

**(Value Chain Analysis for thyme as an agro-based income generating project for poor women)**

**(Final Version)**



**Submitted to:**

**The Economic and Social Development center of Palestine (ESDC)**

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## 1. INTRODUCTION

The Economic and Social Development Center of Palestine (ESDC) is implementing the project “Enhancing the right to livelihood in seam zone and area C of Qalqiliya governorate” which is funded by the Finnish development cooperation (Ministry for Foreign Affairs of Finland through Finn Church Aid (FCA)). The project is intended to promote poor women-headed households’ right to livelihood in the seam zone and in area C and to improve the overall wellbeing and livelihood of the targeted households. More specifically, the project will provide support to small producer women and their association in production, processing and marketing of thyme.

This report aims to provide an overview of thyme value chain in targeted locations in order to identify constraints and opportunities and provide recommendations on way forward to improve small farmers and women producers productivity and earnings.

### A. METHODOLOGY.

To achieve the study objectives, a qualitative research approach was introduced to involve different stakeholders and market actors across the thyme value chain. The following paragraphs provide more details on the tasks that were carried out within the framework of this assessment. (Taking into consideration the need to highlight the fact that this methodology intended to give an overview of thyme value chain in targeted locations and its findings cannot be generalized on the national level).

- ❖ **Literature/Documentation review:** That included a comprehensive review of all available literature related to the assignment like the value chain analysis reports published on the national and international levels, PCBS data related to thyme production, consumption, and cultivated areas. The literature review provided valuable inputs to develop the assessment tools and enriched the analysis, and facilitated the identification of constraints and opportunities.
- ❖ **Semi-Structured Interviews (SSIs):** Several interviews were conducted during the study and covered a group of market actors, that includes the followings:
  - ✚ **Group interviews with female beneficiaries ‘women:** That includes interviews with women in the targeted areas who engage in the production of thyme as agro-based income generating project, around 40 women participated in these interviews.
  - ✚ **In-depth interviews with thyme farmers:** To develop a thorough understanding of the constraints facing thyme farmers and other important issues, five in-depth interviews were conducted with thyme farmers who have extended experience in thyme production.

- ✦ **Interviews with CBOs:** These interviews covered the three CBOs targeted by the project which namely include; Al-Nama' Women Association, KoforLaqif Women Association, and JeenSafout Women Group. These interviews were organized in order to analyze their roles and identify potential interventions needed to leverage their role and build their capacity to support women and small scale farmers.
- ✦ **In-depth, Semi-Structured Interviews with traders:** Three in-depth interviews were conducted with thyme traders to have an overview of the thyme value chain.

## 2. OVERVIEW OF THE THYME SECTOR

*Za'tar* is one of the most popular traditional foods in Palestine. A typical Palestinian day may begin as it has for centuries with the traditional morning meal of *Zeitou Za'tar* (olive oil and crushed thyme) and may end with it too. *Za'tar* is used both as an herb and as a condiment: a mixture of ground thyme, sumac and toasted sesame seeds. It grows in the Mediterranean Basin countries over the slightly warm hills and mountains and has a strong smell and taste. *Za'tar* has been used along with other spiced salts as a staple in Middle Eastern recipes from medieval times to the present. It is used as a seasoning for meats and vegetables and is regularly eaten with olive oil and cheese in Palestine<sup>1</sup>.

Thyme; referred to as *Za'atar* in Palestine, is an aromatic plant with increasing importance in food processing, and it's one of those used in folk medicine. Volatile oil constituents of thyme are used as antiseptic, antioxidant, insecticidal, preservative and anesthetic. These properties of thyme due to their biologically active substances, such as thymol, carvacrol, linalool, geraniol and other volatiles in the essential oil<sup>2</sup>.

It is estimated that an area of 2,500 dunums<sup>3</sup> is cultivated with thyme in the West Bank, of this total area around 2,000 dunums are located in Qalqilya and Tulkarem governorates. Total annual production is estimated to be around 11,000 metric tons (fresh thyme) with a production value of US\$ 14 million around 90% of thyme production is contributed by irrigated fields. Production period usually extends over the year for irrigated fields (usually harvested between 4-5 times each year) while the production in rain-fed plots extends for six months per year and usually harvested twice a year.

Areas targeted by the project (especially Falamyeh and JeenSafout) have an area of 750 dunums cultivated with thyme, with a number of farmers that estimated to be anywhere between 450-500 farmers. A large proportion (Around 60%) of these farmers are women and small-scale farmers. The table below provides more details in that regard.

<sup>1</sup> OXFAM GB- Improved access to market for small scale farmers

<sup>2</sup> IBID

<sup>3</sup> 1 dunum = 0.247 acres. PCBS Agriculture Census 2010 (last updated figures)

**Table 1: Cultivated areas with thyme and number of farmers**

Location	Area cultivated with thyme ( Dunum)	Number of farmers	Estimated Number of small farmers and women
West Bank	2,500	800	550
Targeted areas	750	500	350

More specifically, it estimated that there are around 250 dunums cultivated with rain-fed thyme in Jensafout with annual production that estimated at 200 metric tons of fresh thyme, irrigated thyme on the other hand is cultivated in some 500 dunums that concentrated in Falamyah with annual production that estimated at 1,650metric tons. More details in that regard can be shown in the table below.

