



SMART VILLAGE STRATEGY OF PENELA RURAL INNOVATION VILLAGES (PORTUGAL)

FERRARIA DE SÃO JOÃO



DECEMBER 2020

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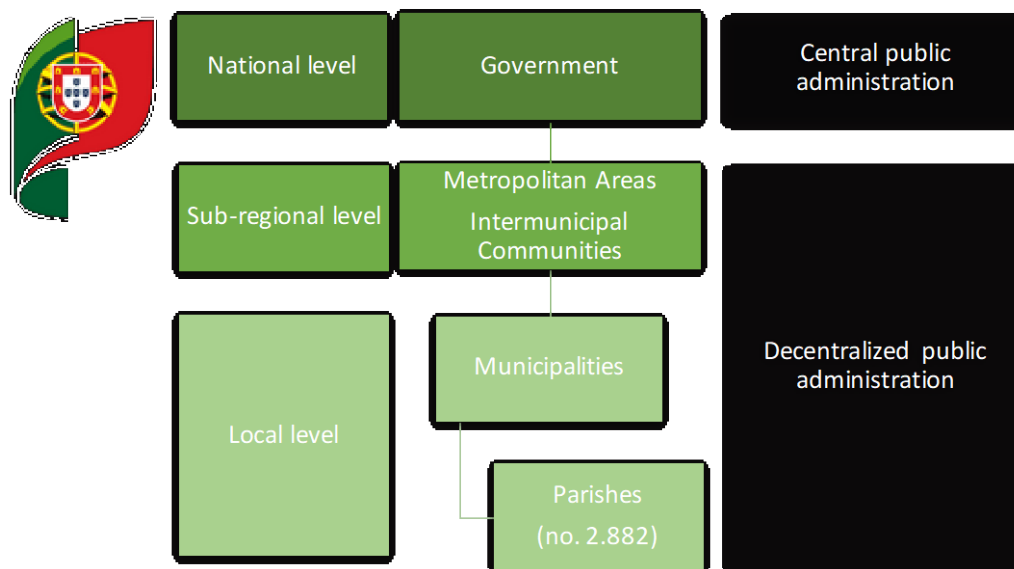
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I. INTRODUCTION

1.1 Local governance in Portugal

The governance model in mainland Portugal includes three territorial levels of administration: central, sub-regional and local. With regard, particularly to the local level, the democratic organization understands the existence of local authorities - Municipalities and Parishes, which correspond to the administrative level at which local political leaders are elected.

Figure 1. Multi-level governance in Portugal



In their definition, Municipalities and Parishes are territorial entities that aim at socio-economic development and the pursuit of the interests of the respective populations, with their attributions and competences directly linked to spatial planning, public supply, basic sanitation, health, education, culture, the environment and sport. To play this role, local authorities are endowed with representative bodies with autonomous political powers and their own responsibilities and competences.

Municipalities

- **Municipal Council (executive body).** Responsible for governing and managing the current affairs of the municipality. It consists of an executive elected through a proportional representation system, which includes a president (first candidate on the most voted list) and an odd number of councilors (between 5 and 17, depending on the population of the municipality), which normally includes representatives of several political party lists.
- **Municipal Assembly (deliberative body).** Its main competence is to supervise the activity of the Municipal Council. The number of members varies according to the number of citizens and parishes, being elected similarly to the Municipal Council, however with the particularity of inherently integrating the presidents of the Parish Councils of the municipality.

Parishes

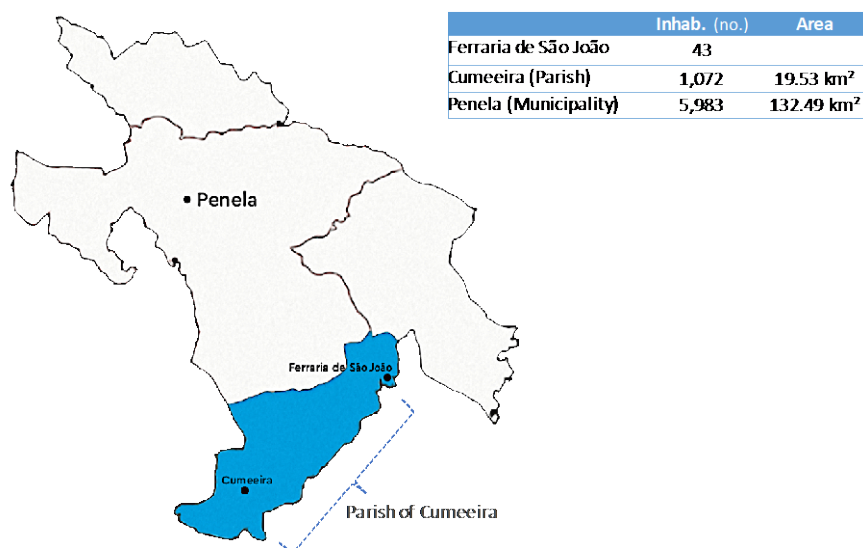
- Parish Council (executive body). Responsible for governing and managing the current affairs of the parish. It is elected by the members of the Parish Assembly, with the exception of the President (first candidate on the most voted list).
- Parish Assembly (deliberative body). It is a body directly elected by registered citizens, through lists that traditionally are partisan, but can also be independent.

All bodies are elected by direct and universal suffrage (party or independent lists), with the exception of the Parish Council. Elections take place every 4 years, with the next electoral process taking place in 2021.

In Portugal, parishes are subdivisions of municipalities and correspond to the smallest administrative division in Portugal (similar to the parish in other countries). In rural areas, parishes are generally constituted by several small population settlements (towns and villages).

In this case, and with regard to administrative division/autonomy, it should be noted that FSJ does not have any local political body. It is a very small village that is located and belongs to the Parish of Cumeeira which, in turn, belongs to the municipality of Penela.

