

Creating a business model for Farmers' Organizations in Tunisia: Lessons learned to strengthen and support their activities

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DOI: 10.30682/nm2504d

JEL codes: P21, P31, P32, Q13

Abstract

Farmers' organizations have become a central element in agricultural policies and have established themselves as key partners in development programs in developing countries. This study aims to create a business model for Melyane Mutual Agricultural Services Company (SMSA) in northeastern Tunisia. This business model will define, on the one hand, the necessary resources (financial, technical, human) to realize its future projects and demonstrate their viability, and, on the other hand, the strategies to overcome existing constraints while leveraging local resources and creating sustainable activities. Semi-structured interviews and detailed surveys were thus conducted with the SMSA board of directors and its members. The business model, developed and validated by SMSA members, provides a clear strategy for income-generating activities to be implemented and investments to be made in the short and medium term. The development of SMSAs should therefore be integrated into a territorial development approach that focuses on enhancing local resources, with members leveraging their artisanal skills. Furthermore, considering the challenges SMSAs face in terms of effective management and visibility, their activities should be reinforced with a mechanism for technical assistance and support.

Keywords: *Producer's Organization, Melyane SMSA, Constraints, Business model, Territorial approach.*

1. Introduction

It is now acknowledged that Farmers' Organizations (FOs) play an active role in the progress of developing countries, with a multiplication of their numbers and an increase in the dynamics of their federation (Bizikova *et al.*, 2020; Ma *et*

al., 2023). Considered key partners in agricultural policies and development programs, FOs act as essential intermediaries between rural communities and institutional actors, facilitating access to markets, extension services and management of common natural resources (Luo *et al.*, 2020; Krishnan *et al.*, 2021; Minah, 2022).

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While some FOs have achieved significant technical and economic results, others are “running on fumes” and their success depends largely on their ability to establish links with funding agencies to secure technical and financial support (Bizikova *et al.*, 2020; Chen *et al.*, 2023). That is why institutionalized mechanisms must be put in place to effectively promote FOs. These mechanisms should primarily address the challenge of access to funding, as FOs’ members need access to credit, and the organizations themselves require resources to sustain their activities (FAO, 2019; Hintz *et al.*, 2021; Iyabano *et al.*, 2022).

In this context, the Business Model Canvas (BMC) has emerged as a relevant tool to address these challenges. By providing a structured framework to analyze and design business models, the BMC enables FOs to identify key resources (land, agricultural equipment, technical knowledge, human resources), value propositions (productivity improvement, market access, food security), customer segments, and revenue streams, thereby strengthening their sustainability and growth potential (Osterwalder and Pigneur, 2010; Gertler and Wolfe, 2002). For FOs, which often operate as fragile structures with limited business management skills, the BMC offers a practical approach to overcome financial constraints, improve operational efficiency, and foster innovation by demonstrating the long-term viability of a farmers’ organization. Furthermore, the BMC can help FOs leverage local resources and establish strategic partnerships with donors and development agencies to create sustainable economic activities, in line with broader development objectives (Sivertsson and Tell, 2015; Atuahene-Gima and Amuzu, 2019; Krishnan *et al.*, 2021).

In Tunisia, the post-2011 Revolution period has seen a renewed interest in cooperatives and FOs as levers for socio-economic development (El Haddad, 2020; Gherib, 2021). However, access to finance remains a major obstacle, limiting their growth and impact (Soltani and Mellah, 2023). This highlights the urgency of using innovative tools such as the BMC to strengthen the organizational and financial resilience of FOs.

The literature on FOs indicates that there have been few recent studies addressing this research gap. To tackle the challenges faced by small-

holders, particularly financial ones, it is essential to develop business models that are viable for smallholder collectives.

The main objective of this study is to assess the potential of a Mutual Agricultural Services Company (SMSA) in the governorate of Zaghouan (north-eastern Tunisia) and to identify the key factors influencing its expansion. By applying the BMC framework, the study aims to define the necessary resources (financial, technical, human) for the growth of the SMSA, to demonstrate the feasibility of its expansion and to propose solutions to the existing constraints. This approach not only addresses the immediate challenges of the SMSA, but also provides a replicable model for other FOs seeking to strengthen their sustainability and impact. Through this perspective, the study contributes to the broader debate on the role of FOs in rural development and the importance of innovative economic tools to achieve their objectives.

2. Conceptual framework

2.1. *Mutual Agricultural Services Company (SMSA) in Tunisia*

SMSAs are agricultural service cooperatives established by farmers to pool services and address various needs related to their agricultural activities. Operating under a cooperative structure enabling commercial activities, SMSAs offer essential services to their members, thus contributing to the improvement of production management and the optimization of their agricultural operations. According to the Law No. 2005-94, enacted on October 18, 2005, SMSAs are defined as “companies with variable capital and shareholders that operate in the field of services related to agriculture and fishing” (JORT, 2005, p. 2683).

In 2022, there were 390 SMSAs. The total number of SMSA members in Tunisia stands at 40,128 cooperators, representing a membership rate of 8.8% among farmers. Of these, only 4.3% are in good standing, 23% have ceased their activities, 20.9% face various difficulties, and 43.9% are active but in a rather average situation (Belhaj Rhouma et Ahmed, 2018).