**Table 2: Area of land cultivated with thyme in the targeted areas and the estimated annual production**

Cropping patterns	Area cultivated with thyme ( Dunum)	Estimated annual production (Tons as fresh product)	Estimated annual production (Tons as dried product)	Estimated annual production (Tons as processed product)
Rain-fed	250	200	35	88
Irrigated	500	1,650	235	588
<b>Total</b>	<b>750</b>	<b>1,850</b>	<b>270</b>	<b>676</b>

### **A.SUBSECTOR RELEVANCE TO WOMEN.**

Based on the research findings, it's estimated that the number of women who cultivate thyme in small areas or in their home gardens is anywhere between 250-300 women in the targeted localities, the vast majority of them are located in Falamyeh and JeenSafout. Thyme has an important contribution to the household diet, and also serves to generate income for women, it also a feasible economic activity for women, and theoretically, it accessible for all women even for those whose household responsibilities make it difficult for them to leave their houses for long hours, moreover, women's role in thyme sub-sector is well recognized and socially accepted. Therefore, the thyme sub-sector offers concrete entry points for female economic empowerment and agency.

During field research, women indicated that thyme cultivation and production is strategic to their households as it helps them to cope with economic constraints and shocks through the sale of thyme or guaranteed access to thyme for household consumption. Despite the additional burden (on top of their domestic chores) that women endure in

thyme production, women feel positively about this type of work due to the income which they generate and cannot secure otherwise

Interviews with women producers indicated they consider thyme to be their key domain of activity where they keep and control income made from the sale of thyme. Moreover, during field interviews women indicated that income is the best thing about cultivating thyme. Therefore, it is expected that an increase in household thyme sales (through increased volume and value) will directly increase cash-in-hand for poor women. This, in turn will secure greater economic choice and likely influence in household decision making. Upon starting to earn income, they started to be listened to by their husbands and they feel that their contribution to the household spending secured a more influential role.

Within small-scale farmers' households, women play a significant role in production including harvesting; fertilizing, cleaning, planting seedlings, and weeding control and accordingly they have practical knowledge and insights on farming, moreover, women participate in other aspects of the value chain especially marketing and procurement of inputs. When it comes to Thyme processing, it was noticed that women shoulder the burden of most processing activities. The table below provides more details on the role of men and women in thyme production.

**Table 3: Role of men and women in farming activities in thyme producing households**

Role	Main Responsibility
Decision on inputs and fertilizers, and what to buy	Male /female
Controls income from thyme	Female
Weeding	Female
Fertilizing	Male /female
Land plowing	Male
Seedling planting	Female
Pest management	Female
Watering	Female
Harvesting	Female
Processing/value addition	Female
Marketing	Male /female
Future planning and decision making	Male /female
Substitution choices	Male /female

## **B. OPPORTUNITY FOR SUB-SECTOR UPGRADING/GROWTH**

Based on the estimated area cultivated with thyme and the average land productivity, the annual production of fresh thyme was around 11,000 Tons in 2016. The local demand for

thyme in 2016 was 5,000 Tones. Close to 60% of the total annual production (6,000 Tons) was exported mainly to Jordan, Saudi Arabia, and Israel. Small quantities were also exported to European markets.

**Table4: Thyme production, demand and trade in West Bank in 2016**

	Local Production	Domestic Demand	Exports
Volume in 2016 (tonnes) in West Bank	11,000	4,400	6,600
Volume in 2016 (tonnes) in targeted areas	1,850	1,100	750

According to PCBS<sup>4</sup>, Per capita annual consumption of thyme was 0.65 kilograms in 2011, with decreasing trend since 2004 when the per capita consumption was 0.82 kilograms, which indicates a decrease of more than 26% during that period. A significant difference was also noticed between the West Bank and the Gaza Strip in the per capita consumption of thyme during that period.

The export market for Palestinian thyme has been growing at a rapid pace in the last three years. It is estimated that close to 60% of thyme production is currently exported to regional markets. Dried thyme forms more than 98% of the exported quantities to Israel and to regional Arab countries, and around 70 percent of the total thyme quantities consumed in the local markets. Market actors view the regional export market as providing the biggest opportunity for the growth of the thyme market, and consider the high quality and good prices of Palestinian thyme as the key leverage points in this regard. This widely shared view is mainly driven by the supply gap created by the inability of Syrian farmers to grow and export thyme as a result of the crisis in the country.

Thyme farmers in targeted locations are benefiting from the growing demand for Palestinians thyme in the regional markets, that's especially true for large scale farmers who produce large quantities of thyme and deal directly with large traders and exporting companies to export their thymes to regional markets, however, small scale farmers and women still not able to benefit from the growing demand in the export market which mainly related to the small quantities they produce that make exporters not interested to deal with them because they prefer to deal with a limited number of large scale farmers to secure the thyme they need for the export market. To overcome this problem, small thyme producer should be encouraged to join forces and work together under the umbrella of their CBOs in a way that enable them to seize the opportunity in the export market.

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<sup>4</sup>PCBS, consumption and expenditure survey.