Figure 2. Municipality of Penela



Despite the absence of an administrative body in the village, there is a local associative structure - Association of Residents of Ferrara de São João (ARFSJ) - which was created to enhance the village progress and growth through the valorization of its endogenous resources, and which aims to:

- recover local traditions;
- support the provision of new services in order to increase, widen and strengthen the local economy; and
- promote the sustainable development of tourism.

This Association, distinguished by its dynamism, entrepreneurial spirit and high motivation, has been assuming a fundamental role in the development process of FSJ and, as a representative of the village, it has established a close relationship with the Municipality of Penela, based on a sharing of a common strategic vision, a perspective of ongoing dialogue, and a strong commitment and cooperation. The outcome of this robust and consistent collaboration is mirrored in a relevant set of structuring projects, both in projects developed so far develop and in projects to be implemented in the coming years.

1.2 What is a 'village' in Portugal?

In Portugal, there are three main types of population centers: city, town and village. Bearing in mind the outline of this strategy, it is important to mention the [informal] definitions of village and town, as both configurations were selectable within the scope of the Project Smart Rural 21.

Village

Population cluster usually located in rural areas, with few inhabitants, with a simple social and economic organization (relatively lacking in collective services and equipment), and which may have administrative autonomy. In general, it is usually a village satellite. A rural parish in Portugal is usually constituted of several villages.

Town

Population cluster of intermediate size between the village and the city, with an almost self-sufficient economy. The transition from village to town depends on the importance that the tertiary sector (commerce and services) assumes in the local economy. Usually it has administrative autonomy (and may even assume the role of the seat of the municipality).

According to the Portuguese legal framework, it is a continuous population agglomeration, with a minimum number of voters of 3,000, having at least half of the following collective facilities: health care post; pharmacy; cultural center or other collectives; public transport; post office; commercial and tourism establishments; establishment providing compulsory education; bank branch.

II. CONTEXT OF THE DEVELOPMENT OF THE SMART VILLAGE STRATEGY

2.1 Top-level strategies

With regard to **regional level** development strategies, it should be mentioned that the strategy for FSJ is appropriately framed in the Regional Innovation Strategy for Smart Specialization (RIS3) and the Program for Revitalization of Pinhal Interior¹, both outlined for the Region Centro of Portugal (programming period 2014-2020), and both operationalized with financial resources mainly mobilized from the Regional Operational Programme Centro2020.

RIS3 consists of a strategic approach to economic development, through support focused on research and innovation in a set of thematic differentiating domains, in which the region differs or has growth potential.

Figure 3. Top-level strategies – RIS 3 for the Region Centro of Portugal



The consistency of this framework is confirmed with the priority line of intervention 'rural innovation'. In fact, RIS3 states that experimenting with new solutions geared to rural innovation allows to enhance the attractiveness and quality of life in rural areas, namely, the development of smart and creative territories; of integrated solutions for the design, production, valorization and commercialization of products and services based on endogenous resources; and the introduction of technologies (e.g., telemedicine, itinerant support systems, ...) and other forms of social innovation.

Another very relevant regional strategy is the Pilot-programme for the Revitalization of Pinhal Interior (PRPI), which was created following the 2017 fires in the Region Centro. This pilot program is implemented through the national Program for Enhancing the Inland, in harmony with the current national policy, whose ambition is to contribute to a more cohesive, more inclusive and more competitive country, in convergence with the European Union's designs: combating climate change, responding to the demographic challenge, building the digital society and reducing inequalities.

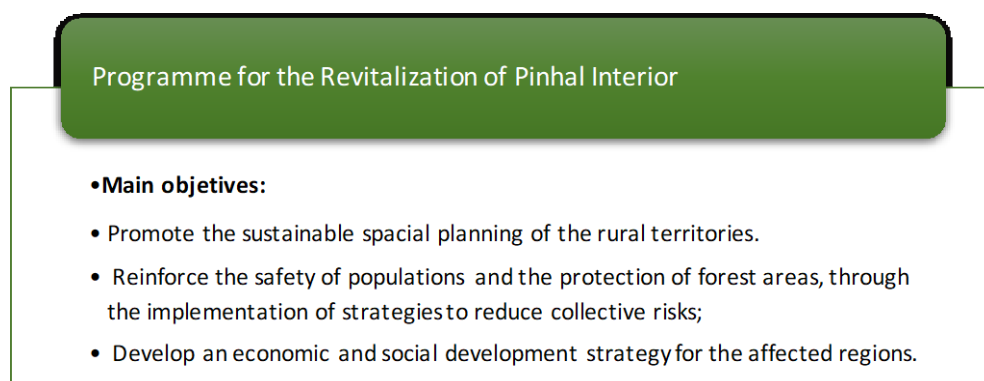
¹ Scope of application: 19 municipalities in the Region Centro most affected by the massive fires in 2017, one of which is Penela.

With the objective of suiting the strategic challenges of the Government Program and the current political cycle, it is organized along the following priority axes:

- Axis 1: Valuing endogenous resources and business capacity in the inland;
- Axis 2: Promote cross-border cooperation for the internationalization of goods and services;
- Axis 3: Capture investment and settle people in inland territories;
- Axis 4: Making inland territories more competitive.

In this context, the Pilot-programme for the Revitalization of Pinhal Interior has an approach centered on economic and social revitalization, including the issues related to the forest areas, developing a set of measures and actions with a strong territorial nature, capitalizing on local complementarities and synergies and articulating the various sectoral policies in favor of a development strategy for the rural territories.

