Proximities and Logics of Sustainable Development of the Territorial Resource: The Case of the Localised Agro-Food System of Kalâat M’gouna in Morocco

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Abstract: Sustainable agriculture is fundamental to strengthening the resilience of rural communities to climate risks. This article aims to integrate traditional and scientific knowledge by identifying the types of proximity and the modes of valorisation of the territorial resource “rose” activated by the territorial actors of a localised agri-food system (LAFS), specialised in the production and processing of fresh rose in Kalâat M’gouna (K-M), Province of Tinghir in Morocco. The objective is to show to what extent the logics of proximity activated allow for the inclusion/understanding of the mechanisms of resource valorisation implemented by the actors. In other words, we seek to see whether the activation of several types of interaction between actors can promote the emergence of new modes of valuing the rose resource. This will be done by analysing the level of valorisation of the “rose” resource by the actors of this system while proposing tracks of improvement to take part in the sustainable development of this traditional system through its orientation towards the cognitive and innovative aspects. Our methodology is based mainly on a case study of a localised agri-food system (LAFS) using a set of semi-directive interviews conducted with 47 different actors of the system. Thus, we relied on SPSS software to study the possible correlations between the types of proximities existing and the modes of resource valuation activated. In terms of results, we were able to verify the domination of traditional proximities (geographical, organisational, relational, etc.) at the level of interactions between actors. On the other hand, there is a kind of insufficiency of the relations which are based on the knowledge and the (cognitive) knowledge.

Keywords: proximity; sustainable valorisation; territorial resource; actors; localised agri-food system; resilience of ecosystems

1. Introduction

In a given territory, there is a set of socio-economic actors that are geographically close to each other, but other types of ties or relationships that bring these actors together may exist, such as family, membership in an organisation, obedience to the same norms and values, etc. These elements constitute traditional knowledge that is essential to the construction of sustainable and climate-change-resilient agrosystems if integrated with scientific knowledge [1,2]. In this context, we use the notion of proximity, whose basic definition, according to the National Center for Textual and Lexical Resources (NCTLR), is: the situation of something or someone being within a short distance of someone or something. The notion of proximity is the basis of the proximity economy, a model for organising the economy around a set of relationships between actors. This notion aims to improve well-being through the valorisation of the territory and its resources by local actors for a sustainable territorial development for resilient rural communities.

Indeed, proximity has a plural meaning (meaning that it takes different forms) and has several facets. Proximity refers first of all to the geographical or spatial aspect, but it
is not only on the basis of a spatial connection that actors or individuals interact. There are other supports that favour the interaction of actors in a territory, such as belonging to the same organisation, belonging to the same value system, etc. Despite their differences, there are many classifications and approaches in the literature; they share many common points. Indeed, where we find a classification of proximity in two types, “geographical” and “organised” [3–5], there are two other classifications based on five types: the first distinguishes “geographical” and “socio-economic” proximities insofar as the latter is divided into two segments; proximity of resources (cognitive and material), and proximity of coordination (relational and mediation resources) [4,6], and the second classification distinguishes between proximities; cognitive, organisational, institutional, geographical and social [4,5,7].

The development of means of communication (car, plane, train . . . ), as well as of Information and Communication Technologies, would sign the end of geography: space will no longer be of interest, as soon as it is possible to abolish it either by travelling or, more and more, via technologies that allow us to discuss but also to interact in a more and more detailed way at a distance (social networks, internet, etc.). Internet-based diagnostics, interventions and consultations are one example. However, opponents of these approaches argue that the local or the territories have never mattered as much as today. Local or original products are in the spotlight, with terroir values, and traceability of goods is sought after while local systems and clusters are the alpha and omega of innovation policies [8].

The purpose of this research is twofold. First, it seeks to identify the different types of proximity existing between the actors of the localised agri-food system operating in the exploitation of the fresh rose at the level of the territory of Kalâat M’gouna (K-M rose ecosystem), as well as the different modes of valorisation of this resource adopted by the local actors (private essentially). Secondly, it aims to analyse the extent to which the logics of proximity activated make it possible to include or understand the mechanisms of valorisation of the resource implemented by the actors. In other words, this research seeks to see how the activation of several types of interaction (proximities) between actors can promote the emergence of new modes of valuing the pink resource. The aim is therefore to investigate the possible adequacy between the proximities of the actors and the modes of valorisation of the territorial resource “rose” (the engine of the Localised Agri-food System of K-M) using the correlation coefficients between the different types of proximities and valorisation. This is to detect the gaps in terms of proximity and valorisation of the resource and propose recommendations to develop the exploitation of fresh rose perfume at the level of the territory of Kalâat M’gouna.

The present study aims to fill the existing gap in this sense, because the majority of studies on the rose agri-food system of M’gouna focuses mainly on traditional aspects, such as the natural potential of the territory, the problems of exploitation of resources, marketing of production, etc. However, no study has previously dealt with the relationship between the proximity of actors and the valorisation of the rose. However, no study has previously dealt with the relationship between the proximity of actors and the development of the rose. For this, we seek to exploit the existing resource of “proximity” between actors in order to develop new ways of valuing the rose based on knowledge, research and development. From there, we present our problem as follows: to what extent can the logics of proximity between the actors of the LAFS rose in Kalâat M’gouna in Morocco explain and promote the mechanisms of valorisation of the territorial resource “rose”? In this context, the combination of the two logics “proximity of actors versus sustainable valorisation of the pink resource” is at the centre of this research. In short, we focus on the logic of proximity to explain and analyse the logic of valorisation.

2. Proximity: A Plural Meaning and Many Classifications

In terms of typology of proximity, there is a great debate between the “tri-type” approaches and the five-type approaches. However, in general, the different approaches can be considered as complementary or even substitutable from our point of view, given
the similarities they present. To this end, we will try to present all the types of proximity existing in the literature in order to broaden the analysis, while distinguishing between “classical” and “neoclassical” proximities.

2.1. Tri-Type Proximity

At this level, we present three types of proximity which constitute the foundation or basis of all classifications of proximity. The first is geographical, the second is organisational and the third is institutional (see Figure 1 below). In our treatment, we will refer to the last two types of proximity (organisational and institutional) under the name of “organised” proximity.

![Tri-type proximity diagram](image)

**Figure 1.** Tri-type proximitis. Source: our elaboration (theory information).

2.1.1. Geographical Proximity

This type does not pose any problems for the authors since there is a kind of homogeneity. Thus, as its name indicates, geographical proximity is defined as “the distance in kilometres between two entities (individuals, organisations, cities) weighted by the temporal and monetary cost of crossing it” [9]. This proximity is therefore spatial in nature and refers to two properties: firstly, it is binary (determines whether one is close or far); secondly, it is doubly relative (in relation to a set of criteria such as subjectivity and means of transport) [10,11]. Thus, it determines whether actors are geographically close or dispersed.