The members of SMSAs must be farmers, fishermen, or agricultural service providers, and they must carry out their activities within the SMSA's intervention territory. The regulatory framework also governs the operating rules of the Board of Directors, which consists of 3 to 12 members elected for a term of 6 years. For a General Assembly to be valid, at least one-quarter of the SMSA members must be present. Additionally, the presidency of the board must be held by a farmer or fisherman actively engaged in their profession, with the necessary academic qualifications to carry out the tasks assigned to them (Giguère, 2016).

These SMSAs have the following missions: providing the inputs and services necessary for agricultural and fishing activities, guiding and supporting their members to increase the productivity and profitability of their farms and improve product quality, and marketing agricultural products, including collection, storage, packaging, processing, transportation, and export (JORT, 2005).

2.2. *Business Model Canvas (BMC)*

The concept of a Business Model has gained prominence since the 1900s as tool for communicating business ideas to potential investors within a limited timeframe (Zott *et al.*, 2011). According to Teece (2010), a BMC is defined as “the way in which the company delivers value to customers, persuades them to pay that value, and converts those payments into profits”. The BMC thus seeks to outline how an organization defines its strategy through the activities and services it provides in the market, the revenues it generates, the costs it incurs, and how it integrates its production chain within a value network (Osterwalder and Pigneur, 2010; Dewitte and Lecocq, 2016). The concept of value is central to a business model and has been expanded from economic value to include environmental and social value, reflecting the need for the BMC to align with the ecosystem in which the organization operates (Schaltegger *et al.*, 2012; Mentink, 2014).

The BMC is now a widely used conceptual tool for organizations, both agricultural and non-agricultural, at all stages of their life cycle helping

them implement a more relevant and adapted business model (Scuotto *et al.*, 2020; Santini *et al.*, 2023). It serves as a support tool for understanding how an organization operates and creates value for its stakeholders (Baden-Fuller and Morga, 2010; Teece, 2010). Consequently, the BMC not only focuses on the organization itself but also involves the stakeholders who interact with it.

Moreover, the BMC is highly useful for exploring potential innovations within the organization, employing an inside-out approach to help managers align their activities and relationships in designing the organization's strategy (Trigkas *et al.*, 2020). Additionally, these business models represent either the current or future state of organizations, offering simple and easy-to-understand configurations of aspects related to their operational mode (Gregurec *et al.*, 2021).

The BMC has been applied in numerous cases within the agricultural sector, including agritourism development, strategic planning for agricultural cooperatives (the subject of our research work), the expansion of renewable energy, and irrigation extension services (Benjaminsson *et al.*, 2019; Trigkas *et al.*, 2020; Zanjirchi *et al.*, 2020; Santini *et al.*, 2023).

The BMC takes the form of a 9-box matrix containing interconnected elements: customer segments, value proposition, distribution channels, customer relationships, key activities, key resources, key partnerships, cost structure, and revenue streams. This matrix helps to identify the organization's competitive advantages, strengths, and the resources required to achieve its objectives and perform its core activities (Osterwalder et Pigneur, 2010; Clark *et al.*, 2012).

3. *Material and methods*

3.1. *Specificities of the Melyane SMSA*

The governorate of Zaghouan has a total of 131 FOs, including 4 SMSAs and 127 GDAPs. The majority of GDAPs (84%) focus on managing water resources, including irrigation and drinking water. The others (3%) consist of rural women specialized in adding value to local products (such as the distillation and extraction of aromatic and medicinal plants-AMP, handicrafts, and *Oula*

products like spices). Although SMSAs are fewer in number, their activities are limited to the distillation of AMPs, the sale of animal feed and the rental of agricultural equipment.

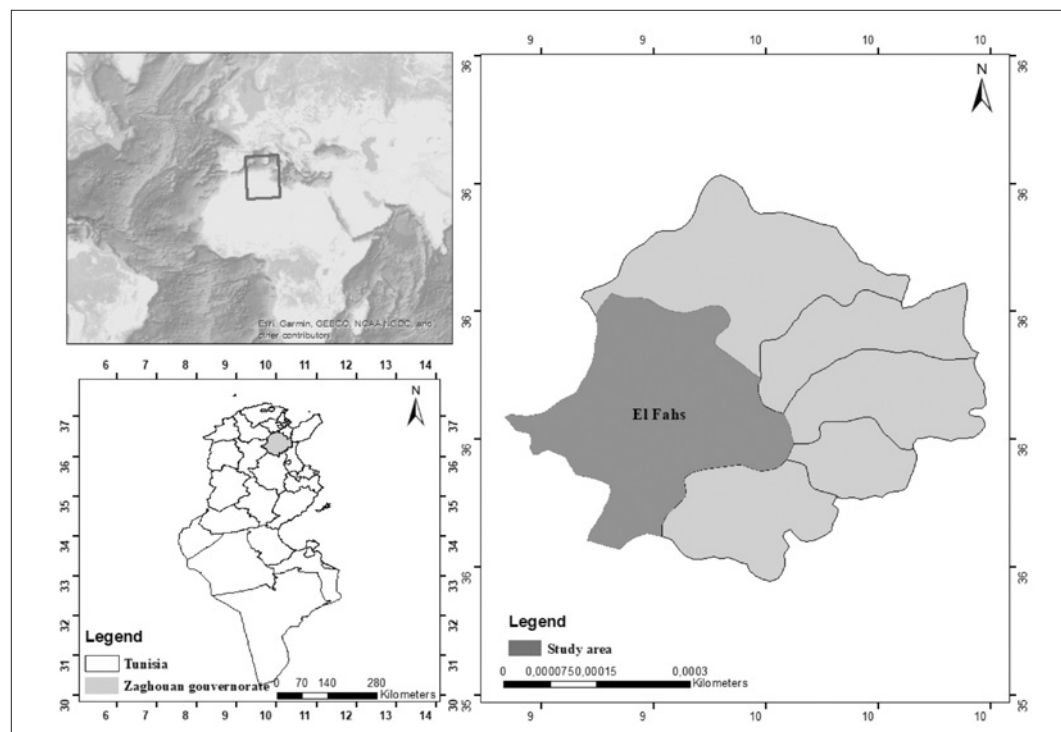
We chose to focus our work on the *Melyane* SMSA, located in El Fahs delegation (Figure 1). El Fahs delegation has significant agricultural potential, with a usable agricultural area of 74,500 ha and abundant hydraulic resources, including deep aquifers, hill lakes, and dams. The cropping systems are dominated by field crops, combined with livestock (such as sheep and cattle), arboriculture (such as olive, almond, apple, and apricot trees), and market gardening. However, small and medium-sized farmers are facing difficulties in making their farming systems profitable due to the surge in input prices (such as fertilizers, pesticides, and animal feed) in recent years, the lack of availability of agricultural equipment, and the near-absence of technical and financial support from public officials.