Figure 4. Top-level strategies – Pilot-programme for the Revitalization of Pinhal Interior



The PRPI considers the instruments related with the spatial planning and management and rural development policies, defining strategies, plans and actions under a specific governance model where it attributes responsibilities and competencies to different stakeholders, allowing the programming and financing of specific actions in the short and medium term.

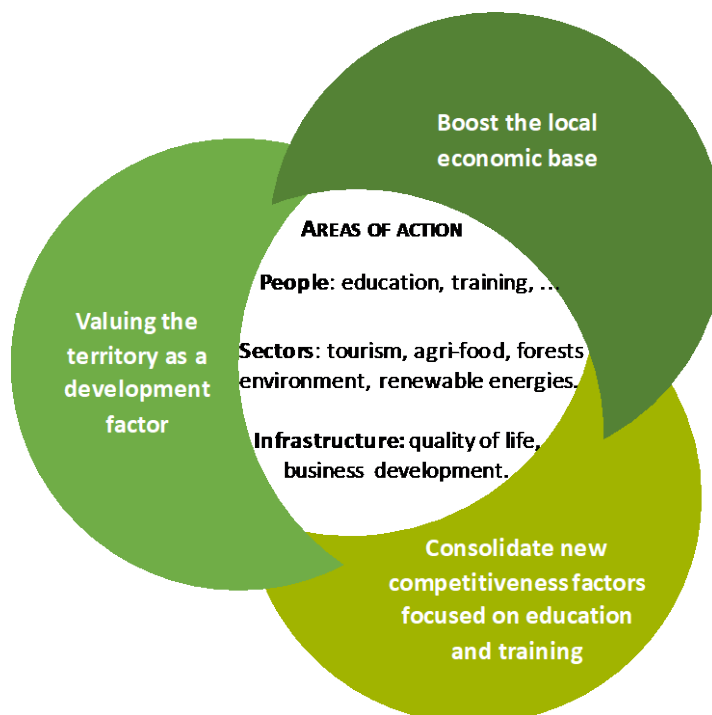
Considering **local level**, the municipality of Penela pursues, since 2007, a sustainable territorial development policy which reflects the specific needs and which enumerates the lines of intervention capable of responding to the complex nature of the economic, social and environmental challenges and opportunities.

With this background, the municipality conceived the Director Programme for Innovation, Competitiveness and Entrepreneurship (PD-ICE), which provides a framework based on territory planning, green economy, social economy, innovation and creativity, for a comprehensive response to the identified needs. In this context, the PD-ICE suggests:

- strengthening the visibility and attractiveness of the territory;
- capitalizing endogenous resources as a differentiating factor;
- promoting tourism in an integrated way, and
- fostering and supporting innovative projects.

Accordingly, the Programme assumes the vision **Local resources at the service of innovation, innovation at the service of local resources**, and sets clear strategic guidelines around three areas of action that represent, at the same time, the basis to mobilize resources and the focus of the interventions (see Figure below).

Figure 5. PD-ICE – strategic guidelines and resources to be mobilized



In addition, the Municipality of Penela designed the Strategic Programme for Sustainable Development 2020², which is a general instrument for framing the development of the municipality for the programming period 2014-2020, being aligned with the premises of EUROPE 2020 Strategy, Portugal 2020 Partnership Agreement, Regional Operational Program for the Region Centro, and Strategic Development Plan for the Region of Coimbra.

This Strategic Programme takes the PD-ICE as its starting point, maintaining the same strategic objectives (cf. previous figure), given the commitment to transform the Municipality of Penela into a competitive, connected, attractive and resilient territory.

² Link: <https://bit.ly/35lXBDj>

2.2 Existing strategies and initiatives

Taking into account the achievement of the ambitious expected results in the scope of the implementation of the Strategic Programme for Sustainable Development 2020, the Municipality of Penela has been executing a set of strategies, initiatives and mobilizing projects, that were considered in the construction of this smart strategy for Ferraria de São João. Of those mobilizing initiatives, the following are highlighted.

Smart Rural Living Lab

In 2010, the Municipality of Penela joined the European Living Labs Network (ENoLL) with the leadership of the Smart Rural Living Lab consortium, whose performance perspective consists of bringing together companies, researchers and public institutions, promoting cooperation and creativity and creating new products and services that will undergo tests in a real context, with the aim of promoting the integration of sparsely populated areas in the challenging global world.

The inspiration of the Municipality of Penela is to learn best practices from other villages across Europe, in order to implement the most efficient solutions to attract citizens and tourists as a way to fight depopulation and revitalize the territory's economy.

Schist Villages Network

Ferraria de São João is the only village in the municipality of Penela that is part of the Schist Villages Network. The beginning of the development of the Schist Villages Program (PAX)³ occurred within the scope of the Community Support Framework III (CSFIII) (2000-2006), based on a collective efficiency strategy that covered 15 municipalities. The structuring of the territory in networks that aimed to emphasize the potential of its resources (villages, water courses, paths, ...) ended up evolving and giving rise to the creation of an Agency for the Tourist Development of Schist Villages (ADXTUR) , and the creation of a brand, whose objectives are the preservation and promotion of the cultural landscape of the territory, the enhancement of the architectural heritage, the dynamization of the socio-economic fabric and the renewal of arts and crafts.

This collective efficiency network has a high level of maturity, both in terms of physical execution and in terms of dynamism and management, having given rise to the River Beach Network and the Schist Paths Network.

The process of integrating the village into this collective efficiency strategy was based on a Village Plan that included intervention in private buildings (operations on roofs and facades) and interventions in the public domain. At the level of private domain constructions, the roofs and façades of about 30 constructions were intervened, which came to trigger, in the majority, interior rehabilitation works that came to allow their use. At the level of the public domain, a significant part of the planned actions was carried out with the financial support of QCA III (the country's first MTB Center, route networks, ...).