While it can be challenging to estimate changes in future demand due to political and economic instability, the trends of increasing per capita consumption and a growing population (2.7%) in addition to the opportunities in regional markets indicate that demand for thyme products is going to increase anywhere from 20-25% over the next five years. The estimated increase in demand will provide benefits for both large scale and small scale farmers, however, unless small scale farmers been able to join forces and cooperate with each other, small-scale farmers and women will only benefit from the growing demand in the local market while large scale farmers will continue to reap the benefits of the growing demand for Palestinian thyme in both local and regional markets

### C. FEASIBILITY OF THYME BUSINESS

Cost structure and revenues in thyme production vary among producers, depending on size, production techniques, climate, fertilization and irrigation management and water quality. The assessment provides an estimate of the costs and returns associated with thyme production for both rain-fed and irrigated thyme cultivated in open fields, and a brief analysis of the profitability of production for each at farm gate prices. Our sample budget based on a three-year average marketable yield 2.2 tons for irrigated thyme, and 600 kilograms in rain-fed thyme as fresh product per dunum, and on estimates of the current average farm gate price of NIS 4 per kg for irrigated fields and a gate price of NIS 7 and per kg for rain-fed fields.

The budget does not make any provision for establishment costs, but seedling replacement and depreciation costs are factored into the analysis. In calculating the net returns. Although the assumptions made in computing the costs reflect the practices of the thyme growers in the targeted locations, the information provided here is intended only as a guide to facilitate (i) estimating the financial requirements of maintaining thyme groves; and, later, (ii) analyzing profitability of various market channels. Data used in the analysis were obtained from interviews with growers and verified with input providers and traders

**Table 5: Sample budget for fresh thyme production in the targeted areas (rain-fed and irrigated thyme)**

ITEM	Irrigated (80-85% of cultivated area)		Rain-fed (15-20% of total cultivated area)	
	Quantity (kg)	Value per kg (NIS/kg)	Quantity (kg)	Value per kg (NIS/kg)
REVENUE	<b>Fresh</b>	<b>Fresh</b>	<b>Fresh</b>	<b>Fresh</b>
Yield (kg/dunum)	<b>2,200</b>	<b>4</b>	<b>600</b>	<b>7</b>
<b>Farm gate price</b>				
<b>Total Revenue</b>	<b>8,800</b>		<b>4,200</b>	
OPERATING COSTS				
Labour	700		350	

ITEM	Irrigated (80-85% of cultivated area)		Rain-fed (15-20% of total cultivated area)	
	Quantity (kg)	Value per kg (NIS/kg)	Quantity (kg)	Value per kg (NIS/kg)
Fertilizers, insecticides...	300		200	
Seedling replacement	100		50	
Irrigation	700		0	
Maintenance/others	150		100	
<b>Total Operating Cost</b>	<b>1,950</b>		<b>700</b>	
<b>FIXED COSTS</b>				
Depreciation on farm equipment	100		50	
Land utilization cost (economic cost)	800		400	
Supervision (by farmer, usually unaccounted)	300		150	
<b>Total Fixed Cost</b>	<b>1,200</b>		<b>600</b>	
<b>Total Pre-Harvest Cost</b>	<b>3,150</b>		<b>1,300</b>	
<b>HARVEST COSTS</b>				
Picking costs	280		140	
Crates /bales costs	60		30	
<b>Total Harvest Costs</b>	<b>340</b>		<b>170</b>	
<b>Total Cost</b>	<b>3,490</b>		<b>1,470</b>	
Estimated Net Returns	<b>5,310</b>		<b>2,730</b>	

Based on the sample budget presented in the preceding table, the total pre-harvest cost is estimated to be NIS 3,150 per dunum for irrigated thyme and NIS 1,300 per dunum for rain-fed thyme. Of the total pre-harvest cost, operating costs are NIS 1,950 per dunum for irrigated thyme and NIS 700 per dunum for rain-fed thyme. Fixed costs are estimated at NIS 1,200 per dunum for irrigated thyme and 600 NIS for rain-fed thyme. The main operating costs are for labour which forms around 45% of the total operating cost, irrigation and fertilizers, fungicides, and herbicides, account for 30% and 15% respectively.

Subtracting the total cost of production from the total revenue has the potential of giving a net return to the growers of about NIS 5,310 per dunum for irrigated fields, and an NIS 2,730 per dunum for rain-fed fields (Table 5). This represents a return at farm gate (discounting marketing costs) of 152% on the total cost of producing irrigated thyme, and 185% on the total cost of producing rain-fed Thyme.

In addition to the fresh thyme, small farmer can produce 250 kg of dried thyme per dunum for irrigated field and 150 kg of dried thyme per dunum for rain-fed fields, this puts the total returns of small farmers at NIS 6,300 per dunum for irrigated fields and NIS 3,695 per dunum for rain-fed fields.

**When considering the conversion rates for producing dried thyme<sup>5</sup>, it becomes clear that return on selling fresh thyme is substantially higher than on selling dried thyme and its most feasible (financially and resource wise, including time and effort).**

Where the return on selling dried thyme range between 36% and 41% while the return on selling fresh thyme range between 150-185%. This indicated to the fact that farmers relate to thyme drying as the quickest method of preserving the herb to last for long periods, and to help them avoid the fluctuation in market prices, and it's not about getting higher margins when adding value to their products. On the other hand, the demand for fresh and dried thyme is highly dependent on seasons, as fresh thyme usually marketed in winter while dried thyme is usually marketed in summer. This said, if small farmers been able to increase the proportion of fresh thyme of their overall sales will contribute to increase their income.

