



SWOT analysis of small ruminants production in West Bank-Palestine

Filistin Batı Şeria'da küçükbaş hayvan üretiminin SWOT analizi

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ABSTRACT

Small ruminant production is important but neglected resource, with multiple goals in West Bank-Palestine. This study aimed to develop the best strategies by exploiting the small ruminant sector opportunities and strengths while neutralizing its threats and avoiding its weaknesses in different production systems through different agro-ecological zones. To minimize the constraints and enhance the development of the small ruminants sub-sector in Palestine, strategies were suggested by using SWOT analysis. Analyzing the strengths and weaknesses of internal factors regarding its connection to resources, capabilities, core competencies and this sector's external factors' opportunities and threats are important not only to enhance the small ruminants' keepers living conditions but also to ameliorate this region's economy. The study was conducted at the Al-thaheryia and Facuo sites. Subsequently, random sampling was done at the identified sites to select the small ruminant rearers who participated in the survey, 170 randomly selected small ruminant rearers targeted, 125 from Al-thaheryia and 45 from Facuo, using the structured interview schedule. The study results point out that improved small ruminant production could be achieved by creating and enabling an environment that alleviates these constraints.

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ÖZ

Küçükbaş hayvan üretimi, Batı Şeria-Filistin'de birden fazla hedefe sahip önemli fakat ihmal edilen kaynaktır. Bu çalışma, küçükbaş hayvan sektörünün, farklı tarım-ekolojik bölgelerinde ve farklı üretim sistemlerinde görülen tehditleri etkisiz hale getirirken ve karşılaşılan zayıflıklardan kaçınırken, sektörünün fırsatlarından ve güçlü yanlarından faydalanarak en iyi stratejileri geliştirmeyi amaçlamıştır. Kısıtlamaları en aza indirmek ve Filistin'deki küçükbaş hayvan alt sektörün gelişimini arttırmak için SWOT analizi kullanılarak stratejiler önerilmiştir. Ekonomik ve doğal kaynaklarla bağlantısı ile ilgili içsel faktörlerin güçlü ve zayıf yanlarının incelenmesi, sektörün üretim olanaklarının, temel rekabet gücünün ve bu sektörün dış faktörlerine ait fırsat ve tehditlerin analiz edilmesi, sadece küçükbaş hayvan yetiştiricilerinin yaşam koşullarını geliştirmek için değil, aynı zamanda bu bölgenin ekonomisini iyileştirmek için de önemlidir. Çalışma Al-thaheryia ve Facuo bölgelerinde gerçekleştirilmiştir. Daha sonra, araştırmaya katılan küçükbaş hayvan yetiştiricilerini seçmek için belirlenen bölgelerde rastgele örnekleme yapılmış, 125 Al-thaheryia ve 45 Facuo bölgesinden olmak üzere rastgele seçilen 170 yetiştirici, yapılandırılmış görüşme programı kullanılarak hedeflenmiştir. Araştırma sonuçları, bu kısıtlamaları hafifleten bir ortam yaratarak ve geliştirerek küçükbaş hayvan üretiminin geliştirilebileceğine işaret etmektedir.

1. Introduction

The importance of the small ruminant sector for farmers are multiple and include, easy to cash assets, means of savings, also a diversification strategy that aims to reduce market and climatic risks and to optimize the use of available resources, in addition of being considered a family business work. Small ruminant rising has traditionally been a key source of income

and food security for thousands of West Bank inhabitants. Within the small ruminant sector, small-scale rearers who maintain herds primarily for household consumption represent an important group, where over half of the owners in the West Bank maintains a herd size fewer than 26 heads, and herding remains the primary source of livelihood for the majority of

these small-scale herders, which on average over 78 percent of household needs (PCBS 2012). Small ruminant sector was facing a crisis due to the rising of input prices, especially fodder cost. This situation led to a change in production systems (from open to the closed system) as a result of land closures. Thus, the low productive local breed usage turned to more productive breed usage. However, the local breed was more tolerant to bad environmental conditions. Long-standing measures that affect small ruminant herding, based on mobility and continuing drought, in addition to the continuously increasing of feed prices, which leads to limitation of investment, and this current decrease in the profitability of 'rearing' has had a strong negative impact, on development and sustainability of this sector (MOA 2014).