In other words, this type of proximity is defined as “the travel distance, functionally expressed in terms of cost and/or time, and dependent on the transport infrastructures and services” [12]. Thus, according to geographical proximity is translated by “the respective positioning of located agents” [4,5]. In this framework, two units (organisation or individual) are considered as close if they can meet or exchange in a given space at the lowest cost and/or in the shortest time and in a simple way [11]. Geographical proximity refers to face-to-face relations between actors [13] facilitating “exchanges, the circulation of new ideas and the diffusion of innovations” [14]. This means that direct and daily relations in a given territory allow for better communication and sharing of experiences, knowledge (tacit and codified), norms and values (e.g., trust), innovations, etc. between the different territorial actors, as well as the generation of financial externalities (economies of scale and minimisation of transaction costs) [14]. In this context, territorial anchorage through geographical proximity “participates largely in the deepening of cognitive processes and in the durability-stability of coordination relations between actors” [13].

However, it can be assumed that the advantages of geographical proximity in terms of innovation and spatial coordination between actors are recognised in numerous studies. In this case, this type of proximity has three limitations [15]. Firstly, geographical proximity only allows the transfer of a certain type of tacit knowledge. Secondly, the trust that could be established through co-location can be dangerous. Third, because many successful innovative networks (or territorial organisations) result from actors who are not spatially close [15].
Thus, we can announce that the analysis of territorial organisations, in terms of geographical proximity, is instrumental to apprehend the relations of inter-actor coordination (inter-individual and collective). Thus, it is essential to understand the processes of creation, transfer and exchange of crucial knowledge in the dynamics of territorial construction. However, this geographical proximity is not a sine qua non condition to coordinate and cooperate between actors. It sometimes constitutes a “constraint” according to the work of Lamara [16] on the coordination of territorial actors.

2.1.2. Organised or “Socio-Economic” Proximity

Additionally, called socio-economic proximity [6], organised proximity has a relational vocation, unlike geographical proximity. This type of proximity is of a different nature “it results from a social link” [12]. It therefore goes beyond the physical framework of the territory to focus on the social links between the actors, from which point on, organised proximity “translates the respective positioning of the agents in terms of coordination potential” [4]. Two entities (individuals or organisations) can be considered as close if they “share values, rely on identical coordination rules, share a precise knowledge base, speak the same language, regularly exchange e-mails . . . ” [15]. All these links can be grouped under the term “organised proximity”. Thus, beyond geographical concentration or physical proximity, there are other possibilities for the actors of a network or a territorial organisation to coordinate effectively.

Additionally, organised (relational) proximity reflects “the capacity that an organisation offers to make its members interact” [10], and thus facilitates interactions between actors according to two logics: the logic of belonging to the same organisation, which necessarily produces interdependencies between its actors, that is to say, “the sharing of common objectives and rules” [13], and the logic of similarity, which increases the possibilities of interaction between members of territorial organisations is “the adhesion to representations, rules of action and models of thought” [13]. From these two logics emerge other types of proximity, we speak here of organisational proximity (belonging) and institutional proximity (similarity) which constitute the two pillars of organised proximity:

Organisational proximity (or the first pillar of organised proximity) refers to a logic of belonging of an individual or an actor to the same organisation or to the same territorial structure. It can therefore be deployed “within organisations (companies, establishments, etc.) and, if necessary, between organisations linked by a relationship of dependence or economic or financial interdependence (between companies that are members of an industrial or financial group, within a network, etc.)” [17]. It therefore seems that this proximity is not identified by direct or indirect relations, but by belonging to the same group [7]. This proximity favours collective learning processes and collective projects.

This type of proximity “refers to the complementary resources held by actors potentially capable of participating in the same finalised activity of a meso-economic type, within the same organisation (large group, etc.) or a set of organisations (network of co-operations, sector of activity, local productive system, etc.)” [18]. This dimension of proximity refers to the belonging of individuals or a group of actors to the same organisation (such as the belonging of a group of students to the same faculty). This type of proximity based on belonging is criticised by a large number of authors because belonging to the same organisation is not a condition for identifying interactions, but the majority of authors defend the idea that belonging to the same structure facilitates and favours interactions and relations between actors. In fact, these interactions are facilitated by the actions, routines and rules according to which they behave.

In this case, this type of proximity is presented as a “material proximity” [6], because they have the same foundations (interactionist logics and belonging to the same organisation or network). Bouba-Olga and Grossetti consider that individuals are similar or complementary from the point of view of the resources they possess (assets, income, diplomas, social status, etc.) [6]. Thus, actors interact because they belong to the same organisation, the same social structure or the same territory.
As for institutional proximity (institutional means organisations, firms, networks, etc. and behaviours [19]), the second pillar of organised proximity, it “reflects the fact that a group of individuals share and conform to the same set of institutions” [20]. Thus, as long as institutions exert a certain influence on individuals, it is obvious that these institutions exert the same or even greater influence on organisations and territorial configurations. In an increasingly uncertain global and local context, institutions intervene to reduce this uncertainty by offering the necessary and precise information and analyses to succeed in any collective or individual action. The institutional sphere therefore intervenes as “structures that frame behaviour, particularly collective behaviour, and are therefore the basis of social relations and therefore of a form of proximity” [21]. From there, the institutional sphere constitutes an important support and a dimension of proximity.

This type of proximity thus refers to “the adherence of the actors to common rules of action, explicit or implicit (habitus), and, in certain situations, to a common system of representations, even of values” [18]. This proximity thus refers to a logic of similarity, which means that all the actors of the territorial system or organisation adhere to or share “the same system of representations, or set of beliefs, and the same knowledge” [10]. In other words, this proximity is based on tacit or immaterial links by nature that intervene so that all the actors of the system resemble each other or become similar on the basis of an infinity of criteria (for example, language, beliefs, rules, etc.). We can say, for example, that two companies in a territory are institutionally close if they obey the same labour code. In the following figure, we summarise the classical proximities mentioned in this axis.

### 2.2. Five-Types Proximity

Following the logic of similarity, organisations and individuals can be similar in knowledge, and this similarity creates a kind of cognitive proximity. The latter “refers to the degree of similarity in the knowledge bases of organisations (. . . ) it is a crucial issue for communication and knowledge transfer. Effective knowledge transfer and collaboration requires the ability to identify, interpret and exploit new knowledge” [4,7]. This means that when individuals, organisations or actors in a given territory share the same knowledge or expertise, they are cognitively close and can therefore interact and establish cooperative and coordinative relationships regardless of the physical distance between them.