**Table 6: Sample budget for dried thyme production in the targeted areas (rain-fed and irrigated thyme)**

ITEM	Quantity (kg)	Value per kg (NIS/kg)	Quantity (kg)	Value per kg (NIS/kg)
REVENUE	<b>Dried</b>	<b>Dried</b>	<b>Dried</b>	<b>Dried</b>
Yield (kg/dunum)	<b>250</b>	<b>15</b>	<b>150</b>	<b>22</b>
<b>Farm gate price</b>				
<b>Total Revenue</b>	<b>3,750</b>		<b>3,300</b>	
Cost of fresh thyme ( to be dried) Conversion rations 1;7 for irrigated thyme, 1: 6 for rain-fed thyme	<b>2,600</b>		<b>2,205</b>	
Drying cost	<b>160</b>		<b>130</b>	
<b>Total Cost</b>	<b>2,760</b>		<b>2,335</b>	
<b>Estimated net return</b>	<b>990</b>		<b>965</b>	

Fresh and dried thyme constitute around 95-97% of the annual thyme production of small farmers, the remaining proportion which estimated at 3% goes to secondary processing where a large number of producers engaged in secondary processing to maximize returns. This process known for heavy involvement of women, and it is also known for depending on manual, labour intensive operations using small grinders. Based on the discussion with women producers the return on selling mixed-ready to eat thyme usually range between 80-100%. It was also noticed that Final products suffer from poor packaging, where thyme is often sold in nylon bags without any form of labeling, and it also sold informally to friends and relatives.

<sup>5</sup>Conversion rations 1;7 for irrigated thyme, 1: 6 for rain-fed thyme

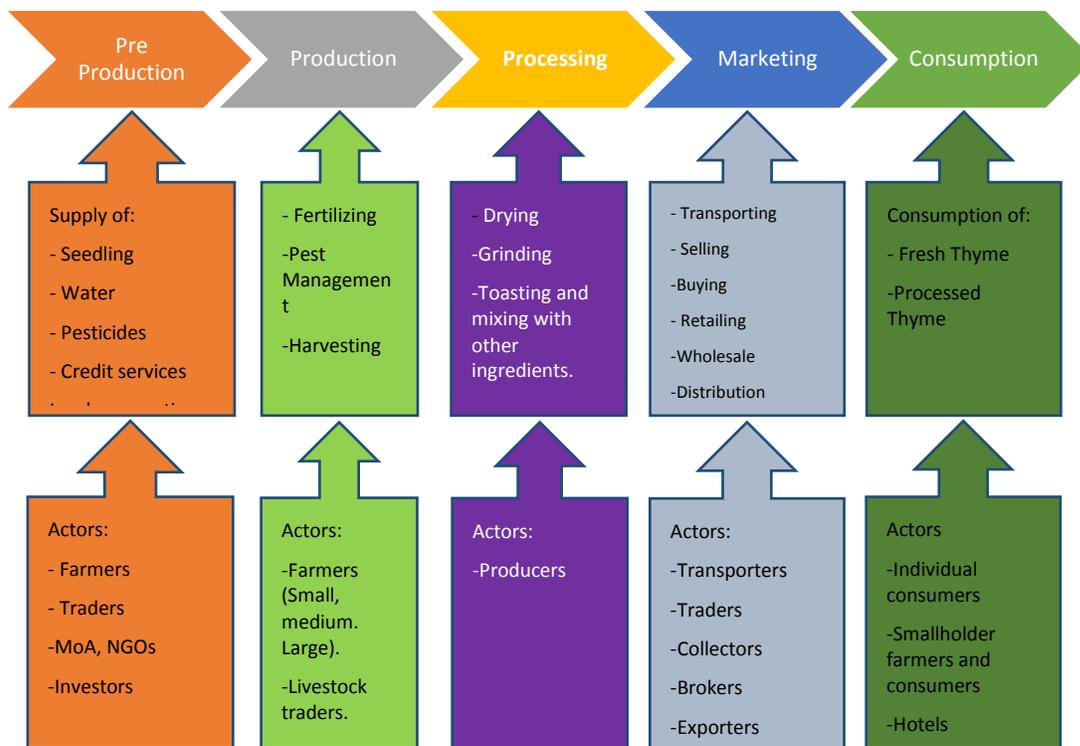
### 3. MARKET SYSTEM DESCRIPTION

#### A. CORE FUNCTIONS OF THYME VALUE CHAIN

Core functions in the thyme value chain in the West Bank and in the targeted locations start with the pre-production phase, such as the supply of inputs (land preparation, planting Seedling, water, pesticides, etc,..) and weeding, followed by the production phase, which includes crop management includes weeding fertilizing, pest management and harvesting. The processing includes drying, grinding, toasting and mixing, while the marketing phase includes transporting, selling, distributing and retailing. The final phase includes the consumption of thyme.

