghab 1-5.[8] Relatively few insect pests attack chickpeas, compared to other legumes. This is probably because it is a cool-season crop, and also because of the dense glandular trichome found on all of its green tissues.

Chickpeas, unlike fruits, do not require as much fertilizers and chemical control. Still, the cost of production is relatively high mainly due to the unavailability of qualified workers who are most of the times brought in from outside the governorate. Workers are generally not qualified and demand high wages. Machinery is either old or not available, and therefore adding to the production cost. Marketing of chickpeas in As-Sweida Governorate is still at its minimum capacity, based mainly on traditional and farmers' approaches. More specifically, 90 per cent of the product is sold to wholesalers, who are called collectors, mostly as bulk packed in 50 kg or 100 kg bags. Sometimes, about 5 per cent is sold to retailers and another 5 per cent is left for home consumption and seeds. Processing of chickpeas is negligible and needs substantial development. Particular attention should be given to the use of machinery in seeding and harvesting, and the introduction of winter varieties to make use of the rain season.

Small ruminants, particularly sheep and goats, are important in As-Sweida. Their cost of production was greatly affected by the increase in the price of forage and other feeding stuff, which has led to a progressive and massive increase in the price of both milk and meat. In 2020, for example, the price of one pack of animal feed, such as "ARASCO", reached 30,000 SYP, and one kg of barely reached 500 SYP. In addition, prices of veterinary drugs have also been dramatically increased. On the other hand, access to rangelands became limited due to security reasons. Subsequently, the price of live livestock has proportionally increased. For example, the price of a head of cattle has reached 4 million SYP and that of a small ruminant has reached about 350,000 SYP (mid- 2020). Milk, in turn, is sold to consumers at about 600-700 SYP/kg, compared to 15 SYP before the conflict. Post-harvest/mortem products include wool, meat, milk and organic fertilizers, which are generally sold in bulk locally and nationally at unsatisfied prices due to market fluctuation and traders' exploitation. Farmers are sometimes obliged to sell part of their animals to sustain their businesses due to expensive input supply. For example, a ton of forage cost about 750,000 SYP and supplement feed (bran and barley) cost 15,000 SYP/week/head. Vaccines and veterinary medication are also expensive and sometimes ineffective, especially when they are cheap, the cost of which is about 85,000 SYP/125 heads.

Supportive functions and activities are mainly provided by public institutions, particularly the Ministry of Agriculture and Agrarian Reform (MAAR) and its related directorates and establishments, including extension and research practices. Public support functions are very limited due to lack of budget and other complications generated by the conflict, especially the socioeconomic pressure. According to a primary survey, only 30 per cent of farmers get partial benefits from extension services. Although there are extension foundations through various entities, they need significant capacity-building and rehabilitation. Also, update and orientation towards innovative and smart systems of production are major needs.

Non-governmental organizations and productive cooperatives are also limited and non-effective mainly due to lack of knowledge and financial support. The most common source of financial support in As-Sweida is the Agricultural Cooperative Bank, which supported farmers with 420 million SYP as soft loans during last year (2020). Loans were mainly used to support procurement of agricultural machinery and equipment. Regarding research, various disciplines

8 http://esyria.sy/sites/code/index.php?site=suweda&p=stories&category=news&filename=201601140846362.

in the agriculture sectors were notably addressed by the Agricultural Directorate of As-Sweida before the conflict (2007), but very limited projects, such as cold storages, have been implemented. Most of those projects were aiming at improving marketing of agricultural products, particularly in the Gulf and European Union countries.

Accordingly, a **targeted strategy of interventions** was formulated to rehabilitate and upgrade the four selected value chains, specifically to:

- Reorganize micro-, small and medium-sized enterprises (MSMEs), including farmers, into stronger and fully integrated groups and cooperatives for a more efficient and cost-effective use of inputs and resources.
- Consolidate and expand the current market positioning of the MSMEs' target sectors and access new markets.
- Facilitate access to finance for needed services and investments, utilizing available funding instruments.
- Create new and inclusive employment opportunities as a result of increased productions and sales.
- Empower supportive institutions and governance through capacity building and modern laws and regulations.

The results (outputs) of the agro-food sector expected from the proposed upgrading programme are:

Result 1: Market targets, access requirements and drivers of value chains are defined as a base for the formulation and implementation of final strategies and plans.

Result 2: Final integrated market development strategies and action plans are formulated and adopted in each value chain and cluster.

Result 3*:* Integrated socioeconomic sustainability of value chains is achieved.

Result 4*:* Value chain-based strategies in the target agribusiness sectors are formulated and adopted by the Syrian private sector and the Government.

The proposed management structure is recommended to be formed by a Steering Committee, a Technical and Financial Coordination Unit (TFCU), and Sector Management and Coordination Units (SMCU) for the agribusiness sector targeted value chains.

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Abbreviations

CAB	Cooperative Agricultural Bank of Syria
ESCWA	Economic and Social Commission for Western Asia
FAO	Food and Agriculture Organization of the United Nations
IDPs	internally displaced persons
HNO	humanitarian needs overview
HRP	humanitarian response plan
Ha	hectare
MAAR	Ministry of Agriculture and Agrarian Reform
MSME	micro-, small and medium-sized enterprise
NGOs	non-governmental organizations
RI	relative index
SMCU	Sector Management and Coordination Unit
SYP	Syrian Pound
SPS	sanitary and phytosanitary
PSD	private sector development
VC	value chain
WFP	World Food Programme

Background

The decade-long ongoing Syrian conflict has exacerbated vulnerabilities and increased the need for humanitarian assistance. The conflict has severely damaged physical infrastructure, contributed to significant annual losses in the gross domestic product (GDP) and the depreciation of the local currency, increased poverty and unemployment and led to massive displacement. International sanctions and the COVID-19 pandemic have exacerbated the impact of the conflict. Almost 90 per cent of the Syrian population is poor, with 55 to 65 per cent living in extreme poverty. Half of the working-age group is unemployed.[9]

Public and private assets have been decimated, with housing and infrastructure damages estimated at around $90 billion in 2016. The GDP, $60.2 billion in 2010, is now at $27.2 billion. Around 15 million people do not have access to safe water, and electricity generation dropped by half from 2010 to 2014.[10] The conflict has pushed a total of 5.6 million people to seek refuge in neighbouring countries, while 6.7 million people are internally displaced within the Syrian Arab Republic;[11] forming the biggest internally displaced population in the world. Supporting durable solutions remains very challenging.

The 2021 Humanitarian Response Plan (HRP) sets out a framework within which the humanitarian community will respond to the large-scale humanitarian and protection needs in the Syrian Arab Republic throughout 2021, on the basis of the prioritization undertaken across and within sectors. HRP estimated

9 https://reliefweb.int/sites/reliefweb.int/files/resources/som_summary_2021.pdf.

10 United Nations News, "Children's access to safe water and sanitation is a right, not a privilege – UNICEF," August 29, 2017, https://news.un.org/en/story/2017/08/564002- childrens-access-safe-water-and-sanitation-right-not-privilege-unicef#.WaXVo5OGNBw.

11 https://data2.unhcr.org/en/situations/syria (June 2021).

that 13.4 million people are in need of various forms of assistance inside the Syrian Arab Republic and 6 million are in acute need.[12] In response, HRP planned immediate priority strategic objectives to save lives, enhance protection and increase resilience and access to services. It specifically planned to increase the resilience of affected communities by improving access to livelihood opportunities and basic services, especially among the most vulnerable households and communities.

Humanitarian responders will continue to leverage and advocate for all response modalities—cross-border and cross-line—to access people in need. The United Nations and its partners aim to target 10.5 million people with humanitarian assistance in 2021, an increase from 9.5 million, at an estimated cost of $4.2 billion, a ten per cent increase from 2020.[13]

The situation continues to deteriorate drastically in regard to food security and agriculture, with an estimated 14.2 million people in need of some form of food and agriculture assistance in 2021, compared to 9.8 million in the previous year. At least 12.4 million people are estimated to be food insecure, of which 1.3 million are considered severely food insecure. Food prices in the Syrian Arab Republic have increased dramatically in 2020, and the national standard reference food basket price of the World Food Programme (WFP) in November 2020 was 251 per cent higher than that of November 2019.

The agriculture sector, which was once a cornerstone of the Syrian economy, has been severely impacted, with half of national grain requirements met through imports, mainly from Turkey and other corridors such as Iraq, Iran and Lebanon. According to the Food and Agricultural Organization of the United Nations (FAO),[14] high cost and limited availability of quality crop and livestock production inputs, damaged irrigation infrastructure across the country, degradation of livelihoods and income earning opportunities, coupled with the direct and knock-on effects of COVID-19 and climate-induced shocks, continue to drive more people into food insecurity.

In line with HRP strategic objectives, ESCWA works to promote the establishment of a broad participatory framework to discuss options and scenarios for guiding Syrian stakeholders through the critical post-conflict process. Area-based agriculture livelihoods programming at the governorate level would promote the resilience and livelihoods of farmers in the Syrian Arab Republic as well as potential refugees, returnees and internally displaced persons (IDPs), and reverse national food insecurity.

12 2021 Humanitarian Needs Overview (HNO) for the Syrian Arab Republic. OCHA. March 2021.
13 Global Humanitarian Overview 2021: https://gho.unocha.org/syria.
14 FAO in the 2021 humanitarian appeals Syrian Arab Republic. http://www.fao.org/3/cb3652en/cb3652en.pdf. March 2021.

Objectives

The objective of the study is to guide and structure the rehabilitation and upgrading of main agriculture value chains through inclusive and participatory mechanisms driven by market demands and capacities of main actors. A holistic and integrated approach is envisaged to bring in all actors of value chains, up and down stream, together with support and functional services, into a market driven system. This shall be based on the identification of market requirements in terms of quantity and quality, and the subsequent upgrading of institutional and regulative infrastructures.

To achieve this objective, the following activities were carried out:

- Context analysis of agriculture livelihoods in As-Sweida intended to show the status of the agriculture sector in terms of (1) livelihoods assets (physical, financial, natural, social and human); (2) vulnerabilities, including barriers for recovery; and (3) institutions and processes. It included the main direct and indirect damages resulting from the conflict and how producers are coping to continue cultivation.
- Based on the context analysis, (4) climate smart agriculture value chains were selected, and a detailed mapping and analysis were conducted.
- Agriculture stakeholders mapping was conducted to provide detailed information on actors and operators currently implementing agriculture initiatives and activities within As-Sweida vicinity.
- An area-based resilient agriculture livelihoods plan developed for the selected value chains based on the above immediate results.

Methodology of selection and analysis

The methodology has been developed based on a step by step analytical and screening process, looking first at the whole prevailing agribusiness sectors and introducing general and more specific criteria allowing to restrict the focus on those subsectors best meeting upgrading potential, as well as the objectives of the study. Accordingly, a *quick screening review* of the agricultural activities in the Governorate of As-Sweida was conducted in order to narrow the scope of the study and to encompass value chains that are of economic importance in the districts. Consulted actors included public and private agricultural experts, institutions and lead farmers.

Data and information were collected as available from several (primary and secondary) sources and re-aggregated for the purpose of obtaining a comprehensive view, and therefore building a baseline for the selection. Main value chains of agricultural production in As-Sweida are summarized in the table below:

Table 1. Major agricultural value chains in As-Sweida Governorate (see annex 1 for production capacity)

Fruit trees	Cereals	Aromatic plants	Vegetables	Animal production
Apple	Chickpeas	Thyme	Tomatoes	Sheep
Grape	Wheat			Goats
Pear	Lentils			Dairy products
Pistachio	Barley			Meat
Almond				
Fig				
Olive				

The socioeconomic value of the above chains was then further assessed using pre-set criteria (table 2) customized to the objective of the study, which included the following:

- Potential of each value chain to increase productivity and competitiveness.
- Efficacy of operational performance and employment generation.
- Feasibility of intervention in term of cost reduction and improvement of agricultural practices.
- Increase economic value and enhance market access.
- Potential impact on cross-cutting issues, particularly women and youth employment.
- Opportunity to establish complementarities and synergies with other programmes.

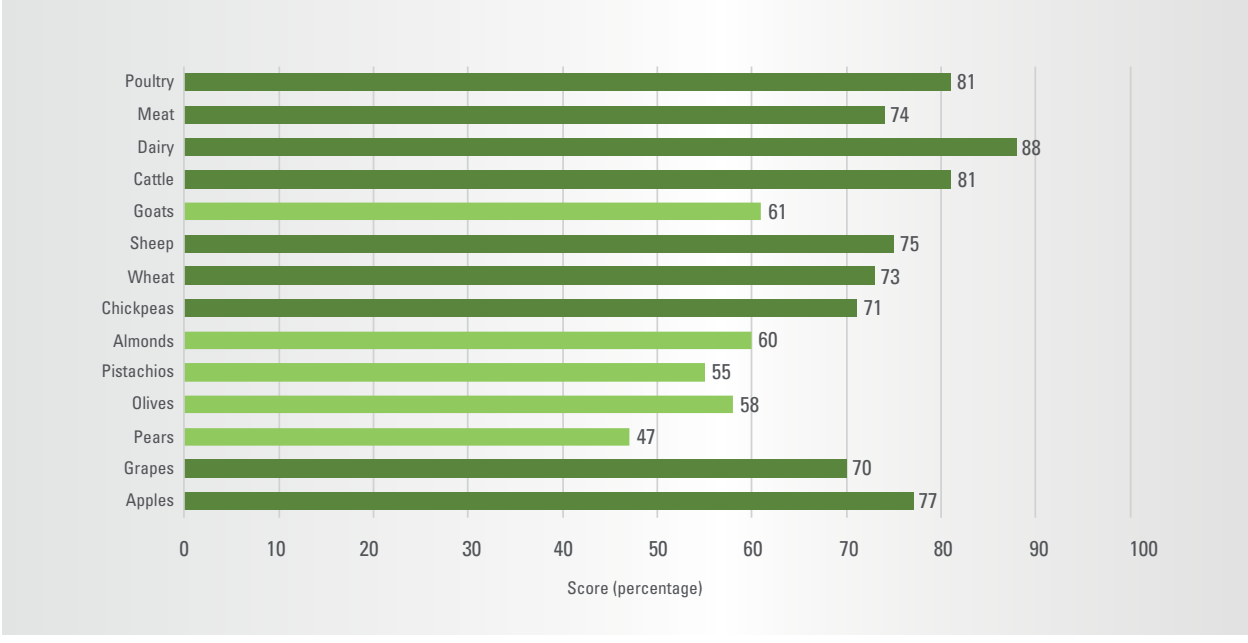
Table 2. Criteria weighing scores applied in the pre-selection of value chains in As-Sweida

Criteria weighing of plant (crops, horticulture and fruit trees) and animal production in As-Sweida Governorate		Weight %
Main criteria A	*Potential for production increase*	60
Sub-criteria A	Relative importance in the governorate	10
	Competitiveness of the product	10
	Availability of support services (including agricultural inputs)	10
	Added value potential	10
	Availability of expertise	10
	Market demand	10
	Per cent average score	
Main criteria B	*Efficacy of operational performance*	15
Sub-criteria B	Employment generation in the agriculture sector	5
	Employment generation for women	5
	Employment generation for youth	5
	Per cent average score	
Main criteria C	*Feasibility of intervention*	25
Sub-criteria C	Availability of specialized supporting institutions	10
	Possibility to reduce cost of production	10
	Timing and investment required to achieve impacts	5
	Per cent average score	
	Total weight	

As presented in table 2, Criteria were weighed (out of 100 per cent) and divided into sub-criteria (scaled 1 to 10) to facilitate non-prejudice socioeconomic assessment of each value chain (annex 2). Assessors (n=13) were key informants in the field, including lead farmers, agriculture experts and public and private agriculture-related institutions as mentioned above.

Scores of panelists were calculated in averages and an overall score for each value chain was generated in percentage. Chains having higher than or equal to 70 per cent scores, equivalent to 95 pe cent level of confidence, were selected for further assessments. The results are illustrated in figure 1 below.

Figure 1. Weighing scores of As-Sweida main agricultural products



Regarding the animal sector, small ruminants (including milk and meat) were selected due to their widespread in the community and high demand, especially for sheep and derivatives. Poultry, however, was excluded due to its limited distribution, which is concentrated within a very small portion of the population and is suffering from major difficulties because of the conflict that has resulted in harsh conditions of rearing, especially with regards to feed cost and veterinary services. Supporting and enhancing this value chain is thought to benefit a larger portion of the population, especially in the rural areas. On the other hand, poultry production is mainly carried out by the public sector, As-Sweida poultry establishment, while the private sector is suffering from dramatic conditions due to cost of production, particularly fuel, feed and veterinary costs. About 129 poultry raising private establishments have closed down by 2020.[15] As per plant production, apple and grapes were selected due to their high economic value in the governorate, in addition to their high scores. Among cereal products, chickpeas value chain was selected due to its acceptable score and the relatively leading position of the governorate in cultivating and producing this product nationally.

Furthermore, a second review was carried out on the value chains performance in As-Sweida. Research reviews and publications (public and academic), in addition to released news and public press, were reviewed and evaluated. Data were obtained mainly from the Ministry of Agriculture and Agricultural Reform (MAAR) sites and from the local directorate of agriculture and were analyzed. The results revealed that value chains are classified into four economic categories, as follows:

C1: Apple VC with RI = 9.

C2: Grapes VC with RI = 4.

C3: Sheep milk and meat with RI = 2.

C4: Olive, pistachio, chickpeas, wheat, livestock milk and meat with RI =1.

Where RI is the relative index of economic importance. This was calculated from data obtained from MAAR about the production volume of each value chain and the total price value relative to olive = 100.

15 @Suwayda24 News & Media Website.

This prioritization was in line with the scoring assessment carried out by key informants, and subsequently, apples, grapes, chickpeas and small ruminants were selected for further assessment and improvement formulations, without underestimating other value chains in category 4 such as olive, pistachio and wheat. Chickpeas were selected as priority in this group because of its significant economic positioning in Syrian production at the national level.

Accordingly, questionnaires were formulated and customized to respond to the overall objectives of the study, and more specifically to generate practical outputs and conclusions concerning the selected value chains. Questionnaires covered all segments of the value chain, starting from primary production up to retailing platforms. Farmers households were also considered in a partial approach to integrate livelihood conditions, before and after the conflict, within the performance scheme of the selected value chains. In specific, questionnaires were customized to include Key Informant Interviews (KIIs), Focus Group Discussions (FGDs), households/farmers, assets information, production and processing, labour and employment, water and irrigation, distribution and marketing and access to finance.

Furthermore, geographical areas of the survey study were identified (As-Sweida mountain: Ain Arab; West As-Sweida: Mazraa, Eraa; South As-Sweida: Salkhad; North As-Sweida: Shahba, As Sawara; East As-Sweida: Malah, As-Sweida City) in accordance with the selected value chains i.e. areas, villages or cities, where value chains are mostly cultivated and utilized. Also, when farmers households and FGDs were selected, geographical locations were taken into consideration.

Household surveys/farmers: To assess the socioeconomic livelihood, 44 households/farmers were randomly selected from designated geographical locations in a stratified approach. The number was considered enough to represent the population because of the scope limitation of the study, which is mainly related to the selected and integrated value chains (initially only four).

FGDs: On the other hand, 20 FGDs (124 participants in all) were designated to open discuss the survey outcomes, conclusions and recommendations generated thereafter, of which five FGDs were conducted to discuss issues related to the apple value chain (primary production, transformation and handling, distribution and marketing), four for grapes, seven for chickpeas and four for small ruminants.

Key Informant Interviews (KIIs, n=27) with community leaders, relevant agricultural public and private organizations and input traders, lead farmers, syndicates and agro-food MSMEs were conducted. The assessment methodology was lightly based on a Household Economy Approach, which emphasizes the importance of understanding local livelihoods and how people in a community typically live, in order to be able to assess the potential impact of the conflict on the community and how the community is coping with it.

Collected data were then divided into two main parts, namely, qualitative/descriptive, which is generally the outcome of FGDs, and partially-quantitative data generated from research reviews, farmers households and KIIs. In addition to reviews, interviewed personnel responses were converted into real numbers for further treatment and analysis, using Excel statistical software.

Data and information were then classified into the chains' segments, e.g. agriculture inputs, primary production, post-harvest handling, processing and marketing, with each segment data analyzed and discussed separately. A collective depiction of the value chain was then drawn, and a strengths, weaknesses, opportunities, and threats (SWOT) analysis was carried out.

The results obtained were then thoroughly discussed and internally validated to be the rationales for holistic mapping of selected value chains and identification of means and tools to boost their socioeconomic impacts. Subsequently, a targeting strategy for value chains matrix (holistic and market-driven) was formulated, along with policy recommendations to scale up and upgrade the selected value chains. The policy recommendations will be validated in the future with main stakeholders involved in the selected value chains.

01

Briefing on the secondary review

A. The Syrian context

The Syrian Arab Republic is a Middle East country situated on the eastern end of the Mediterranean Sea with a total area of 185,180 km². It is bordered in the north by Turkey, in the west by Lebanon, in the east by Iraq and in the south by Jordan and Palestine, with maritime boundaries with Lebanon, Cyprus and Turkey. Its economy was heavily dependent on the food and agricultural sectors.

Agriculture in the Syrian Arab Republic has played a pivotal role in sustaining the livelihoods of Syrians and supporting the country's economy. Before the conflict, the sector employed half of the population and contributed to 19.3 per cent of GDP from 2006 to 2010.[16] An approximate 8.9 million people (44.5 per cent of the population) live in rural areas, and more than one million (19.4per cent of the labour force) work in agriculture.[17] This distinguished the country with self-sufficiency in food production, which is rare among other Arab countries that are highly dependent on imports.

The Syrian Arab Republic had strategic self-sufficiency in wheat and other crops, which allowed it to export food commodities to neighbouring Arab countries, including Gulf States. However, with the Syrian conflict, which started in March 2011, the country's food and agricultural industries have been badly affected. Most of the processing factories and agricultural facilities, such as industrial zones, food plants, greenhouses, irrigation canals and pumps, have been damaged in the conflict areas, resulting in a huge recession in the country's food and agricultural productivity. It is estimated that this will prevent the country from meeting the future food requirements as well. Agriculture jobs that used to support farming households no longer exist, and income sources have diminished.[18]

Pastures, grassland and forests cover 48 per cent of the country, and cultivable lands constitute 32 per cent, while the remainder is rocky mountains and semi-desert. The agriculture land area of the Syrian Arab Republic was estimated at 139.21 km², or 75.81 per cent, where arable land is split into cultivated (92 per cent) and uncultivated (8 per cent).[19] The semi-desert areas of the country are used for grazing when there is adequate precipitate. Agriculture has been the mainstay of the Syrian economy, with 6,025 million ha of agricultural land, representing 22.34 per cent of the total area.[20] The average share of agriculture in gross national products of the Syrian Arab Republic changes between 20 and 27 per cent, depending on the year. For example, it was around 20 per cent in 2007, according to reported values.

Furthermore, continuing shocks and stresses, such as recurrent conflict events, mass displacements, alarming food insecurity, economic crises and the devaluation of the Syrian pound, international sanctions and COVID-19 have further exacerbated the socioeconomic situation and depleted farmers resilience.

1. Conflict, agriculture and food security

The ongoing Syrian conflict has generated the largest migration of refugees and internally displaced persons (IDPs) in the Western hemisphere since World War II. The conflict has pushed a total of 6.6 million people to seek refuge worldwide, including 5.6 million who are hosted in neighbouring countries, while 6.7 million people are internally displaced within the Syrian Arab Republic, making it the biggest internally displaced population in the world.[21] Today, around 13.4 million people need various forms of assistance inside the country, including 6 million who are in acute need. Sixty per cent of the Syrian population was food insecure by the end of 2020, and 2 million are estimated to be living in extreme poverty.

16 Syria At War Report. NAFS 2020. https://nafsprogramme.info/sites/default/files/2020-10/Syria-at-War-Eight-Years-On-Full-En.pdf.
17 Safwan 2019. Syrian crisis repercussions on the agricultural sector: Case study of wheat, cotton and olives.
18 Global Communities, May 2018. Resilience through Humanitarian Assistance: Agriculture in the Syria Conflict.
19 https://data.worldbank.org/indicator/AG.LND.AGRI.ZS?locations=SY (up to 2018).
20 Erian W, Katlan B, Babah O. 2010. Drought vulnerability in the Arab region: Special case study: Syria. Global Assessment Report on Disaster Risk Reduction.
21 HRP 2021.

The situation continues to deteriorate drastically in terms of food security and agriculture, with an estimated 14.2 million people in need of some form of food and agriculture assistance, compared to 9.8 million in 2020. The food insecurity of people in need has risen by 45 per cent in 2019. At least 12.4 million people are estimated to be food insecure, including 1.3 million who are considered severely food insecure. Food prices in the Syrian Arab Republic have increased dramatically in 2020, and the WFP national standard reference food basket price in November 2020 was 251 per cent higher than that of November 2019. ESCWA estimated the loss of capital stock in agriculture between 2011 and 2015 at $6 billion, which is equivalent to 6.7 per cent of the country's total capital stock losses over that period.

2. Syrian agricultural exports

Syrian exports have declined by 91 per cent between 2011 and 2017, mainly due to economic siege. Turkey was the first export destination in 2016, becoming fourth afterwards, with Lebanon being the first, followed by Egypt, Saudi Arabia, Turkey and Jordan. These countries imported about 65 per cent of agricultural commodities, while European Union countries, the United States, India and Russia were other destinations.[22] Agriculture commodities included animal products, especially Awasi sheep, fruits (apple, apricot, citrus, grapes, figs and cherry), vegetables (tomato, potato, onion and melons) and cereals and legumes (wheat, barley, chickpeas, lentils and sesame).

3. Syrian national resilience strategy

In line with the 2030 Agenda, the Syrian Government has planned a strategic development work frame covering all aspects of socioeconomic and environmental issues. The strategic plan was based upon extensive assessment of the conflict destructive effects. This was illustrated in term of a socioeconomic evaluation from 2010 up to 2018. The strategic plan concluded the assessment study with prioritization ranking of reforms as follows: most urgent actions were in the order of importance: combating poverty and ensuring food security (99 per cent); providing employment and job creation (97 per cent); and supporting MSMEs (90 per cent). The strategic plan ended up with the firm commitment of the Syrian Government to follow up and maintain national plans along with the 2030 Agenda in terms of time frame and activities, and to continue pro-active cooperation and capacity building to integrate sustainable development outcomes within its national strategic plans.

B. As-Sweida Governorate

1. Background

As-Sweida Governorate is located in the south-east of the Syrian Arab Republic on the border with Jordan, with a population of about 380,495.[23] It has three administrative districts including Shahba, As-Sweida and Salkhad.[24] As-Sweida is rich in agricultural lands and reserved areas. The Syrian Government has had full control over the governorate throughout the conflict.