In this sense, Pecqueur emphasises that “the common reference allowing coordination cannot be reduced to an accumulation of common knowledge” [22], but must integrate “common social representations” [13], i.e., opinions, beliefs, etc. Because, according to this perspective, the only accumulation of common knowledge by the actors of a given territory does not allow the construction of interrelations and the emergence of a cognitive proximity, the activation of this type of proximity must be supported by a social or identity proximity, that is to say, by a network of social and cultural relations.

Additionally, consequently, cognitive proximity refers to the idea of “a similarity or complementarity of values, goings-on, projects, routines, conventions, referents, etc. (all of which can be grouped under the term “cognitive resources” [6]. In this logic, Dupuy [20] defines cognitive proximity as “the capacity of actors to learn from others. Actors are cognitively close when they share the same knowledge base and expertise”. Then, according to this logic, most cognitive resources are shareable, such as languages, norms, values, representations, cultures, etc. [6]. Consequently, they facilitate the coordination of actors. This makes possible the development of collective learning processes between actors, the construction of new resources, the valorisation of the territory’s resources and assets, and the discovery of new opportunities for the development of the territory.

The second type of this category has a social vocation—social proximity—because it challenges the micro-economic level in terms of interactions and coordination (agents and individuals), contrary to the previous proximities which challenge the meso- and macro-economic levels (organisations and institutions). Indeed, social proximity highlights “the role of social relations, based on trust, friendship and family relations between individuals” [20]. Thus, we can say that this proximity is based, in terms of the creation of
interdependencies, on links of a personal or family nature, developed over time or in the environment of the family and acquaintances.

Thus, social proximity can be defined as “socially anchored relationships between agents at the micro level” [7]. Thus, these relationships that have emerged a social proximity between individuals in a territory, are anchored and rooted in the social structure of the territory, that is, in the history and identity of the territory. Thus, between organisations, social proximity is defined as “the degree of overlap between the personal networks of the individuals who make up these two organisations” [7]. Indeed, the social structure of organisations is composed of a group of people, so it is normal that there are no virtual boundaries between the social networks of individuals and the relationships with the organisation.

Thirdly, we find two other types of proximity, a relational type which refers to the “relational proximity”, and another type of mediation, which refers to the “mediation resource” proximity. This distinction comes down to the fact that the links, coordinations and interactions between actors can take place in two ways: the first is direct or without mediation resources and the second is indirect or with mediation. Thus, at the level of relational proximity, the interactions take place in a network between the actors and in a direct way, in fact, this proximity is defined by “the position of the different actors in the networks” [6]. Concerning the proximity of mediation resources, it is based on “devices that allow exchange without mobilising relational chains” [6]; therefore, at the level of this type, exchanges or interrelations cannot exist without mediation or without means that facilitate the relationship between actors, knowing that mediation resources can be material or immaterial.

Finally, there is another proximity that is widely used and studied in the technological or innovation field, namely the “electronic” proximity, which makes it possible to overcome the geographical or physical constraint [15]. This proximity is based almost on the same logic of similarity already mentioned, so that organisations and companies that possess the same technologies or a similar level of innovation are likely to coordinate and collaborate through collective projects. This is the activation of electronic or technological proximity. In the following Figure 2, we summarize the “five-types” proximities mentioned in this axis.

![Five-types proximity](image)

**Figure 2.** The five-types proximities. Source: Our elaboration from the definitions of [5–7].

3. Geographical, Socio-Economic and Climatic Conditions of the Study Area

The cultivation of the perfume rose (Rosa damascena) is the main agricultural activity in the Dades and M’gouna valleys in the province of Tinghir in Morocco. This activity currently occupies 4200 linear km in the form of hedges or fences around agricultural plots, i.e., about 1000 ha (10% of the cultivated agricultural area). Rose production is often compromised by frosts and cold weather which affect the flowering period and the industrial quality of the rose. It is very variable from one year to the next with an average of 4000 t of fresh roses per year.

The name “Valley of Roses” comes from one of the agricultural specificities of these two parts of the valley: the cultivation of the Damascus rose (Rosa damascena), which, even if it remains discreet, is a real marker of the landscape. The “rose of M’Goun” is dried and distilled on site. This local industry is shared between three large factories, several
cooperatives (37), and a few private distillers. Distillation produces mainly rose water, which is exported to Marrakech and the major cities, and is not very open to the market. Its function in the agrarian system was limited to uses that did not make it a cash crop, before the colonial era. This rose water and the products derived from it (soaps, cosmetics, dried roses), which are marketed nationally and worldwide, but mainly locally in the many shops located along the main road, constitute a marker of the economy of this region. The rose has moreover been labelled through a protected designation of origin (PDO) “Rose de Kelâat M’Gouna Dadès” in 2011 [22]. The following Figure 3 shows the geographical location of the LAFS of M’gouna rose.

![Map of the study area (the M’Gouna and Dadès valleys). Source: [23].](image)

The rose is generally harvested in the first half of May, in the morning, at sunrise. It is used to make several products such as dried flower buds, rose water, rose essence and rose concrete and rose absolute, it is also used in its dry state as a cosmetic product. It takes 4 to 5 kg of fresh roses to make 1 kg of dry rose and 5000 kg of fresh roses to make 1 kg of rose oil. Pale rose petals contain 0.03–0.04% of an essential oil composed of geraniol, nerol, citronellol and phenylethylaldehyde (soluble in water, hence the fragrance given to rose water).

Bioclimatically, the perfume rose production area is arid to Saharan (the average temperature over the year is 18.0 °C) with very irregular rainfall from one year to the next (the average rainfall is 171 mm per year) and with a marked continental aspect. Rainfall is often intense and concentrated in time in the form of storms, causing violent floods. In fact, the Dades belongs to the cool pre-Saharan bioclimatic stage. The cultivated soils consist of deep silts, differentiated by their colloidal element content. Their slightly alkaline pH generally varies between 7.4 and 7.8. The organic matter content is low. The total nitrogen content is medium to low.

This rose-growing region, through its oasis vocation, constitutes an ecological bulwark against the advance of desertification and a source of income for the populations established in these areas. They contain a variety of plant and animal resources in an environment marked by low annual rainfall. This fragile ecosystem is increasingly degraded, due to a combination of factors, including climatic disturbances, which are already having an impact on farmers.

The various aromatic rose extracts are produced by two companies: Bioland and Arômes du Maroc, which have modern processing units in Kelaa M’gouna. Both companies
also have processing units in the town of Khémisset (Biland) and Tiddas (Arômes du Maroc). In addition to these two major players in the “rose” sector, the study area has 27 processing units with a capacity of 920 T/year, and the organisation of the profession includes more than 35 agricultural cooperatives operating in the field of rose production and an economic interest grouping (EIG). These different actors have helped to improve the productivity and cultivated area of rose in the study area, as shown in Figure 4 below.

