GRAPES VALUE CHAIN AND MARKET ANALYSIS

Empowering the youth in a sustainable and equitable way against COVID-19 through agribusiness.

The Agricultural Development (PARC)

& Fundación Promoción Social (FPS)

MARCH 1, 2022

CONDUCTED BY CONSULTANCY DEVELOPMENT COMPANY

Contents

Overview

According to the Oslo Conventions, the West Bank is classified into areas A, B, and C. Area C mostly consists of agricultural and grazing lands, and constitutes 60%[1] of the total West Bank area and population density and is estimated at 297,986[2]people distributed over 532 residential communities. Palestinian residential communities in area C are characterized by a population density relatively less than the Palestinian communities in areas A and B. Some of the residential communities in area C are independent areas such as villages and towns, and other neighborhoods belonging to communities located in area A.

The infrastructure in area C is under severe restrictions due to occupation,; 29% of the constructions in Area C are without plans, less than 1% of area C are planned for the Palestinians development. Most of the Palestinians cannot obtain permits to build or renew their homes, livestock barns, or critical infrastructure. Therefore, the majority of buildings are built without permits, which makes the demolishing and displacing of their residency, by force, a routine action, and hence the prevailing housing style are tents or caves.

Palestinian communities located in Area C are the most vulnerable segment of the Palestinian population in the West Bank. In particular, the demolitions and forced evictions deprive the residents of their homes, undermine their living conditions, leading to deep-rooted poverty and increasing dependency on aid. These actions have been impacting children, and can also be particularly devastating, as they suffer of anxiety, and post-traumatic stress disorder symptoms.

70% of Area C lands is located within the boundaries of the regional councils of Israeli settlements. Therefore, Palestinians are prohibited to use and develop these lands. Moreover, 6200 Palestinians live in 38 compounds that are partially located in Area C and have been declared “firing zones” for military training purposes, increasing the population's vulnerability and risk of displacement.

The occupation severe restrictions imposed in Area C prevent the development process in the fields of social, infrastructure, water sources, transportation, and agriculture. 70% of the area C residents are not connected to the water network and are reliant on water transported by tankers, where the average consumption of water is 202 liters/person/day, while the Israeli settler is sevenfold[3].

[1] https://www.ochaopt.org/sites/default/files/ocha_opt_area_c_factsheet_August2014_arabic.pdf

[2] https://www.pcbs.gov.ps/postar.aspx?lang=ar&ItemID=3689

[3] https://wafa.ps/ar_page.aspx?id

Report summary

The overall assignment is conducted by the Consultancy Development Company, Tubas, and consists of a value chain & market analysis in the grapes sector, especially the grape production in the West Bank area C, with a focus on the Jordan valley.

This assignment is conducted as part of the "Empowering the Palestinian Youth in Area C in a sustainable and equitable way against COVID-19 throughout the Agribusiness Sector" project, financed by The Spanish Agency for International Development Cooperation (AECID), and implemented by the Social Promotion Foundation (FPS) & the Palestinian Agricultural Association (PARC).

The project aims at increasing the resilience of the vulnerable population in Area C against the impact of COVID-19, by promoting the right to employment of the youth (19-35 years) in the agribusiness sector, through the implementation of a set of activities that will take place over a 15-month period (23 April 2021 – 22 July 2022).

The value chain and market analysis of the grapes products give a clear image of the key obstacles, and recommended opportunities and strategic interventions for youth investment in grapes sector in area C of the West Bank. Furthermore, the key constraints and opportunities for the grapes sector value chain were addressed in order to identify leverage points to improve the chain performance. The functions of the value chain include the purchase and production of fertilizers, production quality, pesticides, farms management and marketing/sales.

It should be highlighted that grapes production is strongly affected by political, security factors and COVID-19 pandemic, including severe restrictions imposed by the occupation on the development of infrastructure, expansion of settlements, violence, road closures, and scarcity of water. This study aims to derive recommendations for attracting programs interventions that support the value chain and create an improved enabling environment.

Grapes production is about 65.263[4] tons of seeds and seedless fruits. The production varies between the rainfed farms and irrigated farms and seedless grapes, where the rainfed farm production between 1.5to 2 tons[5], while 3 tons in the irrigated farms, and 2.5 tons in the covered farm (SPS)[6]. [7]75%- 85% of the grapes are sold through varied distribution channels, where the central markets ranked in the first constituting 43%, followed by farm gates 33%, wholesales 17%, and 7% consumers, while the surplus is processed to by-products such as molasses, malban, etc.

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[4] Ministry of Agriculture statics 2018/2019

[5] Grape council Mr. Fathi Shaheen

[6] Grape council Fathi Shaheen

[7] CDC survey

Grapes sector is challenged by the lack of best practices in cultivating grapes and processing of by-products, bad packaging and modest hygiene, water scarcity and lack of enabling environment at policies level. The relation with stakeholders is weak and, the marketing process suffers from dumping the local market with grapes produced in the settlements.

The marketing channels are limited in the local market without export prospects except for small quantities exported to Jordan and Gulf countries. Moreover, 25%-30% of the grapes fruit sold in areas behind the 1948 green line are sold in an informal way. The farmers sell grapes products to local traders, central markets and directly to consumers. This variety of marketing channels does not earn an extra price for the product, but prevents exploiting the farmer, since sometimes there is an increase of up to 5%[8] in the price if it is marketed directly to the consumer.

The cultivating grapes inputs have obstacles related to bad management, quality control, occupation restriction, weak utilizing of organic fertilizers and lack of the capital for purchasing inputs which make markups in the prices of up to 20%[9], according to the payment mechanisms. Furthermore, the COVID-19 pandemic affected the inputs prices, such as the fertilizers prices which increased up to 200- 300%[10].

The obstacles and challenges facing the grapes sector created intervention ideas to develop the sector and overcome problems. These recommendations and interventions are in the area of services, extension and farmers guidance on applying the best practices, in addition to organizing farmers and networking them with the private sector through their associations, as well as by strengthening the production, marketing channels and domestic consumption and enhancing the youth and women’s role in the grapes sector, strengthening youth role in cooperative work through enhancing their participation and membership in the cooperatives to attract the innovative ideas throughout the whole value chain, especially in marketing and supply chain, such as promoting the production of high-quality compost through establishing a group of youth with the required mechanism to produce high-quality and properly packed compost, in addition to the idea of financing a pioneer farm that will be run and owned by youth. For strengthening the women’s role, one of the ideas is to prepare a product portfolio, price list, and setting the products packaging in terms of the required packaging specifications that will be used by cooperatives or women's groups to identify potential buyers to enable distributors to meet market requirements.

[8] Vegetable farmer, Ausamah Naerat

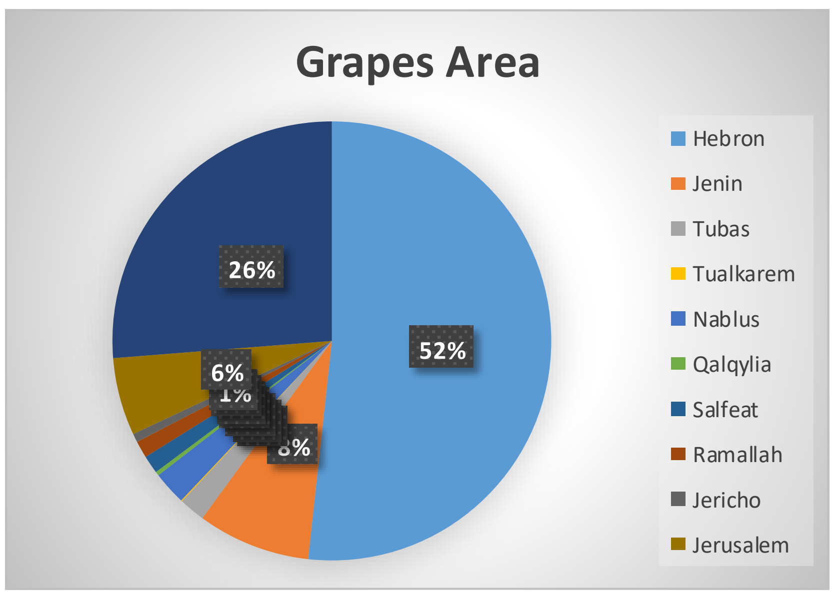
[9] Albarqawi company Mr. Salah Rabaya

[10] Albarqawi company Mr. Salah Rabaya

The importance of agriculture

Agriculture is a very important sector in Palestine, as it provides jobs for around 5.9%[11] of the Palestinian labor force and comprises both major and secondary sources of income for many Palestinians. Recently, Palestinian agriculture has contributed to 3.5%[12] of the GDP. Due to its importance, national and international development cooperation actors have recognized the need to reactivate the agricultural sector in Palestine for not only the benefit of the agricultural sector itself, but also for it to become a key instrument in transforming the country's economic development. However, transforming and developing the agricultural sector are challenges considering that adequate infrastructure, agricultural investment promoting environment, and lacking of risk measurements, needs a suitable framework of policies that make the process of transmission and development harmonious with each other.

Cultivation of horticultural trees is one of the most important agriculture cultivation axes in the Palestinian countryside and areas C. The horticultural trees sector consists of olives trees, which constituted the largest part, followed by fruit trees as grapes and high-value fruit as Avocado, mango, and Guava. The grapes sector is considered to have the largest share of the farmer's interest; cultivation of grapes takes two forms of irrigation; Rainfed and irrigated, the second category includes cultivation in covered and open areas. Grapes sector is one of the most important agricultural activities in the West Bank areas manly in Hebron, Bethlehem, Jerusalem, Jordan Valley, Jericho, Jenin and Nablus.



[13]In the West Bank, the Ministry of Agriculture census in 2018/2019 shows that the area of lands planted with grapes is 54,337 dunums, 18,041 dunums are unproductive grapes trees, and 44,833 dunums are productive grapes trees which produce 65,263 Tons of fresh grapes. 52% (28,107 dunums of the total grapes area in West Bank) are in Hebron Governorate which is considered the highest governorate percentage in cultivation grapes, followed by Bethlehem governorate reported by 26% (14,264 dunums). Then, 8% in Jenin governorate amounted to 4,521 dunums of grapes, 6% in Jerusalem governorate amounted to 3,110 dunums.

[11] https://info.wafa.ps/ar_page.aspx?id=FnFZtGa27819740190aFnFZtG

[12] https://info.wafa.ps/ar_page.aspx?id=FnFZtGa27819740190aFnFZtG

[13] Ministry of Agriculture statics 2018/2019

Cultivating Grapes in South of West Bank has high interest among residents and farmers attributed to social and economic dimensions; The social dimension is a career that has been passed down through generations; the second dimension is an economic goal by producing and marketing fruit and/or processing varied by-products such as grape molasses, dried fruits, Jam, vinegar, etc.