According to the UNICEF Situation Report for 2019, more than 970,000 people located in As-Sweida, Dar'a and Quneitra governorates were in need of humanitarian assistance. In 2019, there were 210,000 people in need in As-Sweida.[25] The total number of IDPs accounted for 71,867 in 2020.[26] As-Sweida reported the greatest percentage of intra-governorate displacement due to its relatively peaceful conditions, considering that the governorate was not directly subject to internal

22 https://kassioun.org/economic/item/59866-33705.
23 https://reliefweb.int/sites/reliefweb.int/files/resources/syria_2021_humanitarian_needs_overview.pdf.
24 https://easo.europa.eu/country-guidance-syria/sweida.
25 UNOHCA. 2019.
26 https://reliefweb.int/sites/reliefweb.int/files/resources/syria_2021_humanitarian_needs_overview.pdf.

conflicts. IDPs have mainly worked in agriculture and some in manufacturing in the As-Sweida countryside. Prior to the conflict, the governorate suffered from the highest unemployment rate in the country. The situation was exacerbated during the conflict, with 18,000 jobs having been lost since 2011, mainly in the construction sector. The main economic activities in As-Sweida are agriculture, construction, manufacturing and trade. In addition, remittances constitute a main source of income. Agriculture is the most important sector, employing a significant portion of the population.

2. As-Sweida – the agriculture sector

As-Sweida is known in the Middle East for growing the high quality "As-Sweida Apple", and is rich in arable land, meadows and pastures that form almost half of the governorate's land surface. The governorate is marginalized and receives little governmental support in agriculture projects, including investment in irrigation systems.

The governorate relies highly on rain-fed systems, where 97 per cent of the actually planted land is rain-fed and thus relying on climate smart crops. The rest relies on modern drip irrigation. Out of the total irrigated land, 56 per cent relies on wells that are mostly licensed. The planted land is distributed as follows: 63 per cent winter crops and vegetables, 37 per cent fruit trees and 1 per cent summer crops and vegetables. As-Sweida is rich in fruit trees, 95 per cent of which are rain-fed. Apple trees are the most important at the governorate and national levels. They constitute the highest area out of the fruit trees area in As-Sweida, which is 39 per cent of the total fruit trees area and 30 per cent of the total fruit trees across the Syrian Arab Republic. Grape vineyards hold the second place in terms of total fruit trees area in As-Sweida (25 per cent) and across the country (22 per cent). Grapes are used for agro-food processing activities, and this is reflected in the high number of syrup factories in As-Sweida (29 factories), which is the highest in the country.

Olive trees occupy the same area as grape trees in As-Sweida (25 per cent of the total area of fruit trees in the governorate). However, they are much less significant at the national level. In 2021, 22,000 olive trees were planted, and the total number in the governorate has reached 1.5 million. As for the winter crops, they are all 100 per cent rain-fed.

As-Sweida is the biggest producer of chickpeas in the Syrian Arab Republic, as it grows 44 per cent of the total chickpeas across the country. However, it holds the second place at the governorate level after wheat. Wheat occupies the largest area of winter crops in the governorate (40 per cent) but this is much less significant at the national level (2 per cent). Barley occupies 25 per cent of the total area of winter crops in the governorate. Winter vegetables in As-Sweida are 100 per cent irrigated, and most importantly include cauliflower and cabbages. However, they occupy a very insignificant area. As for summer crops, they are 100 per cent irrigated and include mainly summer tomatoes and watermelon. Summer vegetables are 67 per cent irrigated. The livestock sector is also important in As-Sweida, with a total of 10,833 cows, 384,400 sheep and 90,160 goats as of end of 2018.[27]

Women are mainly involved in harvesting and food processing activities, including the production of milk, yogurt and cheeses. Other important products for food processing are olives (olive oil), figs (dried figs) and grapes (raisins, molasses and alcohol).

3. Effects of the conflict on As-Sweida agriculture sector

Ten years of conflict have left detrimental impacts on the agriculture sector and farmers livelihoods. The conflict has put pressure on vulnerable farmers and herders in As-Sweida, as they no longer have access to grazing lands in nearby Al-Badia due to the unsafe situation and have thus lost their main source of animal feed. According to a FAO 2016 damage assessment, damage to the agriculture sector in As-Sweida was

27 Statistics from the Syrian Ministry of Agriculture and Agrarian Reform. 2018 (published 2019). http://moaar.gov.sy/main/archives/category/%d8%a7%d9%84%d9%85%d8%ac%d9%85%d9%88%d8%b9%d8%a7%d8%aa-%d8%a7%d9%84%d8%a5%d8%ad%d8%b5%d8%a7%d8%a6%d9%8a%d8%a9.

estimated to be less than $0.5 billion. The damage and loss to livestock was between $100 million and $300 million. As for the damage to irrigation infrastructure and assets, it was estimated to be less than $50 million. As-Sweida was placed in tier 3 as priority for crop and livestock support, with an estimated cost for recovery of up to $100 million for annual and perennial crops, and between $150 million and $350 million for livestock.[28] In 2019, there were 210,000 people in need in As-Sweida, with 70,000 in acute need.[29] Humanitarian Response Overviews (HRO) estimated a 100 per cent increase in the number of people in need in As-Sweida Governorate, from 100,000 in 2020 to 200,000 in 2021.[30]

The area of agricultural land affected by fires in As-Sweida Governorate is more than 20,000 donums, and the number of documented fires reached 105 (2019-2020). The area of agricultural and cultivated lands that was burned is 16,645 donums, of which 3,575 donums were planted with wheat and barley, and 1,430 donums of fruit trees such as apples, figs, grapes, olives and pistachios.[31] Other challenges include the impact of climate change, which resulted in increased water scarcity and desertification and weak marketing systems. In addition, the governorate is suffering from the contamination of agricultural soil and groundwater and excessive use of pesticides, with no special units to measure pesticides residues in agricultural products.

The multiple financial and economic shocks, compounded by the international trade sanctions and COVID-19, have negatively impacted the agriculture sector in the Syrian Arab Republic and in As-Sweida. This was accompanied with the high cost or unavailability of agricultural production inputs, which pushed some herders to sell their sheep and goats. The increase in the cost of seed, fertilizers and diesel fuel for irrigation and machinery has prevented farmers from growing wheat and barley.[32]

As-Sweida residents are extremely vulnerable to shocks such as that of COVID-19. The December 2020 WFP mobile Vulnerability Analysis and Mapping (mVAM) Bulletin Issue no.51 reported that 53 per cent of households in As-Sweida have lost one or more sources of income in the previous six months. Fourteen per cent have lost almost their entire December income. Data have also revealed that the greatest monthly increase of poor and borderline food consumption was detected in Dar'a and As-Sweida (34 per cent). The decrease in purchasing power has pushed households to resort to negative food coping mechanisms to secure their essential food needs. This includes relying on less preferred or less expensive food, with peaks recorded in As-Sweida (77 per cent). As-Sweida is among the top governorates with reduced coping strategy index, reaching 18.8 in December 2020.[33]

Despite all the challenges, agriculture and agri-food processing continue to be the main contributors to the local economy. Agricultural opportunities remain available during seasonal harvests, employing many people for certain periods of the year. According to local sources, more young people have become interested in agricultural and livestock activities since the start of the conflict.

4. Climatic conditions

Climate and topographic characteristics of As-Sweida play an important role in the diversity, productivity and quality of crops. This may cause a significant yearly change in production of up to 35 per cent. For example, yearly changes in apple production have been reported to be about 32.4 per cent,[34] particularly when apple production is rain-fed based by over 99 per cent. The variation in average precipitation fluctuates significantly within the different topographic locations in any given year and between years.

28 http://www.fao.org/3/i7081e/i7081e.pdf.
29 UNOHCA. 2019.
30 HUMANITARIAN PROGRAMME CYCLE 2021, Syrian Arab Republic, ISSUED MARCH 2021.
31 https://www.syriahr.com/en/164132/.
32 http://www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/1149417/.
33 https://docs.wfp.org/api/documents/WFP-0000122803/download/.
34 Safadi 2016. Climate and its impact on the cultivation of apple and grapes in As-Sweida.

The significant effect of climatic conditions on over 90 per cent of agriculture produce requires ever-developing strategies that are specific to each value chain to adapt to emerging climate change characteristics. These may include varieties, good agricultural practices, water collection management, use of renewable energy and others.

On the other hand, water supply in the governorate is short to respond to the needs for potable and irrigation water, especially in the eastern part. Springs are quite few and seasonal, i.e. flooding in winter and dry in summer. Water collection management is short, mainly due to negligence,[35] and the governorate relies on wells for both potable and irrigation needs. The Government has built 16 dams in As-Sweida Governorate, capable of collecting 69 million m³. The current (2021) water storage was estimated at 13.7 million m³ for both drinking and irrigation. The Directorate of Water Resources in As-Sweida is rehabilitating Al Ghayda dam (2 million *m*³), in addition to other collecting dams such as Al Kafr and Meshrif (1.2 million m³).[36] Dams were also reported to be attractive touristic sites, such as Hebran, Room, Jwayleen and Aein. On the other hand, Al-Makruma project endorsed digging 110 wells in the governorate to supplement irrigation and drinking, of which about 104 are already established to irrigate 1,385 ha.

C. Agricultural value chains in As-Sweida

Topographic and climate diversity of As-Sweida allowed for the cultivation of several value chains of fruits, vegetables, cereals and animal production. Values of these productive chains vary significantly between types of products as affected by various factors, particularly environmental, handling practices, market demand, access to market and others. Table 1 shows the main agricultural value chains in As-Sweida Governorate.

These include apples, olive, pears, grapes, almond, peaches, cereals, chickpeas and wheat.

Data were obtained from the Directorate of Agriculture and Agricultural Reforms in As-Sweida for 2014 and 2019. As can be seen from annex 1, most of the fruits were cultivated in rain-fed areas. Sometime, some of them have complimentary irrigation by using well groundwater, depending on precipitation.

The largest area cultivated with fruit trees was recorded for apple, with about 38.8 per cent, followed by grapes and olive, with about 25 per cent each.

Almond is also grown in As-Sweida, with a total production in 2019 of up to 1,114 tons over 2,424 ha.[37] The tree is of a significant economic importance mainly because it has low cost of production, needs less attention, is resistant and needs less water.

On the other hand, the production of summer vegetables amounted to about 58,000 tons in 2019, most of which is tomato (about 53,000 tons). Most of the produce is irrigated using modern techniques, mainly drip irrigation.[38] Production areas are in the western parts of As-Sweida: Mazraa, Kanaker, Arika and Era; and in south-eastern As-Sweida: Kisama, Howyaa, and Arman (table 3).

35 https://alwatan.sy/archives/225464.
36 Al Waha.gov.sy 2021.
37 2019, https://www.sana.sy/?p=979478, Almond cultivated area is expanding at As-Sweida.
38 http://emediatc.com/index.php/using- joomla/css/sidbar_style.css?page=Details&category_id=8&CatId=0&id=62132&lang=ar.

Table 3. Distribution of some crops according to altitude in As-Sweida Governorate

Altitude in metres	% of As-Sweida land	Locations	Most important crops
<700	17.1	Harran, Jrein, Lebbeen	Wheat, chickpeas, irrigated or semi-irrigated olives
700-850	34.5	Areika, Najran, Mazraa, Kanaker	Wheat, chickpeas, olives, irrigated grapes, vegetables
850-100	14.4	Shahba	Wheat, chickpeas, olives, almonds
1000-1150	9.89	Bordering Jordan	Barley, wheat, irrigated fruit trees (peach)
1150-1300	10.15	Salkhad, Mashkuk	Wheat, chickpeas, grapes, almonds
1300-1450	7.8	Tal lawz, Arman, Buzreik	Grapes, apples, wheat, chickpeas, almonds
>1450	6	Thahr Eljabal, Mishnif, Taybeh	Apples

In order to narrow the scope of importance in terms of economic value, data were analyzed and a relative index (RI) of the economic value for each value chain was generated, where olive was considered as a reference score for all other chains, as it is the most stable. Data used to calculate the economic RI were those of 2014/2015 released by the Directorate of Agriculture in As-Sweida. Data were relatively complete and informative to carry out the necessary calculations, whereas prices were adopted from the official exchange platform of 2020/2021. Fruit trees, however, did not show significant differences between data of 2014 and those of 2019, unlike cereals and legumes, which showed greater differences (production differences between 2015 and 2019 were between 4 and 25 per cent, which is mainly due to climate variability).

Prices applied in calculating the RI were medians of values obtained from free stock exchange of the current year (2021). Accordingly, value chains were classified into four economic categories, as follows:

C1: Apple VC with RI = 9.

C2: Grape VC with RI = 4.

C3: Sheep milk and meat with RI = 2.

C4: Olive, pistachio, walnut, chickpeas, wheat, cow and goat milk with RI =1.

It is worth mentioning that pistachio and walnut had relatively high RI due to the very high price/kg of their end product, otherwise the quantity of production is relatively low and have limited use. Also, wheat and olive are both well addressed through continuous governmental development projects, although olive and olive oil can always be considered as significant research and development sectors.

Data and calculated RI suggest five value chains as important economic leverages to improve socioeconomic livelihood in As-Sweida Governorate. These include apple, grapes, small ruminants, olive and chickpeas.

Other relatively important fruit trees include olive, almonds, pistachios and pears. ***Olive trees*** are estimated at about 1.5 million trees and satisfy over 85 per cent of local demand of table olive and olive oil. ***Almond*** production is extending in As-Sweida by about 3 per cent per year, mainly due to its low cost of production and the appropriate climatic conditions. It is planned to make use of the non-cultivated land, estimated at 34,000 ha, to grow olive and almond, as both are quite resistant to dry weather conditions. ***Pistachio***, on the other hand, occupies about 1.3 per cent of As-Sweida agricultural land, with a total yield of 275 to 500 tons per year. The tree is economically ranked fifth after apple, grapes, olives and pears.[39] Almond, however, is going to be in the fifth rank instead of pistachio, after wide almond planting during

39 Talaat Al Hussein (2010). Pistachio tree is the 5th in As-Sweida (Anon).

Table 4. Livestock numbers, milk and meat in As-Sweida Governorate (MAAR, 2014 and 2019)

Livestock	# Dry	# Milking	Total #	Milk production 2014 (tons)	Milk production 2019 (tons)	Meat (tons) 2019
Cows and buffalos	3,654	5,982	9,636	21,346	32,698	509
Sheep	150,024	278,619	428,643	16,716	14,114	1,733
Goats	34,520	73,237	107,757	6,329	3,152	316

the past few years due to its draught resistance and relatively low cost of services. Cultivation of pistachio is concentrated in Afineh, Almjeimer, Bakka, Burd, Era, Kanwat, Lujat, Thibein, and others.

Main ***cereals*** grown in As-Sweida are ***wheat and barley*** that are totally rain-fed. Their economic importance is insignificant when compared to the huge areas of cereal production in other governorates of the Syrian Arab Republic. Regardless of this fact, wheat is a valuable crop for farmers in As-Sweida because it supports rural families with their needs of wheat and its derivatives. Furthermore, no other crop can be successfully grown instead. With the continuous governmental emphasis on wheat production, the country produced about 3 million tons in 2020.[40]

Among legumes, ***chickpeas and lentils*** are two major crops in As-Sweida Governorate, yet lentils had negative RI when compared to chickpeas due to its lower yield in tons. According to the Agriculture Directorate of As-Sweida, the total production of lentils in 2020 was 203 tons yielded from 516 ha.[41] On the other hand, chickpeas had relatively high RI among legumes and is therefore considered to be of high economic importance in the governorate.

The dairy and meat sector in As-Sweida is of significant economic importance, particularly when it comes to small ruminants and sheep, due to the higher prices of their milk and meat. In fact, milk and meat are becoming very expensive to the extent that consumers are starting to exclude those products from their diet.

The overall production of milk and meat (in 2014 and 2019) is presented in table 4. The greatest number of livestock was recorded for sheep with 428,643 heads, followed by goats with just over 100,000 heads, and then cows with just under 10,000 heads.

Cost of production was greatly affected by the increase in the price of distillates

forage and other feeding stuff, leading to a progressive and massive increase in the price of both milk and meat. For example, the price of one pack of animal feed, such as "ARASCO", reached 30,000 SYP, and one kilogram of barely reached 500 SYP in 2020.[42] In addition, prices of veterinary drugs have dramatically increased. On the other hand, access to rangelands became limited due to security reasons.

Subsequently, the price of live livestock has proportionally increased. For example, the price of a head of cattle reached 4,000,000 SYP and that of a small ruminant reached about 350,000 SYP (mid 2020). Milk, in line, is sold to consumers at about 600-700 SYP/Kg compared to 15 SYP before the conflict.

Local experts in As-Sweida produced a new hybrid of goats (crossing Jabali with Shami) to generate a more productive and adaptive type of livestock. They also worked on the production of in-door ever-green barely sprout to support animal feed and reduce production cost.

Home consumption of milk was estimated at about 6.3 per cent, 28.3 per cent of which is sold fresh,

40 https://www.agricensus.com/Article/Syria-facing-wheat-supply-shortfall-despite-27-production-rise-14860.html.
41 https://shamra.sy/news/article/bc3b6527dd0e5ec895a99f90bbda85ab?amp=1.
42 http://thawra.sy/index.php/local/investigations/249482-2020-10-15-10-38-16.

whereas about 65.4 per cent is processed into other milk derivatives such as yoghurt, strained yoghurt, cheeses and ghee.[43] These activities are greatly practiced by women at home, while larger commercial scale operations are limited to selling fresh milk to the milkman or milk collector. The processing scale of dairy products is still limited in As-Sweida.

Industrial scale activities are still limited to a small-scale dairy industry (500 to 1,200 kg per day) that is mostly run in primitive ways and tools such as those in Alwaha and Al Gharyeh.[44] The Government is planning to initiate a large size dairy plant at As-Sweida Governorate to improve the livelihood of farmers and make nutritious products available for consumers, especially children.

Women's involvement in dairy production is still highly significant in the governorate, where housewives are considered responsible for such activities. Certainly, hygienic requirements to produce dairy products under these conditions are not always met, and some of these dairy activities are applied under unsafe and unhealthy conditions.[45]

Agro-food processing is relatively active in As-Sweida and includes olive and olive oil, milk and milk derivatives, fruit juices, wineries and distillates, vinegar, raisin, grape molasses, wheat and its derivatives, including pasta products, animal feed milling and formulation and sorting, grading and cold storages for fruits and vegetables. The agro-food processing standards are still primitive, based on traditional legacy in terms of product diversity (portfolio) and quality. Most of the processed products are marketed in the local market as bulk materials. The main processed products include grape molasses and raisin, although limited trials have been introduced to produce apple molasses and dried chips.

D. International organizations and other associations

UNHCR, the UN Refugee Agency, is one of the main UN agencies present in As-Sweida. Its main related activities include the following:

- Vocational training: more than 1,000 individuals benefited from vocational training conducted in community centres in As-Sweida.
- Start-up small business grants: 16 business grants were approved.
- Dignity Toolkits: 745 toolkits of diverse types were distributed, including those for electrical work, plumbing, carpentry, sewing and painting in different areas of As-Sweida.

UNHCR partners in As-Sweida include the Syrian Society of Social Development; Première Urgence Internationale; the Greek Orthodox Patriarchate of Antioch and all the East; Secours Islamique France; Syria Trust; the Syrian Arab Red Crescent; the Danish Refugee Council; Bara'em Association for Children Care; and the Ministry of Local Affairs.

In 2019, UNHCR provided self-reliance and livelihood support to the most vulnerable in As-Sweida, including livelihood kits (blacksmithing; mobile maintenance; sewing; carpentry; and female hairdressing); vocational training; entrepreneurship/business training; and start-up small business grants.[46] As for 2020, UNHCR activities focused mainly on entrepreneurship/business training and start-up small business grants.[47]

The FAO interventions in As-Sweida, Kunaytara and

43 Kinan Kamal Eddine (2016). Role of women in enhancing dairy processing in As-Sweida. Syrian J. of Agric. Res. (3).
44 https://www.youtube.com/watch?v=eP5uFFXQOzc.
45 https://shamra.sy/news/article/27a1edf0ad9708001ace23c8c98352c2?amp=1.
46 https://www.unhcr.org/sy/wp-content/uploads/sites/3/2019/12/UNHCR-Syria-Main-Activities-January-%E2%80%93-October.pdf.
47 UNHCR. 2020. UNHCR Syria Main Activities (October 2020).

Latika were limited to small projects, including the supplies of wheat seeds, veterinary medications, beehives, laying hens, aromatic plants, greenhouse plastics, cultivation of mushrooms and processing of vinegar. The United Nations Development Programme (UNDP), on the other hand, supported local small projects with 30 per cent in finance and/or in kind.

A youth empowerment centre was established in As-Sweida in 2020 as a joint project between UNDP and the Ministry of Social Affairs and Labour. The centre provides youth with courses on practical expertise in various disciplines, including dairy processing.

The International Orthodox Christian Charities[48] and its partner the Greek Orthodox Patriarchate of Antioch and all the East continue to address the most urgent and dire humanitarian needs of Syrians who are both displaced and affected by the Syrian conflict. Related activities include the Water, Sanitation and Hygiene sector that targets water infrastructure improvements in order for people to regularly have access to adequate amounts of safe water, both for drinking and other purposes, reducing potential morbidity and mortality associated with water-borne diseases.

Until recently, however, the agriculture sector was not targeted as it should be and with relevance to its socioeconomic importance to the community of As-Sweida, neither by international organizations nor by NGOs. As clarified earlier, very limited support was observed at the sector shore. Therefore, immediate planning and interventions should take place to support the resilience and improve the livelihood of the governorate's agriculture-based community.

E. National and local farmers associations

Locally, the most abundant types of associations are those of farmers who are members in the Union of Farmers, though members are demanding to convert these associations into productive and specialized cooperatives.[49] The number of farmers associations in As-Sweida reached 175 in 2016, with a yearly increase of 1.5 per cent. The objective of these associations is to organize and formulate agricultural activities in five-year plans that are coordinated and aligned with governmental agricultural strategies.

Farmers associations cover almost all the agricultural sectors and subsectors, including fruits and vegetables, cereals and legumes, animal production and agricultural land reforms and investment. Most of the time farmers get benefits and support from public institutions, especially the Syrian Agricultural Bank. Moreover, agricultural inputs are provided at subsidized prices, together with free extension and training.

Priority investments of the farmers associations focus on strategic crops such as wheat and cotton, whereas farmers tend to go for higher value products such as vegetables and fruit trees.

However, main responsibilities of the farmers associations include, but are not limited to:

- Minimize or eliminate constraints on investment in agricultural production and productivity.
- Collectively, facilitate availability of agriculture production requirements such as machinery and agricultural inputs.
- Adapt and implement government plans and policies through planning proposals and facilitation of market access.

Associations are legitimate to plan and implement productive investment projects.

48 https://www.ngoaidmap.org/projects/16824.
49 http://www.sana.sy/?p=1298241 2021. General Assembly Council of Farmers' Union.

Major drawbacks of the associations' performance include:

- They become syndicated rather than cooperative.
- They fail to develop productive cooperatives.
- They lack productive investment projects.
- More than 85 per cent of them are multi-purpose and thus lose interest in specialized cooperatives.

On the other hand, private cooperative associations started to be established in As-Sweida with the endorsement of the Ministry of Social Affairs and Labour, but on a very small productive scale, especially in the field of dairying.

Marketing, however, is not governed by any organized structure. Rather, it is informal, depending on the volatile demand and supply. Wholesalers, traders and brokers are controlling marketing and prices through their financial power and are taking advantage of the cut-off situation of farmers. Wholesale markets are very limited, and the Government has promised to initiate selling platforms at As-Sweida, but this has not been achieved due to the conflict.

Fruit marketing depends very much on variety and quality. Apples, for example, are mainly purchased by wholesalers and exporters for external markets. Inferior quality apples are generally converted into local market and/or for processing, which is still very basic. Most of the other agricultural products are utilized in the local market, and small parts, specifically chickpeas, are marketed at national platforms, especially in Damascus.

An old wholesale market, Suk Al-Hisbeh in As-Sweida is no longer fit as a marketing platform, and therefore, new markets were established by the Government, including Walgha/Sweida, Shaba, Al-Kasr, and Suk Al-Hal and are awaiting seasons produce of 2021.

Despite the fact that local public service support institutions that are sub-ordinates of MAAR, especially the General Directorate of Agriculture and its departments and establishments, are present in almost every subsector, they are still short of providing the required assistance and extension to farmers. The institutions, which are almost alone in the field due to the absence of a private sector, are subject to financial difficulties and overall pressurizing environment leading to inferior management effectiveness. Farmers are therefore left to seek advice from here and there and blame traders and public institutions for their unbearable economic status. Rehabilitation and upgrading of the public institutions are therefore urgently needed as they are the main actors in the agro-food chains.

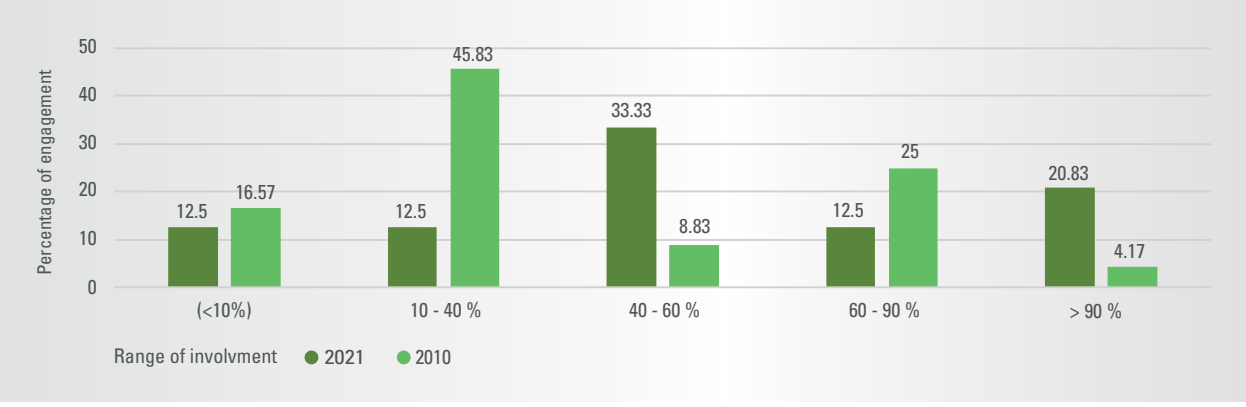
Agriculture labour is another major issue for As-Sweida that confronts farmers and causes an increase in the cost of production. The shortage in agriculture labour is mainly due to the immigration of young people to seek better economic opportunities abroad, the low rate of payments for agricultural activities, and the tendency of workers to handle vocational occupations and careers because of their high turnover. As a result, farmers rely for labour on IDPs from other parts of the country.

F. Access to finance

The most common source of financial support in As-Sweida is the Cooperative Agricultural Bank, which supported farmers with 420 million SYP in soft loans during 2020. MAAR also supported farmers of chickpeas and lentils with 301 million SYP for the 2020 season. Those loans, which were mainly used to support the procurement of agricultural machinery and equipment were estimated at 50, 60, and 70 per cent of the target values. The Bank also purchases farmers' agricultural produce, particularly those subsidized by the Government, which amounted to about 3,400 billion SYP for 2020.[50] Although, the Bank is continuing the

50 2021, https://www.sana.sy/?p=1291078.