![Figure 4](image)

**Figure 4.** Evolution of cultivated area and rose production in the Dades and M’gouna area between 2008 and 2019. Source: [24].

4. Methodology

In order to analyse and explain the relationship between the level of proximity of the territorial actors of the rose LAFS of Kalâat M’gouna (K-M) and the power of the mechanisms of valorisation of the “rose” resource by these actors on the said territory, and thus to verify the existence or not of a coherence between these two variables, we divide the article into two parts. The first is theoretical, in which we present the meaning and classifications of the notion of proximity in the literature. The second is empirical, in which we propose our methodological framework, the results of the field survey, the analysis and discussion of these results, and we conclude by proposing avenues for improving the exploitation of the fresh rose in the province of Tinghir. In terms of the empirical part, we adopt the K-M rose LAFS case study approach in three steps.

The first step consists of contacting the actors of the rose ecosystem of the KM. To do this, we administer a questionnaire to the various local actors in the private and public system, with the aim of gathering as much information as possible about the actors, the types of proximity that link them, and the practices of valuing the “rose” resource adopted by the actors.

The second step consists of classifying and processing the data collected from the respondents (actors of the LAFS rose), in order to analyse, on the one hand, the dominant inter-actor proximities in the study area, and to identify, on the other hand, the modes of promotion and development of the “rose” resource adopted by the actors of the LAFS of M’gouna. This with the aim of correlating the types of proximity and the existing modes of valorisation, with the help of the SPSS software (v23), in order to lead, in fine, to a conclusion on the nature of the relations linking the locally activated proximities between the actors and the logics of valorisation of the territorial resource “rose”.

Thirdly, we will detect the anomalies that prevent a better valorisation of the “rose” resource by the actors of the ecosystem, while proposing ways to improve the conditions and processes of valorisation of the resource by the actors.

In fact, we relied on a representative sample of 47 actors, the majority of whom are private actors (farmers, cooperatives and agricultural enterprises in the rose sector), to which we added a few public actors responsible for the governance and organisation of the sector at the local level. The survey was conducted over a temporary interval of three months (from February 2020 to April 2020).

Our sample is composed of different profiles: presidents of cooperatives, administrative executives (executives of public institutions such as the chamber of commerce,
the chamber of agriculture, the agricultural development agency, the regional office of agricultural development of Ouarzazate—ORMVAO, etc.), members of cooperatives or cooperants, treasurers, etc. Our questionnaire also aims to identify the proximities activated between the actors of the ecosystem and the modes of valorisation of the rose resource adopted by the actors at the local level, in order to correlate the results, with a view to analysing the links between proximities and modes of valorisation and to identify the lack of proximity or valorisation at the level of the M’gouna rose EPA. To do this, we have constructed the questionnaire taking into account the following themes:

The proximities activated by the actor with other actors, or how he communicates and reacts with other actors in the ecosystem (face-to-face, in an organisational framework—such as an association, a cooperative, unions, etc.—via digital tools, via mediation resources, etc.), as well as the level of use of each means.

The modes of valorisation of the rose resource adopted by the actor: how the actor participates in the valorisation of the M’goun rose . . . during the phases of cultivation, production, processing, packaging, transformation, marketing and communication, etc.

The insufficiencies or points of weakness perceived by the actor in terms of the proximity process or the valorisation of the rose resource at the LAFS rose de M’gouna and suggestions for improvement.

To calculate our sample size, we used the G*power 3.1 software [25,26], with the following parameters: $F_2 = 0.02$ (small), $\alpha = 5\%$, the number of predictors $= 2$ (two variables (proximity and valuation)), and the power was set to 80% [27]. The required (significant) sample size set by the software, to test our model is 43. The following table shows some characteristics of our study sample (status of the respondents, gender, number . . . ). More than 70% of the respondents belong to the co-operative world (presidents, directors, cooperators) and almost 60% of the respondents are women. The characteristics of our study sample are explained in Table 1 below.

Table 1. Status and Gender of Respondents to the Questionnaire.

<table>
<thead>
<tr>
<th>Status</th>
<th>Number of observations</th>
<th>Frequency (%)</th>
<th>Type</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>Woman</td>
</tr>
<tr>
<td>President of cooperatives</td>
<td>17</td>
<td>46.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant managers/distillation unit</td>
<td>3</td>
<td>6.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treasurer</td>
<td>2</td>
<td>4.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Members/Cooperators</td>
<td>12</td>
<td>25.53</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Administrative framework</td>
<td>09</td>
<td>19.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Association/federation</td>
<td>4</td>
<td>8.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>100.0</td>
<td>47</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Own elaboration.

In order to process and analyse the results obtained in the field, with a view to understanding the mechanisms of valorisation of the territorial resource “rose” through the proximities activated by the territorial actors of the K-M rose ecosystem, we follow two logics: the first is analytical, and aims to identify the types of proximity as well as the modes of valorisation of the resource experienced or implemented by the actors. The second logic is synthetic, and aims to correlate the forms of proximity identified among the actors with the modes or processes of valorisation of the rose resource implemented by the latter, in order to explain whether there is an adequacy or a direct relation between proximity in the plural sense and the processes of valorisation of the “rose” territorial resource of the LAFS of K-M.

In order to analyse the correlation or the level of interdependence between the two variables (proximity and modes of valorisation of the territorial resource), we opted for Pearson’s correlation (and relying on the results collected from our sample of actors of the ecosystem (47) via the administered questionnaire). The use of this technique tests our
main hypothesis of this research, which stipulates that the proximity (all forms) between actors has a direct impact on the processes of valorisation of the territorial resources of this system, and conditions the local innovation processes.

Thus, from the answers of the respondents to the questionnaire, concerning the activated proximities between the actors and the operational processes of valorisation of the rose (each respondent selects the proximities and the processes of valorisation that he thinks are active within the LAFS of the K-M rose), we were able to set up the dynamic crossing of these two variables.

5. Results

In this section, we will present the results of our field survey. First of all, we will start by presenting the territorial dynamics of the M’gouna rose ecosystem, then its actors, its structure and its history. Then, we will present the results obtained in relation to the proximities and modes of valorisation of the “rose” resource identified among the actors of this productive territorial configuration.

5.1. The Rose LAFS of Kalât M’gouna: A Territorial Dynamic for the Development of the Rose

For a long time, the Dades Valley has been known for the cultivation of the perfume rose with the aim of separating the agricultural plots and not in a purely agricultural and economic logic. With time, this culture has developed more and more to cover today an area of more than 3250 km, or 800 ha, in parallel with the development of the entrepreneurial and cooperative spirit that relies on economic, social and cultural logic aimed at the development of the production and development of the perfume rose. This culture is mainly concentrated in the communes of Kelâât Mgouna, Aït Sedrate, Aït Ouassif, Souk Lekhmis and Ighil N’oumgoun. In the following Table 2, we present the main actors of this activity, who have participated throughout the time in the construction of the rose LAFS of M’gouna.