Background

[14]Grapes contribute to about 12%[15] of the total agricultural production and occupy the second rank after olives in terms of the volume of production and income. The area of land planted with grapes is estimated at more than 54,337 dunums; of these, about 28,107 dunums are in Hebron Governorate, and 14,264 dunums in Bethlehem Governorate. The annual production of this crop is estimated at 65,263 tons annually. According to the Palestinian Central Bureau of Statistics agricultural census at the end of 2010, there were 1,449,262 grape trees in all Palestinian territories, including 1,243,712 in the West Bank and 205,550 in the Gaza Strip.

2018/2019 Statistics indicated that the production of grapes in Hebron amounted to 27,336 tons, and the area of land planted with fruitful grapes was estimated at more than 22,072 dunums of rain-fed lands; while the irrigated areas at 650 dunums, equivalent to 2.8% of the total cultivated area. Hebron is famous for growing grapes, and grapes quality is associated with Hebron, with more than 15 different types of grapes. Among the most famous areas where grapes are grown in the governorates of Hebron and Bethlehem are: Al-Khader, Beit Ummar, Halhul, Al-Aroub, Sa'ir, Al-Shuyoukh, and Dura.

The grapes farms are located in the north, center, and south of the West Bank in areas C and B, where farmers follow different agricultural systems. The farmers of the south and few farmers of the north have followed an open agricultural system that depend on rainwater, but the majority of farmers in the north of the West Bank depend on irrigation water. The second pattern is in the Jordan Valley and Jericho that is characterized by covered farms, depends on irrigation water, and uses grapes type completely different from those in the north and center of West Bank.

The vulnerable environments of cultivating grapes, especially the scarcity of water, as a result of the strict restrictions imposed by the occupation on the water issue are detrimental in grapes cultivation, production, the ability to expand grapes cultivation, in addition to the diseases that cannot be controlled in light of the occupation's prevention to import some agricultural pesticide[16] materials, such as sulfur, which leads to losses in production of 5-10%[17], and so

[14] Ministry of Agriculture statics 2018/2019
[15] https://info.wafa.ps/ar_page.aspx?id=8157.
[16] Al Barqay company Mr. Salah Rabaya

profitability decreases. Moreover, the poor infrastructure in production, especially in the post-harvest area, and the lack of water, electricity and some necessary constructions lead to products losses of up to 3%[18] and poor quality, in addition to the lack of marketing, which leads to lower profitability.

Grape's planting has three economic goals: fruit, leaves, and by-products. Grapes trees in the north and south of the West bank area are classified as: i) white fruit (Aldaboqi, Bayrouti, Al zeni, Alhamadani) characterized by being more suitable for local environmental conditions and tolerant to drought conditions and to high percentage of lime in the soil. These fruits ripen in late August and early September. ii) the second type is colored, (fruit types such as Alhalawani, Albalouti, and Alshami) characterized by vigorous growth prolific highly bearing transportation and storage. iii) Finally, seedless grapes, which are mostly cultivated in covered farms especially in the Jordan Valley and Jericho, are characterized by a high yield of 4 tons with early production in April and May.

[19]The white fruits (Zaeni) are sold from August – October at a price of 3-13 NIS/kg after post packing, and with pre packing at a price 2.5-10 NIS/kg, or under farm out at lumpsum. The colored fruits (Bairuty, Hamadoni) are sold from September – November at a price of 9-21 NIS/kg post packing, pre packing at a price of 8-19 NIS/kg, or within the farm as lumpsum, at 300 NIS/dunum including the harvesting cost, according to the season, while seedless fruit is sold in April – May at a price of 20-30 NIS/kg. Only the surplus and bad quality is processed to a variety of byproducts based on the consumer's food pattern in the south of West Bank.

There is a percentage of grape fruits losses in post-harvesting and during the production of by-products due to the need of infrastructures as packing houses, cooling rooms and processing units, since during the processing health and public safety requirements are poorly applied, with minimum processing requirements such as infrastructure, machinery, and equipment due to the lack of financial resources, and the strict restrictions imposed on Area C. However, some of the processing units, such as Dawalena company and Dura cooperative, have some requirements of public health and safety and necessary equipment in place.

The grapes by-products are derived from the fresh or unripe fruits which are processed to different products. Grape processing contributes to 30%[20] of the revenue in cultivation grape farms. [21]Grapes fruits production in the targeted area is very low as the average of production/ white, colored / within T planting is 1.5-2 tons/year, Y planting at 3-5 tons/year, due to:

1- The separation wall, confiscation of lands, and limited access led to reduction of the farm land and production.

[17] CDC survey
[18] CDC survey
[19] Mr. Fathi shaheen grape council 2021
[20] Grape Council, Focus groups and CDC analysis
[21] Grape Council Mr. Fathi Shaheen

2- Water scarcity due to climate change and limited access to water sources.
3- Relying on the traditional and rain fed cultivation style and not applying the best practices in cultivation.
4- Weak Palestinian control over the quality of production inputs, in addition to the occupation restrictions in supplying some types of production inputs such as pesticides, fertilizers, and carton boxes…
5- Weakness in cooperation and commercial relationship with the private sector.
6- Poor management, planning, and vision, in addition to the absence of business approach.
7- The grapes farms are family businesses that rely on family members without sourcing, in addition to the lack of skilled labor availability in pre- and post-harvesting.
8- Lack of governmental policies and proper implementation mechanisms of agriculture laws that organize the sector including markets.

Study area

This study targets area C communities in the whole West Bank in Palestine especially focusing on The Jordan valley. Based upon the discussion with PARC team to analyze the grape chain, the study will highlight the chain functionality and analysis of the markets. The value chain and market analysis is within the frame of "Empowering the Palestinian Youth in Area C sustainably and equitably against COVID-19 throughout the Agribusiness Sector" project. The targeted areas of this study are:

1. Tubas (Jordan Valley) Governorate: Ein albayad.
2. Hebron, Bethlehem Governorates.
   2.1. Hebron Governorate: includes 3 communities in Beit Ummar, Halhul, and Dura.
   2.2. Bethlehem Governorate: includes Alkhader and Joret Alshamah.
3. Nablus Governorate: includes 3 communities in Al Jeftlek, Frosh beit Dajan and Alnawaji
4. Jericho Governorate: includes Beit Hassan
5. Jenin Governorate: includes 2 communities Miseliah and Qabatyah.

The areas of grapes lands in the West Bank, according to the statistics issued by the Ministry of Agriculture in 2018/2019 are shown in the table below:

Governorate	Total Area (dunums)	Unproductive		Productive	
		Irrigated	Rainfed	Irrigated	Rainfed
		Area	Area	Area	Area
Hebron	**28,107**	389	4,996	650	22,072
Jenin	**4,521**	40	0	4,289	192
Tubas	**1,045**	146	20	799	80
Tualkarem	**43**	0	15	10	18
Nablus	**1,340**	185	68	777	310
Qalqilya	**160**	96	9	54	1
Salfeat	**723**	0	0	0	723
Ramallah	**682**	0	193	40	449
Jericho	**342**	111	0	231	0
Jerusalem	**3,110**	0	640	0	2,470
Bethlehem	**14,264**	0	2,596	302	11,366

Methodology

This study highlights the stakeholder analysis, value chain analysis, and market analysis. To identify and assess the main challenges facing grapes sector in Area C, several approaches were used in collecting and validating information. The methodology tools were developed through a technical offer that has been submitted to PARC. The methodology included secondary data, approx. 40 structured and semi-structured interviews, household surveys in 6 communities, and a focus group with all key stakeholders to validate the data collected and discuss the study results.

The main objective of this study is to promote innovation/entrepreneurship of the common value chains in the targeted areas through assessment of the current agribusiness sector situation there.

The specific objectives of the assessment are:

1. To identify the key constraints and opportunities for the grapes value chain.
2. Identification of leverage points to improve chain performance (focus on fertilization production quality, pesticides, extension services, farm management and marketing/sales).
3. To identify and analyze the marketing systems and the main actors in the Grapes

sector

4. Establishing a productive institutional, legal, and administrative ecosystem for cooperatives
5. Developing systems and tools for the provision of training support services for cooperatives
6. Promoting new and innovative forms of cooperatives

This value chain mapping and analyzing process consists of 5 steps:

1. Data collection and analysis (interviews, desk research and input stakeholders/sector analysis)
2. Chain mapping (actors, functions and relationships) & market analysis
3. Survey among 28 grapes producers in selected communities
4. Analysis of opportunities and key constraints
5. Validating the findings of the VCA through stakeholders' focus groups

Stakeholder analysis

During the period November 5th - November 20th, the Consultancy Development Company conducted a stakeholder analysis for the grapes sector at the level of private and public sectors, with 12 face-to-face/telephone interviews for NGOs, inputs traders, fruit traders, farmers leaders, and Ministries. The general objective of this analysis and interviews is to identify the obstacles facing the grapes sector and highlight the development opportunities.
Throughout the conducted analysis, and in close to consultation with the MoA office in Tubas, the following key obstacles in the grapes sector have been identified:

1) At input level (fertilization, pesticides and water),
2) Production process (incl. extension services and product quality),
3) At output level (marketing/sales), and,
4) The organizational structure/ management of cooperatives.

The following areas of intervention have been identified:

1) Strengthening relations among cooperative societies and stakeholders, and mapping roles in the production process and production inputs.
2) Enhancing agricultural extension services through farmer field schools.
3) Strengthening and introducing new marketing channels.
4) Facilitating measurements to expand women's entrepreneurship in grapes byproducts.

Therefore, a decision was taken to assess these functions in the value chain thoroughly.

Value chain & market analysis

The study of the value chain of grapes products in areas C will be an additional value to the chain, from cultivation inputs to production and consumption. During the period of the value chain analysis, 40 stakeholders[22] (farmers, local NGO and fertilization and pesticides entities) have been interviewed and consulted, through structured and semi-structured interviews, and bilateral consultations. Mapping and analysis of the value chain included the key constraints, opportunities, actors and suggested possible intervention. The process of the value chain had a major focus on the grape production, starting with inputs, grapes planting, fruit and leaves, collection, storing, traditional and advanced processing, quality management, packaging, marketing and sales, etc.

The recommendations will provide a guideline to PARC strategy to reach the core objective of "Empowering the Palestinian Youth in Area C sustainably and equitably against COVID-19 throughout the Agribusiness Sector" project.

Household survey

The household survey was conducted on October 30th and November 5th, including 7 communities in 5 governorates (Hebron, Bethlehem, Jericho, Nablus, Jenin, and Tubas). The questionnaires addressed all relevant functions of the value chain, including the availability and access to water, fertilization and pesticides, production quality, and quantity, farm management and good practices, sales/marketing, and the effectiveness of the cooperatives. In addition, the survey included baseline data to determine the socio-economic situation of the farmers (farms size, household size, losses in production and trees, etc.).