Figure 2. Engagement of farmers (respondents) in agriculture activities before and after conflict



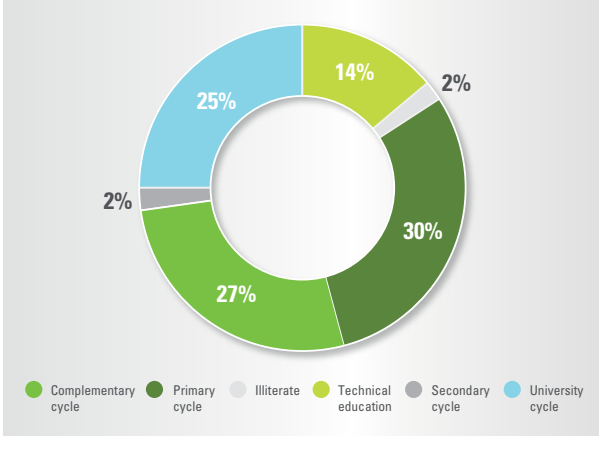
loaning process, farmers of As-Sweida are demanding greater loans in line with the increase in the inflation rate. This was justified by the increase in the cost of production, which is consuming their profits.[51] In addition, there are private financial institutions that provide small loans for satisfying projects, such as the Agha Khan Foundation and few other micro entities.

G. Research and development projects and proposals

Various disciplines in the agriculture sectors were notably addressed by the Agricultural Directorate of As-Sweida before the conflict (2007),[52] but very limited projects have been implemented, such as cold storage facilities. Most of those projects were aiming at improving marketing of agricultural products, particularly for export to the Gulf and European Union countries, considering that regulations concerning the flow of food and feed commodities are becoming very tight in both markets and necessitate high level of commitment to hygienic requirements. Such an approach needs special attention by the government and local authorities, a matter that has been halted by the conflict.

The application of global and European standards on agricultural products in As-Sweida should be a priority, considering the importance of opening the markets of European Union and Gulf countries to these products. Even today, the application of these standards seems more difficult because farmers fear the high cost when applying them. On the other hand, they do not guarantee that these markets will receive their products after they pay these costs.

Figure 3. Respondents' level of education in the Governorate of As-Sweida



51 2020, http://sana.sy/?p=1225080 , Farmers demand higher amounts for agricultural loans.
52 2007, http://www.moaar.gov.sy/site_ar/syriamap/swedaa.htm, Agricultural Investment map of As Sweida.

02

Primary review

A. Agricultural livelihood assessment

Farmers of various agricultural activities in As-Sweida were interviewed to assess their livelihood standards and the efficacy of their economic performance. Respondents (n= 44) were mostly below 60 years of age (about 65 per cent) and engaged in agriculture cropping on a partial and/or full-time schedule. The community of As-Sweida was always engaged in agricultural activities either fully or partially and relies significantly on the sector to enhance the living standard of about 30,000 families. Figure 2 illustrates respondents' engagement in agriculture before and after the conflict. It is clear that the As-Sweida community was engaged in agriculture during the conflict more than before. The range of involvement in agricultural activities for over 90 per cent of the population has increased by about 15 per cent, while increasing by more than 20 per cent for 40 per cent to 60 per cent. It is logical that engagement in agriculture has increased during the conflict, especially with the increased inflation, devaluation of the local currency, reduced incomes and increased prices.

B. Household characteristics

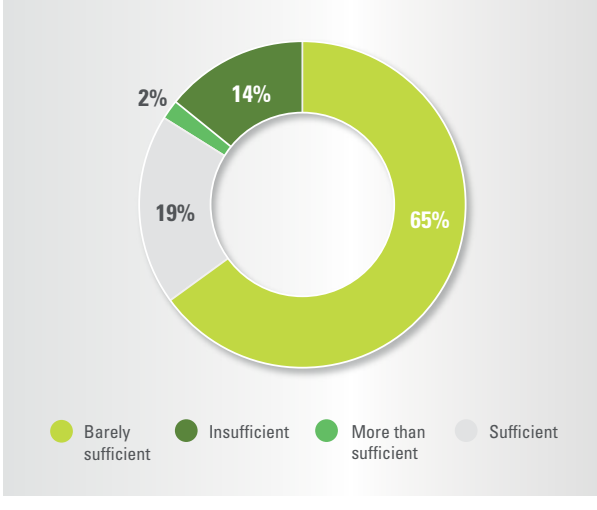
Respondents' education level was quite distinguished, as about 25 per cent of them were university graduates, and the percentage of those having higher than secondary education was about 40 per cent of the total, while illiterates represented about 2 per cent.

Such a level of education, particularly with about 14 per cent having technical education, can form a solid baseline to promote their capabilities and efficacy in developing agricultural production, quality and safety of agro-food products.

The respondents' average number of family members and the median were about five, which is also another factor that can facilitate their living efforts and assist in promoting their standards. About half of them have children going to school and/or having children between 5 and 12 years of age. The other half have completed their primary cycle of education.

Their standard of living is barely enough for them to survive with the minimum requirements for decent life. Figure 4 illustrates the state of their housing conditions and standard of living.

Figure 4. Respondents' standard of living and housing conditions



Most respondents (65 per cent barely have sufficient means and requirements to respond to their living needs, and about 14 per cent have less than enough or not sufficient means to meet living requirements, whereas those having sufficient means and assets were 19 per cent. Only 2 per cent of respondents said they have means that are more than sufficient for their living requirements.

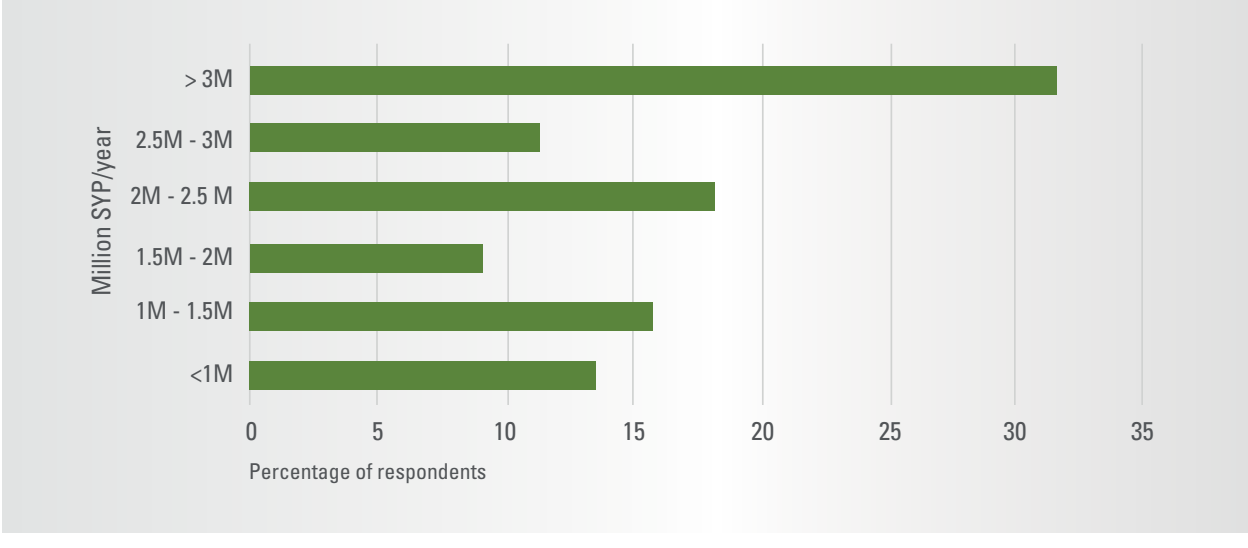
Comparatively, the standard of living in As-Sweida Governorate is expected to be relatively in a better shape than other governorates in the Syrian Arab Republic due to the lesser impact of the conflict. The governorate was only indirectly affected by the conflict, except for few incidents that took place during the ongoing 10 years long conflict.

C. Income and expenditure

Sources of income for As-Sweida community are diverse and mainly composed of agricultural activities, employment at the public sector, private sector, crafts and freelance businesses. About 75 per cent of the population support their welfare from agro-food activities, and about 35 per cent of farming respondents perform permanent agro-food activities, while the remaining are temporarily engaged (figure 5).

Although some respondents were classified as belonging to non-agriculture working segments, most of them are related directly or indirectly to agribusiness. For example, a considerable number of them are employed in the public or private sectors that are handling agricultural issues. The same applies to freelance and crafting, which may include MSMEs that are involved in agro-food activities.

Figure 5. Average annual income of households, mainly farmers, in As-Sweida Governorate



It is obvious that the overall community in As-Sweida Governorate maintains an agricultural identity that is the backbone of its socioeconomic status. Therefore, more emphasis should be given to the agriculture sector to promote productivity, quality and safety of end products, and subsequently promote market access with greater volume of exportable varieties, quantities and qualities.

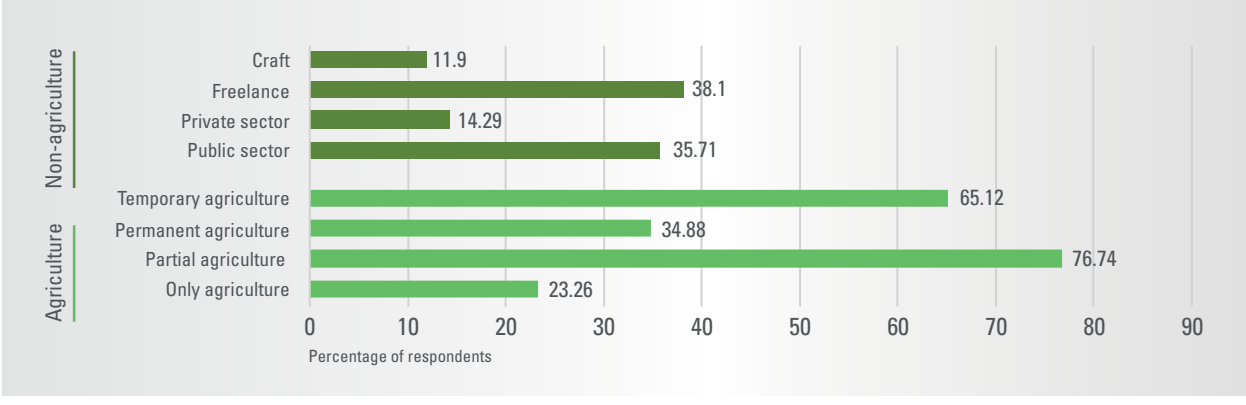
On the other hand, families' incomes dramatically vary within the community, yet they are too low to respond to their basic needs. Figure 6 illustrates the average income of families (respondents) in As-Sweida.

As can be seen from the figure, even members of the greatest earning segment, i.e. those earning more than 3 million SYP per year, are not within the secured living line, where the earning of the majority is about $1,000

per year. While about 70 per cent of respondents are earning less than $1,000 per year, about 30 per cent of them get less than one dollar a day. Although some stated that they are managing, their income is not enough for their basic needs.

The socioeconomic status of As-Sweida community is therefore alarming and calls for immediate interventions, particularly in the agriculture sector, to help strengthen and sustain production and improve market access of its products.

Figure 6. Respondents source of income in As-Sweida Governorate

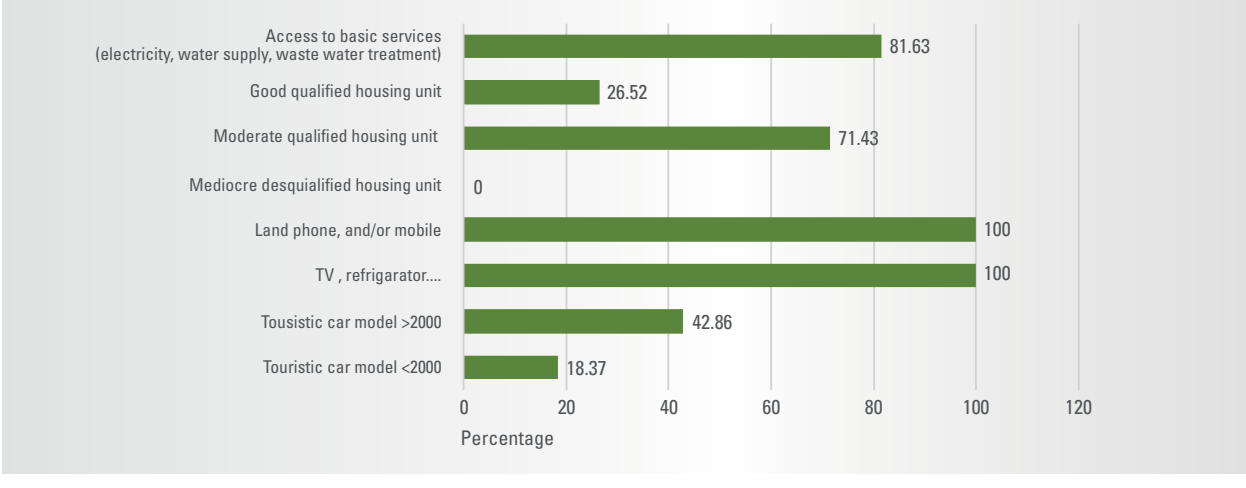


D. Assets and accommodation

The characteristics of households' assets and accommodation are those of before conflict description, and hardly any development has taken place afterwards. On the contrary, assets have been deteriorating progressively ever since. The devaluation of the local currency, low purchasing power and reduced earnings, together with the overall impact of the conflict, have resulted in the deterioration.

As can be seen from figure 7, only a quarter of respondents have good, qualified housing units, whereas moderately qualified housing units represent over 70 per cent. About 20 per cent of respondents have no access to basic needs and services such as clean water, power supply, wastewater management, etc. Community members are struggling hard to maintain what they had before the conflict because they cannot afford renovating and replacement anymore.

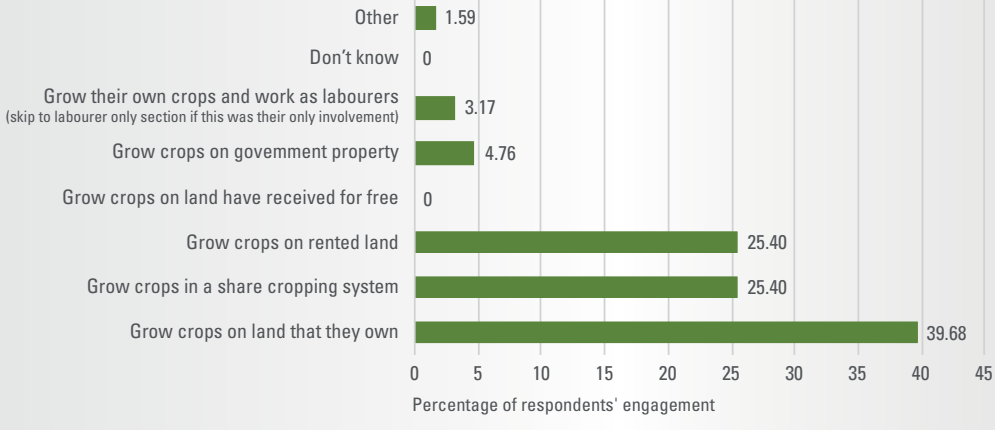
Figure 7. Respondents' household assets and accommodation status



E. Farm use and agricultural practices

One of the most advantageous characteristics of farming in As-Sweida Governorate is the climatic conditions and rain-fed farming. Yet, irrigation water is still a determining factor, especially when precipitation is low. Unfortunately, water collection and management are ineffective or absent, where about 80 per cent of respondents stated not to have water collection management in their areas, and 18 per cent need a water irrigation supplement. Also, technical support is limited to general extension and training, although only about 41 per cent of respondents stated that they receive such a support. Support and services are provided by the public sector (30 per cent) and NGOs and international organizations (13 per cent), while the remaining (57 per cent) receive no support of any kind.

Figure 8. Farming conditions and land use by respondents in As-Sweida Governorate



About 41 per cent of respondents have their agricultural land fragmented into several parcels, which adds to the cost of production, and the vast majority of respondents perform agro-food activities for both trading and consumption (95 per cent), whereas only 5 per cent grow food for consumption only. As can be seen from figure 8, most farmers grow on their own lands (40 per cent), whereas about half of them use rented or sharecropping systems, and less than 5 per cent use public rented land.

The size of farm holdings ranges from 1 to over 100 donums, with about 34 per cent having less than 10 donums. Figure 9 shows the distribution of farm size owned by respondents in As-Sweida Governorate. Relatively small size holdings may increase the cost of production and reduce the profit margin of farmers. Therefore, enlarging the size of holdings by collective grouping approach of farmers, such as cooperatives, can leverage the profit margin. Once holdings are enlarged by grouping, i.e. when expanded and unified farm areas belong or are owned by several farmers, the benefits obtained from support services, financial and in kind, will be more effective with reduced cost of production, where costs will then be distributed over a larger surface area and greater volume of production.

Most respondents expressed enthusiasm to enlarge their farming scope in terms of lands and earnings, but unfortunately, they cannot afford it. Figure 10 illustrates causes preventing farmers from enlarging their land investment in agriculture.

The vast majority (about 80 per cent) do not invest due to shortage of money and lack of access to finance. Other causes include scarcity of land, high cost of production, lack of marketing and shortage of time and labour.

sustaining their agricultural activities due to several reasons, most importantly the disastrous effect of the prolonged economic siege, the devaluation of the local currency and the ever-increasing inflation rate. Farmers

Figure 9. Holding size of farms used by respondents for agricultural cultivation in As-Sweida Governorate

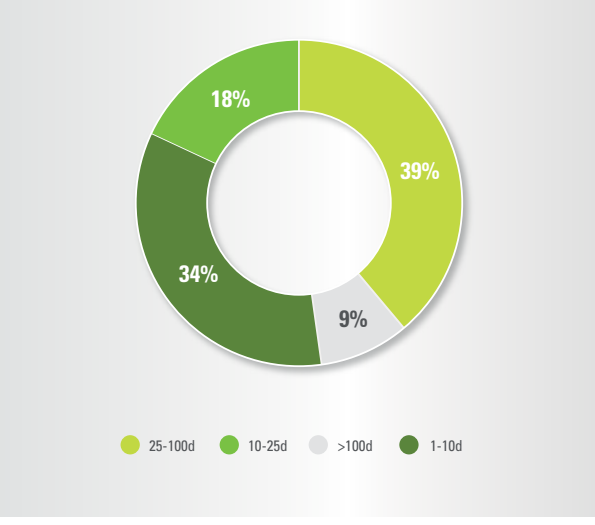
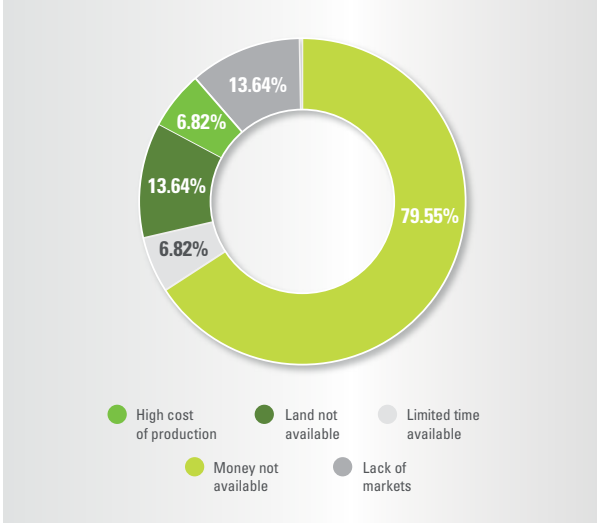


Figure 10. Causes preventing farmers from enlarging their investment in agriculture



have their own strategies to assist them sustain their activities and preserve their life support line of agricultural practices and production.

As can be seen from figure 11, respondents' suggestions to sustain their agricultural activities include grouping of farmers (16 per cent), improving infrastructure (38 per cent), improving water irrigation and collection management (11.36 per cent), subsidizing crops (40.91 per cent) especially for export, and providing financial support through soft and long-term loans (50 per cent). The greatest emphasis was given to access to finance that is in line with current conditions. These suggestions are quite pragmatic, and any intervention should take them into consideration when intervening in resilience strategies.

Participation of respondents in programmes and initiatives of agricultural nature is limited, where only 27 per cent stated to have participated in training programmes, and only 2.27 per cent stated to have NGOs in their areas.

Regarding access to finance, respondents rely mainly on public and private banks (68 per cent). The public sector is represented mainly by the Cooperative Agriculture Bank of Syria. Dealing with the Bank, however, is a complicated process for farmers, and most of the time is costly in terms of administrative issues.

In addition, private banks are expensive, as they demand high interest rates for short-term loans, and farmers most of the time get stuck with re-payment of their loans, which further worsens their living standards (figure 12).

Microfinance institutions provide small amounts of loans that are not enough to sustain or invest, but may be just enough to purchase some agricultural inputs.

As for gender, women are heavily involved in agricultural activities (91 per cent), but only a few own land (about 7 per cent). About 60 per cent of women in As-Sweida Governorate rely on agriculture for their living and financial resources, whereas only 4.5 per cent are engaged in NGO and civil organizations activities. Empowering women by engaging them with NGOs and civil organizations in decision-making will certainly add value to the development strategy, particularly in the agro-food sector.

On the other hand, most respondents were engaged in agricultural activities, particularly cultivation of the selected value chains (80 per cent), of which 38 per cent were engaged in apple cropping, 23 per cent in grapes, 19 per cent in wheat and 12 per cent in chickpeas (figure 13). These percentages proved the right methodology approach in selecting the value chains for upgrading and improvement.

Figure 11. Suggestions proposed by respondents to sustain their agricultural practices and production in As-Sweida Governorate

Figure 12. Financial resources accessed through loans by respondents

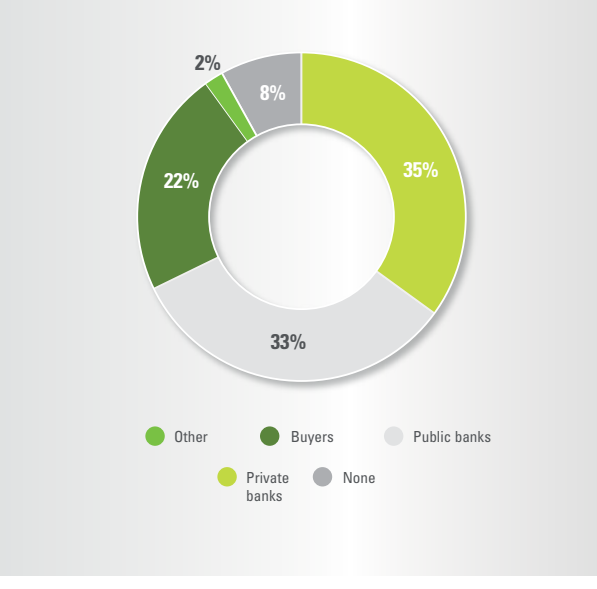
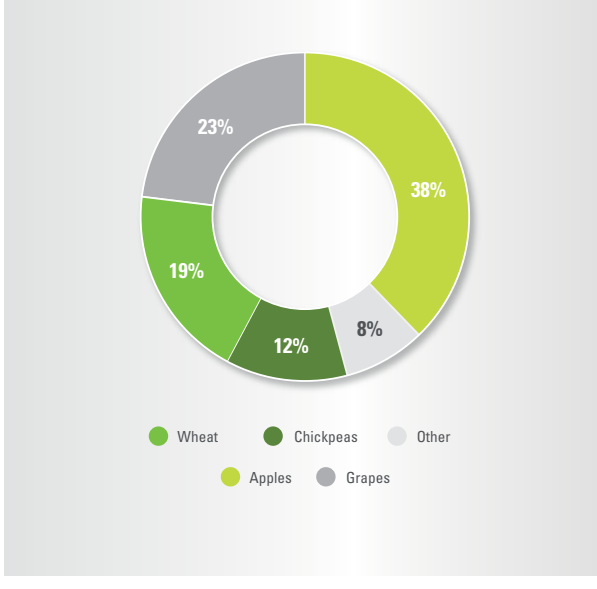


Figure 13. Farmers (respondents) engaged in the production of selected value chains in As-Sweida Governorate



03

Analysis of selected value chains

Figure 14. Apples of As-Sweida

A. Apple value chain

The apple tree is one of the most important fruit crops in As-Sweida, which has been cultivated in the higher lands (>1,300 m) for over 50 years. Apple orchards cover about 38.1 per cent of the total cultivated area of As-Sweida and 27.3 per cent of the total apple cultivated area of the Syrian Arab Republic. Most of the lands cultivated with apple, about 13,410 ha, are located in the administrative As-Sweida City, while the remaining are mostly in Salkhad (about 1,084 ha) and Shahba (about 485 ha).[53] The overall production of apple for 2020 was more than 21,000 tons (Avg. 1.4 ton/ha), of which about 6,000 tons were exported to Egypt, the Sudan and Yemen.[54] Total apple production in As-Sweida varies from year to year due to climatic conditions and biennial year. The standard deviation for apple production for all Syrian districts was estimated at 72,000 tons, with a coefficient of variance equivalent to 20.34 per cent (calculated from 2019 MAAR data of 10 years of apple production in the Syrian Arab Republic).

1. Mapping of apple value chain

Apple production and relevant activities in As-Sweida are schematically illustrated in the below flow chart, where milestone operations are agricultural production and marketing of the fruit.

Therefore, operators and actors are mainly farmers and traders, while support services are limited to public extension and agricultural input supplies that are mostly mastered by the private sector.

Agricultural inputs and services: Apple farmers complain about diseases and infestation and the cost of protection, which is most of the time ineffective or hard to achieve. Apple codling moth (maggot), powdery mildew (fungal threads), wooly aphid, spider mites, borers, bitter pits and cork spots are major infestation issues for farmers in As-Sweida. Although, the local agricultural directorate established an integrated pest management and disseminated the programme to

53 MAAR 2019.
54 http://sana.sy/?p=1349094 (About 6,000 tons of As-Sweida apple were exported).

farmers through extension, results were not promising. The directorate attributed the failure to farmers not committing to the programme in terms of timing, while farmers attributed the failure to ineffective, smuggled, old or cheap pesticides. The Establishment of Fruits and Vegetables complained about infected apples received from farmers, with about 39 per infested by maggots.

This situation has led to heavy use of pesticides, leading to high residues in the final products and thus jeopardizing the marketability of apples, especially their export. For example, Egypt detained 500 batches (containers) of apples coming from the Syrian Arab Republic, and from As-Sweida in particular, with high levels of pesticide residues.[55]

Agricultural production: several apple agricultural production activities add to the total cost, particularly labour for harvesting and management, such as pruning, land works, agricultural waste disposal and sometimes supplementary irrigation. Apple orchards are mostly carried out by workers brought from outside the governorate and/or IDPs living in As-Sweida. Although workers with relatively low wages are available, there is limited availability of technically qualified personnel for orchard management, specially pruning. Management activities are traditionally performed by using old utensils and tools, and therefore need substantial labour and handling. Women are heavily involved in harvesting, and most of the time all family members share the responsibility of agriculture activities.