The thyme value chain includes actors in the targeted locations such as input suppliers, producers, processors, traders and consumers. At one end are the producers – the farmers, who grow, harvest and sell the thyme. At the other end are consumers who consume the final products. In the middle are many individuals and firms, each performing one or more step in the chain: transporting, processing, storing, selling, buying, packaging, checking, monitoring and making decisions. The value chain also includes a range of services needed including technical support (extension), business enabling and financial services, innovation and communication, and information brokering. The value chain actors and service providers interact in different ways at local, national and international levels. The diagram below summarizes the core functions and key actors along the value chain.

**Figure 1: Core functions in thyme value chain, activities and actors in targeted locations**



## B. INPUTS AND SERVICES

**Seedlings:** There are more than ten nurseries in the West Bank that sell thyme seedlings to farmers, the majority of which are located in the northern governorates of the West Bank where most thyme cultivation takes place. Thyme farmers in targeted locations usually deal with 3-5 nurseries located in Nablus and Qalqilya to procure their needs of seedlings and they pay anywhere between NIS 100 -120 per 1000 seedling. Discounts of 10-15% are offered on large orders that usually demanded by large thyme producers. Accordingly, women and small farmers who cultivate thyme in their home gardens don't usually enjoy this price discount.

**Fertilizers, herbicides and pesticides:** Thyme farmers in the targeted areas usually get their inputs directly from input retailers in Nablus and Qalqilya cities. While physical access to input shops and availability of inputs for thyme production are generally not problematic, the quality of available inputs as describe by most farmers as being low due to adulteration practices, insufficient regulatory standards, and lack of government enforcement of existing standards. Farmers, particularly women, report not having adequate knowledge in-terms of application of chemicals and fertilizers. The farmers seek this advice from the shop owners/operators; however they themselves lack proper knowledge to offer this advice.

**Extension services:**Thyme producers –like other farmers- rely mainly on the Ministry of Agriculture and NGOs for technical advice on management of thyme. Women involved in thyme production and processing felt that extension services provided by the Ministry of Agriculture had become less accessible with time following the shift in extension approach from supply driven to demand driven.

ESDC, through the “Enhancing the right to livelihood is seam zone and area C of Qalqiliya governorate” project contributed to mitigate problems facing beneficiaries women and facilitate their access to agricultural inputs needed to cultivate thyme, the project also guided and encouraged women to adopt best farming practices through extension services in a way that improved their business management and reduced their production cost. This said, scores of small-scale thyme farmers in targeted areas still need more support and guidance to improve their farming practices and facilitate their access to agricultural inputs.

### C.SUPPORTING FUNCTIONS

**Credit Services:** Access to finance is very limited for small producers (for males and females) in the West Bank and in the targeted location, but it can be much more difficult for women due to their lack of asset ownership that can be used as collateral. On the supply side, there is little availability of finance from local development or financial institutions due to poor product development and perceptions about the risks of agricultural lending. Moreover, large banks are not interested in dealing with small producers due to small loan sizes, absence of collateral and high repayment risk. The main source of credit available for thyme producers comes from inputs supplier who usually sell their products on credit and charge farmers higher prices in return. Women and small producers are also discouraged from dealing with commercial banks due to the unpredictability of sales and prices, and because they are hesitate to take on complex loans.

Cooperatives/CBOs in targeted locations do not play any significant role in providing agricultural credit to farmers (males and females), and it was also noticed that were no cooperatives that sell agriculture inputs to farmers on credit in addition to limited number of saving and credit cooperatives that provide small loans for agriculture purposes.

**Market information:** Farmers and women obtain market information mainly from middlemen and traders; they also get information from representatives of thyme processing companies to whom they supply. Information shared often focuses on the sizes required by the buyers, prices and changes in market demand, although there were complaints from some farmers concerning the level of transparency among the traders, particularly when it comes to prices of their thyme at end markets and future demand prospects.

Because farmers rely on the buyers to provide them with market information, they are usually price takers and do not take part in price negotiations with the buyers. This said, traders interviewed complained that most farmers with whom they deal often fail to use the information provided to them to improve production and maintain competitiveness, particularly in export markets.

**Business Development Services:** Most thyme farmers do not use business development services, and part of them considers these services as an unnecessary luxury. For most of them, the concept of business development service is not entirely clear, and very few of the farmers interviewed showed interest in learning about business development services.

## **D.PRODUCTION**

Thyme cultivated in targeted locations by some 450 farmers who hold around 750 dunums of land, of whom, close to 60% are small small-scale producers. Total annual production is estimated at 1,850 tons; close to half of which is produced by small-scale farmers with land holdings of less than 2 dunums.

## **E.STORAGE**

Farmers including women usually dry the thyme and store it in their greenhouses or in their stores while waiting to be sold to the buyers. Such places of storage are inadequate as they degrade the thyme's oil content, thereby negatively affect its aromatic and taste characteristics. For green thyme storage is not a major problem among farmers because, in most cases, the crop is sold on the same day they are harvested and therefore farmers do not consider storage as a priority.

## **F.PROCESSING**

Women play a central role in thyme post-harvest activities which usually include cleaning, bundling, drying, and stripping leaves from the stalks, these activities usually conducted at the household level where most family members are involved in the process. Farmers revert to drying thyme not only to meet the market demand or traders orders, but also because it is the quickest method of preserving the herb and to last for long periods, it also helps farmers maintain their products in the case of price fluctuation and assist them to get decent prices for their produces.