Focus group

The focus groups were held on 12th - 20th of November in the West Bank (North of Jordan valley and Beit Ummar), with a total of 33 participants of the main actors in the Grapes sector (17

[22] Annex 1

men and 16 women) in order to highlight the obstacles and opportunities in the grape value chain as well as assessing the women's role in the grape value chain at the social and economic levels, and the women's decision in farm and household management.

Enabling environment

There are opportunities for the development of the value chain functions within agricultural holdings and the food production environment in the vulnerable communities of Area C. Development of the opportunities in the grape value chain functions will serve the farmers sector and grapes products leading to positive impacts on the economic and social aspects. Due to occupation severe restrictions, the enabling environment is suffering many challenges, such as limited access to the minimum requirements of life such as electricity, water, transportation, or even building infrastructure, as well as weakness in implementation mechanisms of Palestinian governmental policies and laws that serve areas C and grapes value chain discourage investments. Based on the recent ministries council policy to encourage investment, the environment is still favorable for investments and development to serve the agriculture sector and cultivation grapes.

Furthermore, among the influencers on the enabling environment are external funds through donor institutions that initially focus on humanitarian aid, then development projects, and finally on market system projects. But the modest support is for advocacy to support and protect the projects serving infrastructures, from occupation, confiscation, and destruction of water tanks and Solar energy, water networks, and the needs for development plans for these areas.

Key obstacles within the enabling environment for grapes farms and farmers:

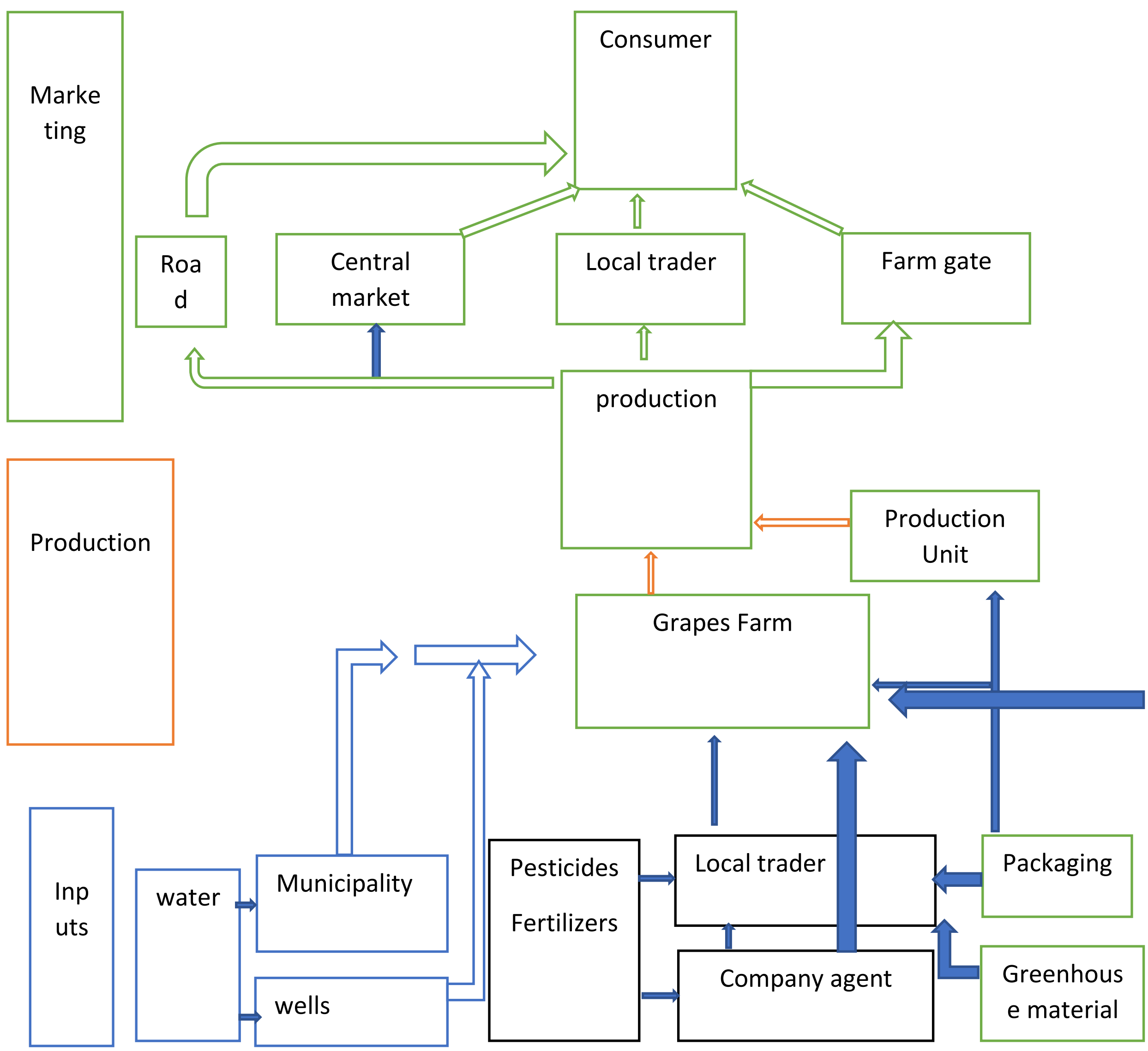
a. Water scarcity and difficulty in accessing water sources. Moreover, the targeted locations have desert climate and environment especially in Jericho and Jordan valley.
b. The closures and Israeli restriction restrict the access to production inputs.
c. The difficulty of local and external marketing due to the occupation authorities' monopoly in controlling the borders.
d. The high costs of production requirements and inputs that are not in line with the financial return and that reduce profitability, especially the recent rise in production inputs prices of up to 200% - 300%[23] due to the COVID-19 pandemic.
e. Weakness in applying implementation mechanism of agricultural laws, that leads to dumping the local market with products from the settlements.
f. The confiscation of land and the separation wall reduced the areas of lands planted with grapes limited the expanding plan in grapes cultivation.
g. The settlers' violence and attacks on farmers and grape farms.

[23] Albarqawi company Mr. Salah rabayah

Opportunities to enable the environment for grapes value chain are:

- ❖ Advocate and influence on the Palestinian government in controlling markets, preventing smuggling and positive distinguishing for local product with the imposed taxes, and labeling.
- ❖ Encouraging the partnership between agricultural cooperatives and private sector.
- ❖ Encouraging the processing of chemical alternatives, organic and environment friendly production inputs to reduce the costs of production inputs, irrigation water and to preserve soil fertility.
- ❖ Strengthening women's role in decision-making positions at farms, household and cooperatives in the grapes sector as they play a vital role in cultivation and processing, in addition to enhancing the women’s farms ownership through capacity building activities.
- ❖ High potential women groups can be supported to develop the skills of production, packaging and marketing of products.

VC MAPPING



Value Chain

Challenges in the value chain

There are challenges facing cultivating grapes all throughout the value chain starting from the cooperative structure to the final consumers. These challenges take place in the chain cycles;

the lack of structuring of farmers into formal and informal groups restrict the cooperative work that serves the farmers in reducing the inputs prices by bulk purchasing and developing the linkage with the private sectors for marketing, in addition to the influence on the decision makers to improve the laws implementation mechanism and enabling the environment to encourage the investment in this sector.

Along with the inputs movement difficulties and unavailability due to the restrictions imposed by the occupation that will raise prices, there are the occupation violations, prevention of access of farmers to their grapes farms and the settlers' violations.

Cooperative structure	Input	Production/ Health	Marketing /Sales
The absence of specialized cooperatives in marketing grapes and by-products of grapes.	All Production inputs are imported from areas behind 1948 green line, and foreign markets through one or more intermediaries. Therefore, prices are high and varied.	General lack in the best practices of grape planting and processing, attention to hygiene, and appropriate conditions for keeping products.	Marketing is confined to a limited geographical area with limited marketing channels due to the lack of farmers' knowledge of other markets and no existing entities owned by framers specialized in marketing.
Cooperative works are voluntary work where all cooperative works are carried out by a few actors that reflect on the quality of services provided	Water scarcity and limited access to water sources.	The agricultural patterns followed in cultivating grapes are the traditional ones, characterized by reliance on rainwater and open farms.	Accumulated profit margins between marketing chains and low profit margins for farms
Weakness in cooperation linkages and commercial relationship with the private sector.	Weakness in quality control implementation mechanisms for production inputs.	Limited use and access to agricultural machineries during harvesting, post-harvest and marketing.	The weakness of exporting grapes due to the Israeli restrictions on the border crossings
Absence and lack of commitments in bulk purchasing of production inputs.	Individual purchasing of production inputs due to the lack of implementation mechanism for bulk	Multiple farmers tasks and responsibilities without outsourcing	Limited business knowledge, marketing skills, poor business mentality, and weak structures of cooperatives.

	purchasing.		Farmers find difficulties in selling their products to the private sector.
Poor management, planning, vision and absence of business approach.			Dumping local markets with settlement products, and thus unfair competition in prices and access to marketing centers
Lack of coordination between the cooperatives in North and South of West Bank, in addition to the absence of specialized cooperatives in grapes.			Weak promotion of the Palestinian product and the absence of incentive policies for consuming the local product

The value chain opportunities

Cooperative structure	Input	Production/ Health	Marketing /Sales
Enhancing collaborative work especially in marketing within the frame of business approach.	Activating the role of monitoring and controlling of Palestinian institutions on the quality of production inputs, and organizing using of pesticides.	Promoting best practices in agriculture, grape cultivation, pre/post - harvesting, the appropriate use of pesticides and fertilizers and processing by-products of grapes	Developing the working mechanisms of central markets in addition to pricing mechanisms
Enhancing paid work in cooperatives by developing cooperative structures, sharing roles, strategies, risk management, and	Improving access to water sources and rationalizing their use through best agricultural practices and wastewater treatment.	Encouraging the processing of chemical alternatives, organic and environment friendly production inputs	Increasing the consumption of grape products among consumers through national awareness campaigns.

business plans.			
Building a cooperative model in partnership with the private sector for packaging and marketing grapes.		Introducing mechanization into harvesting and processing by enabling the working environment.	Abandoning traditional packaging into advanced levels that achieve an added value to the product.
Strengthening the relationship between cooperatives and actor bodies in the grapes sector.		Enhancing specialization in production along the value chain and creating an entity with an agricultural investment that carries out packaging and marketing operations	Creation of proper and fair work environment to attract the skilled labors.
		Enhancing specialization in production along the value chain and creating an entity with an agricultural investment that led the activities of packaging and marketing operations	

Farmers organization and cooperatives

In the last two decades, from 2000 to 2020, many cooperative and charitable organizations were established aiming to develop the agricultural sector and the services provided. The number of cooperative societies working in the agricultural sectors is 139[24], constituting 41[25]% of the total operating cooperatives, as well as some charitable organizations, wherein 5[26] women cooperatives are working in agriculture. The organizations' structures are formed of a board of directors elected by the general assembly, under the supervision of the competent ministerial institution: 1) The organizations focus on reducing production costs and increasing

[24] http://www.cwa.pna.ps/uploads/REPORTS/16341197370.pdf
25 http://www.cwa.pna.ps/uploads/REPORTS/16341197370.pdf
[26] http://www.cwa.pna.ps/uploads/REPORTS/16341197370.pdf

profits through collective purchase and marketing together; 2) They have an economically viable cooperative initiative that actively contributes to improving the economic conditions of the members; 3) Practices of good governance and management principles; 4) Represent the farmers in local and international institutions and the government; 5) To advocate and influence the government in implementation mechanisms of the laws.