Rain-fed orchards are planted in low density patches compared to irrigated ones to allow larger share of soil moist and nutrients. Furthermore, climatic changes severely affect productivity and quality of apples. Half of the apples cultivated in 2018, for example, were damaged by hail. Also, spring freeze causes significant losses in terms of both quantity and quality. Therefore, there are always significant fluctuations in productivity and quality, which may reach 35 per cent. Apple varieties in As-Sweida, however, are mainly golden yellow and Starking, which are classified as table fruits and known to be unfit for processing purposes. Therefore, it is envisaged that new varieties will be introduced that are better oriented for juice processing or other derivatives.

Post-harvest operations: Cold storage of apple, as a strategic tool to control its marketing, is also suffering from major issues, although there are about 600 storage units in As-Sweida with a capacity of 50,000 tons. These issues include the post-harvest operations, especially sorting, grading and packing, which are still carried out mostly by hand or through old technologies. In addition, traders, middlemen, wholesalers and guesstimating aggregators control cold storages by renting them in advance to force farmers to sell at lower prices. The efficacy of refrigeration is also inferior due to old infrastructure, fuel cost and power cuts that are sometimes intentional to save on fuel.

Brief SWOT analysis of apple production (see details in annex 4)

Strengths: As-Sweida climate conditions are favourable for the production of many varieties of apple, and post-harvest facilities, although old, are available, including cold stores. There is also a potential to promote processing exits and improve marketability of non-exportable quality.

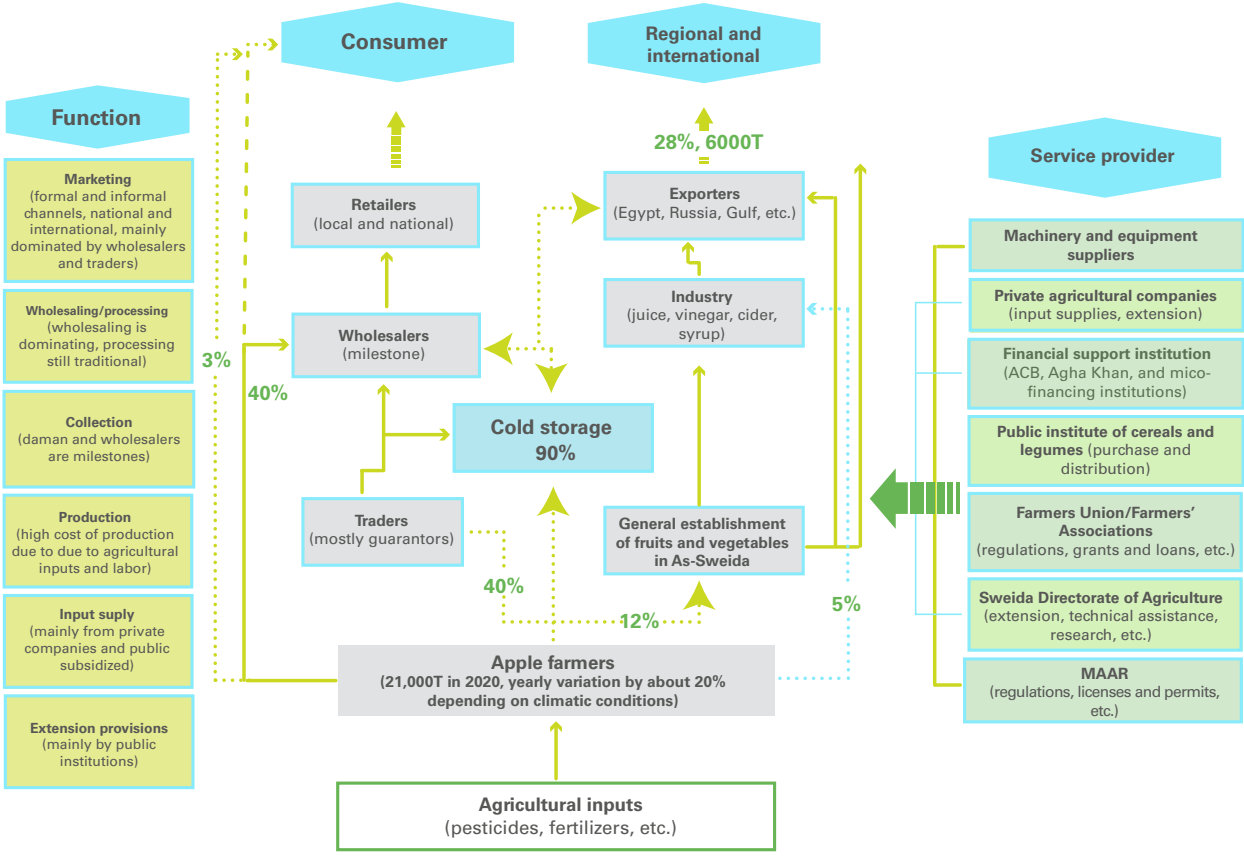
Weaknesses: Main weaknesses include high cost of production, lack of standards and large volume of inferior quality. The post-harvest tools and methodology are primitive and old, and marketing is unformal, where farmers are subject to exploitation.

Opportunities: There is a high potential to increase productivity and improve safety and quality, and thereby increase exportable volume. Also, the already available store houses and post-harvest handling facilities can be upgraded to meet demands. Marketing upgrading potentials can be better activated through the available marketing instruments.

Threats: Unless immediate intervention takes place, farmers may convert their cultivation into other crops.

55 *Economy electronic J. 18/1/2021.*

As-Sweida: value chain mapping of apples



Note: Schematic flow chart of apple value chain in As-Sweida Governorate, with functions and support services institutions. (About 90 per cent of the apple is cold stored by traders/wholesalers who will subsequently control its distribution according to marketing opportunities. A wholesale market, Suk Al-Hal, was only recently established in As-Sweida, and is awaiting the new 2021 season).

The distribution marketing channels of apple are traditional and informal, where most of the fruits (about 80 per cent) are sold to wholesalers and traders, and the remaining (about 12 per cent) are sold to the General Establishment of Fruits and Vegetables. About 90 per cent of marketable apple is stored to wait for good prices, and only few percentages (less than 5 per cent), depending on damaged fruits, are used for the production of derivatives such as alcoholic drink, vinegar, dried chips and, more recently, apple molasses. These percentages are significantly variants from season to season depending on marketing availability and offered prices. The entire value chain of apple is segregated and does not follow any systematic approach.

On the other hand, support services institutions that are mostly public are too underprivileged due to the conflict impact to provide any noticeable services, including effective extension. Government price transparency and law enforcement need to be reimplemented. Farmers demand better structured marketing channels to avoid exploitation by traders. Expenditure on agricultural knowledge and innovation systems should also be increased.

2. Preliminary market analysis of apple

Although the Syrian Government is taking various measures to solve some of these problems, the conflict

has halted such initiatives and slowed down attempts to improve value chain conditions. For example, the Governor of As-Sweida has announced a plan to establish 76 retail shops at the Suk Al-Hal by the end of 2020.[56] On the other hand, farmers are demanding subsidies for apple marketing, especially for exportation, as is done for citrus fruits. They also demand proper distribution and marketing channels to prevent trader exploitation. The local wholesale market, Suk Al-Hisbeh, is old is not fit anymore as a marketing platform. As a result, three wholesale platforms, Suk Al-Hal, were established in 2021 in Walgha/As-Sweida, Shahba and Al Kasr and are awaiting next season's produce.

Currently, there are three main marketing channels for apple: farmers-to-consumers; farmers-to-cooperative establishments of fruits and vegetables and the Syrian Trade Establishment, which has access to about 80 marketing exits or platforms; and farmers-to-guesstimating traders who are more involved with exports that constitute about 45 per cent of total production in normal conditions.

The high storability of some varieties of apple enables them to be supplied almost throughout the year and is reflected in the seasonal stability of price. This contributes to strong acceptance by consumers and leads to greater potential profitability for producers. With apple available in the markets for most of the year, consumers have strong preference for the fresh product.

The existing cold storage facilities do not meet the requirements of producers in terms of capacity, location, cost and quality. Therefore, farmers are often forced to sell just after harvest, without the opportunity to hold their produce for placement when and where prices are best. Need for money and lack of experience force farmers to sell their apple directly from the field.

As Syrian apple available for export is limited in quantity, and markets are very competitive, the export marketing strategy should be tightly focused on Gulf and other Arab countries, which are already the most important markets. The first step would be to survey the quantities and prices in the markets and to determine the consumers' preferences in terms of taste and texture. Subsequently, action could be taken to ensure that the Syrian varieties are those best suited to the market's needs.

Continuing market intelligence gathering of such factors as import varieties, volumes, prices and competitors' performance would be needed for required actions on the part of Syrian exporters. Quality standards should be developed and applied continuously to secure the position of Syrian produce in the competitive markets.

Production and marketing costs need to be reduced to increase the competitive power of Syrian apple in foreign markets. Means to reduce costs include improved farming technologies (pruning, thinning, and biological controls) and more efficient marketing practices.

3. Value chain technical capacity and needs

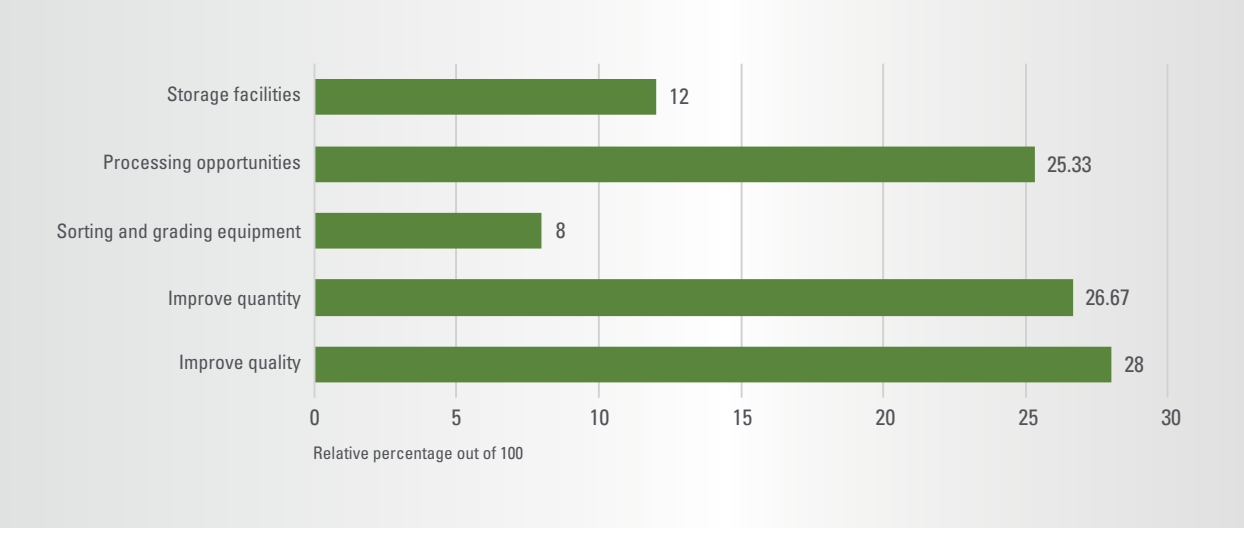
Tree husbandry and irrigation are among a number of farming technology issues that should be addressed. Pruning and thinning, although essential to stabilize yield and secure high quality of fruit, are now not practiced sufficiently by producers. While irrigation is very important for high yield and quality, As-Sweida water resources are very limited. There is a need for water saving irrigation technology within the context of improving the overall use of water resources. Figure 15 shows major needs to promote fruit production, as suggested by respondents.

Major varieties, such as Golden Delicious and Starking, are high yielding and early maturing and have generally good texture and taste. These varieties easily change texture under normal temperature and are not highly storable, which limits marketability, both at home and abroad.

Production cost of apple is generally higher than that of competitors within the region. The increase in the production cost is mainly caused by conditions resulting from the , which has complicated functions

56 *Syrian expert, 10/8/2020.*

Figure 15. Relative percentage of needs to improve fruit production in As-Sweida as suggested by respondents



and operations along the value chain, starting from input supply availability to transport and marketing. Retention of existing exports and development of new markets will depend on reducing costs to make the Syrian apple competitive in regional and other markets.

The increased cost of production reduces agricultural services to basic operations. For example, farmers have stopped fall ploughing, reduced pesticide application or use of banned and/or low-quality pesticides and abandoned all sorts of fertilizers. Although farmers acknowledge the importance of fertilizers, their high prices at the private support basis and the unavailability of subsidized ones have forced farmers to use the minimum possible treatment.

Official entities exist, but they have very limited capability and effectiveness due to various reasons that are mainly related to the conflict and the economic siege. The Syrian Trade Corporation, for example, was not able to market more than 2 per cent of the governorate apples. Meanwhile, traders and wholesalers are more in control and govern the prices in the market, taking the official pretext prices as an excuse most of the time.

The application of integrated pest management (IPM) is very short due to the lack of qualified labour and budgets. Although public extension is available and effective, farmers rely on private companies and apple traders to guide their orchards management, as they are the actual clients.

The availability of agricultural machinery is scarce and very expensive, which adds to the cost of production. In addition, fuel, which is used in various agricultural operations, is unavailable or very expensive.

Regarding post-harvest operations, it is worth mentioning that cold store facilities are relatively and adequately available, and there is no plan to increase their capacity for the time being. Meanwhile, sorting and grading is still carried out manually by non-qualified personnel, with the exception of insignificant few who have sorting/grading machinery but are unfortunately not working. No washing or waxing operations are carried out on apples that are packed in 20 kg boxes for cold stores or the 2-7 kg boxes destined for the domestic market. Apples are packed in cartoon boxes for export.

Transport, however, is carried out on general transport vehicles that are not equipped with refrigeration systems, and thus reducing the quality of apple and increasing charges that are explained by fuel cost and vehicle accessories.

4. Economic performance and benchmarking

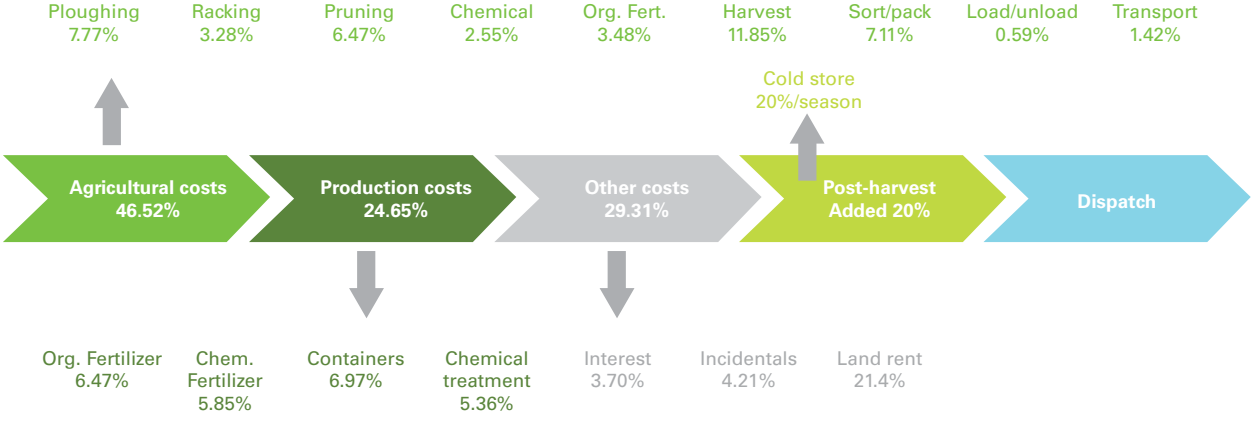
Although apple is the number one product of As-Sweida Governorate, related economic parameters and strategic plans are neither present nor effective. Marketing channels are informal, never stable, and subject to traders' views and decisions. The official entities are not effective and sometimes have negative effects on prices due to unfair and unrealistic pricing index. Traders take this indexing as an excuse to purchase apples at lower prices, hence farmers feel exploited on one side, while consumers are subject to higher prices on the other. According to farmers' opinions, crops are preferably sold, in order of importance, to exporters, wholesalers, commissioners and then lastly to the Syrian Trade Corporation. They believe that exports can ensure higher margins of profits.

Apple was a major economic source for most farmers prior to the conflict. However, this has significantly declined during the conflict, and matters are becoming worse year after year, especially with the absence of inter-firm linkages along the value chain.

Certification of products, especially for export markets, is readily available, but most of the time is unrealistic and therefore batches are sometimes detained by the importing country (Egypt in 2020). Most importantly, certification of residual safety is a must for the export of apples, which is commonly associated with such toxins. Local labs need to be upgraded and accredited for such types of analysis and certification. Besides, the use of forbidden and smuggled chemicals complicates matters and threatens marketing opportunities. Extension and monitoring regarding this issue are weak and unavailable most of the time.

The lack in financial support and/or access of farmers to financial resources aggravates the apple production system and threatens its future. Farmers demand facilitation of soft loans on long-term basis from governmental banks, especially the Cooperative Agricultural Bank, to be able to invest and promote their production systems. The most effective factor is probably the stability of the local currency and a relatively balanced income. On the other hand, support by international organizations is very limited, and when available is unfairly distributed.

Production cost was calculated based on public estimates released by MAAR in 2019, though farmers think that they are higher due to exchange fluctuations. Apple production costs are illustrated in the chart below. The chart shows that the agricultural costs represent about 46 per cent of total production cost, which is relatively high when compared to neighboring countries. This is mainly due to the devaluation of the Syrian currency and the highly volatile pricing indices.

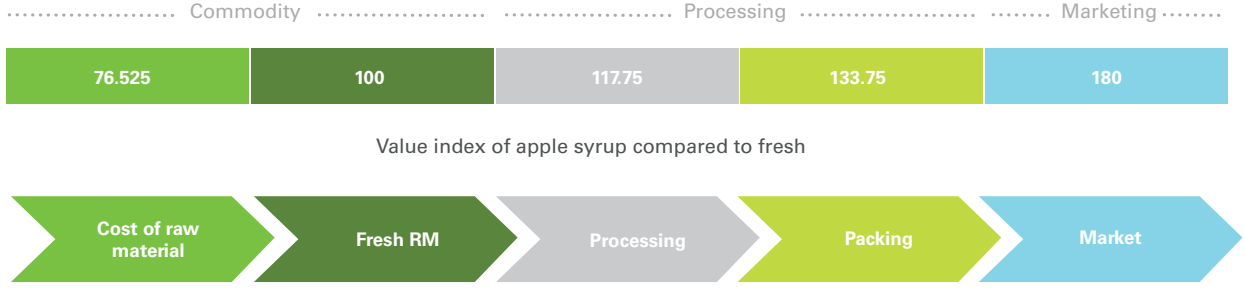


Note: Agriculture costs are those paid for land management and trees when woody, whereas production costs are those paid for trees from sprouting up to harvesting. The 20 per cent cold store is only paid when apples are refrigerated, which is mostly done by traders rather than farmers and therefore was added over the 100 per cent cost of farming.

It is well known that most of agriculture inputs and services, such as machinery, are imported, a fact that adds complications and fluctuation of prices and wages. In addition, all working activities of farming management have also dramatically increased, while the purchasing power was regressively declining. Other expenses that mainly emerge by the public sector, such as land rate, could be reduced to the minimum possible, especially in the current crises conditions.

Added value

Added values beyond fresh production of apple is still insignificant and poorly handled, including post-harvest sorting/grading, treatment, packing and storing fresh produce. Furthermore, further processing is also very limited to trivial volumes that are converted into syrup, vinegar and dried apples. Unless a high value marketing platform, such as the European Union, is established, added value will not be seriously considered. For example, by analyzing the Value index (VI) of fresh apple and apple syrup based on current prices and costs, it was observed that the VI of fresh apple was about 23.5 per cent, while that of apple syrup was 46.25 per cent, or as much as double, although the processing is still new and traditional. Although the added value obtained from processing has increased the profit margin by as much as double, it is still relatively very low. Initially, the profit margin for fresh apple (23.5 per cent) is low due to the high cost of raw materials. This VI can further be significantly increased if processing and packing conditions are improved by, for example, the use of small packages or containers rather than 25 kg containers. Furthermore, technology transfer and know-how will certainly add more values to the final product. To date, derivatives of apple manufacturing, especially those of inferior quality, are limited to vinegar, dried stripes and apple syrup. The juice manufacturing is not working and therefore significant amounts of apple are wasted.



On the other hand, sources of competitions are two-sided: domestic and regional. The first is mainly presented by Homs and the coastal governorates, where production is higher per unit-area. Yet As-Sweida apples are characterized by better and larger quantity of exportable products. Main external competitors are the Turkish and Iranian apple in regional markets such as Iraq and the Gulf countries, especially that their cost of production is lower than that in As-Sweida.

To improve competition, farmers demand good quality seedlings with appropriate characteristics and enough quantity to prosper and improve production. Government support regarding this issue is short, and private nurseries are not trustful regarding varieties and quality.

B. Grape value chain

1. Mapping of grape value chain

As-Sweida is the second biggest producer of grapes in the Syrian Arab Republic, with a production that ranges between 35,000 and 58,000 tons per year, and is the first in term of cultivation area, with about 9,917 ha.[57] Grapes are the second largest fruit production in As-Sweida after apple, with about four million vine trees bearing fruits. Vine trees represent a major economic source for over 25,000 families in the governorate. Grapes are mainly produced in Kafr, Mafa'ala, Sawat Al Khedr, Majamas, Habran, Arman, Karya, Kanwat, Dahr El Jabal, Salkhad, Nimra and Ghaydat Nimra. Varieties produced in As-Sweida include Salty (about 70 per cent), Baladi, Halawani and Black grapes.[58]

Grapes production varies significantly depending on climatic conditions, especially the level of precipitation, as vines are overwhelmingly rain-fed. Like apple, grape farmers suffer from increased cost of production, particularly for plant protection, because they are susceptible to infestation and diseases and are especially attacked by phylloxera. Although still negligible, farmers are starting to convert into apple and almond cultivation.[59]

The production system is still mostly traditional, with significant part of orchards still planted under the creeping system, i.e. as ground-laying vine (goblet), rather than vertical. This system makes plants and fruits vulnerable to infestation and physical damages and therefore increases losses and reduces the

Figure 16. Grapes of As-Sweida

57 MAAR 2019.
58 SANA.SY/? p=1164446, 2020.
59 SANA.SY/?P1229777.

quality of end product. Farmers are therefore urging the government to assist in reducing production costs and financial support in term of soft loans to improve production quantity and quality.

About half of total grape production is processed into various derivatives, including raisin (about 10 per cent), grape syrup (about 50 per cent), alcoholic drinks and methanol distillate (about 25 per cent). These percentages may vary significantly depending on the quality of products and market demand. All processing operations are still applying the same ancient traditional methods. The major issue facing processing is fuel price and availability, as most of the syrup manufacturers rely on diesel, which is short due to the economic siege imposed on the Syrian Arab Republic.[60] Sometimes, grapes must wait in boxes for days until fuel is available, leading to great losses in both quantity and quality. Otherwise, farmers have to buy fuel from the black market at about four times as much as the official price (250 SYP/L). The conversion ratio of grape into syrup is about 20 per cent, i.e. each 5 kg of grapes 1 kg of syrup (70 per cent Brix). The average price of industrial syrup is about 65,000 SYP/tin (25 kg), whereas home-made syrup is at about 70,000 SYP/tin.[61] About 1,500 tons of syrup were produced during the 2020 season. Each tin costs the farmer about 15,000 SYP that was paid to the manufacturer.

Raisin is another main grape product that is produced in As-Sweida, creating about 10,000 job opportunities. Grapes and derivatives are mostly marketed within the country, while small amounts are marketed at the regional level.

Support services, mainly provided by public institutions such as the Directorate of Agriculture and its departments, are at their minimum level due to lack of budget and increased prices of agricultural inputs, particularly subsidized agricultural inputs. This has led to reduced agricultural orchard services such as fertilization and protection through pesticides, which subsequently resulted in inferior quality and reduced productivity. A brief description of grape VC mapping is illustrated in the chart below. The government has promised to reduce production costs, provide soft loans to improve processing of juices and jams, open new markets, make use of renewable energy, support rural development, particularly women, and review pricing of apples and grapes.[62]

Brief SWOT analysis of grape value chain (see details in annex 4)

Strengths: favourable climate and land for the production of rain-fed vineyards with high sweetness, which is suitable for processing molasses, raisin and alcoholic beverages. The potential for improving production and processing is readily available.

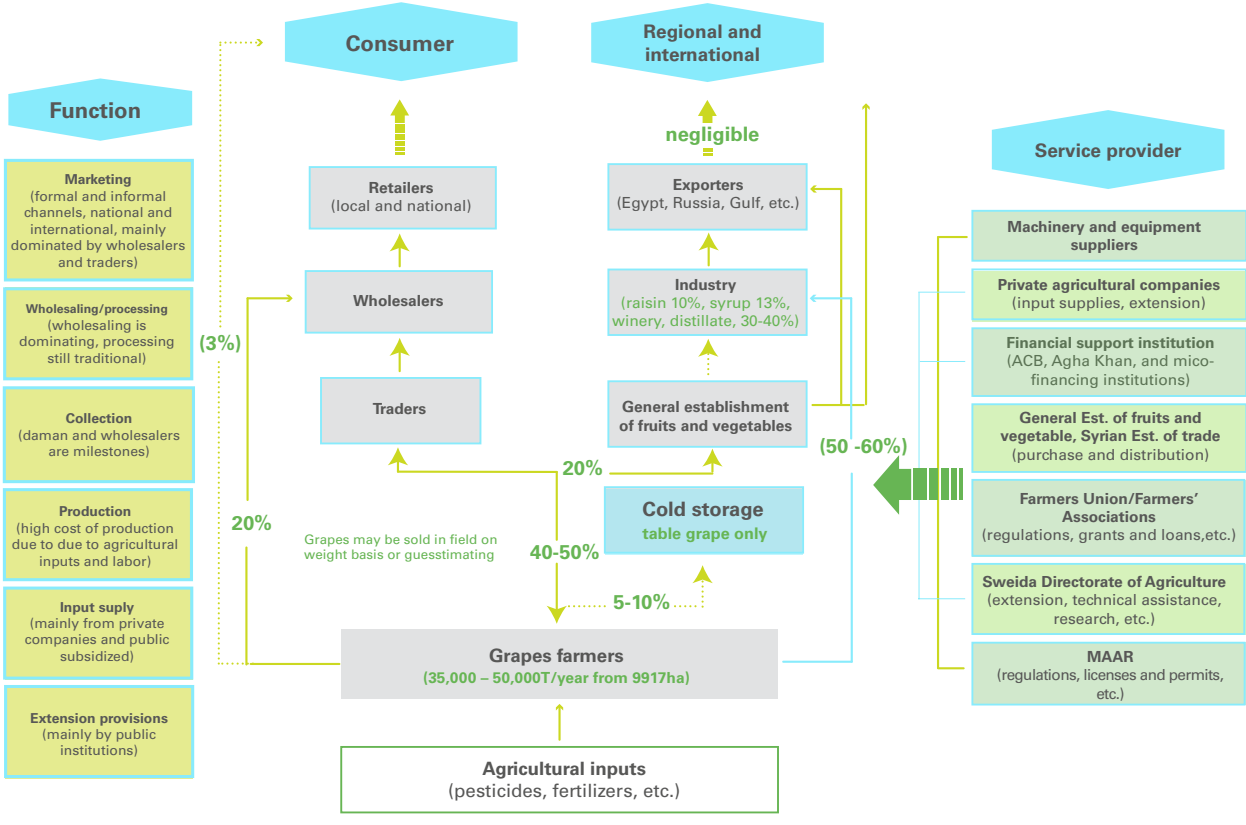
Weaknesses: limited varieties, especially for table grape that is more demanded for marketing. Production system (ground laying) is susceptible for infestation and diseases and leads to significant losses. Handling along the chain is inferior and need improvement.