To improve their socio-economic situation (increased income, access to basic services) and

advocate for their interests with institutional actors, farmers in Elfahs, with the support of the regional agricultural administration (Regional Agricultural Development Commission-CR-DA), decided to establish the Melyane SMSA in 2014. The SMSA currently has about 68 members, primarily small and medium-sized farmers from the region. The association operates on a cooperative economic model, purchasing agricultural inputs in bulk on behalf of its members to benefit from economies of scale and reduced costs. These inputs, which include animal feed (such as soybean meal, corn, hay bales, etc.), phytosanitary treatments, fertilizers (such as ammonium nitrate and diammonium phosphate), and fuel, are then distributed to members at more affordable prices compared to market rates. Additionally, the SMSA offers rental services for agricultural equipment such as tractors and plows, further helping its members reduce operational costs and improve productivity.

The *Melyane* SMSA was one of the FOs selected by the African Development Bank as part

Figure 1 - Location of the El Fahs Delegation-Governorate of Zaghouan (Elaboration by the authors, 2024).



of a project aimed at developing and promoting agricultural sectors in the Zaghouan governorate, initiated in 2022, to benefit from technical and financial support through the creation of a BMC. This selection was made based on well-defined criteria, including the regularity of general assemblies, the absence of internal conflicts, and the level of member involvement. It is also important to note that our decision to study this SMSA was influenced by the members' motivation to engage in new activities and the active participation of women.

3.2. Methodological approach

To achieve the objective of this research, we adopted a progressive methodological approach that includes the following steps.

3.2.1. Data collection

Initially, semi-structured interviews were conducted with agricultural administration officials at both the regional level (CRDA of Zaghouan) and the local level (Territorial Extension Unit – CTV of El Fahs), as well as with members of the SMSA board of directors (president, treasurer, technical director). The objectives of this phase were to collect initial data on the *Melyane* SMSA (such as founding objectives, activities, resources, and constraints), identify the target population (members and board members), and prepare detailed surveys. This exploratory phase is crucial as it provides an opportunity to highlight the key elements of our research.

These interviews were conducted between March and April 2023 through detailed qualitative and quantitative surveys with the SMSA board of directors and its members. The data collected will serve as the basis for developing a business model in a subsequent phase. In total, we interviewed three board members (50% of the total composition) and 37 members (55% of the total membership). Additionally, the initial surveys with the board of directors were designed to thoroughly characterize the SMSA in terms of its resources, current and future activities, budget situation, and operational constraints.

For the second survey with members, the sample was selected in collaboration with the SMSA

President and officials from the Zaghouan CRDA. Selection criteria included the members' level of involvement in the SMSA, their activities, future perspectives (such as activities, investments, and projects), and gender aspects (women and youth). These surveys will allow us to assess the socio-economic situation of the interviewed members (including age, education level, professions, etc.), their level of affiliation with the SMSA in terms of roles and involvement, as well as their short- and medium-term perceptions and suggestions regarding the challenges facing the SMSA.

3.2.2. SWOT analysis

The data collected from interviews and surveys conducted with members and board members facilitated the development of a SWOT matrix (Strengths, Weaknesses, Opportunities, Threats), a strategic tool commonly used by organizations, particularly in the case of SMSA *Melyane*. Furthermore, conducting a SWOT analysis provides a solid foundation for preparing a BMC and developing a clear strategy by enabling both an internal diagnosis (such as skills, competencies, and technology) and an external diagnosis (such as customers, suppliers, competition, and market trends), supporting the necessary decisions for the long-term progress of the SMSA (Teoli *et al.*, 2019; Stefan *et al.*, 2021).