³ <https://aldeiasdoxisto.pt/content/rede>

Strategic Urban Rehabilitation Program

Bearing in mind the importance of structuring territories for the fulfilment of the European Union's ambition, sustainable urban development was considered as a fundamental component in the policy of development and territorial cohesion (economic, social, and environmental dimensions). With this background, urban should be understood as the built surface in the population agglomerations.

At the national level, this policy was included in Portugal's Sustainable Urban Development Strategy for the period 2014-2020, centered on consolidating the role of population agglomerations in development and territorial cohesion, and supported by reference instruments of the spatial planning policy and urbanism as is the case of the Strategic Urban Rehabilitation Program of the Village Ferraria de São João⁴, which also includes the Structured Action Plan “Ferraria, Live Village”⁵, which helped to structure the vision and mission for an intelligent approach to the development of the village of Ferraria de São João.

2.2.1 Links to existing local strategies

The structuring of the vision and mission for a smart approach in the development of the FSJ relied on the Strategic Urban Rehabilitation Program of Village Ferraria de São João, approved by the Municipal Assembly in February 2017, and to be executed between 2019-2029; and with the Structured Plan of Action “Ferraria, Live Village”.

It should also be noted that FSJ is covered by the Territory of intervention of the Local Action Group (LAG) Terras de Sicó, and that the mentioned strategic documents are framed within the scope of the respective Local Development Strategy.

Strategic Urban Rehabilitation Programme for Ferraria de São João

It aims to intervene in an integrated manner over the existing urban fabric, in which the village's urban and real estate heritage is maintained, in whole or in substantial part, and modernized by carrying out construction works, remodeling or improving the urban infrastructure systems and equipment and urban or green spaces for collective use.

The area for which the Urban Rehabilitation Area (of the building) of the Ferraria de São João village was delimited, corresponds to 4.57 hectares.

Structured Action Plan “Ferraria Live Village”

Its vision is to affirm tourism as a lever for the economic, social and environmental development of the village of Ferraria de São João and its surroundings, contributing to position it in the national offer of a competitive and sustainable tourist destination.

⁴ Link: <https://bit.ly/35JwjNb>

⁵ Link: <https://bit.ly/35INiiB>

Local Development Strategy – Terras de Sicó

The strategic lines defined for the development of FSJ are entirely coherent with the overall objectives of the Local Development Strategy of the LAG Terras de Sicó, which are the following:

- Competitiveness. The dynamism and diversification of the local economy should potentially increase the capacity to generate and retain added value in the territory, requiring the valorization of endogenous products as a factor of differentiation and innovation.
- Employment. The creation and the maintenance of jobs are fundamental aspects to counter the tendency of population decrease and aging in the territory.
- Environment and sustainability. The preservation and protection of the environment, in addition to increasing the sustainability of natural resources, it allows their economic use and the activities that could develop around them.

2.2.2 Review of past and ongoing projects and initiatives

The progresses towards the development of FSJ derived from an urban rehabilitation operation financed through the Community Support Framework 2000-2006, under a **Village Plan** whose main objectives were (i) to preserve the local identity; (ii) to stimulate the self-esteem of the populations, and (iii) to promote the development of the local economy and the quality of life of the inhabitants.

This Plan was conceived with the double objective of recovering and revitalizing the urban area of the village, and its integration in the Program for the Economic Valorization of Endogenous Resources (PROVERE) - Schist Villages.

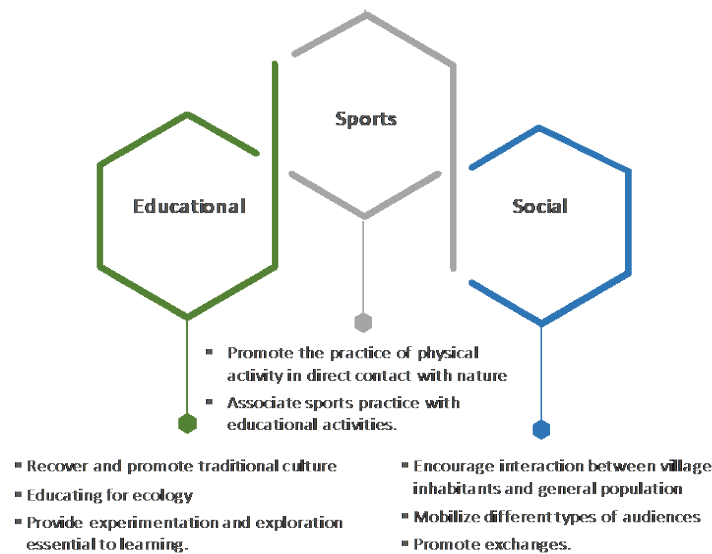
The interventions carried out stimulated a new economic and social dynamics in the village, triggering a set of investments and public and private initiatives both at the economic and social level, among which it can be highlighted the following:

- The rehabilitation of housing led to the establishment of new families, of a second homes for seasonal use, or for placing on the short-term rental market associated with tourist activities;
- The installation of tourism units / local accommodation in renovated properties;
- The reestablishment of community spirit in the village, motivated by the institution of ARFSJ.

It was in this context that, in 2011, ARFSJ started an entrepreneurial and transformative social innovation process that, at that time, was characterized as having unique features at national level, to develop a particularly relevant project – **Ferraria Live Village** –.

This process established the need to ensure a commitment of ARFSJ, that led/moderated the process in partnership with the Municipality of Penela, to define and develop an ambitious and targeted work programme respecting the bottom-up approach, which was able to stimulate the participation and keep a regular involvement of residents, tourism agents and other public and private entities, in order to identify and implement solutions for the sustainable development of the village.

Figure 6. Initiatives developed within the project “Ferraria Live Village”



The initiative was framed in the Schist Villages Animation Plan, taking advantage of the European Union's co-financing through PROVERE. The initiatives developed were part of plans aimed at specific target audiences.