Opportunities: potential to increase productivity is available by changing the cultivation system and introducing new exportable varieties. Processing of grape derivatives, especially molasses and raisin, is very promising.

Threats: the practiced production system may lead to significant losses in volume and quality, and subsequently market and profit losses. This will certainly lead to reduced livelihood opportunities for the community that is mostly involved in agriculture.

60 Albawaba.com/ar/1386047, Oct 2020.
61 7al.net/2019/11/05.
62 prministry.gov.sy/content/18426/2021.

As-Sweida: value chain mapping of grapes



Note: Value chain mapping of grape in As-Sweida Governorate. Most of the juice variety (Salty) undergoes processing (sometimes over 60 per cent), whereas table grape (about 20 per cent) is marketed in the local and national markets, mainly in Damascus and Aleppo. The General Establishment of Fruits and Vegetable receives grapes from farmers in quantities dependent on the market, ranging from 5 to 20 per cent, similarly for the Syrian Establishment of Trade.

2. Preliminary market analysis of grapes

Like apple, marketing channels for grapes are informal, limited and very weak, and are mainly governed by wholesalers and the Syrian Company for the Manufacture of Grapes. The official price was estimated at 125 SYP/kg in 2020, whereas the industrial price was between 160 and 180 SYP/Kg.[63] Meanwhile, farmers are demanding higher prices for their grapes to reach at least 350 SYP/kg, considering the official prices as unfair. Furthermore, they are demanding new marketing platforms for grapes and derivatives by facilitating distribution channels and opening specialized wholesale market places. Recently (2021), the government established and completed three wholesale markets, Suk Al-Hal in As-Sweida, Shahba and Al-Kasr. Prices of grapes, mainly juice grapes, have increased 10 times compared to before the crises, while the inflation rate during the same period has increased 65 times.

However, marketing of grapes is negatively influenced by various factors, most of which emerged due to the conflict and the current financial crisis, including:

- High production costs, especially of fuel and agriculture inputs.
- Devaluation of the Syrian currency, especially that most inputs are imported with hard currency.

63 Npasyria.com/36174, 2020.

- Lack of technology in agricultural practices.
- Limited access to finance.
- Dominance of the juice variety of grapes that are not convenient for export and vulnerable to marketing conditions.
- Low quantity of table grape (less than 20 per cent), and therefore not enough to impact the market.

Yet, marketing of grapes, particularly table varieties, is still facing major challenges. The government worked on opening new internal markets (platforms) to facilitate the distribution and presentation of grapes to consumers. Enlarging and developing the local industry will certainly improve grape marketability in As-Sweida. The greatest portion of grapes are sold directly to wholesalers who take advantage of farmers. The Governor of As-Sweida has announced that there was an opportunity to produce organic grapes and derivatives. Local experts have also urged the government to open external markets by satisfying international standards and certification. There was also a suggestion to convert the ground-laying vineyards into the vertical type to preserve the quality of grapes and subsequently improve its marketability, although vertical grape needs high finance inputs, workers and watering, which are not available.

The main emphasis should probably be given to the processing of grapes into juices, syrup, raisin and other derivatives. These products are historical and traditional and can be improved with the support of technology and know-how to form a significant marketing exits for grapes.

3. Value chain technical capacity

Grape Production is subject to a yearly reduction of about 1.5 per cent in term of cultivating area mainly due to the shift into apple production[64] and the spread of nematodes[65] and infestation by phylloxera[66] that reduce productivity. The main factor that controls grape production and the change in planted area is weather conditions, especially drought. According to the As-Sweida Agricultural Directorate, grape production was estimated at 44,555 tons in 2020, with a reduction of 11,000 tons compared to the previous season, attributing difference to environmental factors.

Constraints facing vine farmers include high prices of agricultural requirements, such as fertilizers (chemical and organic) and machinery, as indicated by 85 per cent of respondents, while 66.5 per cent of farmers complained about fuel prices and availability. Unlike apple, grapes have more exits, especially the industrial varieties that are directly handed to local factories of juices, syrup (molasses), alcohol and raisin. The need for post-harvest storage is relatively limited to table grapes only.

Juice grapes are generally harvested in 20 kg plastic boxes and transported by local tractors to syrup processing plants that are still traditional and very primitive in terms of technology and standard operation procedures.

Creeping-system, i.e. ground-laying vine system of cultivation, is also causing various quality and quantity problems. The system is old and traditional, leading to increased probabilities of infestation and physical damages due to grapes being in touch with the soil with little aeration and sunshine exposure. The vertical type is more common for table grapes and should be generalized for all varieties.

4. Economic performance and benchmarking

Grapes in As-Sweida have no internal or external competition, mainly because of the limited marketing platforms and other reasons stated earlier regarding technical capacity. In addition, most of the grapes are of the juice variety, or "*Salty, Baladi*", which is convenient for processing rather than direct fresh marketing, although the product can be developed to be marketed as fresh in much larger amounts if production systems and post-harvest handling are improved. Product development requires facilitating

64 Safadi 2016. Climate and its impact on the cultivation of apple and grapes in As-Sweida.
65 Saher Mhammad and Khaled El Assass (2021) Research paper, Nematode spread over parasite in vine roots.
66 2020, https://suwayda-event.com/444 marketing of As-Sweida grapes.

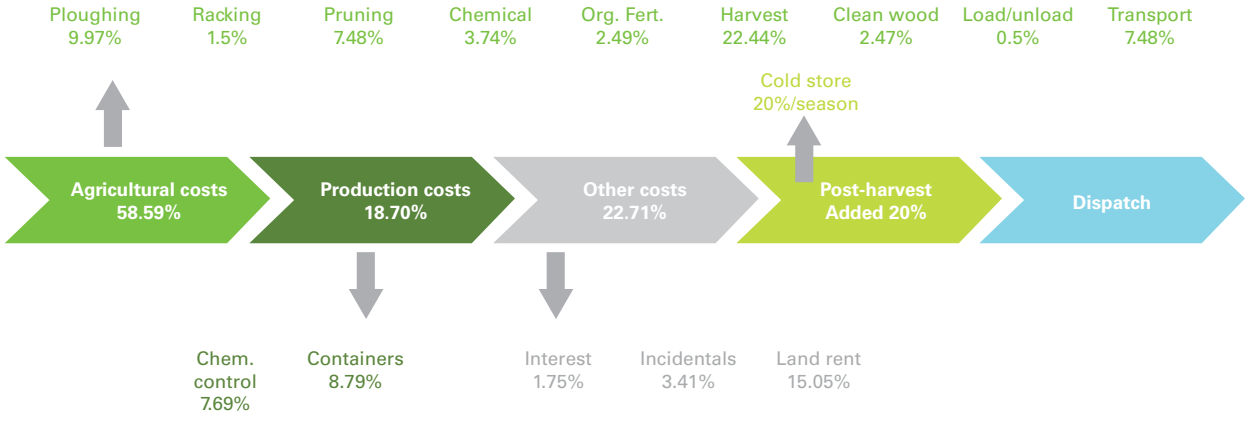
access to finance by farmers under the control and extension of existing public institutions. Also, directing farmers towards organic farming of grapes and derivatives is highly desirable to increase competition of the local grape.

(a) *Cost of production*

The cost of agricultural practices as an economic parameter is over half of the total cost, which is relatively very high mainly because of imported inputs and high labour cost. In addition, the selling prices are lower than what satisfies farmers, and therefore some are shifting into other crop cultivation. The current conditions in the Syrian Arab Republic in general and in As-Sweida in particular are certainly neither convenient nor normal to carry out root cause reforms. Yet, responsible governmental entities can limit losses and help farmers pass through the conflict and its economic impacts. Introducing new grape varieties, such as seedless grapes, and increasing the share of table grapes by supporting healthy and tolerant seedlings, can also improve marketing opportunities and open new market platforms.

Developing the cultivation system by shifting from creeping-style to vertical vineyards will have a highly significant and positive impact on the volume and quality of grapes end product and reduce cost of production.

On the other hand, organic grape farming provides another opportunity to improve product marketability as such grapes are highly demanded in the international market. This would be a good opportunity to increase farmers' income because local grape varieties with creeping-style rearing methods need very limited chemical treatment with pesticides, and it is easier to change to the organic production system.



Note: Agriculture costs are those paid for land management and trees when woody, whereas production costs are those paid for trees from sprouting up to harvesting. The 20 per cent cold store is only paid when grapes are refrigerated, which is mostly done by traders rather than farmers, and therefore was added over the 100 per cent cost of farming.

Supporting and facilitating development of further processing of grapes can enhance farmers' economic situations, especially that these processed products are able to be stored for a long time when compared to fresh grapes. Promising products include grape syrup, raisin, and 100 per cent fruit jams that may add greater values to the end products (which could be certified organic) and ensure a better profit margin for the farmer.

The current processing conditions of grapes are still very primitive, relying on traditional procedures and experiences that should be supported by scientific information and advanced techniques to improve quality and characteristics of the final products. The government is aware of these issues and has promised to reduce the cost of production, improve investments in agricultural lands, provide loans to establish

processing lines for juices and jams, open new markets and promote the use of renewable energy.

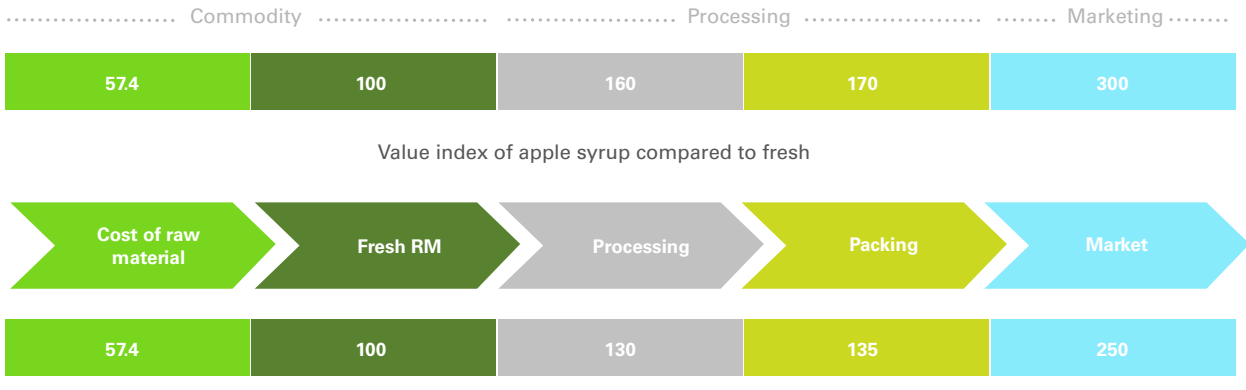
(b) *Added value*

Added value is always looked at as a significant indicator of economic prosperity, especially when raw materials are locally produced, which is the case of grape derivatives in As-Sweida Governorate. The white juice grape, which represents about 70 per cent of total production, is mostly processed into various derivatives, primarily raisin, molasses and alcoholic beverages, although the processing is still traditional and primitive. The chart below briefly summarizes the added value progress for grape molasses or syrup and raisin.

(c) *Value index of grape raisin compared to fresh juice grape (100)*

The profit margin for both raisin and molasses is relatively good, with as much as twice the profit gained from selling fresh grapes, yet farmers consider that raisin has higher margins. Raisin is vastly a homemade product and farmers do not calculate the processing cost, especially labour, because they do it themselves. Therefore, once their wages are exempted, i.e. they do not pay cash, production cost is apparently reduced.

However, added values can be significantly increased if processing conditions and marketing are developed and enhanced. Use of new technologies and standardization of products can ensure better marketing opportunities.



C. Chickpeas value chain

As-Sweida Governorate is the number one in the Syrian Arab Republic in chickpeas production, with about 40 per cent of total national production covering just over 30,000 ha. Chickpeas productivity is significantly affected by climatic conditions, particularly precipitation level, as it is largely grown relying on rain-fed irrigation. According to the Directorate of Agriculture in As-Sweida, the 2021 expected productivity is estimated to be at about 5,000 tons, which is almost half of the previous season (2020).[67] Productivity of chickpeas is reducing regressively due to shortages in water supplies (rain and reserve), with a standard deviation[68] of about 1,083 tons.

Chickpea is often grown under harsh climatic conditions and is well adapted to low moisture situations, such as the post-rainy season. Spring white (Biadi, بياضي) and Ajaylati (عجيلاتي) are the two main

67 Sy.tv, 2021.
68 Standard deviation is the variation in productivity from one year to another calculated from data of 10 years obtained from MAAR.

Figure 17. Chickpeas field of production in As-Sweida Governorate

varieties cultivated in As-Sweida, although public research institutions are proposing new winter varieties such as Ghab 1-5.[69] Relatively fewer insect pests attack chickpea, compared to other legumes. This is probably because it is a cool-season crop and also because of the dense glandular trichome[70] found on all of its green tissues. The most recognized type of infestation attacking chickpeas in As-Sweida is known as "pod borers" that is the single most important constraint to chickpea production. In addition to its wide distribution and host range, high levels of insecticide resistance make this species one of the most difficult pests to manage.[71] The below chart illustrates the value chain mapping of chickpeas in As-Sweida Governorate.

The expected production of chickpeas for this year (2021) is not more than 5,000 tons, which is about half that of the previous year, when 23,000 ha out of 31,000 ha were cultivated (average production 200 kg/ha). Like other produce, the cost of production is a major issue, especially with products that need heavy handling and labour. In addition, chickpeas need extra charges for post-harvest cleaning, sorting, grading and packing, which is normally called marketing expenditure.[72]

Regarding agriculture inputs, chickpeas, unlike fruits, do not require as much fertilizers and chemical control, yet still the cost of production is relatively high due mainly to unavailability of labour that is most of the time brought in from outside the governorate. Labour is generally not qualified and demands high wages. Although unemployment is high in the governorate and elsewhere in the country, this type of work, i.e. harvesting chickpeas, is very difficult and messy, and hardly anyone from the new generation

69 http://esyria.sy/sites/code/index.php?site=suweda&p=stories&category=news&filename=201601140846362.
70 The glandular trichome excretes an acidic substance comprised mainly of malic and oxalic acids, which deter many potential herbivores.
71 Handbook on Chickpea and Pigeonpea Insect Pests Identification and Management. Information Bulletin No. 57, Patancheru, Andhra Pradesh 502 324, India: International Crops Research Institute for the Semi-Arid Tropics. 96 pp. ISBN 92-9066-412-6. Order code IBE 057, 2013.
72 Ashahin and Abdel Aziz (2016). Economic study for marketing chickpeas in As-Sweida. Damascus Unv. J. for Sci. Res.

would accept carrying it. Existing machinery, especially seeding machines, is either old or not available, which adds to the cost of production.

Post-harvest operations, e.g. screening, sorting, grading, chemical treatment and packing, are also expensive, and are most of the time conducted more than once, hence reducing farm-gate prices.

Storage of chickpeas is generally carried out at framers houses until sold. Official stores are either not available or limited, and chemicals for treatment are expensive. Farmers normally use about 5 per cent of total production for consumption and seeds for the following season.

More than half of chickpeas are marketed through wholesalers and traders, whereas about 12 per cent are sold to small and traditional food services, and the same percentage is sold to produce canned chickpeas and Hummus tahini. It is obvious that the industrial share is still very limited and can be significantly improved.

Distribution channels are quite irregular and vary according to demand and supply and offered prices. There are numerous exits for chickpeas and its derivatives, which have high potentials for further development. Roasted chickpeas, canned chickpeas, Hummus tahini, food services and street vendors are all available exits that can boost the economic value of the chain.

Extension and training are weak or unavailable due to low budget of the concerned institutions that are mostly public. The Ministry of Agriculture and Agrarian Reform and its subordinates closely coordinate with the International Center for Agricultural Research in the Dry Areas (ICARDA), particularly in semi-arid and arid agriculture, especially in relation to beans and seeds, including chickpeas and lentils. ICARDA was significantly affected by the conflict and has moved its gene banks from the Syrian Arab Republic to Lebanon.

Brief SWOT analysis of chickpeas value chain (see annex 4 for more details)

Strengths: good quality rain-fed and availability of other marketable new varieties. Potential for processing and product development is highly significant and easy to store and market.

Weaknesses: lack of Good Agricultural Practices (GAP) and technology, and therefore increase of cost of production.

Opportunities: there are potentials to increase productivity, quality and safety of chickpeas through the introduction of GAP and machinery in the production system.

Threats: draught may demolish the whole production, and inferior technology may lead to farmers abandoning cultivation.

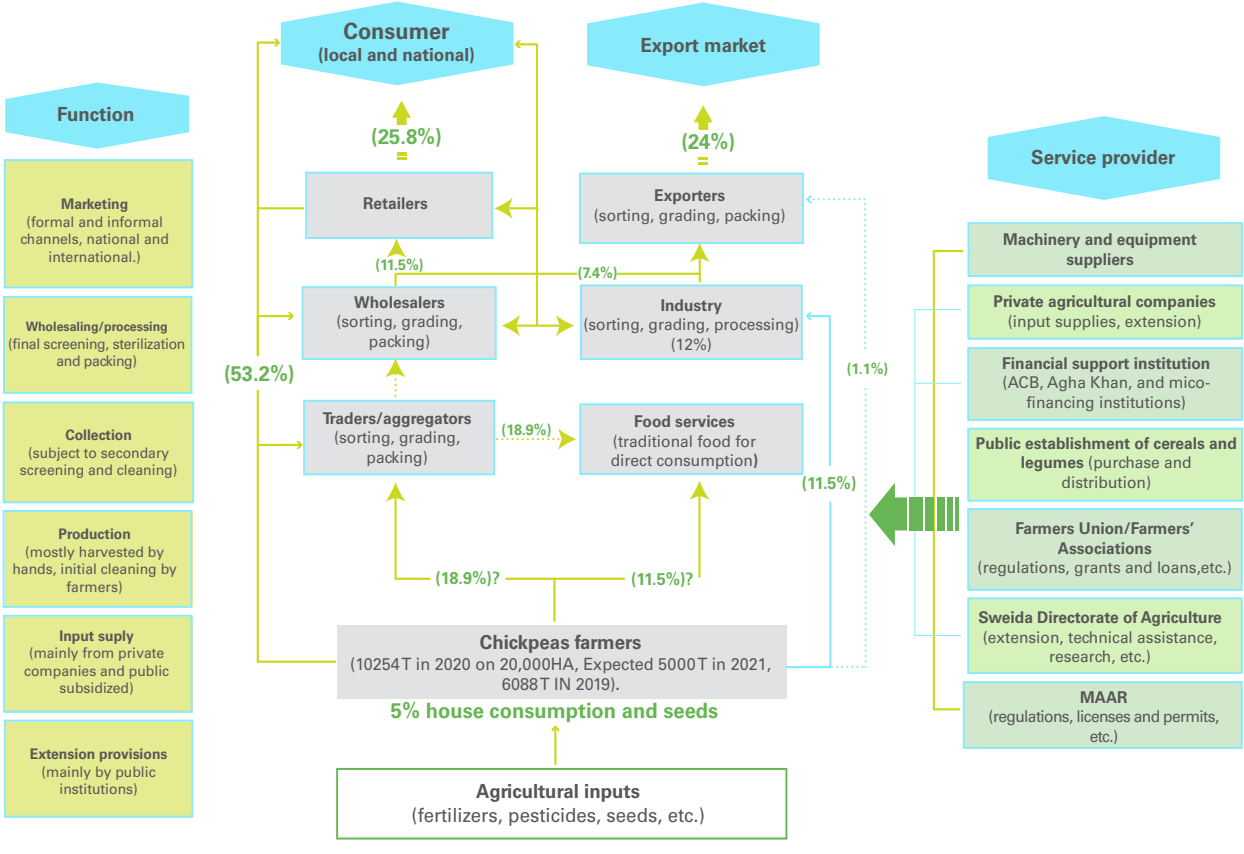
Routing of the chain map is relative and proportional to line colours and thickness. Although there is a significant amount of export, competition is comparatively high, especially from Turkish chickpeas. Support services are at their minimum levels due to low budget and the devaluation of the local currency resulted from the prolonged conflict. Access to finance is almost absent and farmers are in great need of financial support for agricultural activities and machinery. Wholesalers and traders are taking advantage of the vulnerable position of farmers and thereby controlling prices.

1. Preliminary market analysis of chickpeas

Marketing of chickpeas in As-Sweida Governorate is still at its minimum capacity, i.e. using traditional and farmers approaches. More specifically, 95 per cent of the product is sold to wholesalers, or what are called collectors, mostly as bulk packed in 50 or sometimes 100 kg bags. Sometimes about 5 per cent is sold to retailers and another 5 per cent is left for home consumption and seeds. In comparison to the purchasing power of Syrians, the price of the final product is relatively high (about 1,500-2,000 SYP/kg). The local market is very limited and there is a great need to expand the market to national and regional platforms.

The value chain is almost not apparent and the flow of information and transparency are almost absent.

As-Sweida: value chain mapping of chickpeas



Note: The value chain mapping of chickpeas in As-Sweida Governorate. The percentages in blue are the quantities that are exchanged within the local market. The greatest quantity of chickpeas (over 70 per cent) is sold to traders who are most of the times from outside As-Sweida for distribution in the national market.

Also, promotion is limited to social media, which do not seem to be quite effective. Post-harvest treatment and practices are also expensive and add to the original costs, and therefore reduce capability of competition.

However, the value chain of chickpeas needs to be established in an integrated and holistic approach to ease the flow of data and information among all actors and stakeholders, with particular emphasis on support service providers. In addition, the introduction of new varieties, especially winter-grown, is feasible and can boost marketing. Some agricultural practices could increase the productivity and decrease the production costs. Zero tillage, conservation agriculture are some new methods that achieve that goal. Also, changing seeding date from late spring to winter or late winter and using new varieties could increase the productivity up to a double.

2. Value chain technical capacity

Drought and freeze are two major uncontrolled elements significantly affecting the production of chickpeas in the governorate, where the whole crop is sometimes ruined due to droughts. That is why there is some form of a public subsidy called "drought funds" that supports farmers with about 15,000 SYP/ha, but farmers complained that acquiring this amount will sometimes cost (as briberies) more than the actual subsidies.

Agriculture inputs are also forming a complex issue for farmers as they are expensive if imported or ineffective if cheap, especially phosphate and potassium composites of fertilizers. Some farmers refrained from treating their crop due to shortage of finance and/or lack of access to finance. So they believe that all inputs and land services are becoming too expensive to handle, and therefore ask for higher rates of subsidies to cover their costs.

Labour is another issue, either regarding availability, which is scarce, or wages, and subsequently farmers have to bring workers from outside the governorate. As most of the work is still handled manually, farmers demand support for machinery and harvesters to facilitate workload and reduce production cost.

Post-harvest operations are still primitive and consume significant amount of work, time and money, and storing chickpeas is still carried out mostly at homes, until it is sold. Chickpeas sterilization is left most of the time for the buyers to do due to its expensive charging and processing.

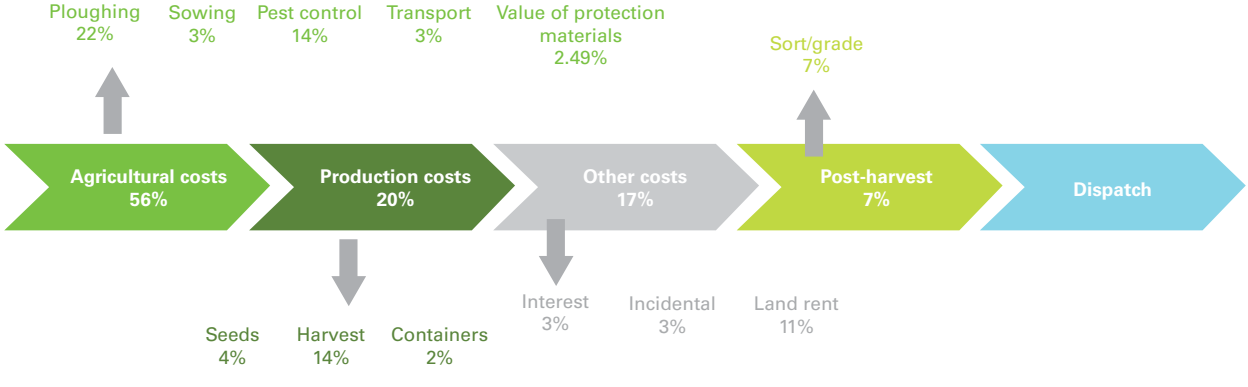
Although local varieties are good, new varieties of chickpeas, especially winter-grown, are required to make better use of rain and reduce costs of chemical control (pesticides, for example). Also, training on good agricultural practices, particularly planting and growing, is necessary.

3. Economic performance and benchmarking

Although chickpeas are a major product of As-Sweida Governorate, little attention has been given to promoting this agriculture either from the public or the private sector. Similarly, international interventions are very limited, and have so far had no significant effect on the cultivation of this product. This has led to very poor competition capability of local chickpeas with the Turkish product, which is sold at about $450 per ton, or about 15 to 20 per cent cheaper than the Syrian variety.

(a) *Cost of production*

Optimally, the production cost should not exceed half of the bulk raw materials in order to be cost effective and capable of competing in the market chain. As can be seen from the chart below, the total cost of production, including both agricultural practices and production requirements, exceeds 50 per cent, therefore a reduction of about 25 per cent should be targeted. Main reasons for high cost of production include lack of machinery, small-size holdings and expensive agricultural inputs such as pesticides, in addition to the impact of the crisis on the economic power of farmers and customers. It is clear that the agriculture costs are the greatest (56 per cent), so the emphasis should be on reducing such costs.



Particular emphasis should be oriented towards the use of technology in agricultural practices, especially mechanical harvesters that are available in various sizes in the market. It is highly feasible to group farmers in some sort of cooperatives to reduce the cost of production. For example, cooperatives can purchase ploughing tractors and thereby do their work for symbolic fares. The same can be applied on other practices such as fertilization or chemical control, which will significantly reduce the cost. Harvesting machines require modern seeding machines to be used, which are also not available.