The analysis of internal factors focuses on the key strengths and weaknesses of SMSA *Melyane*, as well as its current conditions (such as resources, activities, and budget situation). Strengths refer to the advantages and socio-economic benefits inherent to the SMSA, specifically what it offers primarily to its members and secondarily to its clients (non-members), enhancing its attractiveness. Weaknesses highlight areas that need improvement. External factors address the future implications of opportunities and threats. Opportunities refer to positive external factors available to the SMSA (such as financing, legal frameworks, and technical support) as well as the broader environment in which it operates. Threats encompass competitive market dynamics, technological challenges, regulatory hurdles, and financial obstacles faced by the SMSA.

The resulting SWOT matrix was then dis-

cussed and validated with the SMSA members as part of a participatory process aimed at encouraging their active involvement in the development of their community.

3.2.3. *Development of the Business Model Canvas (BMC)*

The data collected from the surveys and the resulting SWOT analysis enabled the development of the BMC for SMSA *Melyane*. This BMC is designed to outline how the organization defines its promotion strategy by leveraging the activities and services it offers to its members while integrating its production chain into a broader value network (Osterwalder and Pigneur, 2010).

Furthermore, the successful development and implementation of the BMC would be a significant milestone for the SMSA, demonstrating that it has made considerable progress in clearly defining its objectives and identifying its specific needs. This achievement would, in turn, lay a solid foundation for improved resource management and targeted technical support. Both are essential for enabling the SMSA to increase its capacity to generate stable income and attract external funding. Although these outcomes are still prospective at this stage, they are a natural progression of the work done during the BMC development process. If realized, these results would strengthen the SMSA's ability to generate lasting socio-economic impacts across the region.

In light of this, the BMC outlines the strategic elements needed to expand SMSA's activities. It presents a clear pathway toward economic sustainability, while also addressing the region's unique social and environmental challenges. However, it is important to emphasize that these potential benefits depend on the successful implementation of the BMC and the SMSA's ongoing commitment to achieving its objectives.

Given that the BMC was structured and developed through consultation with stakeholders and local beneficiaries within a participatory framework (Crispim *et al.*, 2021), it was subsequently discussed and validated with CRDA officials in Zaghuan and the president of the

SMSA. This process enabled the formulation of policy recommendations for the development of these rural communities.

4. Results

4.1. *Strategic diagnosis of Melyane SMSA: SWOT analysis*

A comprehensive strategic diagnosis was conducted for *Melyane* SMSA, focusing on both internal and external factors influencing its operation and development through a SWOT analysis. The main elements are detailed below in Table 1.

4.1.1. *SMSA internal diagnosis: Strengths and weaknesses*

The internal diagnosis examines the environment and internal factors of SMSA *Melyane*, including its resources, capacities, and constraints in institutional, social, and economic terms. This analysis identifies and evaluates key strengths and weaknesses that shape the organization's current state (Table 1).

I. Strengths

At its inception in 2014, the *Melyane* SMSA started with just 12 members. Over the years, this number has grown significantly, reaching 68 members by 2023, making a fivefold increase. This growth reflects the strong interest and commitment of farmers in the region to engage with the cooperative structure and improve their socio-economic situation. Moreover, the technical and financial support provided by the donors (such as training and agricultural equipment) played a crucial role in motivating the members to get actively involved.

Rural women are actively participating in this SMSA, both in decision-making roles as members of the Board of Directors and in various activities as ordinary members. The Board of Directors consists of 6 members, one of whom a woman (an agricultural engineer) serves as the treasurer. Additionally, 53% of the members are women engaged in dairy cattle farming with small herds (an average of 3 cows), as well as in family poultry farming and as vegetable

crops (such as lettuce, fennel, and broad beans). The presence of women is, therefore, crucial, as they are an active and significant force in agricultural production and contribute to the family income through their agricultural and non-agricultural activities (such as weaving, pottery, and transformation of agricultural products).

Various actors, including public institutions, donors, NGOs, research institutes, and private sector, have provided institutional, financial, and technical support to this SMSA, thereby ensuring its long-term sustainability. The collaborative nature of these partnerships highlights the openness of SMSA *Melyane*—both its members and the Board of Directors—to the broader institutional environment, emphasizing its ability to maintain productive relationships. Specifically, the National Institute of Field Crops (INGC), a state actor with a mission to contribute to food security by increasing yields of cereals and related crops (such as legumes and fodder), has provided technical assistance (such as seeding techniques, use of appropriate inputs, crop rotation, pesticides, and phytosanitary products) to members.

Although the CRDA of Zaghouan faces financial and logistical resource constraints, it has provided valuable administrative support to the SMSA. This support has been particularly evident in assisting with general assemblies, facilitating the election of Board Members, and supporting budget management. Despite being somewhat limited by material constraints, this support has been crucial in the organization and structuring of the SMSA.

The Food and Agriculture Organization of the United Nations (FAO) contributed 25,000 Tunisian Dinars (TND) (1USD=3.14 TND in 2025) to equip the SMSA premises and purchase office supplies (such as computers, administrative supplies and furniture). In addition, the International Center for Agricultural Research in the Dry Areas (ICARDA) provided mobile phones to 30 women to support them remotely whenever necessary, mainly through message exchanges (alerts on agricultural risks, market opportunities, demonstrations).