The cooperation of these actors has enabled the creation of a large structure in Dadès (30 km from Kalât M’gouna) with the aim of organising the sector and creating a space for the exchange of expertise between the actors of this sector, to supervise the producers in the operations of production and valorisation and to establish the bases of a partnership and to reinforce the capacities of negotiation in the field of the marketing of the products at the local, national and international level. As well as the creation of a rose and its derivatives exchange by the determination of a reference price and the coordination of the operations of the designations of origin of the rose and its derivatives, without forgetting the insurance of the respect of the quality standards in accordance with the specifications of the designation of origin. This structure is named Maison de la Rose Parfumée, and it includes a museum of the perfumed rose, a laboratory, an exhibition hall, administrative buildings, a conference room and another for meetings.

The interaction of this amalgam of local private, public and community actors, and the implementation of action plans and common strategies for the development of this sector in the Dades valley, have enabled the emergence of a Localised Agri-food System (SAL) on the scale of the M’gouna and Dades territory. This SALA, marked by the diversity and territoriality of the actors, performed unsatisfactorily before 2011, when the average level of production of fresh roses was 2500 t per year, due to a number of reasons such as drought, the poor structuring of the sector, poor communication and coordination between the actors in the sector, etc. However, since 2011, with the implementation of Pillar I of the Green Morocco Plan in 2008 [28]—the programme that aimed to develop the rose sector in the Tinghir area—and the signing of the programme-contract between the government and the professionals of the sector in 2012, the average production level of this system has increased to 3350 t annually, i.e., an increase in production of 30%. This result is due to efforts to structure and energise the sector, as well as to the collaboration of the main actors in this LAFS. Additionally, despite the fact that exports from this ecosystem remain mediocre (63 t/year) [24], but we are witnessing a great movement of industrialisation and
transformation of fresh roses into innovative derivative products. In the following Figure 5 we show the evolution of the sector’s performance over the last ten years.

Table 2. Main actors of the localised agri-food system of Kalâat M’gouna rose.

<table>
<thead>
<tr>
<th>Actors Main</th>
<th>Legal Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Agriculture, Maritime Fishing, Rural Development and Water and Forests</td>
<td>Public</td>
</tr>
<tr>
<td>Agricultural Development Agency (ADA)</td>
<td>Public</td>
</tr>
<tr>
<td>Regional Office of Agricultural Development of Ouazarzate (ORMVAO)</td>
<td>Public</td>
</tr>
<tr>
<td>National Agency for the Development of Oasis and Argan Zones (ANDZOA)</td>
<td>Public</td>
</tr>
<tr>
<td>National Initiative for Human Development (INDH)</td>
<td>Public</td>
</tr>
<tr>
<td>Group of municipalities AL WARDA</td>
<td>Association</td>
</tr>
<tr>
<td>The Moroccan Interprofessional Federation of the Perfume Rose (FIMAROSE)</td>
<td>Association</td>
</tr>
<tr>
<td>Rose production and processing entities (80 local entities including 2 companies)</td>
<td>Private (cooperatives and companies)</td>
</tr>
<tr>
<td>Farmers or peasants</td>
<td>Private</td>
</tr>
<tr>
<td>The National Office of Sanitary and Food Safety (ONSSA)</td>
<td>Public</td>
</tr>
<tr>
<td>National laboratories: OARC—EAFLabo—Charles Nicoles</td>
<td>Private</td>
</tr>
<tr>
<td>International laboratories: Pyrenessences, Intertek, Sofia</td>
<td>Private</td>
</tr>
<tr>
<td>Equipment suppliers: Ura Industrie, etc.</td>
<td>Private</td>
</tr>
<tr>
<td>Cosmetic laboratories: Cerra SAS, Azbane</td>
<td>Private</td>
</tr>
<tr>
<td>The cosmetic experts: A. Y. Cosmetic Conseil</td>
<td>Private</td>
</tr>
<tr>
<td>Supporting structures</td>
<td></td>
</tr>
<tr>
<td>The German Agency for International Development Cooperation—GIZ</td>
<td>Non-governmental organisation (NGO)</td>
</tr>
<tr>
<td>The Belgian Cooperation and the APEFE program (Association for the Promotion of Education and Training Abroad)</td>
<td>NGO</td>
</tr>
<tr>
<td>The UNDP</td>
<td>NGO</td>
</tr>
</tbody>
</table>

Source: Our elaboration.

Figure 5. Impact indicators of the rose sector in the study area. Source: [24].
5.2. The K-M Rose LAFS: From Proximities to the Mechanisms of Valorisation of the “Rose” Territorial Resource

According to the results obtained from the actors of the Kalaât M’gouna rose ecosystem, we identified the existence of many links between the different actors of the system, however, these links are not of the same level and vary according to a set of variables such as the objectives of the organisation, the size of the organisation, the entrepreneurial culture of the entrepreneurs, etc. These different links allowed us to raise the existence of eight types of proximity between these actors, as shown in the figure below. These different links have allowed us to raise the existence of eight types of proximity between these actors, as shown in Figure 6 below.

![Figure 6. Types and frequencies of proximity identified among the actors of K-M LAFS rose. Source: Our elaboration.](image)

From this Figure 6, it emerges that the links that dominate the interdependencies between the actors of the M’gouna rose sector are essentially geographical (88.6%), organisational (82.9%), social (74.3%), relational (77.1%) and institutional (62.9%). It follows that the territorial actors of the KM rose ecosystem weave their relations on the basis of geographical proximity mainly, as the majority of actors are anchored in the province of Tinghir. Thus, their relations are of an organisational nature as the majority of actors are members of the Moroccan Federation of Rose Professionals (FIMAROSE). The last two types of relations are, on the one hand, social and/or relational, that is to say the family, school and friendship ties that exist between the actors. On the other hand, they are institutional in nature, as the actors obey the same system of norms and values and are governed by the same public institutions.

On the other hand, other types of proximity (cognitive, electronic and mediation resources) do not represent a significant share and remain marginalised. This shows the weakness or absence of cognitive-based relationships and links (joint research projects, training initiatives, etc.) between the actors of the system. It also reflects the lack of use of digital and electronic solutions by the actors to foster their integration into the rose ecosystem.