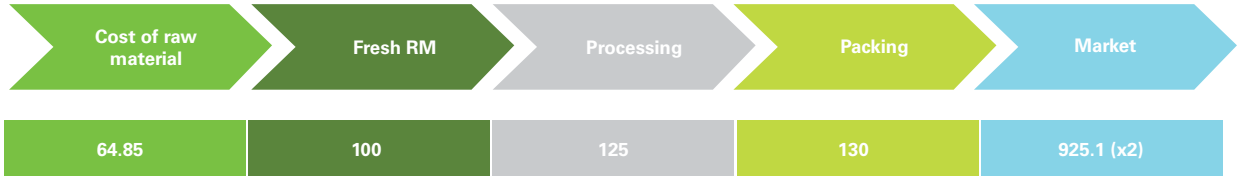
(b) *Added value*

Chickpeas are mostly sold in bulk to wholesalers who re-sort/grade and sterilize them, then pack them in small plastic bags (polyethylene) to be sold locally, nationally or regionally. The added value is normally much greater when some transformation is carried out on the product. Therefore, it is highly recommended to transform chickpeas into other derivatives to add value, hence increase profit margins along the chain.

Processing of chickpeas is already being carried out, but is still very traditional and with no strategic planning for distribution and marketing. Two examples of chickpeas value added are shown in the chart below: roasted and canned in brine chickpeas. The end roasted chickpeas product value (493.38) was four times higher than when sold dried in bulk at 100. On the other hand, canned in-brine chickpeas had a value index of 924 compared to the same value index of bulk dried (100), and this may be multiplied by two due to water dehydration. The use of new technologies may increase the cost of transformation due to capital investment, but still, the margins of profits will always be more than double.

Product development is also another potential for the transformation of chickpeas. This includes, for example, processing of powder chickpeas, which has a wide use in traditional local dishes such as readily made Hummus tahini, falafel and other similar products. A canning industry can significantly boost chickpeas production and save on production costs through the exclusion of sorting, grading, sterilization and many other practices.

Value index of roasted chickpeas as compared to raw dried (100)



Value index canned chickpeas in brine as compared to raw dried (100). Marketing value is multiplied by 2 because of 50 per cent of water absorption upon processing.

Figure 18. Small ruminants in As-Sweida Governorate

D. Small ruminant value chain

The dairy-meat sector in As-Sweida is relatively of significant economic importance, particularly in terms of small ruminants and sheep due to their higher prices for milk and meat. In fact, milk and meat are becoming very expensive to the extent that consumers are starting to exclude those products from their diets.

Cost of production was greatly affected by the increase in forage and other feeding items, which has led to a progressive and massive increase in the price of both milk and meat. For example, the price of one pack of animal feed, such as "ARASCO", has reached 30,000 SYP and one kg of barely has reached 500 SYP in 2020.[73] In addition, prices of veterinary drugs have dramatically increased. On the other hand, access to rangelands became limited due to security reasons. Subsequently, the price of live livestock has proportionally increased. The price of a head of cattle, for example, has reached 4,000,000 SYP, and that of small ruminant has reached about 350,000 SYP (in mid-2020). Milk, as well, is being sold to consumers at about 600-700 SYP/kg, compared to 15 SYP before the conflict.

Rangelands for grazing small ruminants are totally neglected, as there is no management strategy to restore or improve their grazing capacity. For example, rangeland infrastructure, including roads, shelters, water facilities, animal shades and grazing plants, is deteriorating regressively.

Post-harvest/mortem products include wool, meat, milk and organic fertilizers, which are generally sold in bulk locally and nationally at unsatisfied prices due to market fluctuations and traders' exploitation. Farmers

73 http://thawra.sy/index.php/local/investigations/249482-2020-10-15-10-38-16.

are sometimes obliged to sell part of their animals to sustain their business due to expensive input supply. For example, one ton of forage costs about 750,000 SYP, and supplement feed (bran and barley) costs 15,000 SYP/week/head. Vaccines and veterinary medications are also expensive and sometimes ineffective, especially when cheap, costing about 85,000 SYP/125 heads.

Shepherds do not process their raw materials, except for insignificant amounts of yoghurt and cheese for their own consumption. Most of the raw materials are sold in bulk to traders, both wholesalers and retailers. The local market of As-Sweida is very weak, so shepherds rely on Damascus markets to sell their animals for meat.

The average production of sheep's milk is about 0.5 kg/head/day, which is little low due to poor rangeland and expensive supplement feed. The milk is sold locally to milk collectors, retailers or cheese processors at variant prices that are considered unfair by farmers, while considered expensive by the buyers.

The milk industry is still very traditional and basic in As-Sweida Governorate, requiring enormous efforts, awareness, technology, training, safety management and marketing strategies. It is obvious that safety issues are not addressed properly, while the emphasis is given to administrative procedures, such as customs clearances and transport permits.

Farmers' demands include access to finance, rangeland management plans, especially those for water facilities, new breeds that are more productive, better marketing and distribution channels, fair and sustainable prices, training on veterinary applications, machinery to sterilize their livestock, milking equipment, electric wool scissors or wool removing machines and automatic vaccination apparatuses or syringes.

Subsequently, the value chain of small ruminant is almost lost between the needs, which are numerous, and the unstable relevant economic parameters. Restoring and upgrading this economically important value chain is vital for the national economy in general and for As-Sweida in particular.

Brief SWOT analysis of small ruminant value chain (see annex 4 for more details)

Strengths: most importantly, Awasi sheep are highly demanded in regional markets, especially in the Gulf countries, which is within the scope of the Syrian Government. Rangeland is widely available in the nearby semi-arid Al-Badia for both sheep and goats, which are a good source for meat and milk. The processing of dairy products is a tradition in As-Sweida Governorate, just like elsewhere in the Syrian Arab Republic.

Weaknesses: rangelands are neglected, and management plans are urgently required. Veterinary services are expensive and not always available. Processing of meat is almost absent, and that of dairy is still primitive and traditional. Marketing of meat and dairy products is still limited to the local market, whereas live sheep are sold at the national market and exported when permits are available.

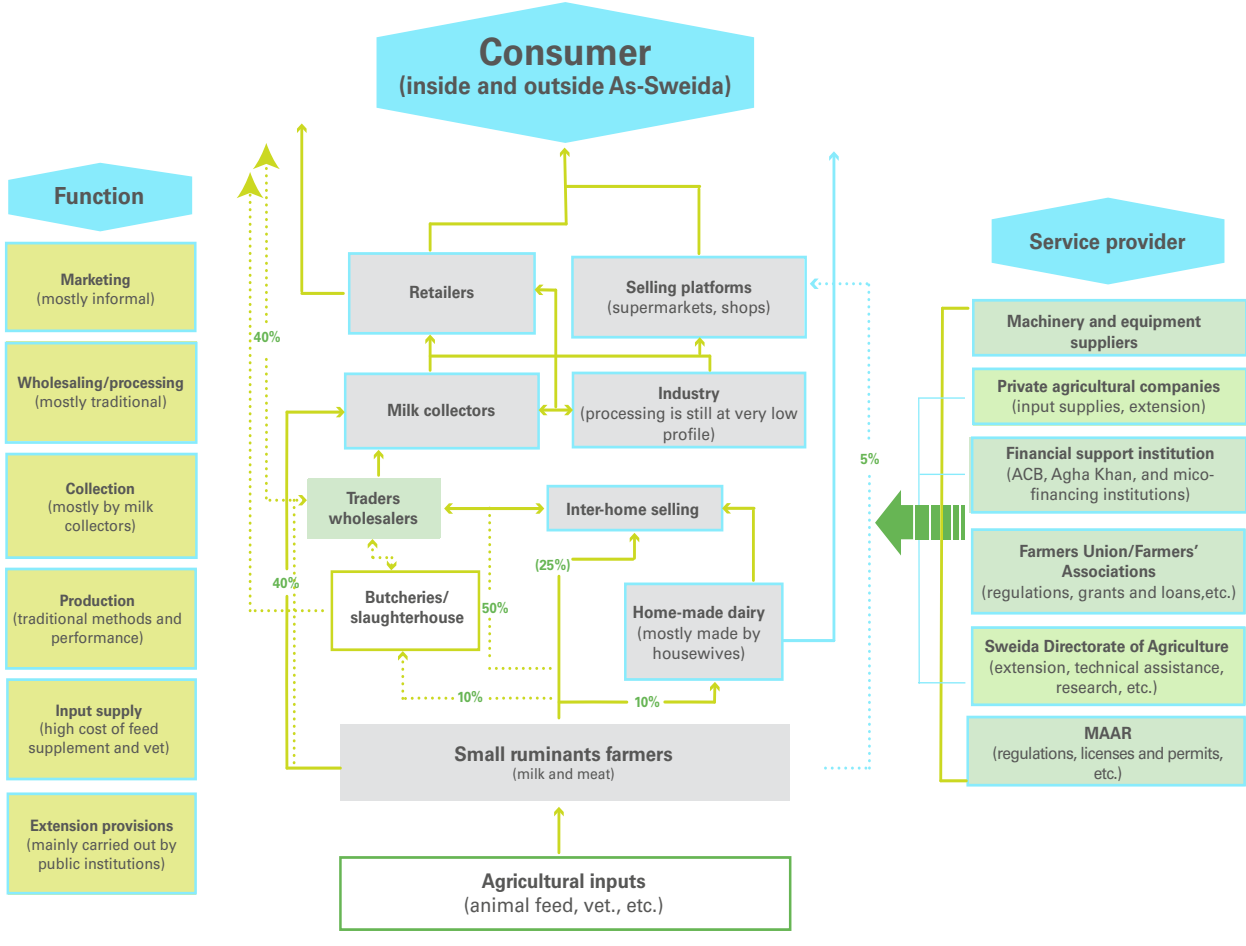
Opportunities: restoration of rangelands will reduce the cost of production and increase productivity of both meat and dairy livestock. Product development will improve quality and safety, and subsequently increase profit margins.

Threats: unless constraints are addressed properly, desertification and rangeland resources will degrade, leading to great losses in small ruminants that rely on them for feed.

1. Preliminary market analysis of small ruminants and derivatives

Small ruminants are a large sub-sector of animal production and their derivatives, including only small game livestock, mainly sheep and goats. Most of these farm animals are sheep, with about 350,000 heads, mostly Awasi breed, which is highly demanded in the Middle East. This breed is very common and desired in Islamic countries, especially Saudi Arabia, where it is used for sacrifices during the pilgrimage season. It is also preferred for its quality and the organoleptic characteristics of its meat and milk.

As-Sweida: value chain mapping of small ruminants/milk and meat (red for meat, blue for dairy)

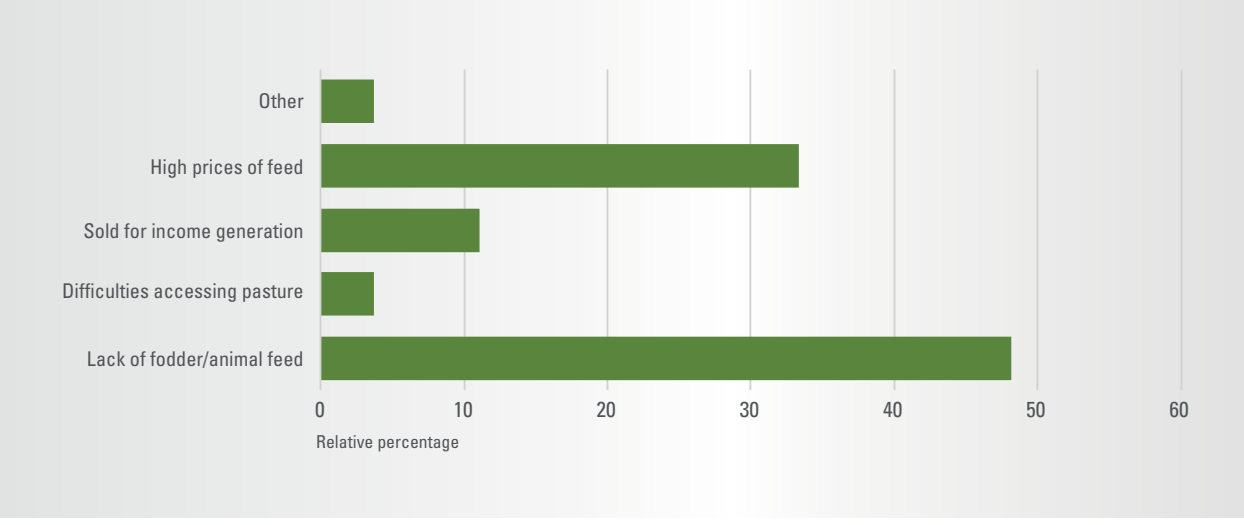


Note: Value chain map of small ruminants' milk and meat. Meat products and livestock, indicated in red doted lines, are mainly sold as live animals in national and regional markets, which absorb about 90 per cent of them (mostly sheep). Local butcheries consume hardly about 10 per cent of lamb meat. Dairy products, including milk, indicated in blue lines, are marketed through various informal channels, the greatest amount, or about 40 per cent, being sold to "milkman" or milk collectors. About 25 per cent is inter-home sold in the form of milk or its derivatives. The industry is still very modest, especially with the absence of a public sector.

The Syrian Government bans the export of the Awasi breed unless with a special permit issued by high-ranking officials on particular occasions and demand. Also, the national market highly demands the meat of this breed, particularly in Damascus where most of As-Sweida sheep are transported to. As-Sweida goats, on the other hand, totaling with about 80,000 heads, mostly of the "Jabali breed", are a major source of milk, and are not commonly desired for meat when compared to sheep.

Raw dairy products, such as milk, are mainly sold in bulk to milk collectors, retailers and/or directly to consumers. The farm-gate price of sheep milk, which is the most expensive, is normally about 1,200 SYP/l, while that of goat is sold at about 1,000 SYP/l. Production conditions are very poor, and daily milk must be sold instantly, which opens the door for exploitation by traders or cheese makers. Milk is not heat treated due to the lack of propane gas or fuel, in addition to the absence of refrigeration facilities. These unfavourable

Figure 19. Causes led to the reduction of small ruminants number as stated by repondents



conditions negatively and significantly affect quality and prices and subsequently marketing.

The local market of As-Sweida is not big or developed enough to absorb local production of small ruminant products, mainly due to the lack of developed processing techniques, fragmented value chain, high prices and reduced purchasing power of consumers. Figure 19 illustrates major causes that led to reduced livestock, with animal feed availability and high prices being the greatest constraining factors (about 48 per cent).

Other derivatives of small ruminants include wool, which has very limited market, and manure, which is sold as organic fertilizers to local farmers.

2. Value chain technical capacity

Urgent intervention is required to restore rangelands in As-Sweida Governorate to allow sustainability of livestock rearing and business development. A detailed management plan should be elaborated based on deterioration assessment and restoration requirements, most importantly for infrastructure, including road constructions, water facilities, shelters and corrals, and plant canopy restorations. The grazing capacity is apparently very low as reported by herders, especially for large size farmers. The management plan should address needs for sustainable grazing and carrying capacity of the rangelands, which could be through seeding and planting of grazing shrubs, leguminous and grass plants. Also, monitoring and sustainable evaluation of grazing are necessary to allow rangelands to replenish.

Support of farmers with technologies and instruments to assist in producing safe and good quality products is highly important. These include milking and livestock sterilization apparatuses, veterinary facilities, and environmentally friendly conditions for rearing.

The value chain is completely fragmented, with very limited and weak inter-firm linkages, which requires urgent upgrading up and down streams, together with chain supply actors and decision makers. Public institutions, which are already weak due to budget shortages and the devaluation of the local currency, should play more effective roles in extension and research to facilitate such development.

Processing of small ruminant derivatives is at its minimum capacity on both technical and volume levels. Unless MSMEs are developed, marketing will be very difficult. The dairy industry is very primitive, and production conditions are not convenient for safe and good quality products, which requires urgent upgrading, with particular emphasis on safety and quality.

3. Economic performance and benchmarking

Although external competition is almost absent, the local absorption of As-Sweida market of small ruminant derivatives is very limited. Again, the cost of production is a major obstacle that prevents the development of this sub-sector. With the deterioration of grazing capacity, the supplementary feeds will increase, which increases the feeding cost. Currently, farmers supplement animal feed with an average of 1 kg of composite bran-barley at a price of about 2000 SYP/head/day. Additional costs include veterinary practices and vaccines, at about 680 SYP/head/season. This has increased the price of raw milk to about 1,200 SYP/kg for sheep and about 1,000 SYP/Kg for goat. With the reduction in rangeland grazing capacity, these prices are expected to become much higher, where the average cost of animal feed would be around 750,000 SYP/ton, knowing that the average consumption of a small animal unit is between 5 and 7 kg/day, depending on body weight.

On the other hand, milk retail prices range from 1,000 SYP/kg for cow's milk up to 1,400 SYP for sheep's milk, which is relatively high compared to the retail prices of derivatives such as fermented yoghurts and cheeses, and therefore reducing the added value to less than 8 per cent for all products. As can be seen from figure 20, the most dramatic constraints affecting livestock rearing and production are fodder and feed (31.67 per cent), limited access to finance (23.33 per cent) and limited access to improved breeds.

It was quite clear that there is no control whatsoever by the source of milk production, i.e. farmers, who are almost absent from the agenda of the processors. Therefore, milkmen and distributors govern both price and quality up and down stream. Most of the processors, especially small ones, use batch heat treating of milk, which adds to the cost of production and negatively affects the quality of end products. Under the current conditions, the use of batch heat or chill-treating of milk imparts major issues, particularly time consumption and quality of end products. Other problems faced by dairy processors are fraud through the addition of water, low fat content and the presence of antibiotic residues in the milk, which may eliminate starter culture organisms and subsequently prevent milk fermentation. The addition of water reduces the total solids in the milk, including fat content. Also, poor feeding of cows may lead to reduced-fat milk.

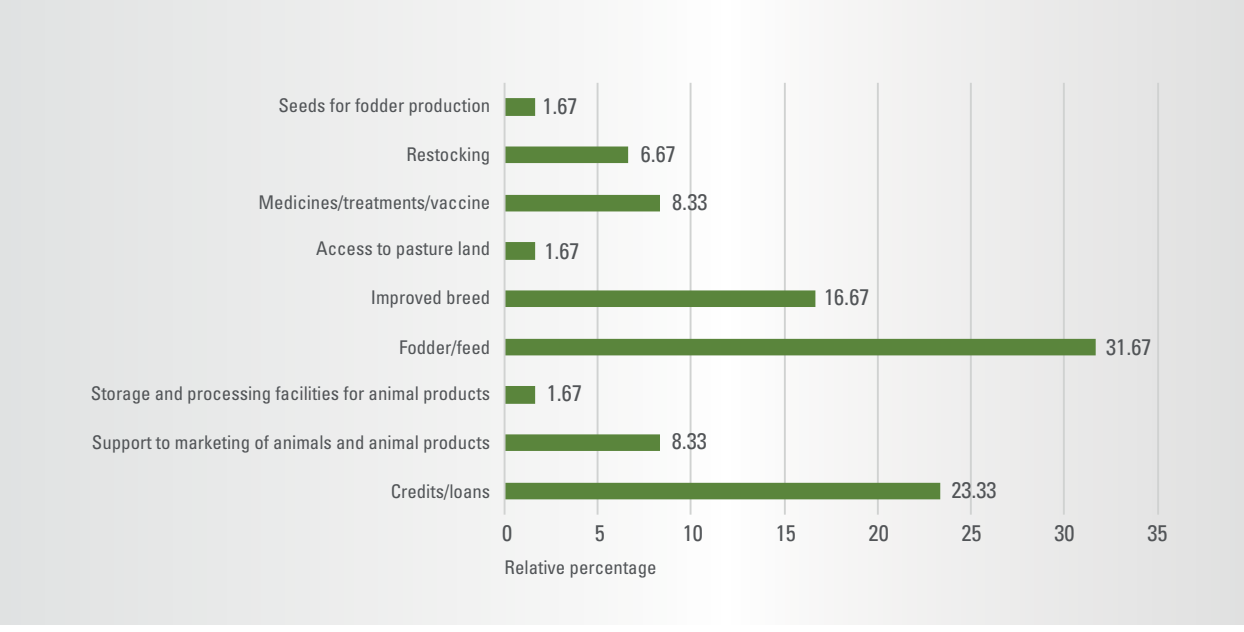
Marketing of dairy products is still governed by informal distribution channels to a large extent, although formal channels are developing slowly, especially that the Syrian conflict has stimulated the informal one. Informal marketing of dairy products includes house-to-house selling, bulk and un-labeled house-based and farm-based processing. The products may be sold directly and/or through intermediate milkmen, distributers and wholesalers. As a result, the market of dairy products is a mix of all types of marketing. As public dairy associations are out of sight, small-size producers and manufacturers have thrived to fulfill the gaps in dairy demand.

Dairy products in general are produced under traditional conditions and methodologies, especially that most production is carried out by small-scale producers (called workshops) using traditional processes and primitive equipment, hence unsafe approaches. Food safety management systems are not familiar to producers, particularly hygienic rules and regulations, including good hygiene practices/good manufacturing practices, that represent the basic ground for the safe production of food. Therefore, intensive training courses and workshops should be conducted along the dairy production chain.

In brief, As-Sweida dairy sector development and marketing can be significantly boosted by improving the conditions of the following:

- Relatively competitive price.
- High quality and safety of products that are manufactured according to quality and safety standards.
- Packaging that ensures safe and appealing presentation of the products to impart confidence.
- Relationship building by incorporating farmers and milk producers within the framework of a transparent and trustful relationship.

Figure 20. Constraints confronting farmers in the development of small ruminants sector in As-Sweida Governorate




TAKAM

04

Formulating and upgrading value chains strategy

A. The value chain vision

The specific approach to selected value chains will be based on a mix of measures and instruments aimed at promoting and sustaining market linkages through value chains and/or clusters (as systems of integrated businesses). In general, value chains are primarily concerned with sectorial linkages aiming at improving relationships within specific selected sectors. Clusters, on the other hand, are instead concerned with sectorial or also multi-sectorial geographical concentrations of businesses facing common challenges and opportunities.

The agribusiness value chain is composed of two main components: agricultural produce and the agro-food or non-food industry. The former is traditionally defined as the production of fresh goods, including post-harvest treated products, whereas the latter includes manufactured agro-products. Therefore, it is highly beneficial for both to strengthen linkages and promote the share of contribution of agriculture in the agro-processing component.

Value chains are to be viewed, however, as dynamic and evolving processes and methods. While the initial focus will be on value chains (by each produce line), the analysis and intervention might lead to the actual establishment of clusters, as geographical concentrations of different produce lines sharing the same challenges and opportunities.

Subsequently, a market-driven and holistic approach is envisaged with the following strategic visions:

- **Marketing:** (1) Improve and strengthen market performance through identified and organized market channels and platforms based on transparency of cost development; (2) maintain and sustain volume/price of the product; and (3) increase exportable and grade A productivity.
- **Production:** (1) Improve production system and methods; (2) improve productivity through transfer of knowledge and technology; and (3) ensure the sustainability of the flow of supplies at a reasonable cost.
- **Product:** (1) Reduce cost of production through the standardization of production; and (2) maintain positioning in price-sensitive markets and increased productivity.

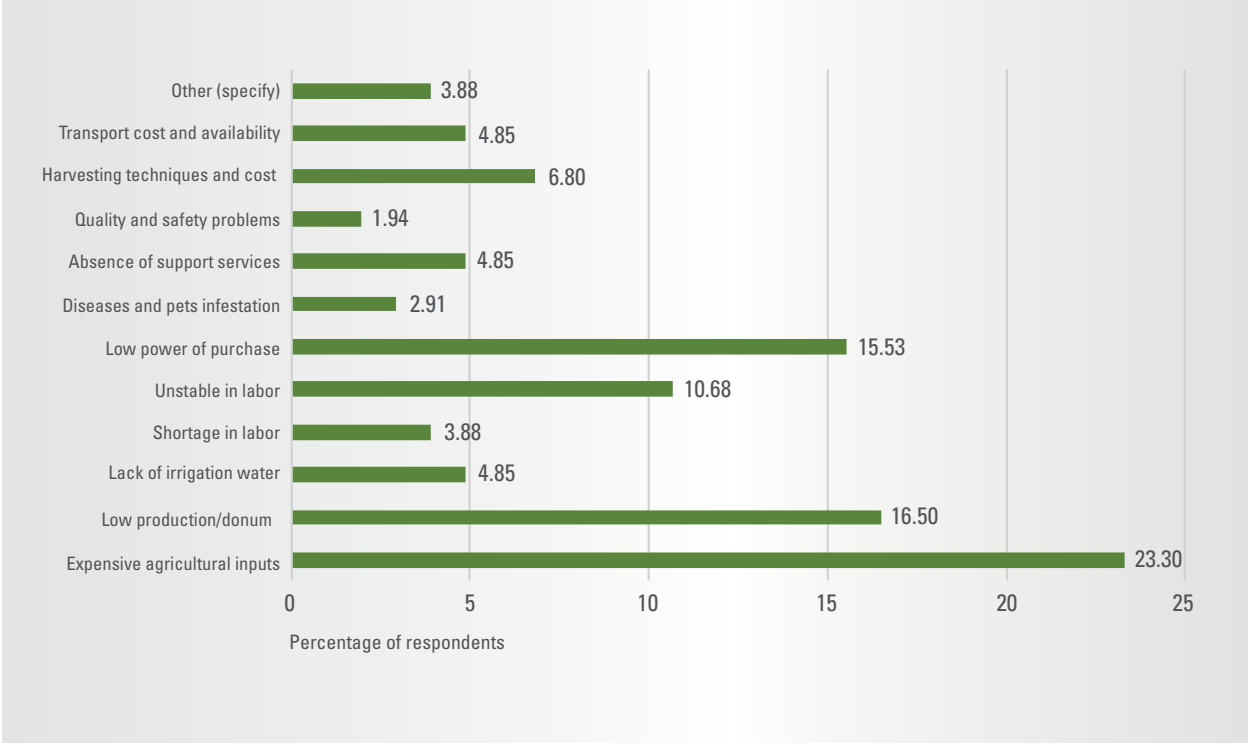
B. Identifying Constraints to Chains Performance

Although agricultural production in As-Sweida Governorate, including selected value chains, is characterized by attractive opportunities and attributes such as a rain-fed system of production and convenience of climatic conditions, the sector suffers from major and threatening constraints. Respondents have ranked these constraints as presented in figure 21. However, the overall and detailed constraints for all agricultural production sectors include:

(a) *General constraints:*

- Increased cost of agricultural inputs and their availability.
- Increased cost of transport in general and exporting through seaports in particular.
- Cost and availability of labour along the chain.
- Unavailability of dispensing wholesale platforms (Suk Al-Hal).
- Poor purchasing power of the internal market.
- Inferior quality of sorting, grading, packing and cold storage due to lack of technologies.
- Traders' exploitation and control of farm-gate prices.
- High percentage of climatic and environmental damages of fruits.
- Need for certification as an instrument for export to foreign countries, especially the European Union.
- Lack of financial support and poor access to soft loans for investment or reforms.
- Weak participatory approach of farmers, public and private institutions.
- Need to improve or change varieties and growing systems.
- Need for technology transfer and know-how,

Figure 21. Percentage impact of constraints on agricultural practices as ranked by respondents (farmers)



especially in the processing segment of the production chain.
- Need for more effective and productive grouping of farmers with specific scope and orientation.
- Lack of standardization and certification of end products and therefore halting marketing.
- Poor extension and awareness.
- Ineffective governance of laws and regulations.
- Poor institutional efficacy, particularly public institutions that are the main actors.