Following the fires in 2017, the “Ferraria, Live Village” Project broadened the scope of its objectives, and designed an Action Plan that, as previously mentioned, includes a vision of affirming tourism as a lever for the economic, social and environmental development of the village, and for which it defined five intervention priorities:

- ➡ enhancing the territory, especially the authenticity of the historical and cultural heritage and the economic enhancement of the natural and rural heritage;
- ➡ boost the economy, qualifying the offer, supporting circular economy, entrepreneurship and innovation;
- ➡ enhance knowledge, through training / capacity building actions;
- ➡ generate networks and connectivity, through community involvement in co-creating tourism development and networking with the primary sector, as the base of the village's activity;
- ➡ project Portugal, increasing the external and internal tourist demand.

Given the general objective of qualifying the village as a tourist destination, it is intended, through the enhancement of its cultural and natural heritage and the surrounding territory, to promote the social and environmental sustainability of this destination.

It should be noted that the set of interventions outlined by this Action Plan are foreseen in the Strategic Urban Rehabilitation Programme for Ferrara de São João.

2.3 What is smart for Ferraria de São João

The 'smart village' approach emerged from specific challenges as depopulation and aging, frail local economy, and consequences / impacts of the forest fire occurred in June 2017⁶ that devastated the surroundings of the village; and it is the result from a continuous and participative process of involvement, discussion and co-creation with residents, tourism agents and other entities with whom AMFSJ has been collaborating, as well as from the partnership with the Municipality of Penela.

The close collaboration between ARFSJ and the Municipality of Penela, is partly due to the sharing of a vision for the sustainable development of the Municipality, based on the valorization of local resources, the improvement of services and the qualification of the territory, in order to stimulate innovation and creativity, to increase competitiveness, to attract more companies, and, of course, to create more jobs and fix more people.

This Plan, promoted by the ARFSJ and the Municipality of Penela, is now firmly embedded in the smart village strategy.

What is smart for Ferraria de São João

Smart for Ferraria de São João is to develop integrated territorial strategies, using innovation and bottom-up approaches to overcome the identified challenges and to achieve a sustainable development in its three dimensions – social, economic and environmental.

In this particular case, smart is to use logical, perceptive, comprehensive and participatory approaches, able to provide the desirable conditions in order to promote the fixation of new residents and to attract tourists and visitors to the territory through social innovation, and that produce lasting impacts, namely using digital technology as a tool.

VISION

Stimulate the economic, social and environmental development of the village and contribute to the well-being of the rural community, by revitalizing local economy on the basis of a sustainable use and management of endogenous resources.

Additionally:

- ➡ Affirm Ferraria de São João in the national and international context, as an example of good practices in the reconciliation between the respect for the village's socio-cultural matrix and the development process.
- ➡ Contribute to leverage low-density territories, increasing the quality of life of resident populations, and creating favorable conditions to encourage new businesses and contribute to reverse the trend towards depopulation.

⁶ The deadliest in the country's history and the 11th deadliest in the world since 1900. The official balance sheet counted 66 dead and 254 injured. In terms of material damage, more than 500 houses were counted, partially or totally destroyed by fire. 48 companies with 372 jobs were also affected. The estimate of the total amount of losses amounted to 500 million euros.

MAIN SUBPROJECTS / INITIATIVES

- **Creation of a Village Protection Zone (VPZ):** aims to prevent rural fires and thus defend the village and its community. It consisted of cutting highly combustible forest species (eucalyptus) in a 200-meter strip around the village and replacing them with more fire-resistant native trees. This project has become an example at the national level.
- **Construction of a Community Shelter:** aims to protect the village community from rural fires. It is the first collective shelter to be designed to withstand fire and cyclonic winds and to be self-sufficient for a certain period of time.

This subproject was developed within the scope of the project Resilient Villages (Pedrógão Grande Fire Victims Association) with the support of the Ferraria de São João Residents Association and the Municipality of Penela, and its funding will be supported by a patron.
- **Construction of a Community Goat Center:** aims to revitalize the production and marketing of Cheese Rabaçal PDO (Protected Designation of Origin), one of the most acclaimed cheeses in Portugal. This subproject consists of the recovery of the community pens that exist in the village, where more than 1,000 heads of goats and sheep have already been housed.

Among other objectives of the subproject, we highlight (i) the promotion of knowledge, innovations and traditional practices of dairy production and quality cheese, as well as practices for the conservation and sustainable use of natural resources (pedagogical component); (ii) stimulating rural and social tourism; and (iii) the contribution to reducing the risk of rural fires by reducing the fuel load (grazing).
- **Promotion of the technological platform (web) FarmReal:** its main objective is to create a basis of sustainability for the recreation of the community herd, with the support of new technologies. Through the platform, cybernauts can adopt a goat and observe their daily lives. In this project, users also have access to other services, such as scheduling visits to their animal and activities related to the herd.

This concept arose due to the lack of shepherds to graze enough goats to obtain the amount of milk necessary to produce Cheese Rabaçal PDO. To counter this trend, the platform also aims to make pastoral activity more attractive to young people and increase income through the adoption of animals.

2.4 Cooperation with other villages

At the international level, in April 2010, the Municipality of Penela joined the European network of Living Labs (ENoLL) through the project *Smart Rural Living Lab* (SRLL), which constituted an important milestone in the strategy of Innovation, Competitiveness and Entrepreneurship for the territorial development of the municipality, namely, with regard to the involvement of the various partners (from the scientific and technological, business, associative and governmental systems) in the to promote the creation of new knowledge and attitudes and the sharing of experiences.