The SMSA currently offers free product delivery during critical periods, such as livestock

or crop diseases, ammonia and seed shortages, at competitive prices. One of the main advantages is the option of installment payments for members. This service not only helps reduce production costs by eliminating transportation fees, but it also lowers prices compared to private input suppliers in the region.

II. Weaknesses

More than half of the SMSA members (59%) own small family farms (less than 5 ha). Only 6% of members are tenants or beneficiaries of State-owned land with agricultural technicians cultivating State land under long-term contracts (15 years). In addition, some members (23%), particularly women, do not own land and instead raise livestock, including sheep and cattle, on rented land. The small size of family farms and the lack of land ownership limit farmers' ability to achieve economies of scale, making investments in modern technologies and agricultural equipment expensive and difficult to make profitable.

An SMSA has a social capital, which consists of all its shares and evolves over time based on the issuance of new shares, contributions from new members, or additional investments. For the *Melyane* SMSA, the number of shareholders is 40 farmers, in 2023, (59% of the members) participating with an amount of 50 TD/share. Thus, the social capital is relatively low, amounting to only 4,000 TD. Most shareholders (70%) purchased only one share, while Board Members bought between 8 and 16 shares, valued at 400 to 800 TD. Note that shareholders hold a stake in the SMSA's capital and actively participate in its financial and strategic management. While members benefit from the services offered by the SMSA, participate in general meetings, and vote on matters concerning its operations, they do not have a vote in major decisions related to its financial management or strategic direction.

The revenues of SMSA *Melyane* come from two sources: membership fees and the sale of agricultural products (such as animal feed, phytosanitary treatments, fertilizers). The annual turnover is limited to 20,000 TD (2022). However, these sources remain insufficient to meet

the growing needs of the SMSA for its development. According to 95% of the surveyed members, the main challenge faced by the SMSA is financial. This situation can be attributed to two main factors: first, some members do not pay their membership fees but continue to benefit from the services offered by the SMSA (42.5% of the surveyed members); and second, there is a risk of a decline in agricultural activity, particularly due to climate change and market fluctuations. Consequently, the main expenses (such as rent for the premises, electricity, water, etc.) are covered by the board members, and the SMSA's assets are very limited, consisting primarily of office and computer equipment, along with a truck used for deliveries to members. Furthermore, the absence of a clear strategic vision, particularly a BMC, for the SMSA impacts its promotion and limits its ability to explore new opportunities to diversify its activities and generate revenue, such as through partnerships, grants, or income-generating initiatives.

4.1.2. External diagnosis of SMSA: Opportunities and Threats

The external diagnosis examines the environment in which the SMSA operates, aiming to identify both available opportunities and various threats (such as competitive, regulatory, financial, climatic, etc.) (Table 1).

I. Opportunities

The SMSA Melyane is faced with several opportunities that promote its evolution and development. First of all, the existence of development and support programs for FO's, particularly the Agricultural Sector Development and Promotion Project in the Zaghouan Governorate, funded by the African Development Bank (ADB). The project aims to support FO's through targeted training programs (such as administrative and budgetary management, communication techniques, etc.) and the provision of equipment (such as distillation equipment, incubator, etc.). However, the ADB, like most donors, requires that the SMSA have a clear strategic vision and develop a BMC before providing technical and financial support.

In addition, several national and international

institutions (such as INGC, ICARDA, and FAO) collaborate with SMSA Melyane through formal agreements and conventions concerning the activities of her members (including cereal crops, forage crops, cattle breeding, etc.).

Regarding the financial environment, Investment Law No. 2016-71 of September 30, 2016, which aims to promote investment and encourage the creation and development of businesses. It offers several advantages for the establishment of SMSAs, such as a 55% subsidy on the purchase of agricultural equipment, storage infrastructure, or innovative technologies.

Furthermore, the Tunisian Solidarity Bank provides loans for financing SMSAs repayable over 10 years and at an interest rate of 5%.

II. Threats

The development of SMSA Melyane faces several major threats, the most significant of which is the rural exodus of young people to the capital (Tunis) or coastal regions in search of better economic opportunities. This rural exodus is particularly exacerbated in the El Fahs region, where unemployment and poverty rates remain very high. As a result, the availability of agricultural labor (farmers and workers) is impacted, posing a serious threat to the sustainability of the SMSA.

Another threat is the limited participation of young people in the SMSA Melyane. Currently, 40% of the members are between the ages of 55 and 75, while only 10% are under 35. This age distribution could present a challenge, as older farmers may be less inclined to collaborate or embrace new practices.

The third major threat is climate change. El Fahs delegation, like the rest of the country, is increasingly vulnerable to climate risks, including rising temperatures, irregular and decreasing. These challenging conditions threaten agricultural production and, therefore the viability of the SMSA Melyane.

Finally, there is the issue of the national and, in particular, the international market, on which Tunisia is heavily dependent. Certain sectors, such as the dairy industry, rely on imports for most of their dairy cows and concentrated feed, while the poultry sector depends on imported chicks and feed.

Table 1 - SWOT analysis of the *Melyane* SMSA (Our results, 2023).