In general, some weakness in the performance of cooperative and charitable societies was noticed, at the level of organization structure and services provided, which had negative impacts and weakness in operation, especially, the those that were established upon a donor's request or covering humanitarian aid projects. Many cooperatives share a reasonable level of motivation among members to work together. However, more than 85[27]% of the farmers interviewed stated that they subsequently experienced poor performance due to lack of fund, vision, resources, leadership, and unsuccessful business plans. This resulted in a loss of momentum and motivation towards self-help. Therefore, the Ministry of Labor or the competent authority has closed many cooperative societies or has not renewed their license.

Several stakeholders interviewed for this assessment, including the Department of Agriculture, had indicated that most cooperatives are viewed as charitable organizations by the donor community, rather than as for-profit institutions. It is therefore the current model that has to shift to a more profit-oriented, donor-oriented approach, by supporting cooperatives with a business-oriented approach. They also mentioned some successful models that carry out collective purchasing and marketing, such as Al-Thenabeh Cooperative, which purchases animal manure, processes it, and markets it, as well as snable Cooperative that buys the grape Fruits, process it and market the products. This is due to the fact that: 1) They have an active (elected) paid board of directors, 2) The members pay an annual fee for services received, 3) The co-ops pay back a certain amount of profits to the members and a certain percentage of the profits is used for the development of the cooperative and investments; 4) The active and paid employees of the cooperative are responsible for the management, production quality, and sales/marketing.

The success of a cooperative depends on the common goal or "cooperative spirit" and business oriented. Unfortunately, Cooperatives often rely on funding from donor organizations, rather than collecting financial contributions from their members. Lack of knowledge, experience, and models that show how cooperatives can operate successfully as businesses undermines the need for motivation and confidence.

Production Inputs

Production inputs including seedlings, Extension Services, Pesticides, water, transportation and labor pose a major challenge to grape plantings. According to the majority of stakeholders interviewed, value chain inputs skilled labors and water are the biggest challenges, followed by fertilizers.

[27] Breeder survey

Agriculture labor (skilled labors) is considered one of the most interesting inputs in the cultivation of grapes due to Labor competition between local agriculture employment opportunities and agriculture opportunities in settlements and areas behind the 1948 green line, that pay more wages and somewhat protected workers' rights. This led to an increase in the production cost or delay in production in the West Bank.

The limited water resources are due to factors such as climate drought and changes, over saturation irrigation, occupation restrictions in digging artesian wells. All these led to scarcity of irrigation water for planting grapes, and thus, reduction in productivity per dunum and fruits quality.

The traditional cultivation of grapes is characterized by an open system that depends on rainwater. Usually, the rainy season extends in the period between October and April. The quantities of rainwater are not stable and vary among different geographic sites in the West Bank, whereas the rainfall average in Hebron and Bethlehem is more than the average in Jericho and Jordan valley. This variable distribution has bad reflections on production quality and quantity. Therefore, a few farmers use complimentary irrigation, while the covered farms (seedless fruits) depend on water irrigation. The irrigation water quantities are exposed sometime to shortage due to well efficiency and climate drought, and scarcity of water due to the difficulty in reaching and Israeli Military regulations (starting from Oslo II, article 40), that prevents digging artesian wells in Area C or the implementation or rehabilitation of any (water) infrastructure.

Fertilizers used are chemicals, supplements, natural or compost. But the majority of farmers is using a mixture of natural and compost, and chemical fertilization that are used in the flowering period. This duality in the fertilizing system is a coping mechanism to reduce production costs and increase production.

100% of the chemical and supplements fertilizers and pesticides in the West Bank are imported from areas behind the 1948 green line and foreign markets, whereas and a part of chemical fertilizers is acquired through Israeli importers due to political reasons. The annual rate [28]of agricultural fertilizers used in the West Bank amounted to 30,000 tons of chemical and organic fertilizers, and 502.7 tons consisting of 123 types of pesticides. And there are 14 types that were banned for health reasons, including (Lindat-Aldecarb-Chlordane DPT - Pentachlorophenol Parathion - Parquet). Only natural fertilizers and compost are produced in the West bank, and also imported from areas behind the 1948 green line at a price of 2000- 3500 NIS/12cup[29]. The cost of pesticides is charged on the farmer’s account with high-interest rates, and will be paid off after production. The depth and repayment cycle can only be addressed through access to capital.

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[28] https://info.wafa.ps/ar_page.aspx?id=2322

[29] Albarqawi company. Mr. Salah Rabayah interview

Fertilizers and pesticides purchasing chain

Analysis of fertilizers and pesticides purchasing chain[30]:

- First ring: Manufacturers: These companies are either foreign or Israeli, where they depend on the agency system in distributing their products to the world through agents.
- Second ring: Israeli and Palestinian agents (importers): Mostly they are agents to the original company or buy fertilizers and pesticides from the above mentioned first ring and supply them to the wholesalers, or directly to the farmers through agents in the West Bank with a %30 mark-up. Payments are made through cheques or in cash.
- Third ring: Wholesalers: They buy the fertilizers and pesticides from the agencies or company agents and sell them with about a %20 mark-up. Payments are made through short-term cheques or in cash.
- Fourth ring: Farmers: They have two options to buy: The first is to buy from an agency according to farm needs saving %15 (%10 mark-up of the sub-dealers and %5 transportation). The second option is to buy from wholesalers (retailers) based on the farm needs at higher prices (adding 10% and 30 NIS as transportation cost). Initial payment is in cash and the residual is paid in installments when selling final products.

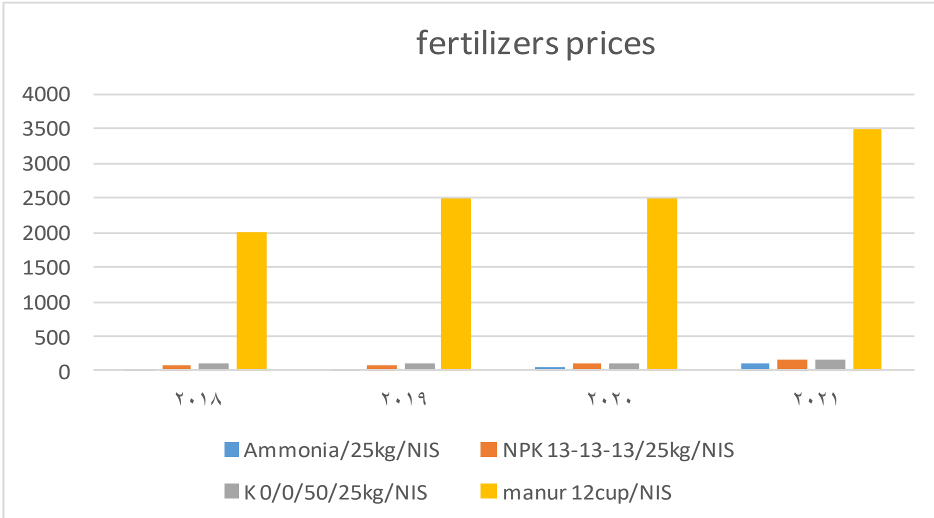
Need to finance

Grape's farmers need capital to reduce purchasing production inputs costs resulting from loan interests, which make prices high. Access to finance is very limited for small farmers as banks refuse to give loans and lending institutions are reluctant to do so. Limited financial services/loans are provided to the cooperative as well. The Agricultural Credit Corporation was established and is in operation. It provides loans of up to NIS 70,000[31] at an interest rate of no more than 3%. However, farmers are reluctant to get the loans due to lack of knowledge, and cultural and religious beliefs that just allow borrowing money without interest.

[30] Albarqawi company .Mr. Salah Rabayah interview

[31] Interview with a member of the institution management board Mr. Rafet Khandaqgi

The following chart shows the increase in fertilizers prices in the latest years[32]:



Key obstacles

- Lack of quality control on fertilizers and pesticides that leads to adulterated commodity, and therefore lack of efficiency and effectiveness.
- The Israeli restrictions imposed on some of the solid fertilizers' entered to the West Bank due to security issues reduce efficiency and effectiveness such as inputs that include sulfur and nitrate compounds
- Reliance on imported fertilizers and pesticides, and Israeli middle men who charge high commissions.
- Due to limited extension services, there is poor using of organic fertilizers and companion plants that maintain soil fertility and help eliminate agricultural pests.
- Lack of capital among farmers and cooperatives, and the absence of institutions that take risks in lending farmers. Most producers purchase the fertilizers and pesticides on an individual basis from retailers or company agents and agree to re-pay after the production process, and are charged at high interest rates.
- The agricultural pesticides and fertilizers agencies (import companies) compete with the local traders in distributing agricultural goods. This led to ignoring a component in the supply chain, and therefore monopoly will take place among distribution agencies as a result of canceling the local traders from supply chain, that will have negative impacts on prices. For example, Mezarol pesticide is sold by X agency directly to the farmer at a price of 270 NIS, while the trader of the same agency sells it at a price of 300 NIS.
- VAT / double taxation

[32] Albarqawi company .Mr. Salah Rabayah interview

Agriculture patterns

The agricultural projects in Palestine are family businesses. There are three patterns of agricultural employment: 1) depending on the family members employment in an unpaid work perspective, where all family members participate in the implementation of all agricultural activities and fieldwork such as plowing, pruning, picking fruits, etc., Most of processing grape by-products works are done by women except for grape squeezing which is done with men. Occasionally, in the other works such as plowing and pruning, some farmers hire skilled workers at 100 NIS/day; 2) Second employment pattern is based on a 30%[33] of production return through agreement with X family. This is sometimes followed in the large-scale farms; 3) Third employment pattern is when the X traders farm out the production including the cost of harvesting and post harvesting.