(b) *Apples and grapes chain specific constraints:*

- Reduced exportable volume.
- Non-industrial varieties.
- Lack of safety in end products, especially pesticide residues.
- Fragmented value chain and poor inter-firm linkages.
- Poor processing exits for the non-marketable portion.
- Poor post-harvest handling, including cold storage.

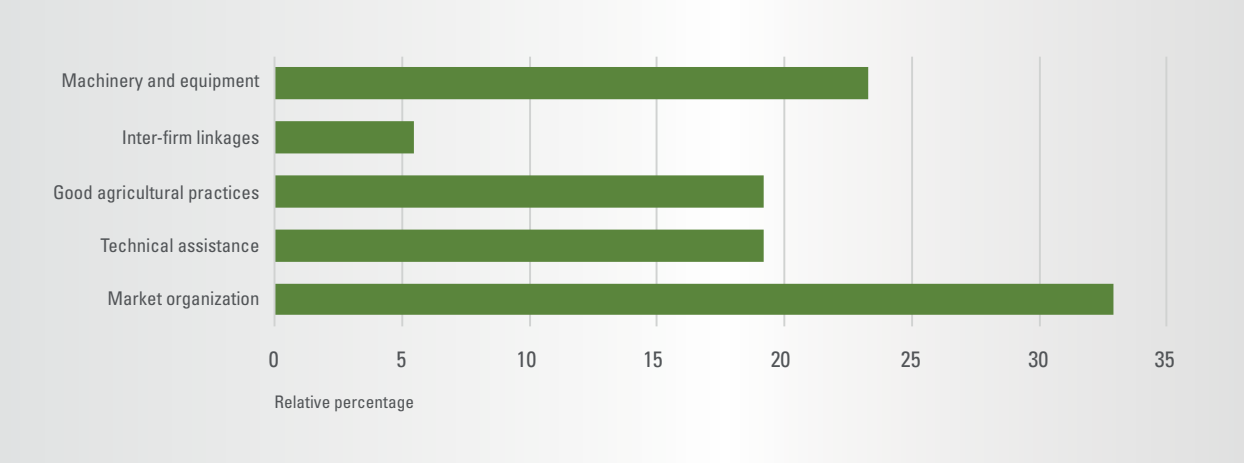
(c) *Chickpeas chain specific constraints:*

- Poor post-harvest handling, especially sorting/grading and sterilization.
- High competition, especially by Turkish products.
- Climate vulnerable varieties.
- Poor processing exits.

(d) *Small ruminants chain specific constraints:*

- Absence of rangeland management and deterioration of grazing capacity.
- Low milk productivity.
- High cost of feed supplements and veterinary practices.
- Poor or absent access to finance.
- Poor processing exits for both milk and meat.
- Limited local market.

Figure 22. Marketing constraints as ranked by respondents



Generally speaking, marketing suffers from several and complicated constraints, the most important of which is the lack of market organization and management, as noted by the greatest percentage of respondents (about 33 per cent). This was followed by the lack of machinery and equipment, according to about 23 per cent of respondents, and then good agricultural practices and technical assistance, noted by 18 per cent for each (figure 22).

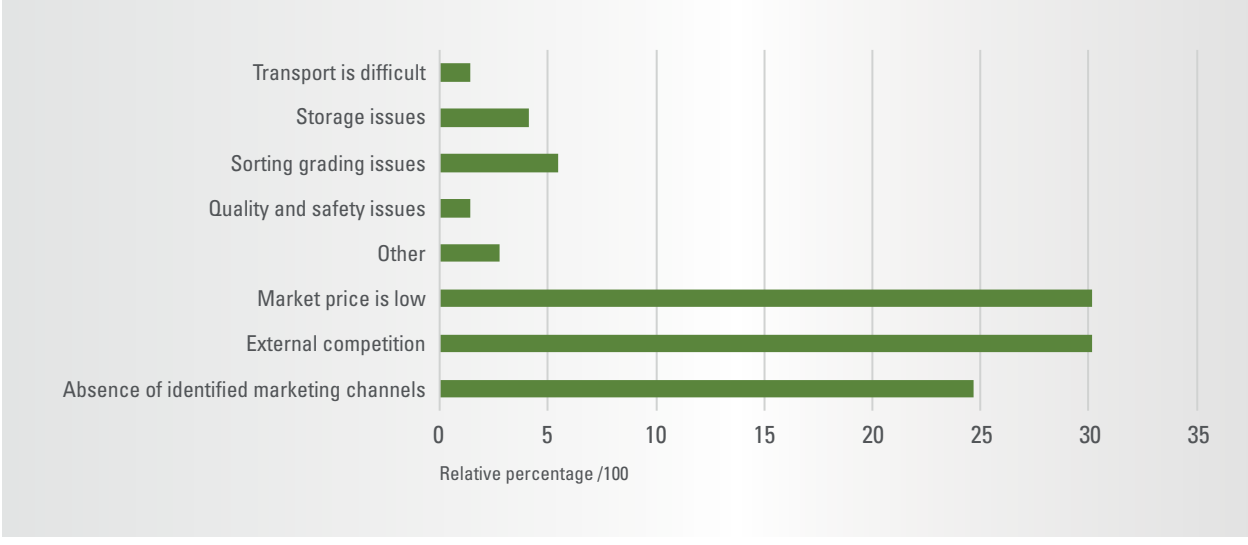
On the other hand, the relative impact of marketing constraints on export of agricultural products is illustrated in figure 23. The greatest impact on export was marked for greater external competition and the low prices at the market, with 30 per cent each, and the absence of identified marketing channels, with about 25 per cent. Other impacts were marked for safety and quality issues and post-harvest handling and storage.

The prolonged conflict in the Syrian Arab Republic has dramatically affected agricultural production and significantly damaged the infrastructure, reduced efficacy of support institutions, halted development and upgrades, and most importantly, reduced the standards of living through the devaluation of the local currency, and subsequently the purchasing power. As a result, the sector needs urgent interventions to firstly reform basic infrastructures and secondly build upon these infrastructures to revive it into a more productive and profitable sector, especially that it is a living source for over 30,000 families.

C. The value chains upgrading strategy

Based upon the strategic vision, as stated earlier, which encompasses marketing, productivity and product, in addition to the socioeconomic system applied in the Syrian Arab Republic, where the public sector is the main actor, particularly in the agriculture sector, upgrading the strategy shall be founded on a public-private partnership. The public sector overwhelms the agro-food sectors through its numerous establishments and entities. Each sub-sector is almost subject to direct or indirect intervention by a public entity, such as the General Establishment of Fruits and Vegetables, or public-like entities such as farmers unions and their subordinates. These institutions are very widely spread in the Syrian Arab Republic in general, including in As-Sweida. Since they are governmental or government-oriented institutions, they were significantly damaged by the ongoing conflict, and therefore their efficacy was minimized.

Figure 23. Relative impact of marketing constraints on export



On the other hand, **private sector intervention**, particularly in As-Sweida, is not well established and is not capable of taking over needed activities to minimize the effects of numerous constraints facing the agro-food sector in general, including those confronting selected value chains, namely, apple, grape, chickpeas and small ruminants. In addition, various other difficulties, such as capital migration, either financial or industrial, have added to the complications.

As a result, livelihood resilience and the assistance to value chains will translate into a series of specific and multidisciplinary support actions in complementary and synergic areas to enhance their development potential, according to a fully integrated approach. Public and private institutions, particularly MSMEs, will benefit from the programme in terms of:

- Public institutions rehabilitation, reforms and upgrading to be capable of handling constraints and pairing with the private sector at all levels, especially in cooperative production and processing units.
- Specialized advisory, technical and market development and financial assistance services, including access to available funding instruments for working capital and investment needs that cannot be covered by government resources.
- Service and Information Support systems[74] as specialized hubs for the agribusiness to coordinate and assist on collective supply and technical, marketing, commercial and financial operations.
- Minor supplies for more vulnerable groups, particularly with relevance to technology transfer and know-how.
- Leveraged funding from available national and international instruments.
- Collective measures in the areas of renewable energy, environment, logistics and other territorial elements, in a wider context of neighbourhood refurbishment and development.

Down on the ground, and in response to the complicated socioeconomic environment at As-Sweida Governorate, urgent and immediate intervention should be planned to leverage agro-food production and improve livelihood resilience in line with community needs and priorities, in particular *combating poverty and assuring food security, providing employment and job creation, and supporting MSMEs*. The strategic plan may be categorized into three integrated phases-periods:

74 The establishment of Service and Information Support Centers owned by the value chained or clustered MSMEs is recommended initially.

1. Short-term period, which includes those activities and plans that are in urgent need and at the same time have a positive impact. These may include, but not limited to:
    - Establish the foundation for public-private partnerships and pairing shared plans and activities relevant to the programme of intervention. In parallel, rehabilitation and strengthening of both sectors institutions will be applied.
    - Establish information support systems for each or group of subsectors as appropriate, with particular emphasis on strategy vision, i.e. marketing, productivity and product characteristics, as signalled by market requirements.
    - Establish and strengthen civil organizations and non-governmental organizations, including cooperatives, especially farmers cooperatives.
    - Alternate exits for non-exportable or marketable products (apple and grapes, in particular) and improving processing techniques and methodology, including product formulation for selected value chains.
    - Facilitate transport to national markets and maintain optimum conditions to preserve quality and safety of products.
    - Improve finance access through the establishment of broader opportunities for micro-soft loans.
    - Improve safety and quality of agro-food products by applying international standards and norms.
2. Medium-term period, which includes plans and activities with medium range impact up to five years. These include, but are not limited to:
    - Improve varieties of plant production, particularly apple and grapes, and enlarge diversity choices for marketing and processing.
    - Introduce innovative water irrigation management such as under stress agriculture, which is convenient for As-Sweida conditions.
    - Improve post-harvest practices, especially sorting, grading, cold storage and packaging, for selected value chains.
    - Maintain conditions and foundations, including legal requirements for the production of organic food products.
3. Long-term period, which includes, but is not limited to:
    - Manage rangelands plans for the diverse grazing areas in As-Sweida depending on climatic conditions and elevations to reduce cost of forage production and animal feed.
    - Update the legal framework and governance for smoother flow of upgrading, communication and transparency.
    - Continue plans from previous periods that are of sustainable nature, including upgrading and updating marketing organizations and financial schemes.
    - Increase research budget for start-ups and innovation application, and emerging agro-tech.

Table 5. Relevance of upgrading strategy to selected value chains

Upgrading strategic plan	Apples	Grapes	Chickpeas	Small ruminants
Short term				
Establish the foundation of public-private partnerships and pairing shared plans	++	++	++	++
Establish information support systems	++	++	++	++
Establish and strengthen civil organization and non-governmental organizations	++	++	+	+
Alternate exits for non-exportable or marketable products	++	+	-/+	+
Facilitate transport to national markets and maintain optimum conditions	++	++	+	+
Improve finance access	++	++	+	++
Improve safety and quality	++	++	++	++
Medium term				
Improve varieties of plant production	++	+	-/+	-
Introduce innovative water irrigation management	++	+	-	-
Improve post-harvest practices	++	++	+	+
Long term				
Maintain conditions and foundations, including legal requirements, for the production of organic food products	++	++	++	++
Rangeland management plan for the diverse grazing areas	-	-	-	++
Update legal framework and governance for smoother flow of upgrading, communication and transparency	++	++	++	++
Continue plans from previous periods	++	++	++	++
Increase research budget for start-ups and innovation application	++	++	++	++

1. Expected impact of the upgrading strategy

Two pillars are expected to be addressed with great emphasis: market-driven holistic value chains, and supportive regulations that adhere to the smooth flow of information and transparency. Most of the times, the latter pillar is underestimated, leading to ineffective impacts. The Governorate of As-Sweida, like others in the Syrian Arab Republic, is governed by public institutions, with noticeable absence of the private sector in terms of organization and planning. Therefore, it is vitally important to bring both sectors in harmony and close coordination, particularly at the ground level. Agricultural public institutions are widely spread within the framework of agricultural activities, and are already getting weak with limited budget and work manoeuvre. Accordingly, impacts of the proposed intervention(s) are expected to include:

1. Rehabilitation and upgrading of relevant public and private institutions involved in the various agricultural activities, particularly local ones that are in direct contact with farmers, producers and traders, to enable these institutions to effectively engage in improving resilience and boost production.
2. Immediate improvement of the production system of fruit trees, particularly apple and grapes, to ensure exportable quantity and quality, with specific emphasis on pesticide residues in the end product.
3. Noticeable reduction of the production cost through the proper utilization, application and use of locally produced inputs.
4. Immediate improvement of processing conditions and product formulation of grapes and apple derivatives according to international standards and food safety management systems.
5. Value chains are rendered more effective and of higher economic values by strengthening inter-firm linkages and transparent and effective communications in all dimensions (up and down streams, and internal/external supportive supplies).
6. Immediate livelihood improvement of agricultural community by engaging it in value chain activities and clusters where applicable, and where home production can be brought into the chain network with close monitoring and awareness. Particular impact shall be seen with families practicing apple, grape and small ruminant activities (production of home-based niche and specialties).
7. Increased income and employment generation, particularly for women and youth.
8. However, the general and overall impact is summarized in terms of results (outputs) and further discussed in the log-frame that contains, to some details, outputs of particular activities in addition to stakeholders' matrix explaining roles, responsibilities and impacts of the various beneficiaries and decision makers.

2. Strategy cross-cutting issues

The proposed strategy covers both horizontal and vertical dimensions of expansion throughout the local and national communities, and therefore providing opportunities for women's involvement and empowerment through several production segments of the value chains, particularly in primary production, such as harvesting, processing and related operations. As-Sweida women are already involved in the socioeconomic cycle, and such a role can be further empowered through women's productive cooperatives that are quite common in the area. The function of such entities can help both farmers and consumers join the value chain and absorb non-exportable products for further handling and processing, and subsequently bring them back to the distribution channels.

Also, the proposed programme of the strategy provides youth with wide-open employment and education opportunities, especially those interested in vocational training and technical assistance. Numerous initiatives can be extracted from the programme to form start-ups for the initiation of new businesses and carriers. These may include, but are not limited to, product formulation such as dietetic and niche products from fruits or dairies.

The programme can easily empower the whole community, both urban and rural, through the formulation of cluster approaches of main line streams and their needed supply, which may be acquired from local resources, such as innovative packing materials and specific ingredients made out of traditional processes, such as molasses. In addition, training

and awareness campaigns will enrich the community background about agriculture and environmental issues and collaborative planning and acting.

The collective and wide-sector approach and livelihood resilience will provide the foundation for sustainable management and continuous monitoring and evaluation to ensure the continuity of profits gained. Certainly, the government, as a main actor, shall be the guaranteeing party of such sustainability, once it is committed to the strategy.

D. Overall objective

In consistency with the identified needs of the four value chain subsectors, as well as the objectives of the entire ESCWA Programme, the **general objective** of this action targeting the agribusiness sectors is:

- To enhance the competitiveness and productivity of the selected value chains, i.e. apple, grape, chickpeas and small ruminants subsectors by developing inclusive green economy-based value chains and clusters, as replicable models also in other sectors.

E. Specific objectives

The specific objectives are:

- To reorganize MSMEs, including farmers, into stronger and fully integrated groups and cooperatives for a more efficient and cost-effective use of inputs and resources.
- To consolidate and expand the current market positioning of the MSMEs' target sectors and expand and access new markets.
- To facilitate access to finance for needed services and investments, utilizing available funding instruments.
- To create new and inclusive employment opportunities as a result of increased productions and sales.

Value chains will be established and initial market strategic implementation plans will be formulated and adopted under a defined management and organization plan.

F. Expected results (outputs) of the proposed programme

The results of the agro-food upgrading strategy, if applied properly, should be the following:

Result 1: Market targets, market access requirements and market drivers of value chains are defined as a base for the formulation and implementation of final strategies and implementation plans.

Result 2: Final integrated market development strategies and action plans are formulated and adopted in each value chain and cluster.

Result 3: Integrated socioeconomic sustainability of value chains is achieved.

Result 4: Value chain-based strategies in the target agribusiness sectors are formulated and adopted by the Syrian private sector and the Government of the Syrian Arab Republic.

To achieve the above listed results (outputs), each should be subordinated into a series of operational activities, as illustrated in table 8.

G. Main activities

Table 6. Results and activities

	Main activities
Result 1 **Market targets, market access requirements and market drivers of value chains are defined as a base for the formulation and implementation of final strategies and implementation plans**	National and international surveys for the identification of potential domestic and foreign market targets, market access requirements and possible product mixes/market
	Assessment of potential supply sources for needed inputs
	Identification of business leaders and potential strategic partnerships (Chamber of Commerce, large distributors, etc.)
	Identification of alternative and direct input supply sources
	Formulation and adoption of alternative product mix and production programmes and market development, as well as partnership strategies
Result 2 **Final integrated market development strategies and action plans are formulated and adopted in each value chain**	Technical and technology upgrade needs assessment (harvesting time and attributes, sorting, grading, packing and cooling and other food safety management measures) for each variety
	Definition of cost reduction strategies based on input optimization (energy, fertilizers, pesticides logistics, work organization, etc.)
	Design and arrange the establishment of Service Centres in As-Sweida, based on farmers grouping ownership
	Drafting of strategic partnerships in the market development, technological and other relevant areas
	Preparing and disseminating guidelines, operational manuals and other educational and support documentation (in Arabic) on EurepGAP and other applicable European Union standards, and the use of inputs, traceability and certification procedures, including quality seal obtaining
	Mobilization of funding resources
Result 3 **Integrated socioeconomic sustainability of value chains is achieved**	Rehabilitation and capacity building of public and private institutions of direct relevance to value chains activities
	Establishment, staffing and operation of Service and Information Support Systems/Centres
	Assistance to the implementation of measures in all relevant areas according to the adopted implementation strategies and plans, for technology upgrade, certifications and arrangements between post-harvest operators and farmers, IT based traceability systems, including product-specific market signal communicated along the value chains, neighbourhood (urban planning) refurbishment and development measures in the areas of landscaping, common structures, spaces and logistics,
	Procurement of specialized services, works and supplies
	On the job and specialized training of farmers and operators on best conditions and agricultural practices, together with storage conditions and shelf-life improvement
	Training of exporters on official procedures and requirements for smooth and effective export flows
	Networking with European Union institutions and programmes for know-how transfer, joint development actions and study tours
	Marketing actions, assistance for the implementation of sales contracts and strategic partnerships
	Assistance to production management and recruitment of personnel
	Participation in selected specialized fairs and events in the European Union and regionally, and the organization of match making business events

Result 4 **Value chain-based strategies in the target agribusiness sectors are formulated and adopted**	Formulation of national strategies, including regulatory frameworks in the target sectors, in compliance with European Union practices
	Publication and dissemination of newsletters and other media campaigns targeting selected national and international market stakeholders
	Action results dissemination workshops and thematic seminars led by local and national private sector institutions
	Dissemination and advocacy actions for the adoption of a sector strategies

05

Definitions of roles and responsibilities

Stakeholder matrix (apples, grapes, chickpeas and small ruminants)				
Stakeholders	**Subsector of competence**	**Interests and roles**	**Key institutional and organizational issues**	**Programme impact**
Target groups				
Input suppliers	Inputs import (fertilizers, pesticides etc.)	Reduce cost and optimize usage	Need to align standards of input application	Reduce residues of fertilizers and pesticide in final products
Agro-food cooperatives and associations	Manufacture inferior grades	Create jobs and income generation, absorb excess fruits	Upgrade to increase their capacity in absorbing excess non-exportable fruits	Upgrade to meet market requirements
Large size business leaders	Grouping carrier	Promote small farmers efficacy	Reduce cost and promote exports	Facilitate linkages to reform value chain effective
Syndicates and cooperatives (including peasant associations)	Promote efficacy in terms of volume, quality and marketing	Increase efficacy of production and marketing	Need to be mobilized and organized effectively	Reorganize into effective models
Farmers, aggregators, post-harvest operators, wholesalers, traders andexporters	Chain actors and operators	Increase production, marketing, promote quality and profits, and promote employment	Need for reorganization and aggregation, cost reduction, access to markets and finance	Income and employment generation
MSMEs and NGOs manufacturers of food and non-food products	Local manufacturers or importers of food and non-food materials	Promote product development and presentation for better marketing	Need to be updated to meet market and customer requirements	Improve supportive substances to meet market requirements
Public institutional stakeholders				
Public institutions (Ministry of Agriculture and Agrarian Reform, Ministry of Industry, Ministry of Economy and Trade, Ministry of Social Affairs and Labour)	Legislation and official certification, extension and export facilitation	Enforcement of laws and regulations to promote awareness and efficacy at the level of input and primary production, post-harvest operation and marketing levels Facilitate the establishment of a food industry	Coordination and pro-active approach need to be maintained	Improved extension and certification process to facilitate marketing
Directorate of Agriculture	Testing, training and research	Practices and quality attributes verified and validated	Testing conditions need to be certified	Approved testing and increased export
Centre of Agriculture Science Research	Extension, research and development and testing certification	Improve quality through pest prevention and product development	Agricultural research for marketable varieties needs support	New varieties are emerged and improved export
Local authorities	Local management facilitation	Local mobilization of farmers and services providing post-harvest development trials	Rural municipalities need reform, training and further effective engagement in development projects	Better engagement of municipalities in agricultural development

Private institutional stakeholders				
Chamber of Agriculture	Management, service providing, marketing facilitation	Value chains organized and maintained in a holistic integrated system	Need to be well integrated into the MSMEs to promote their production and marketing conditions	Marketing is facilitated and quality is improved
Agriculture companies	Service providers, product development	Investigate investment opportunities for better development		

06

Proposed governance structure and tasks

A. Overall structure

The proposed management structure is formed by:

- A Steering Committee.
- A Technical and Financial Coordination Unit (TFCU).
- Sector Management and Coordination Units (SMCU) for the agribusiness sector target value chains.

B. The Technical and Financial Coordination Unit (TFCU)

The TFCU will play a key management and coordination role in the Private Sector Programme (PSD), being responsible for:

- Establishment of the SMCUs.
- Initial market and diagnostic studies and surveys (in cooperation with the SMCUs).
- Preparation of specific guidelines and provisions of training, management and advisory assistance to the SMCUs throughout the implementation of the Programme.
- Jointly with the SMCUs, dissemination of information on existing financing facilities.
- Strengthening the capacity of public and private institutions for delivering high quality non-financial services for access to finance.
- Leveraging funding sources for needed investments in the target value chains and clusters.
- Formulation of proposals to the Financial Institutions for developing innovative financial instruments to support value chains.
- Coordination and cooperation with private sector institutions and associations for advocacy at the Syrian Government level and for the dissemination of approaches, methods and results of the work developed in the value chains.
- Liaison with and reporting to the Steering Committee.
- Supervision and Monitoring and Evaluation of the Programme.

C. The Sector Management and Coordination Units (SMCUs)

The SMCUs shall constitute the implementing arms of the Programme in their respective sectors of competence.

As such, they will be responsible for organizing, managing and coordinating the implementation of the action plans of the value chains, under the guidance of, and in cooperation with, the TCFU.

In summary, their tasks will include:

- Identification and organization of the value chains and clusters.
- Organization of information dissemination campaigns on the scope and benefits of the Programme (in cooperation with local institutional stakeholders).
- Set up and organization of the value chains.
- Establishment and operation of Service and Information Support Systems (SISS).
- Provision of on-the-job training as well as advisory and counselling assistance to the value chains throughout the Programme.
- Strengthening the capacity of public institutions and other intermediaries to deliver high quality non-financial services for access-to-finance.
- Formulating and assisting the adoption and to overall implementation of integrated action plans of the value chains.
- Assisting funding applications by value chain members.
- Procurement of services to be provided by specialized institutions and experts.

- Procurement of supplies of equipment funded directly by the Programme.
- Procurement of services, technology, equipment and work funded by leveraged funding sources.
- Assistance to networking, organization of study tours and participation in international events.
- Formulation of sector strategies, along with recommendations for streamlining relevant legal and regulatory frameworks.
- Reporting to the TFCU.

07

Recommendations

Although a recommended strategy to upgrade agricultural performance in As-Sweida Governorate in order to strengthen and improve resilience and livelihood of the community has been proposed in some details, emphasis should be given to the following recommendations:

Establishment of service and information support systems/centres

Core agro-food value chains need the establishment of a service and information support centre specifically designed to address issues and constraints confronting progressive and sustainable development of the value chain, maintain and ensure the flow and transparency of information, particularly regarding inter-firm linkages and relationships, distribution and marketing dynamics and prices. In coordination with the relevant public institutions, the centre should be owned and managed by the chain actors and provide members with their needs for a symbolic fee, just enough to sustain the operational costs.

Organization and management of the distribution channels and marketing

The informal and distracted marketing is negatively affecting the development and flourishing of all value chains in As-Sweida, and it therefore needs well identified routings governed by strong relationships between actors and built on solid trust and transparency. This is to prevent exploitation, especially of small and medium-size holding farmers, and improve their enthusiasm for more effective investments in land reform and technology.

Irrigation water management and collection

The climatic conditions, particularly precipitation, are a vital factor in determining productivity and quality of agriculture produce in As-Sweida, and therefore more attention should be given to precipitation water collection and irrigation management. Most importantly, focus should be put on new technology and approaches to minimize water utilization by plants, together with water collection systems. Farmers should also participate in the innovative management system of water use, such as production under stress, and thereby reduce negative environmental impact.

Establishing finance schemes for small and medium-size farmers

Farmers are always in need of financial support, generally for short-term periods of time, to cover up part of agricultural inputs, use of technology and agriculture machinery, and therefore they are in need of some sort of guarantying schemes to borrow money. They are facing difficulties and heavy administrative work to get hold of financial support.

Increase research budget for start-ups and innovation application and emerging agro-tech

Encouraging start-ups, innovation applications and emerging agro-tech is extremely important to sustain and improve agriculture production and quality of end products. This will also reduce production and marketing costs and improve the profit margin and livelihood of the community.

Improve safety and quality of agro-food products

Improving safety and quality of end products facilitates the flow of food products and creates new markets. This may be accomplished by implementing relevant international standards and norms, especially those related to hygienic requirements and world trade such as the principles of the Sanitary and Phytosanitary agreement.