During interviews with thyme farmers and beneficiary women, it was noticed that a large proportion of them follow wrong practices when drying the thyme by placing the fresh thyme under the sun which negatively affects both the aromatic characteristics of the plant and reduces the levels of its active ingredient (thymol) this also could contaminate the product with birds/animal and insects residues and increase potential of microbial contamination., thereby affecting the taste of the final product. While most farmers were aware that the best way to dry the thyme is to put it in the shadow or use thyme

dehydration machines, they explained their poor practices to the lack of shaded areas needed to dry the thyme.

## G.MARKET CHANNELS

Each type of thyme (fresh and dry) has its own market channels, when it's come to green thyme it was found that majority thyme farmers (large and small) sell their produce to thyme traders in one of two ways: The first involves traders buying already box-packed fresh thyme at farm gate after a visual inspection. In such transaction, the buyer bares the price of the boxes. It is estimated that 75-85% of fresh thyme purchased by traders at farm gate is sold in central markets. The remaining 15-25% are sold by traders to middlemen, local bakeries, retailers, and other buyers.

The second (which only applicable to large farmers) involves traders buying the entire crop off the farmers before harvest. In such cases, the buyer and farmer negotiate and agree on a price, and the buyer assumes the responsibility for harvesting, packaging, transporting, and marketing the thyme.

Small proportion of farmers on the other hand sells their produce directly to the wholesale or to the retail markets using their own vehicles to transport the thyme from their own farms. Direct sales to customers on the other hand constitute the smallest proportion of fresh thyme sales which usually don't exceed 1%.

### Market channels for dried (processed) thyme

**Wholesalers and exports companies:** It is estimated that around 55-65% percent of the total dried thyme quantities is directed toward wholesalers and exporting companies. In Falamyia alone we found a large trader and exporter ho procure anywhere between 250-300 ton of dried thyme and export it to Jordan. Traders/companies transport the dried thyme with their own trucks from the farm gate to their own facilities where they perform variable primary processing activities (sifting and repacking), and then export it to three main directions: Israel, Jordan and Arab Gulf Region.

**Local thyme processors (companies):** Anywhere between 35-45% of the dried thyme goes to local food processing companies and specialized spice and herb retailers, who use it as an input for their Za'tar mixture products. While it was not possible to map all food processing companies with Za'tar processing operations due to the fact that a large number of herb and spice shops also produce and market a variety of Za'tar mixtures, it is estimated that some 15 local food processing companies and some 50-70 spice retailers are active in the thyme processing and value addition.

**Retailers:** only minor percentages of farmers (1-3%) of the thyme farmers deal directly with retailers, that's related to the dependence of thyme farmers on local companies and wholesalers to sell their produce.

Table 7: Prices and estimated returns for farmers, by type of thyme variety and buyer\*

Buyer	Irrigated						Rain-fed	
	Fresh		Dried		Fresh		Dried	
	Average Price (NIS/Kg)	Estimated return (NIS/Kg)						
Middlemen/Wholesaler	4	2.5	15	4	7	4.5	22	6.5
Processing companies	3.8	2.3	14.8	3.5	6.5	4	21.5	6
Retailers	4.2	2.7	15.2	4.5	7.2	4.7	22.3	6.8
Direct customers	4.5	3	15.5	4.5	7.5	5	22.5	7

\* Calculations are based on farmer interviews and sample budget in Tables 5&6

From the above table we conclude that the direct sales to customer offers the highest profit margins for farmers, followed by sales to retailers and sales to wholesalers and middlemen.

#### 4. KEY TRENDS: SUB-SECTOR DYNAMICS AND DRIVING FORCES.

The key trends that are driving the way that the thyme sub-sector is developing in the oPt and in the targeted areas have been alluded to above. These are:

- ✚ Thyme sub-sector in the oPt operates within a constrained environment marked by harsh restrictions on access to the land, water, technology, energy, agricultural inputs, and infrastructure. These are critical factors of production that directly affect the competitiveness of the Palestinian farmers and products. This also impacts the opportunities of growth and limits the long-term investments in the high potential commodities, including thyme products.
- ✚ There is a growing demand for thyme in the local market driven by customer awareness of the consumption of thyme as part of a healthy diet. There is also specific demand for chemical and preservative-free products, especially those produced by women. Moreover, there are a growing number of people in urban centers willing to pay higher prices for healthy food.
- ✚ There is also a growing preference for local products (as opposed to imports), which means that in the future, thyme are is to remain protected from import competition. Producers should look to capitalize on this long-term trend.

- ✦ There is recent evidence of more SMEs, cooperatives and women's groups entering into thyme production.
- ✦ More marketing companies are tapping into the local market and establishing new selling points to market and selling thyme products produced traditionally by women (like Thimar, Rozana, Bas Baladi, etc) who also adopt different business models in supply and production.
- ✦ A growing number of women especially those who head their households or who live in poor families are cultivating thyme in their home gardens as a mean to secure additional income for their families and improve their dietary diversity, this was also supported by the fact that thyme is a resilient crop that can endure drought, poor soil and other harsh conditions.

## 5. CONSTRAINTS ANALYSIS

This chapter summarizes main constraints facing small thyme farmers and women in the targeted localities which affect their ability to manage profitable businesses and secure decent income for their households.