SRLL is the first Living Lab exclusively Portuguese, dedicated to promoting sustainable development in rural areas, having participated in the first World Congress of Smart Cities in November 2011 that took place in Barcelona.

The philosophy of Living Lab presupposes an innovative co-creation process, in which companies test their products and / or services in a real context, that is, users are part of the product and / or service development process itself.

Following the success of its business incubation activity and the accumulated experience in the dynamics of entrepreneurship and innovation, in 2013 a partnership was established between Institute Pedro Nunes (IPN) – Incubator and the Municipality of Penela to support the implementation of the “Smart Rural Living Lab - Economic Valorization and Formation of the Municipality of Penela”.

Through the IPN-Incubator, the National Scientific and Technological System was mobilized, to reinforce the competitiveness of the regional economic fabric and rural territories, with a pilot project in the municipality of Penela, which aimed to improve scientific knowledge, through the creation and consolidation of collaboration networks with a view to promoting innovation, R&D and entrepreneurship leveraged by new technologies, methodologies and solutions capable of giving rise to new services or products of added value, conceptualized and tested by citizens in a real environment. The practical result of this partnership was translated into the FARMREAL pilot project.

At the regional level, the Schist Villages Network is the greatest example of cooperation between municipalities⁷ with the common objective of promoting sustainable territorial development, while valuing the customs and traditions of the different villages. The Schist Villages Network, thus, brings together public and private motivations and ambitions, which are reflected in the shared management of a brand, in the joint promotion of a territory, in the creation of wealth and in the preservation of the culture and heritage of the rural world.

At the local level, the closest village to Ferraria de São João is Favacal, which is only 1.2 km away, which allowed Favacal to benefit from all the synergies resulting from the Schist Villages Network, with private investments associated with tourist accommodation having arisen in this village, thus enhancing cooperation between the two villages.

Another village that is part of the schist village network is Casal de São Simão, located in the neighboring municipality of Figueiró-dos-Vinhos, which has allowed cooperation between tour operators, both due to the existence of a pedestrian route that connects the two villages, existing catering offer at Casal de São Simão. The village of Louçainha in the municipality of Penela has also served as an example of cooperation, mainly due to the fact that there is a river beach in this village that is part of the Schist river beach network.

These cooperations have served effectively to qualify the tourist offer in the village of FSJ.

⁷ The partnership involves 21 Municipalities of Region Centro, 27 villages and more than 100 private operators that work in the territory.

III. MAIN FEATURES OF FERRARIA DE SÃO JOÃO

3.1 Main characteristics of the village and rural area

Low-density territories, especially those that were able to preserve their local identity, are currently experiencing a period of change, in which innovation, the use of indigenous resources, competitiveness, sustainability and cohesion are essential factors for identifying and implement new ways of intervening and pursuing the development and sustainability of territories.

Ferraria de São João has a set of differentiating characteristics at the most diverse levels: natural heritage, historical-cultural heritage, traditions and social (tacit and erudite knowledge of the population), of which we highlight:

- The quartzic crest that frames the village and the valley, next to the water line;
- The large majority of buildings preserve their traditional characteristics;
- The set of community corrals, built on common land (baldio);
- The cheese production and goat breeding, associated with pastoral activity;
- The products from agricultural activity;
- The existing montado (agroforestry system) in the baldio (common land), whose property is currently mostly owned by the Residents' Association.
- The classification of the village as a space of special use, which correspond to areas for equipment or tourism.

The “community corrals” are characterized by a set of buildings which once housed the community's flock, with more than a thousand animals. The grazing followed a system called “A roda”, in which each inhabitant took the livestock to graze in a number of days proportional to the number of animals of their property. Currently, most of the corrals is abandoned. Nevertheless, they are important anthropological and social references, and the Municipality has a concession contract to use some of these pens.

Regarding equipment, it is considered as buildings of the village, the ones currently owned by the Municipality, such as the mountain bike Center, the ARFSJ headquarters and the public sanitary facilities.

In what respects infrastructures, the electricity and the water networks were upgraded following the integration in the Schist Villages, with the support of CSF III. However, there is still no sanitation network. Even though it is a very low density urban agglomeration, where the effluent produced is not significant, the absence of this network makes it impossible to recover some buildings intended for housing.

Another shortcoming is the absence of public transport network for FSJ, however the accessibility by road using own vehicle, doesn't represent a problem.

Nowadays, tourism represents the main driver of the local economy. The integration of the village in the Schist Villages Network, the implementation of actions provided for in the Village Plan and / or carried out by ADXTUR or by ARFSJ, enhanced the recovery of properties for tourist accommodation and augmented the recreational and educational activities promoted by tourism operators and by ARFSJ.

The quality of the offer, both in terms of the original characteristics of the village, as well as the offer of accommodation and “experiences”, has guaranteed a high occupancy rate and a high number of visitors, with economic return for the local population. In addition to the direct economic benefits, tourism has provided the recovery of activities that were in decline, and that are now a complement to the income of residents, such as the manufacture of bread and cheese and the practice of agricultural and livestock activities.

And although there is a significant decrease in the number of inhabitants, there is also the establishment of young families, who exchanged urban for life in the village.

Some key features are presented in the tables below. For comparability purposes, and whenever possible, the most relevant quantitative information includes official statistical data.