In spite of the benefits associated with the small ruminants sector, Palestine suffers structural and chronic constraints reflected by the socioeconomic condition of small ruminant production. Therefore, to understand the overall contribution of small ruminant production in developing national economy, it is important to have an understanding of the different small ruminant production systems and constraints that exist in the West Bank and the producers' objectives from different views. Official statistics may be underestimating the total contribution of the small ruminant sector, by placing emphasis on the production and small ruminant regarding the non-marketed socio-economic functions which small ruminant also assumed. This is because the functions are difficult to value, whereas production and technical aspects of small ruminant rising have been extensively studied and socio-economic structure analyzed, quantified and modeled. But so far very little has been done to get a conceptually better underpinned and more quantitative grasp of the importance of the socioeconomic sector that would explain why small ruminant keepers are willing to keep low producing animals in the herd as perceived by the farmers and technical staff.

The works which attempted to analyze the socioeconomic constraints from small ruminant production, from the perspective of keepers at the SWOT tool framework, and finance some activities based on the costs and return like fattening of lambs, and adoption of new technology rate, percentage and the indicators about refusing the adoption. Then connect this with socioeconomic analysis. Review of existing literature so far does not indicate any study, which has attempted to quantify these benefits and their effect on the profitability of the small-holder small ruminant production systems, by corresponding farmers' circumstances in West Bank. This study aims to fill this gap by focusing on the socioeconomic analysis, functions, and the sector's contribution to the national economy. As a consequence, constraints are ranked in the small ruminant production sector and drawn recommendations and policy implications on the basis of the study results.

2. Materials and Methods

Both quantitative primary data from survey and secondary from different sources and also, qualitative data have been gathered. The study was conducted at the Al-thaheryia and Facuoa sites. Subsequently, random sampling was done at the identified sites to select the small ruminant rearers who participated in the survey, 170 randomly selected small ruminant rearers targeted, 125 from Al-thaheryia and 45 from Facuoa, using the structured interview schedule.

2.1. Areas of the study

The study selected two benchmark sites. The first site is Facuoa in the northeast of the eastern slopes of the West Bank, and the second site is Al-thaheryia in the southern part of West Bank in Palestine. Facuoa in the northern part of West Bank and Al-thaheryia in the southern part, in which SR small-holders classified to semi-open grazing, partial grazing, and zero grazing systems are practiced (MOA 2014).

2.1.1. Facuoa District

Facuoa district is in the North-East part of the West Bank, located about 12 km from the Jenin governorate between mountain area, rise around 420 m above sea level, the district covers approximately 1 010 da, with an estimated human population of 3 650 persons (PCBS 2013). The climate of the study area is dominantly Mediterranean, characterized by long, hot and dry summers and short and moderate winter. Within a few kilometres, going towards the East and South the climate changes dramatically to a more arid and hot region. Facuoa annual rainfall range between 350-450 mm and average yearly temperatures is 18 °C while the humidity is 59%. For the purpose of socioeconomic analysis of the Facuoa site, around 60% of the area is rangelands and most of them controlled by Israel because of military issues, and 30% used for rain-fed agriculture. In Facuoa SR is considered as one of the main sources of income where the SR population is around 2400 heads most of them Awasi and Assaf breeds, with a limited number of goats. Fewer goats are a result of the nature of this area where in general, rearers depend on semi-closed and closed systems, as a result of low range lands availability. Total animal numbers in the village distributed between producers on average are about 26 heads. About the schools and the availability of other associations, the village contain 5 schools and 2 other agricultural associations, with low participant percentage (PCBS 2012).