- ✚ **Small-scale producers' exposure to markets and its dynamics is limited:** Most of thyme producers had little exposure to markets and consumer preference, though they have learned a lot in recent years through practical experience. Many women would rather engage in processing/ production and leave marketing function to someone else. The three CBOs in targeted locations still not doing well to link small farmers and women to market, inform them about market needs, or support them to sell their products. While small amounts of thyme were actually marketed through two CBOs (KuforLaqif and Al- Nama') who also been able to secure a marketing line through a number of traders, these CBOs still not able to open direct channels with large super markets, food chains and marketing companies to secure regular and annual marketing contracts in a way that support farmer and small women to market their thyme in feasible prices.
- ✚ **Limited access to high end markets:** Women and small scale farmers have limited access to the markets in urban centers and to regional markets due to the poor contact and relations with marketing stakeholders. They have limited access to the information needed to understand consumer preferences before producing thyme products, they are also constrained by lack of marketing skills, technical skills, linkages and access to distribution channels. While targeted CBOs supposed to facilitate women and small scale farmer access to high end markets they still not assuming that role due to the poor contact and relations with marketing stakeholders they are also constrained by lack of marketing skills, technical skills, linkages and access to distribution channels.
- ✚ **Processing constraints:** Targeted CBOs, traders and SME thyme processors usually complain about the quality of products they buy from farmers. They specifically mention the problem of not maintaining the colour, smell and taste of products, and a lack of product consistency. This is related to a lack of technical and managerial skills among farmers, low access to proper technology, the absence of standardized quality control systems, and reliance on out-of-date manual equipment. During the interviews with targeted CBOs it was noticed that they don't have a clear idea about the right quantity and quality of each ingredient (Especially thyme and sesame) that should be used to produce high quality products which affected the quality of their final products.

- ✚ **Access to finance:** Access to capital is the main constraint facing farmers who want to improve their farm productivity and investment in their businesses, during interviews most women and small-scale farmers highlighted the need for shaded places or greenhouses to dry their thyme indicating that the access to capital is the main constraint facing them to do that.
  
- ✚ **Inadequate extension services:** Generally speaking, extension services especially for small scale farmers suffer from lack of human and financial extension resources at the village level; poor operational support; lack of applied training and incentives for the extension workers; lack of farmer input into extension service design, training, or support. The extension services that are currently offered are largely inadequate in terms of frequency and content. Moreover, extension is not aligned with market demand, and tends to be of general nature. Farmers need routine extension services to diagnose pests and diseases to avoid losses. They also need support from extension workers to test the quality of inputs to protect them from bad quality products.
  
- ✚ **Limited access to affordable water sources:** This problem is especially facing thyme farmers in Jensafout where water is either expensive or not regularly available during summer, because of that, farmers in Jensafout completely depend on rain water to irrigate their thyme which negatively affect the productivity of thyme and the overall farmer's business.

## 6. OPPORTUNITIES AND SUGGESTED RECOMMENDATIONS

**Capacitate women’s cooperatives/CBOs to serve women and men small-scale thyme producer through enhanced value-adding services and marketing:** Within the framework of the project "Enhancing the right to livelihood in seam zone and area C of Qalqiliya governorate", ESDC has contributed to improving the institutional and business capacity of three CBOs in the targeted locations, this was done by providing these CBOs with a group of productive assets (Thyme grinder, packaging machines, toasters, etc..) in addition to training and capacity building courses that targeted the board members of these CBOs.

Despite this important achievement, it was noticed that more still needed to capacitate the three CBOs and improve their ability to serve as hub for women and small-scale thyme farmers in a way that strengthen their market position and assist them to improve their products quality and consistency as well as facilitate stronger marketing linkages between farmers on one end and traders and marketing companies on the other. More specifically, it’s proposed to capacitate the CBOs and thyme producers in three areas which includes, marketing, product development and support women to sustain their plots.

### **Support CBOs to improve their ability to market thyme products.**

It’s advised to hire a marketing specialist to build the marketing capacity of targeted CBOs and promote their cooperation in production and marketing, more specifically, the marketing specialist with support of the project management can build the capacity of the targeted CBOs in the following areas:

- ✚ **Capacitate the CBOs to market farmer’s products and improve their access to market information:** Targeted CBOs can be guided to establish contacts with large food stores and large supermarkets to sell thyme products, they also can be assisted to open channels with luxury restaurants and hotels to market thyme. Targeted CBOs could be further linked with companies like Al-Reef, Canaan Fair, and NFC that have social enterprise characteristics, to access and establish more stable market channels and quality standards for processed food products by women.
- ✚ Support the CBOs to engage with women’s NGOs to facilitate a larger network of women’s CBOs for broader economic as well as social empowerment. YWCA and Business Women’s Forum have a greater understanding about business orientation and they could be provided with strategic support to create a greater economy of scale, instill market orientation among women’s groups, and explore

the potential to facilitate common brand, packaging, and quality standards to meet market demand.

- ✚ **Support targeted CBOs to demonstrate the unique attributes of their thyme products:** Thyme produced in targeted locations have unique attributes that should be highlighted and to be well-known by customers, an awareness and promotion campaigns can be introduced to exhibit the unique attributes of thyme focusing on the special attributes the organic cultivation of thyme and the use of high quality ingredients like pure olive oil and baladi sesame.
  