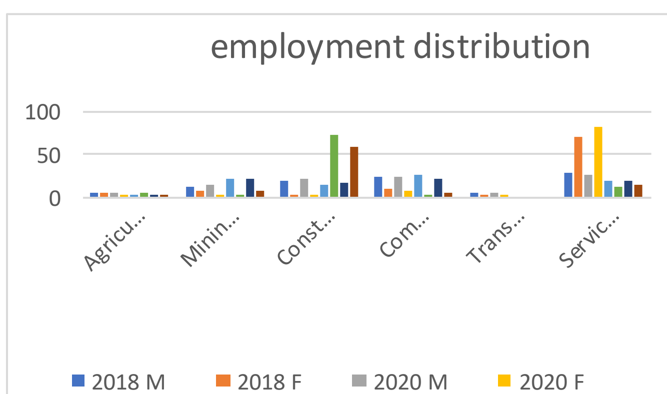
The grapes farmers reported that there is a shortage of manpower if the need arises to hiring skilled workers. Therefore, skilled workers are not available in some aspects of grapes farming, but are sometimes cramped and confined between family members especially in family businesses.

Youth & Labor force

Statistics show that the percentage of youth (15-29 years)[34] in Palestine is 30.0% of the total population, distributed per age groups as follows: 37.4% are within the age group (15-19 years), and 62.6% within the age group (20-29 years), whereas (40-29%) of the young people are in the labor force. The highest unemployment rate among individuals is in the age group (20-24 years) by 44%, compared to 36% among individuals of (25-29) years.

Youth unemployment is an increasingly urgent and local problem. A recent PCBS report on the first quarter of 2017 stated that 53% of young people in Palestine were unemployed; the highest rate of unemployment was between the graduates of natural science by 70%.

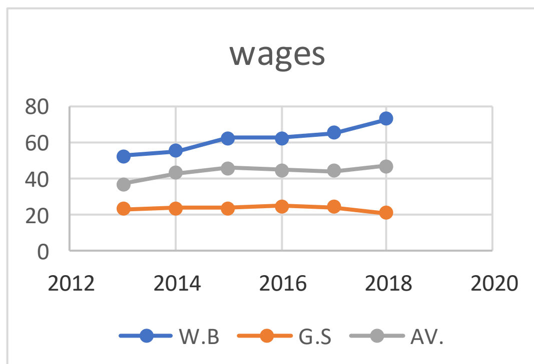
The survey showed that 30%[35] of the workforce in the grapes sector is youth as part-time and not permanent work . But in general, [36]the percentage of youth workers in the agricultural sector in 2017 was 3.4% (less than the services sectors including (Professionals, Technicians, Associates and Clerk, services, trade, Elementary



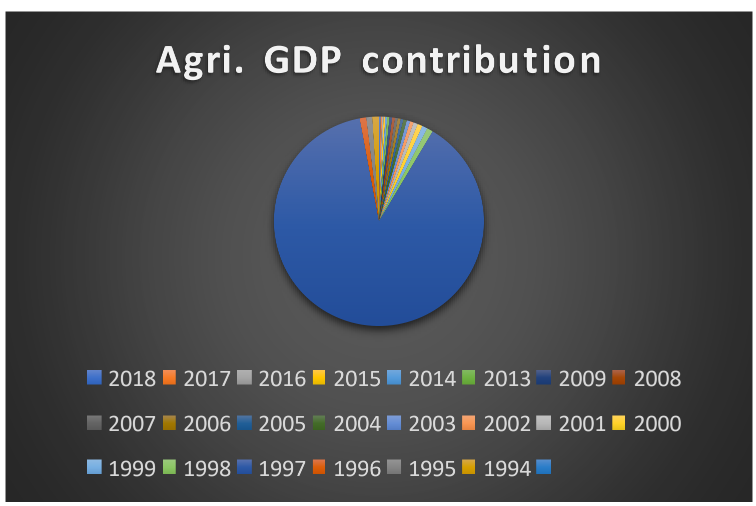
[33] Grape council, Mr. fathi Abu Ayash
[34] https://www.pcbs.gov.ps
[35] CDC survey
[36] https://www.pcbs.gov.ps/pcbs_2012/Publications_AR.aspx

Occupations, manufactures), while in 2018 it was 6.3% (6.2% M, 6.8% F), compared to 35% working in the services, commerce and restaurants, and the hotels sector. In 2019, the agriculture youth employment was 3.2% (3 M, 2.9F) while increased in trade activities at 21.9 %. Finally, the youth employment in 2020 has been increased from the previous year to 6.2% (6.6% M, 2.6% F), whereas it is noticed that female work in agricultural activities is continuously decreasing due to hard work and ownership.
According to the Palestinian Central Bureau of Statistics, "The Performance of the Palestinian Economy, 2018" issued in May 2019, the agricultural sector workers in 2018 were 51,500: 37,000 from the West Bank and 14,500 from the Gaza Strip, while the number of workers in the agricultural sector in 2013 was 82,700: 59,900 from the West Bank and 22,800 from the Gaza Strip. The drop-off in agriculture labor is due to:

- Unfair daily wage: According to the Palestinian Central Bureau of Statistics "The Performance of the Palestinian Economy, 2018" issued in May 2019, the average daily wage in the agricultural sector in 2018 was 47.0 NIS: in the West Bank it was 73.1 NIS/day, and 21.1 NIS/day in the Gaza Strip, while the daily wages in agriculture is lower in comparison to other sectors and higher in settlements or areas behind the 1948 green line, at 150-200 NIS/day.



- Low contribution to GDP: According to the Palestinian Central Bureau of Statistics "The Performance of the Palestinian Economy, 2018" issued in May 2019, the agricultural activities contribution in GDP was 4.8% in the Gaza Strip, compared to 2.6% in the West Bank, which is a relatively low percentage compared to other sectors, especially the services



sector and the trade sector. While [37]in the mid-seventies the agricultural sector contribution in the GDP was 36%, then decreased to 25% in the eighties, and in 1994 it declined to 13.4%. This percentage continued to decline till it reached 3.5% in 2018.

Access to Market

Access to local and international markets of the grapes fruit and by-products within the current enabling environment and importing policies in foreign markets is considered a major issue facing farmers and traders due to the occupation restrictions and controlling of borders, lack of infrastructures in borders, as well as overuse of the fertilizers and pesticides and variation of technical and management skills. These obstacles need a lot of technical procedures and advanced training to overtake, in addition to the fact that the majority of farmers are not organized within effective and well-defined marketing systems. Therefore, prices are low (in – out of Palestine) which makes farmers' families endure low income.

In general, the marketing channels of grapes products are limited in the local market through middlemen (local traders), directly from the farm to wholesalers, supermarkets and to the consumer. Moreover, there are weak market channels for exporting grapes fruits and by-products, where small quantities[38] of grapes fruit are exported to Jordan (30K tons), and 20K tons to areas behind the 1948 green line. These limited quantities are linked to the Israeli restrictions of Palestinian goods that directly affect the sustainability of the market and the development of new channels.

Local market channels (local market) which represent most of the marketing channels that absorb the grapes products are facing significant challenges in market regulations and laws implementation mechanisms that regulate the goods movement in the local market and prevent the dumped, monopoly and unfair competition, in addition to the quality control due to production conditions and the processing environment.

Grapes and vegetables traders in the export market are considered weak players as a result of some challenges facing the farmers and traders; nevertheless, one of the grapes by -products penetration in foreign markets are grape molasses and malban, but in small quantities. With regards to markets in the areas behind the 1948 green line, the occupation government puts obstacles on the marketing of products and disclaimed all economic conventions and agreements signed with the State of Palestine, despite that some quantities are exported or sold to these areas through the wholesalers and sub traders, and also through direct purchasing by residents individually from the West Bank markets. In October 2021, the Israeli cabinet declared a law that did not allow the importing from West Bank directly; Any imported quantity must be kept for 48 hours in Israeli traders stores then undergo laboratory tests. Positive tests will allow passing the goods into the market, whereas negative tests have two choices: either

[37] https://info.wafa.ps/ar_page.aspx?id=FnFZtGa27819740190aFnFZtG

[38] Garoe council ,Mr. fathi Abu Ayash interview

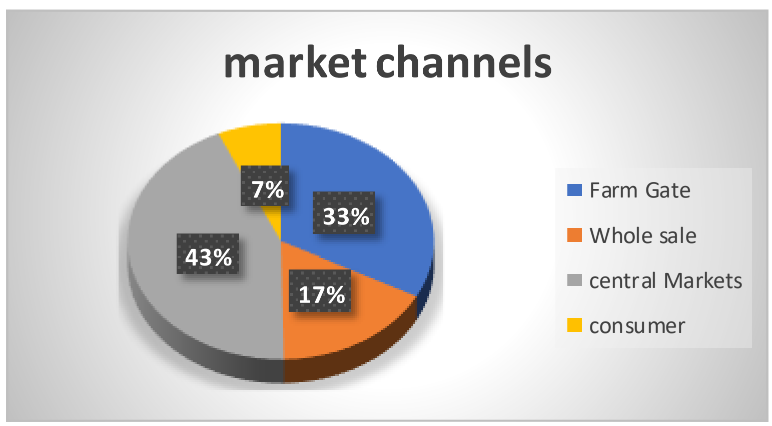
damaging the products or returning it to the Palestinian traders. This law has a negative impact on the price and market channels.

Opportunities

- The quality and taste of the Palestinian seedless grapes compete with Indian and Egyptian grapes, which facilitates their penetration to global markets.
- Traders and packinghouse gained experience in exporting grapes through grape experimental shipment process and existing market links. They also gained experience in global markets requirement and standards
- Existing grapes sales outlets in foreign markets such as Jordan and the Gulf market, which can be developed and expanded.
- The existing packaging house models and entities will facilitate applying global markets requirements in producing grapes and grapes by-products.
- Production of grapes of various types is extended from April to November, which enriches the trust and confidence with markets through continuous supply.

Market Channels

Market channels are considered the core of the market and main means of communication in the market members between the farmers and consumers. Grapes fruits and by-products are marketed in the West Bank markets through multiple marketing channels in each governorate. These marketing channels have not developed the trade contractual mechanisms or developed new market channels in or out of the West Bank . Therefore, we do not see a strong tendency to export agricultural outputs like other sectors or olive oil.



Central markets in the Hebron, Nablus, and Jenin governorates are the engines of vegetables and fruits trade fed from the other governorates and regions, traders, and farmers through oral contracts. This market channel absorbed 87.5%[39] of the whole quantities, and these markets are operated through municipalities which impose 2% and 10%[40] of the farmer's volume of sales for commissioners. The operation mechanisms for Central markets did not develop or improve into one unified system based on prices and supply and demand.

[39] CDC survey

[40] Central market interview HalHul

The final consumers get their demand of grapes fruit through wholesalers, supermarkets retailers, and street traders or directly from the farm. Also, there are weak market channels for grapes fruit through processing entities as companies, cooperatives, and individual processors that absorb 10- 15%[41] of the whole quantities of less quality.