2.1.2. Al-thaheryia District

Al-thaheryia district is located in the southern part of West Bank with a multidisciplinary eco-agricultural area and gathering 53 villages under of Al-thaheryia control. The district total area is around 13 800 ha⁻¹ with an estimated human population of 3 750 persons. Al-thaheryia located in the southeast of the eastern slopes and covers approximately 27.316 square km (MOA 2013). The average annual rainfall in the area ranges from 70 mm in the east to 300 mm in the west. The climate of the study area is dominantly Mediterranean, characterized by long, hot and dry summers and short and moderate winter, within few kilometres, going towards east and south the climate changes dramatically to a more arid and hot region. This high variability is caused mainly by the elevation, desert & circulation of airstream. In general, at Al-thaheryia, the annual rainfall range between 200-300 mm, and average yearly temperature is 19 °C while the humidity is 59%, the temperature is hot and dry in summer and cold in winter, which almost considered as semi-desert climate. The district has the long rains starting from November to May and range from 220 mm-250 mm. For the purpose of socioeconomic analysis, collecting many villages presented in the study area, around 60% of the area is rangelands and 37% is used for rain-fed agriculture. In Al-thaheryia district SR considered as one of the main sources of income where the SR size near 36000 head. Most of SR are Awasi variety as a result of the nature of this area, these animals

are distributed on 480 keepers in average about 80 head where most farmers depending on a semi-closed system. Also in Al-taheryia there are most governmental offices in addition to 24 schools and 2 agricultural associations with low participant percent, nearly to 3% in these associations (PCBS 2012).

2.2. Method

SWOT is now extensively used independently in public and private business decision-making. This approach helps planners in identifying the factors associated with external opportunities and threats with internal strengths and weaknesses (Aktan 1999). The main purpose of the SWOT analysis is to discover the most favorable match of internal resources, capabilities and core competencies to develop competitive advantage and identify the constraints facing the analyzed sector. Additionally, the suggested strategies can lead to more efficient operations, or influence them to study objectives favor (Friend and Zehle 2009).

2.2.1. SWOT framework components for small ruminant

Small ruminant sector strengths are alternatives and skills of small ruminant keepers, capabilities and core competencies that enable the small ruminant sector to identify and implement its strategies. Different strategies call upon different skills and competencies. Organizational weaknesses are skills and capabilities that do not enable the small ruminant sector to choose and implement strategies, which supports its mission. The sector with its weaknesses should either make investments to improve its weaknesses or change its objectives (Rajasekaran 2009). Therefore external evaluation focuses on the economic, technological, legislative, social, political, ecological and competitive environment to identify opportunities and threats within which the small ruminant sector activities. After, SWOT analysis determines which of the mentioned factors can help the small ruminant sector in accomplishing its objectives, and what obstacles need to be minimized or overcome to achieve desired results (Sav 2014; Sav and Sayin 2015). The small ruminant sector opportunities are events or phenomena in sector environment which, if exploited, can generate above-normal economic performance while threats are events or phenomena in small ruminant sector environment which makes it difficult for the sector to create and maintain above-normal economic performance or even normal economic performance.

3. Results

The SWOT analysis applied on the SR sector in West Bank in Palestine suggests that there are favorable conditions for further development and intensification of SR sector conditions in West Bank, bearing in mind weaknesses and possible threats of the production. In order to maintain the position in SR production and increase the competitiveness on the production, SR sector in West Bank need to ensure horizontal and vertical integration within the production cycle. Horizontal integration enables economies of scale, while vertical integration provides more efficient production systems (input production, manufacturing, technical development, management, packaging, transport, distribution channels, direct sales).

The SR sector has a lot of strong points especially the marketable products, qualified farmers, but still in the small size of production. Also, the threats coming from Israel considered permanent risk, starting from owning land and pastures to the marketing and other production details like water, raw

materials, and electricity. To generate higher profits, achieve higher market share and satisfy the demands of consumers for the SR products, it is essential to maximize cooperation between all the participants of the production and marketing channel; SR producers, processing industries, wholesalers, importers, and retailers. The development of an integrated system is required due to the complexity of the operating conditions, changes in the business environment treats from the competitors, perishability of the dairy products. The strong distribution system, taste, and shape can be a competitive advantage.