- ✚ **Support Jensaout CBO to brand the rain-Fed thyme:** Rain-fed thyme has unique attributes especially when it's come to taste, flavor, and aroma, however, these unique attributes are not well utilized by producers, accordingly, the project can support Jensaout CBO to develop a brand for the rain-fed thyme produced in the locality which will help to differentiate the rain-fed thyme from the irrigated thyme in a way that support both the CBO and the farmers to get higher prices for their products.
  
- ✚ **Facilitate CBOs access to export market:** As indicated earlier that small farmers access to export market was constrained by their limited ability to produce large quantities of thyme, accordingly, it important to support the CBOs to organize small farmers to sell their production through the CBOs and connect the CBOs to marketing companies or to tap directly into the regional markets, this should go hand in hand with guiding targeted CBOs through the best practices in production processes to produce a high quality products and adhere to quality standards needed in regional and international markets.

### **Support the targeted CBOs to develop their products and improve its quality.**

- ✚ Develop a unified package and brand for the three CBOS in a way that promote the cooperation between the CBOs, adopt a unified price for their products and facilitate the bulk marketing of the CBOs products.
  
- ✚ **Guide the CBOs through the best practices in thyme processing:** As indicated in the constraints section, targeted CBOs don't have a clear idea about the right quantity and quality of each ingredient (Especially thyme and sesame) that should be used to produce high quality products, so it's important to guide targeted CBOs through the production processes to produce a high quality products and to adopt best practices in processing. Equipping the CBOs with more productive assets: ( including the provision of thyme driers for Haja and Jensaout CBO). Will enable these organizations to control the quality of thyme

during the drying process and to produce more consistent and high -quality products.

- ✚ **Support farmers to dry their fresh thyme under shaded areas:** Drying thyme under the sun and in open areas affects negatively both the aromatic characteristics of the plant and reduces the levels of its active ingredient (thymol), it also expose the thyme to the wildlife and to the contamination by animals, thereby affecting the taste and the quality of the final product. Based on the discussion with experts it was indicated that a greenhouse that extends over an area on 1,000 m<sup>2</sup> can serve a group of 7-10 small farmers to dry their fresh thyme. Hence, it important to promote the cooperation between small farmers and support them to establish greenhouses as a mean to improve the quality of their products.
- ✚ **Increase the proportion of green thyme in the overall farmer's sale:** Fresh thyme provides much higher returns to farmers than dried thyme, so it important to promoted and increase the sales of fresh thyme to increase farm revenue. This should be done through improved extension, demonstration and facilitation of trade linkages between men and women small-scale producers and buyers of fresh thyme. Particular focus should be given to promoting linkages between institutional buyers of fresh thyme, such as restaurants, traditional pastry shops, and retailers and small-scale producers.
- ✚ **Enable farmers to sell their products through marketing channels that offers the highest profit margins:** This comes with great challenge considering the fact that wholesales, middlemen and thyme processing companies are the main players in the market, however, supporting the CBOs to establish retail outlets in the major city centers will be a good a way to reach out direct customers and sell thyme in higher prices, improving CBOs linkages with restaurants, hotels, and pastry shops, would also be a good way to reach out high end markets.

### **Improve women beneficiaries' ability to sustain their plots.**

One of project's concerns is poor women ability to sustain their thyme plots after the project termination considering the fact that poor women advances their households basic needs over the investment in their thyme plots , accordingly, it's important to improve women access to finance which can be done by replicating the experience of saving and loan at the village scheme (VSLA) that was implemented by the ESDC in other locations, doing this will contribute to enabling women to save money needed to develop their business and sustain their plots. It's also important to guide women through the best practices in thyme production which can be done by improving their access to regular

extension and by the development of guidelines to promote the best practices of thyme cultivation and production which expected also to improve the production yields for women producers and increase their income.

**In addition to the above interventions, its also advised to promote the following practices among women and small-scale farmers.**

- ✚ **Promote complementary irrigation among rain-fed farmers:** Complementary irrigation can increase thyme productivity and protect it in hot and drying weather, and to do that, it is important to provide farmers with the means to install small water tanks and simple irrigation networks in their plots to be used during dry seasons. Experts estimated that anywhere between 20-30 cubic meters are needed for each dunum to provide the complementary irrigation with a cost that ranges between NIS 80-120, this will contribute to increase thyme productivity by 20% and protect the thyme.
  
- ✚ **Land Fencing:** The vast majority of areas cultivated with thyme are open and unprotected areas which make it vulnerable to wildlife. During interviews, most women and small-scale farmers highlighted the wild pig's problem as one of the main problems that affect their lands and damaging their thyme. To solve this problem, it's recommended to cultivate grapevines around farmer's lands in order to protect the land and contribute to increasing its productivity.

## 7. MARKET POTENTIAL

The assessment showcases a significant opportunity for women and small-scale farmers in the subsector to benefit from the growing demand for thyme. In order for small-scale female and male producers to increase sales and margins, investments in product development, diversification, consistency and increased output are required. Such efforts have to be augmented with improved business and farm management to optimize profits.