	<i>Strengths</i>	<i>Weaknesses</i>
<i>Internal factors</i>	<ul style="list-style-type: none"> • Fivefold increase in membership since inception (from 12 members in 2014 to 68 members in 2023). • Significant presence of women who represent 53% of the members (2023). • Partnerships with institutional environment (FAO, ICARD, INGC, CRDA of Zaghouan). • Medium to high levels of education (secondary or higher) among board members. • Strong interpersonal relations and absence of social conflicts. • Proximity of products and their availability during critical periods (such as ammonia and seed shortages), coupled with free delivery and flexible payment. 	<ul style="list-style-type: none"> • Small size of family farms (59% of members) and lack of land ownership (23% of members). • The social capital is relatively low, amounting to only 4,000 TD (2023). • Activities and services limited to the sale of animal feed, phytosanitary treatments, fertilizers and fuel. • Financial deficit and inability to cover main expenses (such as rent for the premises, electricity, water, etc.). • Low annual turnover (20,000 TD in 2022). • Absence of a clear strategy and business model. • Limited knowledge among members and board members regarding tax and financial incentives related to SMSAs.
	<i>Opportunities</i>	<i>Threats</i>
<i>External factors</i>	<ul style="list-style-type: none"> • Access to funding and development of specific support programs for FOs (ABD). • Collaboration with national and international institutions (INGC, FAO, ICARDA) through formal agreements and conventions. • Collaboration with regional and local agricultural authorities. • Financial incentives: Investment Law n° 2016-71 of September 30, 2016, such as 55% subsidy on the purchase of agricultural equipment or innovative technologies. • The Tunisian Solidarity Bank provides loans for financing SMSAs repayable over 10 years and at an interest rate of 5%. 	<ul style="list-style-type: none"> • Migration and rural exodus of young people. • Limited involvement of young people (40% of members are between 55 and 75 years old, and only 10% under 35). • Risks associated with climate change. • Heavy dependence on international markets for agricultural inputs.

The elements drawn from the internal and external diagnostics showed the absence of a clear strategy to successfully carry out its activities and services and make sustainable decisions.

4.3. Development of a Business Model Canvas for SMSA *Melyane*

The surveys and SWOT analysis conducted enabled the creation of a BMC for SMSA *Melyane* (Table 2), highlighting both the current activities and the new initiatives proposed in collaboration with its members. Upon completed, the BMC was discussed and validated through consultations with officials from the Zaghouan CRDA and the SMSA president.

The primary activities and services of the SMSA include the sale of animal feed, phytosanitary treatments, fertilizers, and fuel. Since its establishment in 2014, these activities have remained limited in scope. To strengthen the financial situation of SMSA *Melyane* and create employment opportunities in the region, especially for women and youth, additional initiatives have been proposed. These initiatives will emphasize the utilization of local resources and the preservation of traditional know-how.

According to officials from the Zaghouan CRDA, these new activities will be funded by the ADB and the Special Fund for Agricultural Development (FOSDA), which supports agricultural development through grants aimed at

Table 2 - Business Model Canvas (BMC) for *Melyane* SMSA (Our results, 2023).

Key partners	Key activities	Value proposition	Customer relationship	Customer Segments
Private <ul style="list-style-type: none">• Veterinarian• Microfinance organizations• Banks Public <ul style="list-style-type: none">• INGC• CRDA Zaghouan• CTV El Fahs Development <ul style="list-style-type: none">• ICARDA• FAO• ABD	<ul style="list-style-type: none">• Sale of animal feed, fertilizers and phytosanitary treatments• Equipment rental (tractor, combine harvester, manure spreader, etc.)• Aromatic and medicinal plants:<ul style="list-style-type: none">- Set up of a nursery: 10,000 plants- Technical monitoring and control- Distillation and extraction- Marketing• Range chicken breeding (150 to 300 chickens per member):<ul style="list-style-type: none">- Technical monitoring and control- Support for the marketing• Milk collection center: capacity 1000 liters/day• Training and support:<ul style="list-style-type: none">- Administrative and financial management- Communication skills- APMs extraction and distillation- Conduct of poultry farming• Computer space for members' children	<ul style="list-style-type: none">• Provide inputs at the right time and at the right price• Very qualifying training courses• Agricultural equipment rental service• Marketing service of essential oils• Farm chicken marketing service	<ul style="list-style-type: none">• Free shipping• Ease of payment• Participation in training and awareness days• Visit to members for technical monitoring and control	<ul style="list-style-type: none">• Farmer members and users• Collectors, retailers, herbalists, processors
	<i>Key Resources</i>		<i>Channels</i>	
	<ul style="list-style-type: none">• Human resources<ul style="list-style-type: none">- Executive board :6 members- 1 driver for delivery- 2 Agricultural counsellors- Marketing Manager- 1 Veterinarian• Material resources<ul style="list-style-type: none">- A truck- Office equipment- Extractors and distillers- Local• Financial resources<ul style="list-style-type: none">- Working capital		<ul style="list-style-type: none">• Direct and free delivery• Social networks (Facebook page)• Marketing platform• National agricultural and agri-food fairs (SIAT, SIAMAP, PAMED)• Sale in the premises of the SMSA	
<i>Cost structure</i>		<i>Income structure</i>		
Start-up cost: 500,000 TD <ul style="list-style-type: none">• Accounting software• Training material• Distillation equipment• Incubator• Milk collection center Cost structure <ul style="list-style-type: none">• Purchase of seeds: 10%• Purchase of phytosanitary treatments: 7%• Purchase of fertilizers: 7%• Purchase of fuel: 15%• Purchase livestock feed: 24%• Veterinarian: 3%• Wages: 20%• CNSS¹: 3%• Local rent: 5%• SONED²: 3%• STEG³: 3%		<ul style="list-style-type: none">• Membership of members (5%)• Sales of inputs (13%)• Animal feed sales (20%)• Sale of fuel (10%)• Training contribution (5%)• Rental of agricultural equipment (12%)• % on the sale of PAMs products (15%)• % on chicken and egg sales (8%)• % on sales to the milk collection center (12%)		