The growth, profitability, and competitiveness of the SR sector in West Bank can be enhanced through investment in all stages (production, processing, trade, and marketing). One of the first steps in creating stronger competitiveness of the sector through the integration of SR producers into cooperatives which will strengthen its position on the market and help them establish more trustful links to processors and consumers.

In the primary development of production, new SR breeds need to be provided with local breed (Awasi) crossing with new qualitative breeds. New feed sources suitable at prices and qualities allow producers to increase their profit through higher price of the products. New growing technology, with the use of lactation machines and manufacturing tools; an improved system of grazing; an efficient system in vaccines and treatments, will allow higher quality and profitability of SR production. Infrastructure and transportation of the SR need to be upgraded, particularly in the villages far from the markets. The processed SR products tend to generate the highest profit margins, so the aim of the sector, should be on increasing production within own and modernized facilities and creating its own products. The government should provide support for investments in primary production (machinery, equipment, and storage system), processing industry (improved cold storage and packaging facilities, modernized equipment for processing industry) and provide support for the implementation of the initial standards required. The government needs to encourage opening cooperatives and private distribution centers that will provide uniformity and consistency of the quality products and their continuity and provide information to producers related to the consumer needs and price trends in the green and wholesale market. The government needs to help SR producers producing different and new qualities and tastes of dairy products, in their promotion in the domestic market. Educational programs and professional training provided by extension/marketing services can help SR producers so that they will be able to produce products that meet national standards and acceptance from consumers, which can help them in getting information about domestic market needs.

Better organization and integration of all the sector's participants will facilitate achievement of greater results. Joint organizations and associations of producers, processors, and traders will help participants to be better informed and prepared to deal with price, supply and demand fluctuations in the markets. That will allow all contributors to obtain optimum price. The marketing concept of business should be applied in the process of planning of production, processing, and should be applied to meet the needs of domestic markets in terms of quality, safety, presentation, and price, thus increasing the profit. Developed countries succeeded in taking over a sizeable share of the market and have the opportunity to further improve its position due to the tradition in growing SR, strong scientific research, the existence of a large semi-processing industry, geographical concentration of SR production. From this SWOT

analysis, looking for highlighting the critical points that will participate in sustainable rural development.

The SWOT analysis with a group of stakeholders summarized 6 strengths: farms' good experience in SR rearing and good management system (Table 1). The SR sector has multiple products that are marketable, provides good cash flow during the year, the producers' willingness to adopt new technology, the possibility of processing the feed mixes from available feeds, which can reduce costs, SR sector work consumes family labor, and suitable infrastructure and weather conditions. The SWOT workshops also identified weaknesses of the sector including high input prices, uncontrolled feed quantities requirements according to the animal production stage and inefficient food substitutions, need for high capital costs and equipment infrastructure, unorganized SR keepers in the form of production and marketing cooperatives, unavailability of active marketing requirements and marketing extension services, perishable products and postharvest losses, lack of standards in production, low productivity from SR

production unit and in completed manufacturing facilities, lack of access to credits and large debts to producers (Table 2).

On the other hand, the opportunities points are at below;

Small ruminant sector produce commodities that are essential for consumers and has effects for the development of other economic activities, new varieties of dairy products with branding system, growing market demand for the agricultural product, increase of competitiveness with the development of cooperatives, funding agricultural research centers and education with qualification of the young workforce of SR production and marketing, high quality raw material and pastoral land development. Finally, the threats points are unexpected rising of input costs and world market fluctuations in the commodity prices, Israel regulations on marketing and rangelands, difficult access to the new technologies and low level of education of producers, unfavorable government policy and insufficient knowledge of market conditions (Table 1).