Additionally, the field survey enabled us to identify the different modes of valorisation of the “rose” resource by the actors of the K-M rose ecosystem. In Figure 7 below, we have summarized the different modes of valorization identified in the field. In fact, we were able to identify five dominant modes of valorisation of the resource; recovery during the cultivation phase (85.7%), recovery during the harvesting phase (91.4%), productive recovery or transformation of the rose into by-products (77.1%), recovery through packaging (54.3%), and commercial recovery or sale (51.4%). Whereas the other modes of valorisation of the resource such as valorisation by innovation, commercialisation, historical and cultural valorisation are very weak or not implemented by the actors of the K-M rose ecosystem.
From this figure, it can be seen that the lowest levels in terms ofvalorisation of the “rose” resource, are those that focus on innovation, advertising or marketing valorisation, and the presence of the historical and cultural touch in the products of the K-M rose ecosystem. This is due to the insufficiency or even the non-existence of local structures responsible for research and development and the training of the actors of the localised agro-food system in the areas of creativity and productive and valorising innovation, new techniques and production processes, as well as new channels and alternatives for the commercialisation of production.

Thus, the presence of these local training structures would have allowed the development of local knowledge of operators, farmers and traders of the perfume rose on the whole territory of the K-M rose ecosystem. Their presence would have made it possible to improve the strategic competences of the cooperatives and companies of the system concerning essentially the mastery of the value chain of rose cultivation to the mastery of the processes of valorisation and marketing of the production, while passing by the good mastery of the processes of production and innovative transformation which goes beyond the simple transformation of the rose into traditional products. However, the absence of training institutions and actors at the local level in the field of the exploitation of the perfume rose, shows the absence of cognitive links between the actors of the rose ecosystem of K-M.

The inexistence of these links between actors (cognitive, knowledge, training and technology) therefore refers to the absence of proximities that relate to these links; in this case, we speak of proximities of cognitive, electronic and mediation resources. Additionally, as a logical consequence of the absence of proximities, we find a great insufficiency of the modes of valorisation of resources based on cognitive, innovative and electronic skills.

After analysing the links of interdependence and the types of proximity that link the actors of the K-M rose ecosystem, and after analysing the different modes of valorisation of this resource among the actors, it is necessary to analyse the correlation or the possible interdependence between these two variables (proximities and modes of valorisation of the resource). In the following Table 3, we show the results of the correlation between the types of proximities and the ways of valuing the pink resource in the LAFS-KM.

From the table that relates the forms of proximity and the logics of valuing the rose resource in the LAFS rose of M’gouna, we see that the significant values are expressed at the level of the following proximities: geographical, organisational, institutional, relational and social, while the significant values that concern the rose valorisation processes are expressed at the level of the following processes: cultivation/production, harvesting, transformation, packaging, marketing and sale. The cognitive, electronic and social proximities, as well as the valorisation processes (innovation, marketing and valorisation through the historical and cultural imprint of the M’gouna territory) express non-significant values.
Table 3. Results of the correlation between types of inter-actor proximities and rose valuation patterns in LAFS-KM.

<table>
<thead>
<tr>
<th>Types of proximity</th>
<th>Production</th>
<th>Harvest</th>
<th>Transformation</th>
<th>Innovation</th>
<th>Packaging</th>
<th>Sale</th>
<th>Marketing</th>
<th>Historical Footprint</th>
<th>Cultural Footprint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geo</td>
<td>C.P 0.540 ***</td>
<td>0.114</td>
<td>−0.037</td>
<td>−0.1</td>
<td>0.038</td>
<td>−0.199</td>
<td>−0.011</td>
<td>0.052</td>
<td>−0.175</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.445</td>
<td>0.805</td>
<td>0.503</td>
<td>0.801</td>
<td>0.18</td>
<td>0.94</td>
<td>0.73</td>
<td>0.238</td>
<td></td>
</tr>
<tr>
<td>Orga</td>
<td>C.P 0.204</td>
<td>0.763 ***</td>
<td>0.714 ***</td>
<td>0.09</td>
<td>0.079</td>
<td>0.189</td>
<td>0.042</td>
<td>0.09</td>
<td>0.141</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.169</td>
<td>0</td>
<td>0</td>
<td>0.547</td>
<td>0.595</td>
<td>0.202</td>
<td>0.78</td>
<td>0.547</td>
<td>0.343</td>
</tr>
<tr>
<td>Relat</td>
<td>C.P 0.183</td>
<td>0.032</td>
<td>0.088</td>
<td>−0.003</td>
<td>−0.184</td>
<td>−0.07</td>
<td>0.237</td>
<td>−0.244</td>
<td>−0.019</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.217</td>
<td>0.829</td>
<td>0.556</td>
<td>0.986</td>
<td>0.215</td>
<td>0.642</td>
<td>0.108</td>
<td>0.098</td>
<td>0.901</td>
</tr>
<tr>
<td>Soc</td>
<td>C.P 0.258</td>
<td>0.194</td>
<td>0.134</td>
<td>−0.256</td>
<td>−0.07</td>
<td>0.631 ***</td>
<td>−0.154</td>
<td>−0.256</td>
<td>−0.320 *</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.08</td>
<td>0.192</td>
<td>0.37</td>
<td>0.083</td>
<td>0.642</td>
<td>0</td>
<td>0.303</td>
<td>0.083</td>
<td>0.024</td>
</tr>
<tr>
<td>Inst.</td>
<td>C.P −0.083</td>
<td>−0.129</td>
<td>−0.129</td>
<td>0.163</td>
<td>0.326 *</td>
<td>0.123</td>
<td>0.029</td>
<td>0.042</td>
<td>0.253</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.585</td>
<td>0.394</td>
<td>0.394</td>
<td>0.278</td>
<td>0.025</td>
<td>0.414</td>
<td>0.649</td>
<td>0.781</td>
<td>0.09</td>
</tr>
<tr>
<td>Elec</td>
<td>C.P −0.18</td>
<td>−0.151</td>
<td>−0.254</td>
<td>0.129</td>
<td>−0.076</td>
<td>0.171</td>
<td>0.18</td>
<td>−0.03</td>
<td>0.067</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.227</td>
<td>0.312</td>
<td>0.085</td>
<td>0.389</td>
<td>0.61</td>
<td>0.25</td>
<td>0.227</td>
<td>0.839</td>
<td>0.653</td>
</tr>
<tr>
<td>Cog</td>
<td>C.P 0.011</td>
<td>−0.135</td>
<td>0.044</td>
<td>0.004</td>
<td>−0.077</td>
<td>0.074</td>
<td>0.253</td>
<td>−0.144</td>
<td>0.183</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.943</td>
<td>0.365</td>
<td>0.77</td>
<td>0.979</td>
<td>0.607</td>
<td>0.622</td>
<td>0.09</td>
<td>0.333</td>
<td>0.219</td>
</tr>
<tr>
<td>RDM</td>
<td>C.P −0.292 *</td>
<td>−0.022</td>
<td>−0.105</td>
<td>−0.245</td>
<td>0.168</td>
<td>−0.259</td>
<td>−0.185</td>
<td>−0.245</td>
<td>−0.285</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.047</td>
<td>0.883</td>
<td>0.483</td>
<td>0.097</td>
<td>0.259</td>
<td>0.079</td>
<td>0.213</td>
<td>0.097</td>
<td>0.052</td>
</tr>
</tbody>
</table>

Types of proximity: Cog = Cognitive, Geo = Geographic, Inst = Institutional, Orga = Organisational, Relat = Relational, RDM = Mediation Resources, Soc = Social, Elec = Electronic. C.P = Corrélation of Pearson. Sig = Signification. Source: Our elaboration. *** significant at the 1% level, * significant at the 5% level.