¹ Social Security, ² Charges for the use of water, ³Charges for the use of electricity.

promoting added value and fostering regional development. The first activity to be developed is the Aromatic and Medicinal Plants (AMP) sector (such as rosemary, thyme, mint, lavender, and verbenas), where demand in the local market is growing. This activity involves establishing a nursery specialized in the production of AMPs, with an initial capacity of 10,000 plants. It will also include value-added processes (such as drying, distillation, and extraction) as well as the commercialization of a range of finished products, including floral waters, essential oils and dried plants. This will allow members to engage in the AMP sector at every stage, both as producers of plants and as sellers of finished products.

The second activity to be developed is family poultry farming. Currently, 40% of the members are already engaged in this activity, raising small numbers of chickens, ranging from 15 to 100. These members are mainly housewives and young women, both educated and uneducated, seeking employment opportunities. For many, poultry farming provides a vital source of income to cover household and personal expenses while also allowing them artisanal know-how, particularly for those with limited financial resources and land. The goal is to promote this activity by incorporating chick production and free-range chicken farming, as well as creating a branded label for marketing. The target is for each member to raise an average of 150 to 300 chickens.

To ensure the economic profitability of SMSA Melyane's activities, they should be reinforced with technical assistance and support mechanisms. Members will receive training in pasture management and forage production for their flocks, the extraction and distillation of AMP, as well as poultry farming techniques, including incubation, feeding, chick rearing, and marketing. Additionally, to guarantee effective management of the SMSA, the board of directors will undergo training in administrative and financial management, communication techniques, and conflict resolution, board by field experts.

Women are increasingly becoming key actors in the success of FOs, contributing significantly to production, representation, and decision-making. In this context, the final proposed activity, in collaboration with the members, involves creating a

computer space within the SMSA premises for members' children. This initiative will not only provide optimal working conditions for the members but also ensure their availability for various SMSA activities (such as meetings, general assemblies, training sessions, and awareness days).

The various activities of the SMSA require the provision of financial, material, and human resources to generate high added value and achieve sustainable competitive advantages. First, the human resources of the SMSA will be strengthened by the addition of two agricultural extension workers, including an engineer to provide technical support to members, a marketing manager to promote AMP products, and a veterinarian to improve animal husbandry practices. Second, in terms of material resources, the SMSA will be equipped with distillation and extraction equipment for AMPs. Additionally, administrative and financial management software is also essential to ensure effective management of the SMSA. Finally, to support dairy farmers, establishing a milk collection center with an initial storage capacity of 1,600 liters per day will be essential, serving 80 dairy farmers (both members and users).

The various activities of SMSA *Melyane* should address the needs of different customer segments, prioritizing members while also considering the needs of users (non-members). These customer segments also encompass other stakeholders involved in the value chains, including collectors, retailers, herbalists, and processors engaged in family poultry farming and the valorization of AMPs.

To enhance its services, SMSA *Melyane* is currently offering free delivery of inputs and animal feed at affordable prices, along with flexible payment options for members. Additionally, to facilitate information sharing, boost membership, and strengthen its brand image, the SMSA plans to promote the distribution of AMP products and poultry farming supplies through social media and a dedicated marketing platform.

The SMSA operates with a defined cost structure and revenue structure. The cost structure includes all expenses related to value creation and covers costs associated with key resources, activities, and partnerships. It is important to

note that the start-up of the proposed activities for SMSA *Melyane* will require an investment of 500,000 TD to acquire necessary equipment (for training, distillation, and incubation), establish the milk collection center, and install accounting software. These activities will be funded by the ADB (60%), FOSDA (30%), and member contributions (10%) (Table 2).

The revenue structure outlines all cash inflows generated by the various activities of the SMSA. It identifies the sources of income and explains how the SMSA plans to generate revenue from its services and products. Notably, over half (60%) of the cash inflows will come from the sale of animal feed, inputs, fuel, and farm equipment rentals. Additionally, the SMSA will generate 35% of its income from the sale of AMP products, poultry products (chickens, eggs), and the milk collection center. However, member dues will account for only 5% of total revenue.

It is important to note that these revenues are recurring but are subject to certain conditions, including price fluctuations, climate changes, water resources, and the availability of inputs.

5. Discussion

The results indicate that, although the SMSA *Melyane* has certain strengths, it faces significant challenges that hinder its ability to serve as a true partner in rural development. To effectively fulfill its role and remain relevant to its members, the SMSA must develop a clear strategy and vision that incorporates the key elements essential for its promotion.