Table 1. Populations in proximity to FSJ

Name	Population	Distance between village
Favacal (village)	17	1.2 km
Grocinas (village)	102	5.1 km
Penela (Town, seat of Municipality)	3 300	15.3 Km
Coimbra (City, capital of district)	105 842	39.1 Km

Table 2. Key statistics of FSJ

Indicator	Value	Last year	Comments	Source of information
Population (No.)	43	2011		2011 Census
Elderly dependency rate	50%		Elderly population (65 and over) / working age population (15-64 years)	
Unemployment rate	10%		Unemployed aged 15 or over / active population aged 15 or over	2011 Census - Municipality Total Value
Employment tax (%)	90%		Employed persons aged 15 years and over / active population (15-64 years)	
Age structure				
Population from 0 to 14 years	4	2011	Data from FSJ	2011 Census
Population between 15 and 64 years	26			
Population over 65 years	13			

3.2 Main challenges

3.2.1 Depopulation and ageing

Depopulation is a common challenge for rural villages across Europe so, like other territories, action must be taken to make these villages more attractive to potential new residents and it can only be done if local communities understand, from their perspective, the importance of that goal.

Depopulation is the most demanding challenge that the village and surrounding territories are trying to face, and the most relevant for defining a strategy to attract new residents, assuming that the sum of the benefits of living in a rural village is greater than the benefits of living in a city.

According to formal statistical data, in 2001, Ferraria de São João had 63 inhabitants, of which 45% over 55 years old and 13% under 20 years old. In a period of 10 years, the inhabitants dropped to 43, of which 30% over 65 years old and only 9% aged under 20 years.

The Municipality of Penela assumes, here, a relevant role, considering it essential to set up initiatives with the objective of attracting new residents, preferably young people that allow to increase the critical mass of this rural territory (e.g., territorial marketing plan to promote FSJ to potential new residents).

To face this challenge, emphasis should be placed in the fact that rural and farm tourism can make an important contribution to improve the quality of life in the village, to the diversification of the local economy, and to prevent depopulation, while also helping to preserve the cultural identity and traditional practices.

3.2.2 Difficulty in accessing the market / Valuing Resources

Since endogenous products have great difficulty in reaching markets besides the local one, it represents a challenge for the development and stability of the local economy. Among the various products, it should be mentioned, for their exceptional quality, the cheese, the vegetables and the honey.

However, finding new markets for this type of products is a specific challenge, as it is considered that these products need new approaches to reach the final consumer, and to introduce innovation at different levels, innovation in products, production or distribution processes.

It is also important to ensure that national and regional strategies and programs for the energy transition, the bioeconomy and the circular economy are adapted to the specific needs of the village.

3.3.3 Maintaining the protection of the village against rural fires

The risk of forest fires is an important factor that jeopardizes the migration of people to the village. FSJ was one of the villages most affected by the fires that occurred in Portugal in 2017 and which led to the creation of the first Village Protection Zone.

Bearing in mind that the safety of people and assets play a major role in the development and in the inhabitants' quality of life, the challenge at this point is to ensure the proper maintenance of the protection strip through a collaborative management model (Village Condominium) that includes a sustainable financing model.

3.3 Key features / assets and opportunities

3.3.1 Quality of life

FSJ offers a high quality of life to its inhabitants, far from the hustle and bustle of everyday life in a large city. On the other hand, it provides quality access to health, education, culture and leisure due to the proximity to the village of Penela, and good accessibility to the city of Coimbra, which gives access to the services usually provided by a large urban city.

Connectivity is added as an essential factor to promote the development of these rural villages, through fast connections to the internet by optical fiber in order to enhance remote work and, consequently, the attraction of new residents.

3.3.2 Ability to mobilize voluntary work

Ferraria de São João is one of the most innovative villages in terms of the capacity to boost voluntary work programs associated with tourism (voluntourism), having done so for the cleaning and reforestation of the protection space of the village recently created.

3.3.3 Focus on sustainable tourism

The sustained development of tourism offer represents an opportunity for this village, with very interesting and satisfactory results linked to the use of the village's resources and the recovery and valorization of local traditions (e.g., activities related to agriculture). This also gives rise to the opportunity to provide services that enhance the local economy.

Despite the decrease in the resident population, it is evident the existence of new socioeconomic dynamics in the village, evidenced through the rehabilitation operations that were carried out on the buildings (41 buildings were rehabilitated between 2001 and 2019; in 2001 there was no property for tourism in the village, in the end of 2019 there were 9; and, there is a significant increase in properties that are occupied seasonally).

This dynamic is clearly a consequence of the implementation of the Village Plan, which, although it was not able to maintain the number of inhabitants with permanent residence, managed to attract new families to the village, though with a seasonal character.

3.3.4 Environmental and aesthetic quality

The excellent environmental quality of the village of Ferraria de São João, combined with the beautiful landscape, are assets that promote the well-being of its residents and visitors.

Also, the constructions are mostly of a simple nature with two storeys at maximum, and built using traditional construction techniques and with local-based materials, namely, shale, limestone, quartzite, clay, wood.

3.3.5 Investment in livestock production

The focus on the livestock farming of goats (and the respective processing of milk) is an element of differentiation and intelligent innovation that is expected to contribute to the revitalization of the production of endogenous products and the development of short supply chains.

In addition, if associated with the introduction of new IoT technologies, it could allow increasing productivities. For this, the village can count with the existing Scientific and Technological bodies - IPN and HIESE - Habitat for Business Innovation in Strategic Sectors⁸.

3.3.6 Economic and environmental enhancement of the forest

The economic and environmental enhancement of the forest is a unique opportunity that should be associated with the VPZ (Village Protection Zone) as an integral part of its management model. This embody a good practice example of how the replacement of monocultures, such as pine and eucalyptus, by other species more resistant to fire can increase the economic valued and environmentally and, at the same time, protect the village and its inhabitants.

3.4 Main characteristics of the local community

The community of the village of Ferraria de São João took the initiative to create a private association among residents to foster the village's development process and to help solve the problems of its inhabitants. This association is fully representative of the community since its members are the inhabitants of the village.

ARFSJ is a non-profit entity, that has been promoting a broad range of activities aimed at the valorization of the endogenous resources: people (know-how) and heritage (natural built, cultural, ...).