There are several channels for marketing grape by-products including the farm gate channel which is directly from processors to consumers, supermarkets, cooperatives, and companies, where it is noted that the market channel from farm gate has the highest percentage in distributing products according to consumers' confidence, who seek to buy products manufactured traditionally.

Traditional processing has a preferred flavor and taste, but has weaknesses such as; 1) lack of standards and specifications; 2) traditional or unattractive packaging; 3) This manufacturing is still within the framework of the family business approach without a commercial perspective, despite the presence of manufacturing units that are somewhat advanced to a certain level.

The graph shows the rate of utilization of the market channels by farmers. It's clear that the Central Markets represent 43 %[42] of total channels, followed by the direct marketing from the farm.

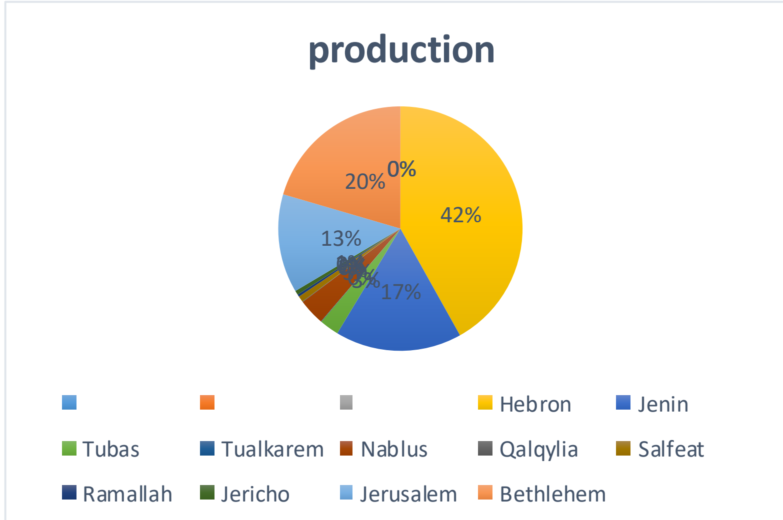
Market Shares

Statistics indicate that the grape production in Palestine is 55-65K Ton[43]; 42%[44] are produced in the Hebron area, 75-80% is sold as fresh, while the rest (20-25%) are processed or dried. The exported grapes to the Israeli market are estimated at 30%[45] of the total production, most of which is illegally traded. On the other hand, there are no official statistics available about the grapes amount that are smuggled from settlements into the Palestinian market, except the study by Applied Research Institute (ARIJ) in the 2015, which showed that 93%[46] of the grapes in the local market are from Palestinian origin, while everyone knows that Israeli goods are available in many wholesale or retail stores, including the ones sold under the name of Palestinian farms.

[41] Farmers interviews
[42] CDC survey
[43] MoA statics 2018/2019
[44] MoA statics 2018/2019
[45] Grapes council interview
[46] ARIJ, 2015, Palestinian Agriculture Production between challenges and reality.

Grape production

Grapes rank second after wheat in terms of being raw materials for food industries in Palestine. There are 15 grapes products, most important of which are vine leaves, fresh fruits, raisins (dried fruits), molasses, malban, Enabia, shaddah, and Khabeesah, and jam. The grape production in 2020 is estimated at 65,263 [47]Ton, 42% are produced in Hebron. Vine leaves production is feasible for a wide range of farmers, as the dunum produces 100-200 kg[48].



Profit Margin

Grapes are ranked second among different crops in terms of profit margin after palm. As a study by ARIJ Institute, the margin of profit in rain-fed grapes production is estimated at 35.6%[49] and 45%[50] in Nablus for the holdings that used treated water. According to farmers' estimates in Hebron, the cost of producing 1 kg of grapes fruits is 1.1-2[51] NIS, and seedless grapes are 3.5 - 4.0 NIS.

The export prices for grapes products do not vary from local prices (ARIJ 2015); Even though farmers confirmed that the price of seedless grapes in the local markets is higher than in the export markets.

		Selling price for end consumers[52]			
Price Average for end consumer	Production cost NIS/kg[53]	2018	2019	2020	2021
Earlier production (Zeni)	1.1- 2.00	2-3 NIS	3- 6 NIS	3 -6 NIS	3 -13 NIS
Late production	1.1- 2.00	3 -6 NIS	4-7 NIS	3 -6 NIS	9-12 NIS
Seedless grape (green House)	3.5- 4.00	18-25 NIS	20-30 NIS	15-20 NIS	25-30 NIS
Seedless grape (uncovered)		8-10 NIS	6-10 NIS	5-10 NIS	5-10 NIS

47 MoA statics
48 CDC survey
49 ARIJ, 2015, Palestinian Agriculture Production between challenges and reality.
50 CDC team and grape council.
51 Interview grape council
52 Central markets interviews
53 Farmer and grape council interviews

Grapes by – products [54]

Product	Annual production	Price average 2018	Current Price
Grape Jam	No data	10 – 15 NIS	15- 20 NIS
Malban	150 Tons	20-25 NIS	20-25 NIS
Molasses	300 Tons	20-25 NIS	20-25 NIS
Dried Fruit	150 Tons	15-20 NIS	15- 20NIS
Vinegar	No data	10 – 15NIS	15 -20 NIS

Main marketing challenges

- Occupation restrictions and control of borders and goods movement
- Lack in law implementation mechanism and poor role of inspecting authorities.
- Local and territorial marketing: Selling grapes at the central markets (Hesba), which is the most common market channel, where the farmer has to pay 10% of total volume sales as a fee for the commissioner; It is a loss for the farmer. Also, central market sales take place at low prices (6- 9NIS/kg)[55].
- Poor and unattractive packaging due to the lack of a Palestinian carton factories. The Palestinian farmers use the second-hand Israeli cartons to market products, which may have pesticides residues, and are thus are unhealthy and may cause the transmission of diseases, mislead the consumer and obliterate the Palestinian grapes.
- Post harvesting process: Due to the bad infrastructures for picking and grading of fruits, which limited the farmer to grading production in proper environment leading to low quality and reduction in prices.

Main marketing opportunities

- The existing relationship with central markets and Palestinian bodies authorities.
- The presence of packing houses and manufacturing units models that can be developed and expanded to establish new facilities.
- Local sales campaigns that gain consumers' interest, in addition to raising awareness of the local consumers about the Palestinian product.
- The State of Palestine and the Ministry of Agriculture pay attention to the grapes sector, through approved policies as the Grape Council. The council prepared strategies to develop the sector and organized local campaigns on an annual basis.
- Diversity of grapes varieties which are characterized by continuous production throughout the period from April to November, in addition to the multiplicity of grape products and their marketing outlets.

[54] Al-Sanabel Cooperative, Mr. Raed abu Yousef

[55] CDC survey and interview with central markets

Production & farm management

In the past decade, due to the competition in the grapes sector and the variety of products and prices, farmers follow several planting models for grape cultivation which are open and covered (green house) farms. In the green house model, some farmers in the towns and villages of Area C, such as North and middle of Jordan valley and Jericho, shifted from vegetable cultivation to grape cultivation, as well as from traditional and open planting, which is completely different. But in areas where water is scarce, in the North and south of West Bank, planting remained the same with some differences in irrigation. The grapes sector has three types of holdings[56]: small agricultural holdings (less than 10 dunums), medium holdings (10-20 dunums), and large-scale agricultural holdings (usually more than 20 dunums).

Grapes planting is classified into three irrigation systems: 1) irrigated system usually used in green houses and in few opened farms. The green house farms are characterized by earlier production and high quantities due to geographic sites in warm climate and farmers' good expertise; 2) complementary irrigation system: Few farmers follow this system in irrigation of grapes farms where relying on rain water and complementing the irrigation in May, June and July are followed. This system is characterized of an average production and length of leave production; 3) Rainfed system which is used by open farms due to scarcity of water, inherited experiences passed down from one generation to another, and lack of knowledge of good practices. This system depends on rain water and extends farms or Y farms and is characterized by low productivity and widespread of pests.

The abundance of cultivation grapes in the South of the West Bank and the awareness of Palestinian consumers of the economic importance of cultivating grapes, helped shaping the consumers' food patterns to consume grapes and its by-products. There is a need to increase and develop grapes production and marketing in terms of specifications that meet the consumer's aspiration in/outside of Palestine. Therefore, it is necessary to shift the processing into modern manufacturing in terms of hygiene, packaging, and enhancing the business initiatives that produce the grapes in an advanced level rather than primitive. Moreover, it is necessary to promote specifications within the Specifications and Metrology Authority.

To increase grapes production, farms management and applying best practices among grapes farmers must be improved, in addition to shifting cultivation grapes from traditional to modern system. Grapes farmers and stakeholders reported that irrigated farms production in the Jordan valley and rainfed production differ widely. Several stakeholders have highlighted the need to increase MPA and production through professional farm management. Therefore, applying best practices of irrigation, fertilization and pesticides, planting high-quality seedlings, extension services, and improving the best post-harvesting practices, such as picking fruit and

[56] Oxfam value chain report 2016

packaging, should increase the profit. Interventions in cultivation, MPA, and protection can reduce the losses by 5%[57]

The assessment in Area C showed that grapes farmers rely on their own accumulated experience in controlling pests and selecting appropriate pesticides, and following experts' agriculture engineers from the private or public sector. The demand for pesticides is increasing during the preparation period (May, June, July, August, September)[58]. Through in the study, we found that farmers have limited awareness about the safety period of pesticides and that a small portion of the farmers adheres to it. Farmers purchase pesticides from wholesalers or companies' agents, either in cash or on account after selling the product.

Key obstacles

- Multitasking for grapes farmers, from cultivation to marketing, without outsourcing, added some sections in the value chain.
- Linkages are weak between grapes farmers and stakeholders; farmers are confined to a limited network of relationships.
- Production losses are high up to 5%[59] due to the post-harvest fragile infrastructure and poor packaging materials.
- Grapes by-products, such as molasses and malban, do not receive the interest of the private sector in exporting, such as the olive sector. Thus, export is limited to some weak initiatives.
- Weak marketing channels to export markets due to the restrictions imposed on exporting and necessary facilities, in addition to the weak laboratory analysis of chemical residues.
- The majority of grapes farmers sell fresh fruits without grading due to the fragile infrastructure and lack of funding.
- General lack of knowledge of good practices (hygiene, fertilizing, pest controlling, separation)
- The dependence of farmers on their own experiences in pest controlling.

Seedlings

Nurseries are considered one of the most important parts in the grapes value chain, which produce seedlings within certain conditions and needs. Many farmers resort to produce seedlings through their accumulated experience, and this is often in seed grape farms. As for seedless grapes, farmers depend on Nurseries in the cultivation of the grapes; there are 20 nurseries in the West Bank for the production of different varieties of grapes.