The strengthening of SMSAs and FOs, in a broader sense, is closely linked to the enhancement of local resources (such as AMPs, local breeds, traditional varieties, etc.) and the promotion of high value-added local products, often perceived as typical or organic. This approach aligns with territorial development strategies. It enables the effective and sustainable exploitation of local potentials by enhancing artisanal know-how, thus strengthening and energizing the development process (Apostolyuk *et al.*, 2020; Ibrouk and Raoui, 2022).

The promotion of these activities aims to generate additional jobs across the various stages of

the sector (supply, production, processing, distribution, marketing), thereby improving and diversifying income sources for vulnerable social groups, such as youth and women (Callois, 2016). These findings are also supported by Gillero *et al.* (2022), who demonstrated that cooperation among farmers acts as a lever for implementing practices, enhancing economic value, and promoting access to strategic local resources.

Moreover, strengthening local resources and traditional knowledge in agricultural strategies plays a key role in enhancing resilience to the impacts of climate change. Traditional agricultural practices, tailored to local conditions and often more environmentally sustainable, provide better responses to climate-related hazards while preserving biodiversity (Apostolyuk *et al.*, 2020; Ouerghemmi *et al.*, 2024).

Technical support is essential for SMSAs to ensure their sustainable economic and social development, including the promotion of gender equality (Quisumbing *et al.*, 2015 Kinikli and Yercan, 2023). This support encompasses areas such as production, management, productivity improvement, and the adoption of sustainable agricultural practices. For technical support to be effective, it must be accessible to all members of the SMSA, including the most vulnerable (Sapbamrer and Thammachai, 2021; Mushi *et al.*, 2022). This was confirmed by El Badri *et al.* (2023), who demonstrated that entrepreneurial support acts as a catalyst for the development of rural cooperatives in Morocco, helping them to improve their skills and overcome inherent challenges. Similarly, Garnevska *et al.* (2011), through a case study of cooperatives in China, demonstrated that these cooperatives could become more effective by improving members' management skills and their understanding of the legal and regulatory framework governing cooperatives.

The strengthening of SMSAs is closely linked to their understanding of the institutional environment and their financial capacity, enabling them to become autonomous and create favorable conditions for their representation and sustainability (Chaves and Monzón, 2019). To achieve this, board members should not only enhance their leadership skills but also

deepen their commitment to the organization, fostering a spirit of innovation and openness to ensure its long-term viability (Mishra and Sharma, 2022). This was similarly observed by M'Barki and Schmitz (2023) in their study of farmers' cheese cooperatives in Morocco, which highlighted how weak governance, a lack of collective spirit, and legal gaps have hindered the promotion of cooperatives. Moreover, the presence of competent leaders and the active participation of members are crucial for the sustainable development of agricultural cooperatives, as they ensure strategic governance and the continuous mobilization of human and material resources. Garnevska *et al.* (2011) confirmed in their study of agricultural cooperatives in northwestern China that strong leadership and continuous member participation in activities such as management, decision-making, production, and marketing are key factors for their successful development.

Access to markets remains a significant challenge for SMSAs, especially in promoting local products. While SMSAs can add value by processing agricultural products and accessing larger markets, this often requires investments in infrastructure, management capabilities, and the fostering of an entrepreneurial spirit. In this context, promoting short marketing circuits strengthens the local economy by providing producers with direct and more profitable business opportunities, while also contributing to the reduction of logistical costs (Callois, 2016; Gillero *et al.*, 2022; Ibrouk and Raoui, 2022).

6. Conclusion and political implications

Since the 2011 Revolution, which marked Tunisia's transition to democracy and the implementation of new legislation on the freedom of association, the role of cooperatives, particularly SMSAs, has been increasingly strengthened. These organizations can contribute to boosting production and income, facilitate the sharing of knowledge and expertise, and improve access to resources and services.

However, SMSAs face various obstacles, including limited market access, difficulty accessing bank credits and scarce financial resources,

as well as a lack of training and support. Moreover, the absence of a clear strategy within many SMSAs represents an additional challenge. Without a solid strategic vision and clear objectives, SMSAs struggle to direct their actions and coordinate their efforts. To this end, developing a Business Model Canvas in collaboration with SMSA members and the board of directors could promote SMSAs and facilitate sustainable investment decision-making. This approach aims to secure funding from stakeholders (such as donors and NGOs) while establishing solid governance and fostering partnerships with local authorities and development institutions. This BMC should primarily reflect market trends, member needs, and funding or innovation opportunities for the SMSA. The development of this BMC aims to go beyond traditional approaches to managing SMSAs in Tunisia, offering pathways for their adaptation to current challenges and positioning them as key players in sustainable rural development. These improvement pathways, coupled with inclusive partnerships and government support, could transform SMSAs into engines of economic, social, and environmental growth for rural areas in Tunisia could play a key role in the sustainable structuring of SMSAs. It is crucial that the public policies implemented encourage the integration of SMSAs into incentive mechanisms to encourage private companies to collaborate with them through partnership contracts or research grants or crowdfunding.

Acknowledgement

This work was partly supported by the Multifunctional Landscape Program in the frame of the area of work - AoW3 on 'Markets and Business Models' under a grant agreement (#200149) with the International Center for Agricultural Research in the Dry Areas (ICARDA). We would like to thank all funders who supported this research through their contributions to the CGIAR Trust Fund, <https://www.cgiar.org/funders>.

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