On the other hand, when we asked the ecosystem actors what is missing at the local level or what needs to be improved to better valorize the rose resource at the local, national and international levels, the answers were very different. However, after processing and analyzing the responses, we found that most respondents emphasized the following components: training of actors, technical support, know-how, and cooperation and coordination of actors, as shown below in Table 4. This explains well the important lack of links and proximities between the K-M rose LAFS actors in the areas of knowledge, know-how, new technologies, technical support and cooperation in local collective projects. These advances therefore logically support our analysis.

Table 4. Gaps expressed by the actors of the K-M rose LAFS and their level.

<table>
<thead>
<tr>
<th>Gaps</th>
<th>Number</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordination of actors</td>
<td>6</td>
<td>9%</td>
</tr>
<tr>
<td>Training of actors</td>
<td>9</td>
<td>13%</td>
</tr>
<tr>
<td>Governance of the system</td>
<td>3</td>
<td>4%</td>
</tr>
<tr>
<td>Technical assistance</td>
<td>10</td>
<td>14%</td>
</tr>
<tr>
<td>Financial support</td>
<td>7</td>
<td>10%</td>
</tr>
<tr>
<td>The spirit of creativity</td>
<td>5</td>
<td>7%</td>
</tr>
<tr>
<td>The customers—the demand</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Simplification of the export scheme</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Trust</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Technology equipment—computer</td>
<td>4</td>
<td>6%</td>
</tr>
<tr>
<td>Cooperation of actors</td>
<td>8</td>
<td>12%</td>
</tr>
<tr>
<td>Know-how</td>
<td>15</td>
<td>22%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Total: 69 100%

Source: our elaboration.

6. Discussion

Indeed, according to the results of our empirical study (notably the correlation table), we note the existence of a sort of homogeneity between the valorisation processes in place or operational and the nature of the relations linking the actors of the local system. We can see that the modes of valorisation that dominate in the M’gouna rose LAFS are consistent with the existing proximities. According to the data in the table, it can be seen that the processes of valorisation of the rose resource effectively identified by the actors in the system (cultivation/production, harvesting, processing, packaging and marketing)
can be explained essentially by the existence of five forms of proximity (geographical, organisational, relational, social and institutional).

These proximities are the effective concretisation of the relations that link the actors to each other in this productive territorial configuration. However, we note the insufficiency or even the fragility of the valorisation processes which are based on knowledge, know-how and new technologies, which allows us to understand the insufficiency of the cognitive and electronic links and mediation resources between the actors of the system.

In fact, the processes of valorisation of the rose resource revealed by the actors of the KM rose ecosystem are those attached to the classical operations of the rose value chain in this territory, i.e., production (harvesting), harvesting, processing, packaging, and marketing operations.

They are based on traditional interdependencies governed by physical and geographical links justified by the geographical proximity between the actors in the system, due to their location in a small geographical area (Dades and Kalâaât M'gouna). Additionally, the actors have family and social links that allow them to intervene on the quantity, the nature of the by-products, the packaging and the points of sale of the production, etc. These personal and social links have been developed over several decades, since the emergence of this activity in the territory. They are now well maintained thanks to the trust established between the actors.

Consequently, we can say that the logic of proximity expressed in the territory of Kalâaât M'gouna allows us to understand the mechanisms of valorisation of the rose resource in which the private actors of the rose ecosystem of K-M participate in this territory. Thus, in the case study, we only find the modes of valorisation that already have an adequate relational base among the territorial actors.

As a result, the modes of valorisation of the “rose” resource that are revealed in M’gouna are based on direct contact between actors, informal cooperation and competition, and membership of common territorial structures that reinforce the social, relational and institutional interdependencies of the actors (in this sense, we are talking about the agricultural cooperatives of the sector operating in the territory). On the other hand, the modes of valorisation based on cognitive, creative and innovative interdependencies are very little present in this ecosystem. These types of proximity are not revealed or established by the actors until now because of the lack of coordination of the actors in terms of designing common research projects, collective training actions, knowledge and technique sharing processes or financing of innovative projects, etc.

Consequently, we can affirm that each mode or process of resource valorisation is in adequacy with a type of proximity implemented by the actors of this local agri-food system. Geographical proximity is correlated with the harvesting process. This is mainly due to the existence of direct links and face-to-face relations between the actors of the system on a limited territory, these direct links favour inter-actor cooperation relations (mainly producers) in terms of harvesting and collection operations, which allows the development of techniques attached to these processes. Consequently, it can be said that the geographical proximity of the actors improves the process of harvesting and collecting the system’s production each year.

Additionally, we notice that the organisational proximity is linked to the production process or rose cultivation. This situation shows that the membership of LAFS actors to the agricultural cooperatives and the interprofessional federation of rose producers in the study area makes it possible to improve more and more the techniques and tools for rose cultivation in Kalâaât M’gouna. The improvement of cultivation techniques undoubtedly favours the increase in production from one agricultural company to another.

We also note that relational proximity is correlated with the transformation process. This can be explained by the existence of direct relations between LAFS actors, supported by membership of the same territory and common professional organisations, which reinforces the pooling of knowledge, techniques and equipment. As a result, there has been
an improvement in the processes of transformation of the rose (LAFS products) into other derived products, such as perfumed water, soaps, creams, etc.

In terms of institutional proximity, it is noted that it is linked to the rose conditioning process (processing, packaging and conditioning). This observation can be explained by the activation of institutional relations between the actors of the system and the public actors in charge of the governance and promotion of the rose sector at local level. The local public actors (the Regional Office for Agricultural Development of Ouarzazate, the Agricultural Development Agency, the Chamber of Agriculture, etc.) are therefore involved, through technical and financial support programmes (training, technical packaging equipment, value-adding units, etc.), in the improvement of operations and packaging techniques for the products of the KM rose LAFS.