The planting of grapes seedlings faces many obstacles such as:

[57] CDC survey
[58] Farmer interviews
[59] CDC survey

1. The seedlings used in planting are personally selected and there is lack of rootstock for grafting trees.
2. Losses in trees seedlings due to the grafting experience.
3. Helps spread soil diseases in addition to weak resistance of seedlings to diseases and pests.
4. Low quality and production quantities.

Gender

Most of the agriculture projects are family businesses; all the family members participate in implementing the farm activities. Women are considered the agriculture sector engine due to the work they carry out that is more than 50%[60] of the fieldworks. Cultivation grapes fieldwork is executed by family members, but sometimes they recruit labors from outside the family. Women undertake field tasks such as fertilizing, picking fruits, vine leaves harvesting, in addition to the hard works in by-products processing.

Production of grapes by-products such as molasses, malban, raisins is women's responsibility, and are solo in processing grapes by-products. In some times, men participate in squeezing grapes when done by simple machines or through some cooperative societies that squeeze grapes for 0.40[61] NIS per liter, and this is often in medium/large scale production units, where the tasks of men are limited to coordinating with the cooperatives or operating machinery. However, in the small-scale production units, the squeezing is manual and is done by women. Grapes juice is transformed either into concentrated grape juice, where women are mostly solo in preparing the juice, or into molasses where processing operations are carried out by women with minimal participation from men. The stakeholders stated that this work is completely done by women because it needs special care during different stages of processing, in which women are more successful and capable.

As for the farms' ownership, most of the farms are owned by men, while only a few women own a limited number of grape farms. This led to the dominance of men in farm management such as development, expansion, and marketing, there is an almost non-existent women role, men do marketing and negotiation prices, distribution channels, selling inside or outside the communities, but for marketing of byproducts the women play the major role in marketing.

The Ministry of Agriculture, Extension Department, provides extension services from a gender equality perspective frame works. It also has female agricultural engineers providing the services, in addition to other civil society and humanitarian institutions that have female employees providing these services. Access to information and extension is not difficult for

[60] Focus groups
[61] Alsnabil cooperative interview, Mr. Raed Abu Yousef

women in Area C, but some social determinants and norms prefer men to receive the extension service.

With regards to income and sales, women’s work is unpaid. Fewer women are free to use the income and save following the man’s approval, except for the income of by-products produced at the household level. Women in the focus group reported that the spending decision is made by men in most cases; they decide spending sectors and how to spend, and women play a marginal role in this aspect.

For the women’s entertainment, for those working in the grapes sector, women stated that general environment is limited with vulnerable infrastructures, especially in the Jordan valley, in addition to the difficulties of movement and access to entertainment places. Therefore, the women's life in Area C is confined in farms working, processing, and household duties.

General obstacles facing women in agriculture

- Customs and traditional norms sometimes restrict women's individual running of the agriculture activities, starting with purchasing inputs and ending with marketing products. This problem exacerbated by the fact that these customs and norms became convictions and many women believe in them.
- The weakness of women’s ownership of agricultural capital, especially agricultural lands and farms, due to the lack of access to their rights of inheriting lands from the father’s or husband’s side.
- Access to financial resources is limited due to the lack of guarantees for women, such as lands being registered by their names.
- Increasing production costs and thus reducing the level of profits, because most women are not able to do many jobs that require great physical effort, which leads to hiring male workers to do these jobs.
- Weakness in women’s ability to deal with men from outside the family or the village in purchasing production supplies or marketing products, especially when dealing directly with wholesalers. This can lead to being exploit in terms of prices.
- Weakness in women’s affiliation to specialized agricultural cooperative societies. They do not even occupy senior positions as boards of directors of these associations, which hinders the access of their voices and thus solving their problems.
- The inability of women farmers to become members of agricultural cooperative societies, due to the high “costs” of fees.
- Weakness of women’s role in decision making positions at household and community levels, due to weak women capacity and social norms.

Opportunities

- Encouraging women farmers to claim their rights of inheritance in agricultural lands, as owning and registering the land. This can lead to benefit from many agricultural projects or facilitate their access to the necessary financing, as the relevant institutions require that the land be registered for the person requesting the service.

- Encouraging women to apply best practices and standards in cultivation of grapes and producing grape byproducts that will reduce the impact of the price fluctuation problem, and the control of traders.
- Increase women's awareness of supply chain suppliers and marketing channels through communities' associations and cooperatives.
- Improving women's capabilities at social and economic levels.
- Enhancing women's affiliation to cooperative and community associations.
- Increasing women's awareness, in terms of technical and social aspects related to production techniques, and keeping pace with other developments in production methods, and new products and varieties that can be introduced to the production process, in terms of social aspects to increase her self-confidence and how to deal with others, in addition to notifying them of their rights and how to claim such rights.
- Expanding the formal agricultural extension process, both in terms of quantity (number of extension agents), or in terms of type (specializations of extension agents and their gender).
- Establishing sufficient and competitive storage and refrigeration units in cooperatives, in order to absorb part of the surplus production in seasons. This helps in stabilizing prices in the market.

Environment

Rainfed grapes farms structures have consisted of Y-shaped or extended iron corners. These farms do not affect nature in biodiversity and soil fertility in terms of using polyethylene in cultivation, but sometimes there is an effect resulting from excavating the land to be suitable and using cement, which is necessary for fixing the iron corners. In the covered farms (greenhouse), however, farmers used polyethylene in covering their farms. This is not environment friendly, and there is no plan to recycle the polyethylene waste that will affect the soil fertility when damaged, in addition to prevent biodiversity, which leads to an imbalance in the nature of plants and insects. Furthermore, using herbicides has the worst impact on soil fertility and biodiversity.

85%[62] of the grapes farms rely on rainwater for irrigation, without establishing water channels or bodies of water or wells. The majority of irrigated grapes farms is using water networks in irrigation through drip nozzles, which reduces the evaporation, but water scarcity has forced farmers to use more saline water or irrigate excessive water to make up for the shortfall according to the water distribution schedule. This excessive irrigating destroys the soil in terms of raising salinity and acidity.

[62] Ministry of Agriculture statics 2018/2019

Farmers during daylight times depend on sunlight and use the local electricity network with electric meters, controlled by the village councils. 70%[63] of the farmers expressed that they use the electricity in squeezing the fruits and gas stoves in production and processing. They also depend on solar in processing some of the products as dried MALBAN and raisins. But in the field works, they use some fuel-operated machines to operate, which are sometimes subject to defects or malfunctioning.

Production waste as water used for washing grapes and the leftover fruits and fruit seeds, in addition to farm waste such as twigs, dry leaves, polyethylene, fertilizer and pesticides packages, have no existing or used plan for waste management, disposal, or recycling. For the water used in the processing, there are no treatment units to use again; it is disposed of through the household sewage network or to the valleys or around the house, in addition to leftover fruits, twigs, and dry leaves that are disposed of in the farm or around the house without tendency towards composting, which is very weak and almost not existing. Moreover, as for the disposal of used polyethylene in greenhouses or packages of fertilizers and pesticides, there is no place designated for collecting them and safely disposing or recycling.

COVID-19 impact

In light of the COVID-19 pandemic, and following the emergency law declared in Palestine, super markets, restaurants, butcheries were closed, transportation was stopped, and movement was almost paralyzed. This had a negative impact on sectors of employment, production and marketing, and services, and, therefore, on family household income.

The agricultural sectors were affected by the pandemic like other sectors. The peak of the pandemic was in the period of April to May, and June to October 2020. For vine leaves and fruits harvesting, the period April-May 2020 and 2021 were the peak of vine leaves production as well as in June to October 2021. Emergency law and continuous closures had direct effect on markets demand and supply and marketing channels, whereas, marketing of vine leaves decreased to 15% in 2020, but in 2021 the prices increased based on the production quantities. Marketing fruits was also affected in 2020, in the form of a decline in prices to 15%, due to the cancellation of some marketing channels such as the supermarkets, central markets, and consumer channels. The market supply increased and demand decreased. The cancellation of market channels led the market shares to rely on other marketing channels as processing units or from farm gate, which, in turn, led to an increase in the supply, thus the prices of grapes and leaves decreased by approximately 15%[64]. Also, the production inputs, especially fertilization and pesticides supply, were affected in the pandemic by the methods of payments in which the farmers had to prepay, contrary to what was done previously. Prices did not rise till July 2020,

[63] CDC survey

[64] CDC survey and farmers interviews

because most farmers bought their needs before the emergency law, but in 2021 they rose up to 200%, as the increase in demand and shipping costs also increased for up to 30%.

Grapes sector employment has not been affected by the COVID pandemic, because the sector depends on labor from inside the family. However, extension services have been affected by the pandemic due to the closures which sometimes caused delay in fulfilling the services and cost higher prices.

Recommendations for youth interventions

Selection of beneficiaries

- It is strongly recommended to work with the youth in the south of the West Bank, Hebron and Bethlehem Governorates, because of the added value of their basic knowledge in cultivation of grapes and processing byproducts. Moreover, the existence of cooperatives and processing units' medium scales serve the farmers in squeezing grapes for processing concentrated juice, molasses, and malban.
- It is highly recommended to work with those who have innovative ideas, preferably in the area of automating farms, and those who have new technologies in cultivation of grapes and processing byproducts.
- According to the high-rate return of investment in cultivation of grapes greenhouse farms, especially in the Jordan valley and Jericho, we strongly encourage to work with the youth who have the ability to establish such greenhouse farms as micro businesses.
- It is highly recommended to work with the youth in proper legal framework, such as establishing companies or cooperatives.

Proposed grapes interventions

As a result of some gaps and problems facing the grapes sector in the various functions of the value chain, following the traditional method of production, and based on profit margins, we recommend that the interventions focus on the following topics:

- It is strongly recommended to encourage agricultural projects that specialize in packaging, as the overlap in post-harvest functions and absence of the specialization in packaging reduces the profit return. The opportunity is to create entities carrying out packaging and filling the products by trained skilled labor.

- As vine leaves are the second economic product in the grapes sector, there is a creative idea of planting American grapes in greenhouses, in order to produce vine leaves for freezing and pickling for household consumption.
- To focus on the idea of recycling the farm's waste to produce compost, for which the profit margin is estimated at 40%[65].
- There are byproducts varieties produced of the immature fruits which are processed to make a substitute for Sumac.
- To encourage agricultural projects that use farm automation, by establishing automated grapes farms and applying irrigation systems to limit excessive irrigation, and thus preserve soil fertility.
- The low productivity of farms in rainfed farms that rely on rainwater for irrigation leads us to the idea of establishing farms that depend on complementary irrigation, through facilitating access to water sources, by establishing water harvesting units, which increase the water quotas for grapes farms and increase productivity.

Action plan pre-selection

Support aimed to engaging youth in a participatory creation and business planning process, which may help them in refining, clarifying and rearticulating their ideas, aspirations and business objectives. This should be done as an outcome of an individual assessment for their business idea and a SWOT analysis.