Table 1: SWOT framework within main strength and opportunities.

| Strengths | Opportunities |
|---|---|
| S1: The farms have a qualified, experienced, and good management system by small ruminants keepers | O1: Small ruminant sector produce commodities which are essential for consumers, also for the development of other economic activities |
| S2: Small ruminants sector have marketable and multi-variety products that avail cash flow during the year | O2: New varieties of dairy products with branding system |
| S3: The willingness of small ruminants keepers for the technology adoption and social activity participation | O3: Growing market demand for the SR products and manufacturing |
| S4: Processing possibility of the feed mixes from available crops and postharvest plants as inputs | O4: The increase in competitiveness with the development of cooperatives and project funds |
| S5: Small ruminant sector working with full family teamwork | O5: Agricultural sector's research centers, the education and the qualification of the young workforce in SR production and marketing |
| S6: Suitability of infrastructure and weather conditions | O6: Availability of raw materials and postharvest residue. Pastoral development through water harvesting funds |

Table 2: SWOT framework within main weakness and threats.

| Weakness | Threats |
|--|---|
| W1: Uncontrolled feed quantities according to the animal requirements and the inefficient use of feed substitutions | T1: The unexpected rising of input costs and world market fluctuations in the commodities prices |
| W2: SR owning need expensive capital costs and equipped infrastructure | T2: Unexpected Israel regulations on marketing and rangeland movements |
| W3: Unorganized SR rearers in production and marketing cooperatives | T3: Difficult access to the new technology and low level of awareness within SR producers |
| W4: Unavailability of active marketing requirements and marketing extension services | T4: Unfavorable government policy and misknowledge of market conditions |
| W5: Perishable and loss products, and the lack of conservation production standards | T5: Productivity stagnation and the lack of qualified resources for functioning and development of the SR productivity |
| W6: Lack of access to credits, and large debts to consumers | T6: Unfavorable weather conditions and unexpected risks as the duality of currency |

3.1. Recommendations for farmers;

1. Improve production efficiency from the small ruminant, by focusing on quality animals, not quantity, through using available improved breeds and inside flock selection.

2. Continuously visit the extension and veterinary services offices and present constraints to benefit from their technical and management advice.

3. Work as cooperatives to benefit from collective action, by joining available cooperatives.

4. Benefit from efficient family labor, apart from their own and other farmer experiences, to increase the farm size, by focusing on production from fattening and dairy product diversification, based on technical standards and market demands.

5. Benefit from farmers' rights from the government as an extension and veterinary services availability, available support and tax recovery.

6. The new technology verification aiming to minimize costs and maximize the profits, and try to deal with what recommended by experts.

3.2. Recommendations for the government (policy makers):

1. Development different applied research that will enhance in minimization of the production costs and maximization of the profits, and benefits of available resource.

2. Regulate farmers' cooperatives efficiently by continuous monitoring, advising, and building their capacity to better support their members.

3. Strengthen extension and veterinary services programs, media and farm visits. Review the laws, regulations and issue new ones depending on farmers' needs, to manage imports from Israel, and the duality of currency problems of depending on the single currency.

4. Increase control of the inputs and product's qualities, in addition to developing branding, standardization and labeling systems, through incentive methods.

5. Improve the provision of agricultural loans and insurance system, as an encouragement policy.

6. Support the preparation of refrigerated storage facilities and complimentary on-farm processing facilities.

4. Conclusion

The findings of this analysis show that SR production is positively influenced by farmers' type of engagement in the farm (full time vs. part time farming), education and cooperative membership. Younger SR keepers with less experience reported SR production constraints, including inputs such as pasture land limitations, capital (credit), land, diseases and feed costs. The study results point out that improved small ruminant production could be achieved by creating and enabling an environment that alleviates these constraints. For instance, farmers' cooperative could be initiated to offer opportunities for members to facilitate access to capital (credit) and other inputs. Such cooperative should benefit both men and women in terms of marketing. The Ministry and NGOs should build leadership qualities of the cooperatives, which should have the function of channeling the interests of their members to the extension services and other development organizations. Small ruminant keepers listed most important insecurity factors as feed cost, disasters, SR diseases, marketing and price fluctuations. They are also seventeen identified main constraints with minor differences between sites. The top six constraints are high feed

prices, marketing difficulties, and price instability, lack of health control and veterinary vaccinations, unavailability of manufacturing and conservation facilities for products, low technical and management experiences of keepers, Israel occupation control, and lands closing.

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