- Improve governance and law enforcement.
- Good governance through the enforcement of laws and regulations is a milestone in achieving success and controlling a smooth flow of products and information along the chain, and particularly ensure transparency and deepen trust.
- Establish management plans for rangelands.
- As rangeland is a major source of feed for the animal production sector in As-Sweida, and due to the semi-arid nature of the grazing area, it is envisaged to establish comprehensive plans for rangeland management. This will reduce the cost of production through the reduction of supplement feed and improved environmental rearing conditions.
- Establish and strengthen civil organizations and non-governmental organizations, including cooperatives.
- Empowering women and youth is crucial and

necessitates their engagement in a grouping approach that is complementary and supportive to their main roles and responsibilities. This may be achieved through their sustainable participation in NGOs, civil organizations and/or cooperatives, especially agro-food establishments and supportive entities.

08

Conclusion

As-Sweida Governorate was indirectly impacted by the prolonged conflict in the Syrian Arab Republic, leading to grave losses in the agriculture sector that the community relies on as a major economic resource. Subsequently, livelihood standards have been dramatically reduced and about half of the community is not able to meet basic needs. In addition, the devaluation of the local currency and the economic siege have made imported materials, especially input supplies, difficult to get hold of, resulting in increased production cost and minimized expenditure on farming management activities.

To assess and evaluate the current conditions and potentials to improve resilience and livelihood, a survey study was carried out and data were analyzed that revealed the following facts and proposals:

1. The agriculture sector in As-Sweida is the major economic resource for over 65 per cent of the community, encompassing mainly rain-fed fruit trees and cereals. Chief fruit trees are apple, grapes, pears, almond, pistachios and olives, while the main cereals include chickpeas, lentils, wheat and barley.
2. According to an economic importance classification calculated by the study, the most important products in As-Sweida are in rank of priority: apple; grape; small ruminants (milk and meat); chickpeas; lentils; olive; almond and pistachio, where the latter five were in one class of importance.
3. Further assessment and consultation revealed four important value chains that can be substrates for upgrading interventions: apple, grape, chickpeas and small ruminant.
4. Analysis of the four value chains was carried out according to a standard approach, where each value chain was separately described, and constraints were identified.
5. Collective constraints included high cost of production, poor technology transfer and know-how, devaluation of local currency, and subsequently increased prices of input supply, unavailability of qualified labour, very weak and informal marketing and distribution, weak to absent inter-firm linkages, difficult and expensive transport, lack of access to finance and minimized investment, and weak to absent management, organization and extension functions.
6. Accordingly, to improve resilience and the livelihood of the community, the study proposed a holistic intervention programme to address the four value chains with a market-driven approach to achieve the following outputs:

Result 1: Market targets, market access requirements and market drivers of value chains are defined as a base for the formulation and implementation of final strategies and implementation plans.

Result 2: Final integrated market development strategies and action plans are formulated and adopted in each value chain and cluster.

Result 3: Integrated socioeconomic sustainability of value chains is achieved.

Result 4: Value chain-based strategies in the target agribusiness sectors are formulated and adopted by the Syrian private sector and the Government of the Syrian Arab Republic.

7. Main activities to achieve these outputs shall include the following:

- Public institutions rehabilitation, reforms and upgrading to be capable of handling constraints and pairing with the private sector at all levels, especially in cooperative production and processing units.
- Specialized advisory, technical, market development and financial assistance services, including access to available funding instruments for working capital and investment needs that cannot be covered by government resources.
- Service and Information Support systems established as specialized hubs for the agribusiness to coordinate and assist on collective supply, technical marketing and commercial and financial operations.
- Minor supplies provided to the more vulnerable groups, particularly with relevance to technology transfer and know-how.
- Leveraged funding from available national and international instruments.
- Collective measures in the areas of renewable energy, environment, logistics and other territorial elements, in a wider context of neighbourhood refurbishment and development.

Activities are further detailed into an operational approach and classified into short, medium and long-term periods. The proposed programme was designed to be implemented either as a whole or to be divided into segments or small projects, depending on the available budget.

Annexes

Annex 1. Agriculture production and economic importance

Agricultural production (2014 and 2019)

Table A1.1 Cultivation and production of various fruit value chains in As-Sweida Governorate (2014)

Type of tree	Irrigated				Rain-fed				Total production (T)	Total area (ha)
	Area (ha)	Number of trees	Fruitful tree	Production (T)	Area (ha)	Number of trees	Fruitful tree	Production (T)		
Olive	1006	191735	148341	1782	8563	1545769	1226646	5424	7206	9569
Grape	288	141485	77221	964	9271	4357879	3896039	25517	26481	9559
Fig	12	4815	1614	22	310	98778	89802	979	1001	322
Apricot	3	1655	444	2	78	35136	28748	53	55	81
Wallnut	3	1368	810	7	85	17422	12694	64	71	88
Apple	77	13095	6997	318	14723	3106774	2092081	65101	65419	14800
Pear	3	913	601	9	460	143179	119516	897	906	463
Plum	1	498	204	2	27	12262	11039	49	51	28
Greengage	1	482	144	1	10	6091	5440	17	18	11
Pomegranate	28	9946	5451	69	20	14666	12118	76	145	48
Chery	0	764	217	1	336	96633	74822	805	806	336
Almond	537	133831	69179	159	1460	458720	315661	535	694	1997
Peach	20	7436	5170	43	276	127103	96113	696	739	296
Quince	0	25	10	0	9	3703	3221	26	26	9
Pistachio	44	8624	4390	26	443	89275	66586	123	149	487
Berry	9	1765	395	3	33	7403	3503	39	42	42
Chestnut	0	0	0	0	0	745	230	0	0	0
Hazelnut	1	250	0	0	0	0	0	0	0	1
Barbary Fig	0	0	0	0	0	0	0	0	0	0
Total	2033	518687	321188	3408	36104	10121538	8054259	100401	103809	38137

Note: Cells highlighted in green are within the upper 10 per cent in the corresponding description.

Table A1.2 Overall area and production of fruit trees in As-Sweida Governorate (MAAR, 2019)

		Olive	Grape	Fig	Apricot	Apple	Pear	Cherry	Almond	Peache	Pistachio
Irrigated	Area (ha)	1101	288	8	10	6	4	-	589	78	55
	Number of trees	169.1	139.7	3.8	2.6	3.6	1.6	0.7	143.1	19.7	9.3
	Fruit bearing	153	114.8	2.7	1.1	2.8	1.6	0.3	123.8	14.1	7.1
	Production (T)	1949	2137	64	13	29	23	1	304	147	38
Non-irrigated	Area (ha)	8895	9628	305	72	15767	467	329	1835	278	486
	Number of trees	1390.2	4588.4	96.2	38.7	3321.6	151.4	101.6	530.1	136.8	99
	Fruit bearing	1163.6	3884.4	88.8	29.9	2682.5	130.1	82.1	405	110.5	73
	Production (T)	9136	48822	1747	146	21288	1333	824	810	677	236

Total	Area (ha)	9896	9916	313	82	15783	471	329	2424	356	541
	number of trees	1559.3	4728.1	100	41.3	3325.2	153	102.3	673.2	156.5	108.3
	Fruit bearing	1316.6	3999.2	91.5	31	2685.3	131.7	82.4	528.8	124.6	80.1
	Production (T)	11085	50959	1811	159	21317	1356	825	1114	824	274

Table A1.3 Economic importance of value chains calculated as Relative Index (RI), with olive as reference equal 1 (2014 production)

Fruit tree	Total production (T)	SYP/KG	Value * 1M SYP value RI	Value RI
Apple	65419	950	62148.5	9
Grape	26481	1000	26481	4
Olive	7206	1000	7206	1
Fig	1001	450	450.45	0
Pear	906	500	453	0
Cherry	806	2000	1612	0
Peach	739	2000	1478	0
Almond	694	2400	1665.6	0
Pistachio	149	7000	1043	0
Pomegranate	145	600	87	0
Wallnut	71	5000	355	0
Apricot	55	2000	110	0
Plum	51	1000	51	0
Berry	42	1700	71.4	0
Main cereals				
Chickpeas	10254	2000	20508	3
Lentils	300	1500	450	0
Wheat	28263	450	12718.35	2
Barely	18000	200	3600	0
Animal production				
Cow milk	21346	700	14942.2	2
Sheep milk	16716	1000	16716	2
Goat milk	6329	1000	6329	1
Beef meat	449	6000	2694	0
Lamb meat	2090	9000	18810	3
Goat meat	439	6000	2634	0

Notes: 1. Bars reflect economic importance within the specified column; 2. Relative Index (RI) was calculated based on olive as reference equal to 1; 3. Cells of the same colour have the same RI; 4. Cells in all types of red shade are below "0"; 5. Price fluctuation will not significantly affect RI.

Table A1.4 Economic importance of value chains calculated as Relative Index (RI) with olive as reference equal 1 (2019 production)

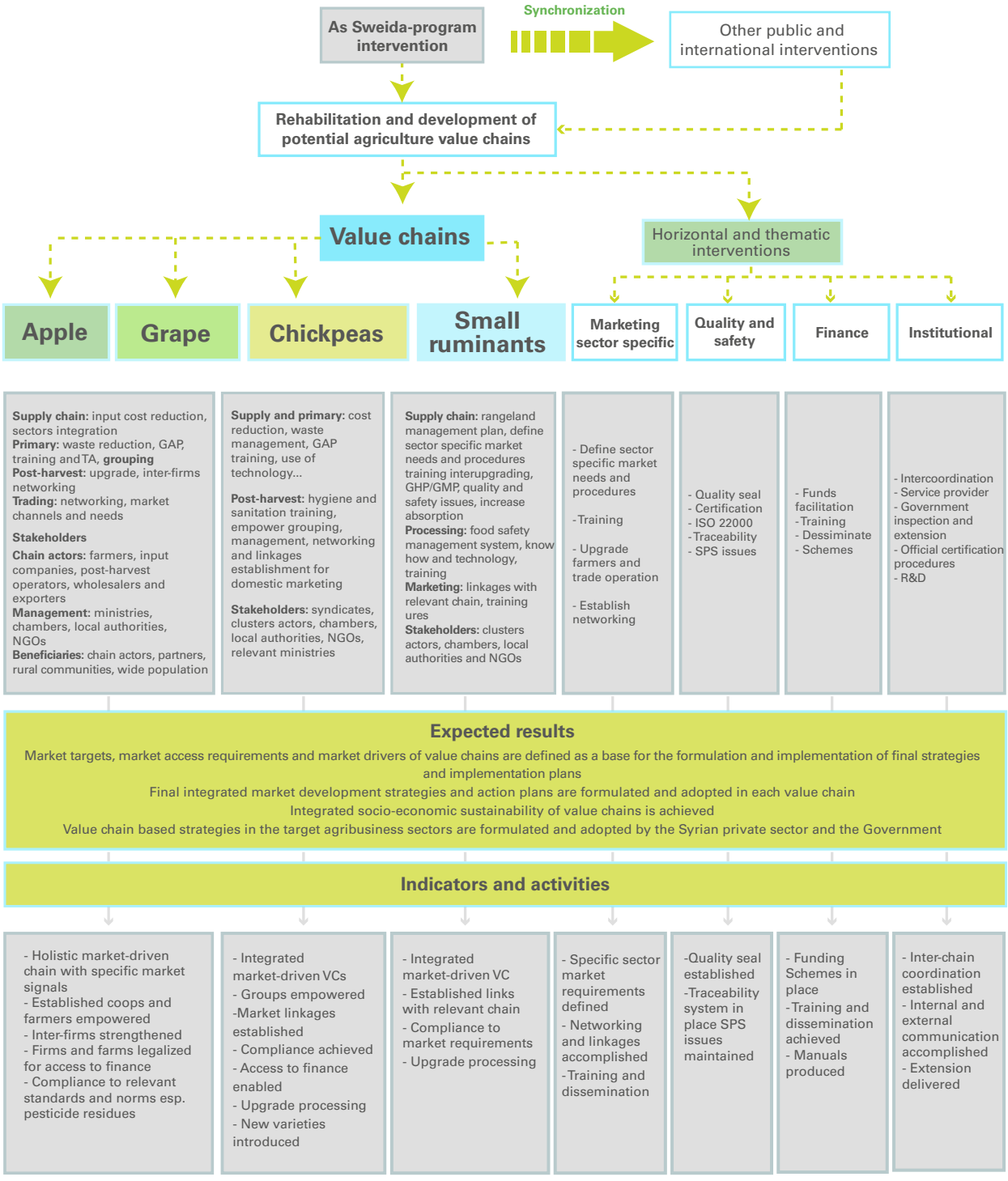
Fruit tree	Total production (T)	SYP/KG	Value * 1M SYP value RI	Value RI
Apple	21317	1500	31975.5.5	3
Grape	50959	1500	76438.5	7
Olive	11085	1000	11085	7
Fig	1811	450	814.95	1
Pear	1356	2000	2712	2
Cherry	806	2000	1612	1
Peach	824	2000	1648	1
Almond	1114	2500	2785	2
Pistachio	274	7000	1918	1
Pomegranate	317	600	190.2	0
Wallnut	82	5000	410	0
Apricot	159	2000	318	0
Plum	102	1000	102	0
Berry	42	1700	71.4	0
Main cereals				
Chickpeas	6088	2000	12176	8
Lentils	165	1500	247.5	0
Wheat	31288	450	14079.6	9
Barely	18433	200	3686.6	2
Animal production				
Cow milk	32698	700	22888.6	14
Sheep milk	14114	1000	14114	9
Goat milk	3152	1000	3152	2
Beef meat	449	6000	2694	2
Lamb meat	2090	9000	18810	12
Goat meat	439	6000	2634	2

Annex 2. Selection criteria and scoring of agricultural value chains

Plant production (crops, horticulture and fruit trees)	Weight %	Average scores for each of the evaluating criteria							
		Apple	Grapes	Pears	Olive	Pistachio	Almond	Chickpeas	Wheat
Potential for production increase	60	46	47	24	34	32	40	51	52
Relative importance in the Governorate	10	9	9	3	7	3	5	9	9
Competitiveness of the product	10	9	8	4	5	4	6	8	8
Availability of support services	10	5	5	5	5	4	5	8	8
Added value potential	10	9	9	5	6	6	7	9	9
Availability of expertise	10	6	8	3	3	7	8	8	9
Market demand	10	8	8	4	8	8	9	9	9
Average score		7.7	7.8	4	5.7	5.3	6.7	8.5	8.7
Efficacy of operational performance	15	11	10	5	9	7	7	7	9
Employment generation in the agriculture sector	5	4	3	2	3	2	2	3	4
Employment generation for women	5	3	3	1	3	2	2	2	2
Employment generation for youth	5	4	4	2	3	3	3	2	3
Average score		3.7	3.3	1.7	3	2.3	2.3	2.3	3
Feasibility of intervention	25	20	13	18	15	16	13	13	12
Availability of specialized supporting institutions	10	9	7	8	8	7	6	8	8
Possibility to reduce cost of production	10	7	3	6	5	5	3	3	3
Timing and investment required to achieve impacts	5	4	3	4	2	4	4	2	1
Average score		6.7	4.3	6	5	5.3	4.3	4.3	4
Total weight		77	70	47	58	55	60	71	73

Animal production	Total score	Sheep	Goats	Cattle	Dairy	Meat	Poultry
Potential to increase economic value	55	51	38	47	51	42	44
Relative importance of products	10	8	5	9	9	9	9
Margin of profit	15	15	11	10	14	14	10
Market demand	15	15	12	14	14	10	12
Competitiveness	15	13	10	14	14	9	13
Efficacy of operational performance	15	11	10	12	11	10	11
Rearing efficacy and expertise	5	5	4	4	3	5	3
Employment absorbance for women and youth	5	4	4	4	4	1	4
Feasibility of intervention	5	2	2	4	4	4	4
Feasibility of intervention	30	13	13	22	26	22	26
Reduction of production cost	15	5	5	14	14	10	14
Potential to target specific markets	15	8	8	8	12	12	12
Total weight		**75**	**61**	**81**	**88**	**74**	**81**

Annex 3. Proposed intervention programme



Annex 4. SWOT Analysis of value chains

Table A4.1 SWOT Analysis of apple value chain

Strengths				
• Favourable climate. • Good expertise. • Available extension and research and development. • Rain-fed. • Distinguished flavour. • Good storability.	• Availability of cold storage facilities. • Available knowledge and information. • Post-harvest handling exits in production area.	• Availability of potential exits and product development.	• Availability of potential development. • Relevant institution exits.	• Exportable quality exits. • Volume exits. • Sensory quality is good.
Weaknesses				
• Lack of GAP. • High cost of production. • Lack of standards. • Biennial bearing is large. • Large volume of inferior quality.	• Poor sorting and grading. • Poor post-harvest handling operations. • Inferior storage conditions and transport.	• Very limited. • Inferior quality. • Out of standard.	• Mostly bulky. • Inferior packing. • No promotions. • No formal or identified channels.	• Relatively small volume. • Residues in final product. • Poor presentation. • Limited markets. • High competition in world market.

Opportunities				
• Increase productivity. • Improve quality and safety. • Reduce cost of production. • Organic production possible. • Introduction of new varieties.	• Sorting/ grading technology. • Improve storage conditions and transport.	• New product formulation. • Develop domestic processing. • Establish processing cooperatives. • Activate juice factory. • Boost apple chips processing.	• Increase marketing platforms. • Facilitate national distribution conditions. • Improve presentation and packing.	• Increase exportable volume. • Increase export platforms and exits. • Reduce residues in final products. • Apply monitoring and international standards.

Threats				
• Climate change. • Lack of markets. • Poor post-harvest handling. • Pesticide residues. • Lack of standards and certification.	• Degradation of product quality. • Loss of profits. • Abandon cultivation. • High waste.	• High wastage and losses. • Loss of profits. • Increase unemployment.	• Farmers' exploitation. • Reduced prices. • Reduced profits. • Reduced livelihood standards.	• Loss of markets. • Damage national economy. • High unemployment and reduced livelihood.

Table A4.2 SWOT Analysis of grape value chain

Strengths				
• Favourable climate. • Good expertise. • Available extension and research and development. • High sweetness. • Suitable for processing.	• Availability of stores. • Available knowledge and information. • Exits in production area.	• Availability of processing potential exits and product development. • Various derivatives available.	• Availability of potential development.	• Potential for organic production exits.
Weaknesses				
• Lack of GAP. • High cost of production. • Lack of standards. • Large volume of inferior quality due to cultivation system.	• Poor sorting and grading. • Poor post-harvest handling operations. • Inferior processing conditions and transport.	• Very old. • Inferior quality. • Out of standard. • Manual and primitive.	• Mostly bulky. • Inferior packing. • No promotions. • No formal or identified channels.	• Relatively small volume. • Residues in final product. • Poor presentation. • Limited markets.
Primary production	Post-harvest	Processing	Retailers	Exporters

Opportunities				
• Increase productivity. • Improve quality and safety. • Reduce cost of production. • Organic production possible. • Introduction of new varieties.	• Sorting/ grading technology. • Improve storage conditions and transport.	• New products formulation. • Develop processing. • Establish productive cooperatives. • Activate juice factory.	• Increase marketing platforms. • Facilitate national distribution conditions. • Improve presentation and packing.	• Increase exportable volume. • Increase export platform and exits. • Reduce residues in final products. • Apply monitoring and international standards.
Threats				
• Climate change. • Lack of markets. • Poor post-harvest handling. • Pesticide residues. • Lack of standards and certification.	• Degradation of product quality. • Loss of profits.	• High wastage and losses. • Loss of profits. • Increase unemployment.	• Farmers' exploitation. • Reduced prices. • Reduced profits. • Reduced livelihood standards.	• Loss of markets. • Damage national economy. • High unemployment and reduced livelihood.

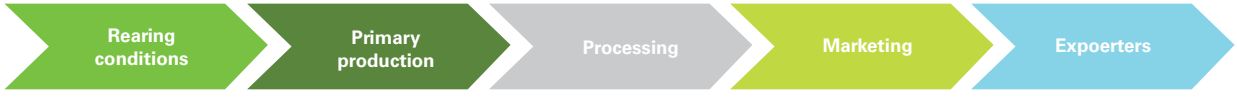
Table A4.3 SWOT Analysis of Chickpeas value chain

Strengths				
• Favourable climate. • Rain-fed. • Available good varieties. • High potential of processing.	• Available knowledge and information. • Available Packing.	• Availability of potential exits and product development.	• Availability of potential development. • Relevant institution exits.	• Exportable quality exits. • Volume exits. • Sensory quality is good.
Weaknesses				
• Lack of GAP. • High cost of production. • Lack of standards. • Climate change.	• Poor sorting and grading. • Poor post-harvest handling operations. • Inferior storage conditions.	• Needs development. • Lack of technology.	• Inferior packing. • No promotions. • No formal or stable channels.	• Relatively small volume. • High competition. • Poor presentation. • Limited markets.

Opportunities				
• Increase productivity. • Improve quality and safety. • Reduce cost of production. • Organic production possible. • Introduction of new varieties.	• Sorting/grading technology. • Improve storage conditions and transport.	• New products formulation. • Establish productive cooperatives. • Activate processing and create new exits.	• Increase marketing platforms. • Facilitate national distribution conditions. • Improve presentation and packing.	• Increase exportable volume. • Increase export platforms and exits. • Apply monitoring and international standards.
Threats				
• Climate change. • Lack of market. • Poor post-harvest handling. • Lack of standards and certification.	• Degradation of product quality. • Loss of profits. • Abandon cultivation.	• High wastage and losses. • Loss of profits. • Increase unemployment.	• Reduced prices. • Reduced profits. • Reduced livelihood standards.	• Loss of markets. • Damage national economy. • High unemployment and reduced livelihood.

Table A4.4 SWOT Analysis of small ruminants' value chain

Strengths				
• Demanded breeds of sheep. • Available rangelands. • High development potential.	• Relatively high number of heads. • Good supply of milk and meat.	• Have high potential and diversity, dairy, meat, wool and organic fertilizers.	• Availability of potential development. • Relevant institution exits.	• Exportable quality exits. • Volume exits and no competition. • Internal and external market exits.
Weaknesses				
• Rangeland deterioration. • Low grazing capacity. • Lack of rearing facilities. • Expensive input supply.	• Veterinary services and feed are expensive. • Traditional rearing. • Lack of qualified labour (shepherds) .	• Needs development. • Lack of technology and know-how. • Intense training required.	• Informal and mostly sold in bulk. • No sustainable routings and prices. • Exploitation by traders.	• Fragmented market channel and value chain. • Poor presentation. • Volatile markets.



Opportunities				
• Restore rangeland. • Improve quality and safety. • Reduce cost of production. • Organic composting. • Introduction of new breeds.	• Milking technology and cooled reservoirs. • Improve storage conditions and transport. • Awareness and training on rearing practices.	• New products formulation. • Establish productive cooperatives. • Activate processing and create new exits.	• Increase marketing platforms. • Facilitate national distribution conditions. • Improve presentation and packing.	• Increase exportable volume. • Enforce standards and norms. • Improve safety and quality of products.
Threats				
• Desertification. • Loss of livestock. • Poor post-harvest/ post-mortem handling. • Lack of standards and certification.	• Degradation of product quality and quantity. • Loss of profits. • Abandon rearing business.	• High wastage and losses. • Loss of profits. • Increase unemployment.	• Reduced prices. • Reduced profits. • Reduced livelihood standards.	• Loss of markets. • Damage national economy. • High unemployment and reduced livelihoods.

Annex 5. Stakeholders analysis of the selected value chains

The agribusiness chains and clusters are characterized by a wide diversity of actors, as they connect farmers, food processors, traders, wholesalers, packaging designers and producers, exporters and retailers. Both large companies and small and medium-size enterprises are simultaneously active, either as competitors, suppliers or customers. These relationships are often fraught with difficulties, which hold back the full potential of the chain. These relationships should be optimized to create a healthy and pro-active environment for development and sustainability.

Stakeholders who are affected and/or involved in the post-harvest subsectors can be classified as follows:

Target groups (direct beneficiaries):

- Fruit farmers and operators (individual and micro enterprises).
- Syndicates and unions.
- Cooperatives.
- Small and medium enterprises (production and/or trading).
- Suppliers and supply chains (agricultural inputs, packaging materials, tools, equipment, machinery, etc.).
- NGOs and MSMEs processing fruits and manufacturing complementary materials.
- Larger size business leaders in the different target subsectors (manufacturers/traders).

National and local public institutions:

- Directorate of Agriculture in As-Sweida.
- General Union of Peasants.
- Agricultural Cooperative Bank.
- Peasant associations.

- Scientific Agricultural Research Center.
- Rural Development Center.
- Syrian Trade Establishment.
- General Fodder Establishment.
- The Public Poultry General Organization for Textile Industries.
- Hand-made carpet manufacturing units.
- Grape processing plants and the production of arak and wine.

Private sector entities:

- Hal markets and wholesalers.
- Forage markets and animal dealers.
- Juice factory.
- Vinegar factory and manufacturing workshop.
- Molasses and fruit drying factories.
- Alcohol plants.
- Mills.
- Dairy coefficients.
- Pastry factories.
- Fruit packing centres.

International development partners (including United Nations agencies):

- FAO.
- Syrian Arab Red Crescent.
- UNDP.
- UNCHR.

NGOs and other civil society organizations:

- Ecumenical Patriarchate.
- Charities.

Financial and microfinance institutions:

- Agricultural Cooperative Bank.
- Agha Khan Foundation.
- Wataniah Finance Corporation.
- Small Enterprise Funding Authority.
- Investment Authority.

Training providers:

- Department of Rehabilitation and Training in the Directorate of Agriculture.
- UNDP.
- Red Crescent.
- Ecumenical Body.
- Youth Empowerment Center.
- Community centres.
- Rural Reform Center.
- Local community associations.

Agriculture is the most important livelihood source in As-Sweida Governorate, including fruit trees, cereals and legumes, with the advantage of rain-fed cultivation system. The governorate, with a population of about 509,000, suffered prolonged indirect and severe socioeconomic traumas due to the Syrian conflict. These included a financial crisis, currency devaluation, instability and conflict events, climate shocks, food insecurity and COVID-19, all of which have depleted farmers' resilience, along that of their families and dependents.

As a result, and in line with national and international strategic objectives, an area-based assessment study was conducted to explore means of improving community resilience and evaluate potentials "to upgrade agro-food value chains through inclusive and participatory mechanisms driven by market demands". It mapped and analyzed four value chains including: grapes, apples, chickpeas and small ruminants, and a strategy was prepared to scale-up the selected value chains. The study also aimed at understanding the context of agriculture livelihoods in As-Sweida in terms of livelihood assets, vulnerabilities and barriers for recovery. The study was carried out through a participatory approach using pre-set questionnaires designed to interview 27 key informants (KII) in the field, 19 Focus Group Discussions (FGDs) and 44 surveys, mainly with farmers. The collected data and information were statistically treated and analyzed using Excel statistical software.

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