Step 1: Generation of ideas

Innovative ideas are the core factor of entrepreneurship. Every youth will derive these ideas from different sources. Generating ideas for an entrepreneur means discovering a business idea or developing an idea into a working business concept. This idea can be a plan, proposition, opinion, or belief. The informed entrepreneur gets better opportunities to identify upcoming opportunities. Generation of ideas will be through:

- Brainstorming: A way to get new ideas and potential solutions. It is a method where like-minded youth participate in the discussion and provide their inputs. There may be constructive criticism at times but there are no dominances and inhibitions. This method has a good success rate when efforts are focused on grapes production, market area, or the supply chain inputs.
- Focus groups: Workshop with those who possess accurate information about the concept of a certain idea, where they present this information in a structured form. The

[65] Mr. Fathi Abu Ayash, grape council.

productive idea is conceptualized creatively as per the market need. It also helps in examining the idea.

- Problem analysis: The goal is to generate new ideas. Consumer's opinion is sought by providing them with a list of problems encountered, in general, and asking them to identify and discuss products in that category that have a particular problem. Thus, it helps find a new product or develop the practices or the products.

Step 2. SWOT analysis

SWOT analysis should address the need for access to input resources and the market. By analyzing the strengths, weaknesses, opportunities, and threats of the grapes sector challenges, pioneers will easily address their own needs.

Step 3. **Market readiness assessment**

A market readiness assessment should address the steps of improvement in the value chain prior to entering the market. All needs related to improvement of access to fertilization, increased productivity and quality, pests' control and processing will be addressed.

Step 4. Develop business plans

The business plan is an important and strategic tool for entrepreneurs. The business plan focuses on the specific steps needed for them to make their business ideas established and successful. Moreover, it helps them achieve short-term and long-term goals.

The business plan will include the human resources needed, production (product type, final shape, inputs, specifications, and machinery), and also analysis of the market in order to determine the demand and supply of the grapes products. Identifying the sales volume of grapes products, distribution, the competitors' strategies, pricing, market share, consumers, and finally addressing cash flow and return, should all be part of the plan as well.

Step 5: Networking with Private sector and financial resources

Through the multiple function linkages of the grapes value chain, the challenges facing the grapes sector, and youth employment, it is necessary that these links are connected to each other in the presence of specialization in tasks for each function. In addition, pioneers should be introduced and linked to services providers such as inputs suppliers, extension services and markets and financial resources, with a necessity to create a business legal framework.

Recommendations

It is recommended to focus on:

- The capacity building and governance for the agriculture entities.
- The intervention that enhances the farmers' awareness of best practices, pest control and fertilizing the trees.
- Encouraging the initiatives that focus on recycling farm wastes to compost or recycling waste water of the processing units.
- Enriching the relationships between the private sector and farmers, especially in supply chain and marketing.
- The intervention that engages the youth in the grapes value chain, with giving attention to innovative ideas.
- The intervention that focuses on automation of farms, especially in irrigation.
- The interventions of post harvesting
- Linking the central markets together through an application that will be developed by IT graduates. This system gives indicators on supply, demand and prices.
- The existing relationship with central markets and Palestinian bodies authorities.
- The presence of packing houses and manufacturing units models that can be developed and expanded, and to establish new facilities.
- Local sales campaigns that gain consumer's interest, in addition to raising awareness of the local consumer about the Palestinian products.
- Stimulate the State of Palestine and the Ministry of Agriculture to pay attention to the grapes sector, through approved policies as the Grapes Council. The council should prepare strategies to develop the sector and organize local campaigns annually.
- Diversity of grapes varieties that are characterized by continuous production throughout the period from April to November, in addition to the multiplicity of grape products and their marketing outlets.
- Encouraging women to apply best practices and standards in cultivation of grapes, and producing grapes byproducts that will reduce the impact of the price fluctuation problem, and the control of traders.
- Increase women's awareness of supply chain suppliers and marketing channels through communities' association and cooperatives.
- Improving women's capabilities at social and economic levels.
- Enhancing women's affiliation to cooperative and community associations.
- Increasing women's awareness, in terms of technical and social aspects related to production techniques and keeping pace with other developments in production methods, and new products and varieties that can be introduced to the production process, in terms of social aspects to increase her self-confidence and how to deal with others, in addition to notifying them of their rights and how to claim such rights.
- Expanding the formal agricultural extension process, both in terms of quantity (number of extension agents) or in terms of type (specializations of extension agents and their gender).

- Establishing sufficient and competitive storage and refrigeration units in cooperatives, in order to absorb part of the surplus production in seasons. This helps in stabilizing prices in the market.
- Benefit from traders and packinghouse gained experience in exporting grapes, through grapes experimental shipment process and existing market links, as well as their experience gained in global markets requirement and standards
- Develop and expand existing grapes sales outlets in foreign markets such as Jordan and the Gulf market, which can be developed and expanded.
- Take advantage of the existing packaging house models and entities that will facilitate applying global markets requirements in producing grapes and grapes byproducts.
- Encouraging the processing of chemical alternatives, organic and environment friendly production inputs to reduce the costs of production inputs, irrigation water and to preserve soil fertility.
- Strengthening women's role in decision-making positions at farms, household and cooperatives in the grapes sector, as they play a vital role in cultivation and processing, in addition to enhancing the women’s farms ownership through capacity building activities.
- Supporting high potential women groups to develop the skills of production, packaging and marketing of products.

Proposed interventions:

Organizing and structuring farmers

Intervention area	Intervention		Description	Target beneficiaries
Organizing and structuring farmers	Strengthening relations among cooperative societies and stakeholders, and mapping roles in the production process and production inputs.	Individual level	Increase the awareness of collaborative works among farmers and strengthen collaboration work spirit in a business approach framework, especially in marketing grapes products through conducting workshops with CAW partnership. The workshops will target individual farmers, members in the cooperatives and charitable associations to increase farmers' pertinence to cooperatives and charitable associations	Farmers, coop
		Farmers and cooperatives	Strengthening the links between agricultural entities in the grapes sector and farmers in the south of The West Bank, and forming specialized agricultural entities in the northern West Bank and the Jordan Valley. Moreover, establishing a central packing house with cooling storage units in North and South of WB.	Farmers, coop, producers and private sector
		Cooperative level	Raising cooperative capacities in planning, management, generating business ideas, and developing business plans within the business approach, in addition to rehabilitating agricultural entities facilities such as the processing unit in the Dawalina Company and the packing house in Shahd Al-Anab Association to carry out its business and expand production and marketing.	Agricultural entities
			Conducting a code of conduct between stakeholders in the grapes sector and markets to organize the supply chain and markets, so that the Palestinian product is adopted as the main product and distinguished on the markets shelves	Private sector, coop, companies' central markets
		Youth level	Strengthening the youth role in cooperative work through enhancing their participation and membership at the cooperatives, to attract the innovative ideas at value chain length, especially in marketing and supply chain	Youth in South, North, and Jordan valley
		Traders	Develop a central application that organizes markets operations in the West Bank in terms of supply, demand, pricing and organizing the harvesting. The App will be run by a group of youth specialized in IT technology	Central markets, coop, MoA and municipalities

Production and management

Intervention area	Intervention		Description	Target beneficiaries
Extension services	Enhancing agricultural extension services through farmer field schools		Farmer Field Schools (FFS) is a group-based on youth and farmers learning approach that teaches farmers how to experiment and solve problems independently. FFS groups of farmers will meet regularly with a facilitator to observe, talk, ask questions, and learn together. Farmer field schools, as an approach, will first develop to teach integrated pest management (IPM) techniques in grapes cultivating, post harvesting, and also income generating activities such as processing grapes.	Hebron, Bethlehem, Jordan valley
Production and management	Enhancing alternative fertilizers as natural and compost	Youth & farmer level	The intervention idea is to promote organic and natural fertilizers in the cultivation of grapes such as producing high-quality compost, through establishing a group of youth with the required mechanization to produce high-quality and appropriate packed compost. The production will be marketed through schools and field visits.	Cooperatives, groups of Youth
Management	Good planning and farm management		The idea of the intervention is to guide farmers to plant certain varieties of grapes such as Hamdouni, Beiruti, Halawani, seedless, and to rationalize the cultivation of Zinni kind in order to organize demand and supply and increase the supply of the other varieties according to market needs and water availability	Farmers in Hebron and Bethlehem

	Establishing a pioneer farm		The idea is to finance a pioneer farm with partnership investment by youth, and subsidies grants. The farm, under formal frameworks, will be run and owned by youth, where best agricultural practices are applied, and introducing and promoting new grapes varieties such as American grapes for leaves production and seedless grapes. Moreover, it shall raise the farmers' awareness of best practices through organizing field visits to it and through training.	Jordan valley, Hebron

Marketing

Intervention area	Intervention		Description	Target beneficiaries
Marketing grapes products	Strengthening and introducing new marketing channels	Strengthening packing houses and processing units	Stimulating the private sector to contract with farmers and cooperatives to promote the grapes products in local and international markets, through enhancing the participation in exhibitions and campaigns.	Shahd Al Enab, Dawalena, seedless grapes, farmers, and exporter companies

Export	Enhancing exporting grapes byproducts		The intervention idea is to promote exports of grapes byproducts through utilizing the existing outlets. The intervention aims at enhancing the products in export markets, through working with private sector companies to export grapes byproducts especially molasses, malban, which are made by women or cooperatives. The intervention will conduct an analysis of the export potential and the market attractiveness index (MAI) based on market information, then choose the most strategic markets based on the market information as consumer trends, product quality standards, importers, and the supply chain. After that, producers will be trained to apply the market requirements.	Dawelenna, Dora cooperative
	Facilitating measurements to expand women's entrepreneurship in grapes byproducts		The idea is to prepare a product portfolio, price list, and determining the products packaging in terms of the required packaging specifications that will be used by cooperatives or women's groups to identify potential buyers to enable distributors to meet market requirements. Moreover, conducting an assessment of women groups situation in terms of production capacity, production facilities, legal status, human resources, challenges, and required support. As a result of this assessment, commercial mediation services will be facilitated by cooperatives through direct training in selling to market outlets, conducting workshops and educational visits on standards required by specifications, standards, and validity Environment health, in addition to conducting one-to-one coaching and mentoring provided by a professional technical and marketing team.	Women groups in Hebron and Bethlehem

	Stimulating and increasing domestic demand		The idea of the intervention is to promote the local consumption of grapes products through marketing campaigns and good promotion via social media, radio and TV spots.	Consumers
	Enhancing collective marketing and supply chain	Farmers, Youth & women	The idea of the intervention is to establish a commercial entity that includes farmers and cooperative societies to provide production inputs from fertilizers to packaging. This entity will be established through investments of the participating members and agricultural loans. The entity's financial returns will be through a simple profit margin that is gained through providing input.	Hebron and Jordan valley