As much, we notice that social proximity is attached to the marketing process of the system’s products. As a result, it can be said that the marketing operations of the KM rose LAFS products are largely based on the personal and family ties activated between the actors of the system. Actors use their family or acquaintance networks to sell their products mainly locally, but also in other major cities in Morocco (Agadir, Casablanca, Rabat, etc.).

For the other three types of proximity, which have insignificant levels (cognitive, electronic, and mediation resources), we notice that they are linked, although at a mediocre level, with the processes of innovation, marketing and valorisation through the historical or cultural imprint of the territory. Therefore, the weakness of the innovation and marketing processes can be explained by the insufficiency or inactivation of the said proximities (or cognitive). In fact, the innovation or invention of new rose-based products by the actors of the LAFS, which reflects the historical and cultural specificities of the M’gouna territory, as well as the marketing and commercialisation of these wide-ranging products, requires innovation networks, research and development structures and links based on knowledge on the one hand, and on new technologies on the other hand, which is not the case within the framework of the rose LAFS of KM. Consequently, the overall level of resource valorisation by the actors of the ecosystem is linked to the actual level of proximity implemented by the said actors.

Indeed, as the valorisation of territorial resources depends on local actors, their collective actions and their coordination on a given territory, the valorisation of the territorial resource also depends on the proximities set up by the actors and their degree of implementation on the ground. Thus, to improve the level of valorisation of the rose resource by the actors of the K-M rose LAFS, it is judicious to develop and promote the presence of links of research, training, collective learning, collective action, etc., between the actors of this productive territorial organisation. This requires the establishment of other actors at the local level responsible for the training of professionals in the sector, the setting up of joint research projects between actors, the financing of these projects and the coordination of the actors’ actions.

Indeed, apart from the efforts invested by GIZ in this field in the province of Tinghir, we do not find any other actor who deals with the connection between rose professionals in M’gouna and their training in topics related to the control of the production chain, stock and quality, etc. Thus, the great lack at the level of this ecosystem is concretised by the absence of links and actions that promote cognitive and electronic proximity between actors. Thus, the great lack at the level of this ecosystem is concretised by the absence of links and actions that favour cognitive and electronic proximity between the actors. This is due to a set of reasons such as:

- The lack of establishments and actors (private or public) in charge of training in the field of the development of the rose sector in the territory (from production, to marketing, through the development of a local industry for the transformation of the rose into innovative by-products: perfumes, cosmetics, food, etc.). Thus, for the other training organisations present in the territory (OFPPT, mainly), they do not offer adequate training to the actors concerning the rose value chain;
• The resistance of a group of private actors in the sector to join the cooperatives, associations and federations of LAFS, given that the objectives of these organisations are to provide professionals in the sector with supervision, monitoring, awareness-raising, training, support in the search for opportunities, etc. However, the low membership rate of the actors in these territorial structures shows that the professionals of the sector are reluctant to carry out collective actions and that their awareness of collective work is not yet developed;

• This can be explained by the low level of computerisation and digitalisation of the sector at the local level, as the production, transformation and marketing processes of the K-M rose LAFS products remain faithful to the traditional approach, following classic methods, which does not favour a better valorisation of this resource with high potential.

7. Conclusions

In conclusion, we can note that the rose sector in the territory of Kalâat M’gouna (the LAFS of K-M rose) is experiencing numerous difficulties on several levels, notably that of the quantitative and qualitative valorisation of this territorial resource, considered as the driving force of the economic activity in this marginalised geographical area. The production of fresh rose and the processes of transformation of the rose into derived products (oils, perfumes, cosmetics, soaps, creams, etc.) still suffer from a set of constraints such as:

- The non-modernisation of the practices of operators, farmers and even local cooperatives in the cultivation and harvesting of their produce;
- Poor control of the processing of fresh rose into by-products, which leads to many failures in the distillation process;
- The absence of structures and actors responsible for training field actors to adopt good operating practices;
- Weaknesses in the processes of valorisation of production, particularly in the cognitive, historical, cultural, commercial and technological fields;
- Weak coordination, cooperation and sharing of knowledge, techniques and tools;
- Very heterogeneous sales prices and many similarities in the packaging and labelling used;
- Non-compliance with texts and regulations on labelling and mandatory inscriptions, etc.

For that, and to restructure the activity at the level of this space and for a better valorisation of the local production in fresh rose, it proves necessary to put an end to the disorganisation of the sector which takes advantage of the normative and legal vacuum, and to set up a legal and normative framework which organises this production that it is at the quantitative or qualitative level. Thus, it is a question of reviving the governance bodies of this activity. We are talking about FIMAROSE—leader of the rose sector—which federates the vast majority of producers and operators of fresh rose in Morocco. Thus, FIMAROSE is called upon to put in place new tools for the coordination of actors, particularly in the cognitive aspect (training, collective research projects, mutualisation of knowledge and techniques, seminars related to the activity, international presence in scientific events related to the fresh rose sector, etc.).

Similarly, other public actors, at the local level, are called upon to participate in this transition towards another mode of management and governance of this sector, through the creation of a local committee encompassing all the institutions at the level of the province of Tinghir, in order to coordinate efforts and implement a program for the development of the sector, in which each organisation presents what it can offer to this activity and to the deadlines, while promoting the cognitive sides. However, the problem of enhancing production in the K-M rose ecosystem is essentially linked to knowledge, new techniques, and adaptation to environmental changes.

Lastly, it is impossible to sustainably develop the territorial resource without the human factor, the heart of any project or system. Additionally, as long as the human factor
of the K-M rose ecosystem is not at the level of international good practices in terms of management, exploitation, cultivation and production, this factor is likely to remain an obstacle to the development of the resource in this sector. It is therefore time for the actors in this system, including the governance institutions, to focus on the skills and know-how of the human factor in this system, with a view to creating cognitive, technological and mediation resource proximities between the actors, and to continuously improve the strategic capacities of the actors along the value chain of the “rose” resource. It is a question of going beyond the productive issue at the level of this ecosystem and talking about an innovative local dynamic oriented towards industrialisation and based on sustainability.


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Data Availability Statement: The data used in this study come mainly from a field survey (the rose production system in Kalaat M’gouna), through a paper questionnaire distributed to the actors, and also with the help of an interview guide. The collected data are stored in the form of an Excel file, so they are processed using the SPSS software (V 23). We can of course share with you the Excel file containing the data for the other data (system indicators) we mentioned that they are the data of the Ministry and the Regional Agricultural Development Board. Here are the links: https://www.fellah-trade.com/fr/filiere-vegetale/chiffres-cles-rose-a-parfum?filiere=filiere_rose and https://docs.google.com/spreadsheets/d/1U_zC4mZrp-gTiwnZ52qIr9_CmcsBM7_JjAKa1Uq_ARW4/edit?usp=sharing (all accessed on 20 October 2022).

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