(see chapter VI)

3.5 SWOT Analysis

The SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) presented in the following table outlines a comprehensive analysis of the strengths, weaknesses, opportunities and threats associated with FSJ, given that it considers the basis for the definition of its Strategic Program for Urban Rehabilitation.

This analysis allows an easy identification of the current strengths, which could be considered as engines of evolution, the areas for improvement, for which specific strategies should be designed, the opportunities, which reflect the positive influences that need to be harnessed, and the threats, which are important to know what is needed to be done in a perspective of prevention. The analysis is organized around five key areas:

- ✓ Territorial organization
- ✓ Social politics
- ✓ Culture and heritage
- ✓ Environment
- ✓ Territorial competitiveness.

⁸ <https://www.smartrural.pt/incubadora>

Table 3. SWOT Analysis

STRENGTHS	WEAKNESSES
<p>Territorial organization</p> <ul style="list-style-type: none"> ▪ Proximity to cultural and sports facilities, research centers, incubators of internationally renowned companies, reference educational institutions ▪ Existence of cooperation networks based on the territory's specificities ▪ High standards of environmental quality ▪ Diverse landscape heritage ▪ Proximity to population centers <p>Social politics</p> <ul style="list-style-type: none"> ▪ Support and / or monitoring of families at risk ▪ Support in the provision of primary care to vulnerable people (food, health, domestic organization) <p>Culture and heritage</p> <ul style="list-style-type: none"> ▪ Diversity and quality of ethnographic heritage ▪ Uses, customs and traditions still rooted in local cultures ▪ Production of endogenous quality products ▪ Preserved cultural landscape ▪ Quality offer of activities related to nature ▪ Investment in rehabilitation of houses for own home or tourism <p>Environment</p> <ul style="list-style-type: none"> ▪ Areas of high interest and landscape value ▪ Landscape diversity and quality as a quality tourist resource ▪ High air quality ▪ High water quality and availability of water resources (mines, wells, ...) ▪ Low noise levels ▪ Natural conditions for renewable energy production (wind, biomass, ...) ▪ Integration in the municipal system for selective collection of solid urban waste <p>Territorial competitiveness</p> <ul style="list-style-type: none"> ▪ Variety and quality of endogenous products and resources ▪ Existence of public policies based on the valorization and promotion of endogenous resources ▪ Integration into the Schist Villages Network ▪ Quality landscape, environmental and built heritage ▪ Increasing investment by entrepreneurs in the tourism sector, in outdoor activities and in the primary sector 	<p>Territorial organization</p> <ul style="list-style-type: none"> ▪ Deficit in the digital network service ▪ Dispersed and low density population ▪ Deficit in the supply of public transport ▪ Peripheral position in relation to urban centers ▪ Occurrence of forest fires <p>Social politics</p> <ul style="list-style-type: none"> ▪ Lack of capacity for demographic attraction and fixation of human resources, namely middle and upper management staff ▪ Progressive loss of population and high rate of aging ▪ Scarce job supply, upward trend in long-term unemployment ▪ Lack of an active policy for the elderly, that makes it possible to incorporate value in the local economy <p>Culture and heritage</p> <ul style="list-style-type: none"> ▪ Non-existent registration of ethnographic heritage ▪ Local resources underutilized by the local population ▪ Absence of policies to encourage property preservation / rehabilitation ▪ Low private investment in building preservation/rehabilitation, accompanied by the lack of incentives for it ▪ Difficulty in financing cultural activities / initiatives <p>Environment</p> <ul style="list-style-type: none"> ▪ Landscape degradation associated with intensive exploitation (eucalyptus) ▪ Environmental degradation resulting from the occurrence of forest fires ▪ Risk of soil degradation due to monoculture and fast-growing species ▪ Lack of clean water lines ▪ Low level of use of microgeneration and renewable energy systems <p>Territorial competitiveness</p> <ul style="list-style-type: none"> ▪ Weak investment by the business fabric in continuous improvement processes (e.g., skills, investing in innovation and market diversification). ▪ Inexistence of a system to manage the available and the economic aptitudes ▪ Difficulty in the entry of new rural entrepreneurs in the primary sector due to the complexity of the land market ▪ Lack of scale in primary production that allows competitiveness ▪ Absence of markets for products from the primary sector.

OPPORTUNITIES	THREATS
<p>Territorial organization</p> <ul style="list-style-type: none"> ▪ Trend towards the occupation / use of the village for tourism projects <p>Social politics</p> <ul style="list-style-type: none"> ▪ Improvement in the dynamics of attracting foreign investment ▪ Local resources with the capacity to leverage new companies <p>Culture and heritage</p> <ul style="list-style-type: none"> ▪ Cultural diversity of the territory influenced by history ▪ Existence of “unique” equipment and natural conditions for mountain biking ▪ Built spaces retain traditional features ▪ Tourist potential ▪ Integration in cooperation and knowledge sharing networks <p>Environment</p> <ul style="list-style-type: none"> ▪ Potential for agricultural and / or forestry use ▪ Existence of projects and actions aimed at enhancing the landscape and natural heritage <p>Territorial competitiveness</p> <ul style="list-style-type: none"> ▪ Investment of public policies in investment in development and technological innovation. ▪ Investment of public policies in investing in the green economy and in promoting the economy and social entrepreneurship ▪ Growing development of the market for land products, organic farming and research related to its valuation (potential uses, medicinal properties, nutrition, functional and nutritional foods) ▪ Regional tourism strategy that makes it possible to leverage existing resources (differentiated products and services in the field of tourism, nature, gastronomy and wines, ...). 	<p>Territorial organization</p> <ul style="list-style-type: none"> ▪ Road network in poor condition ▪ High cost of using the access highway to the region ▪ Models to encourage the rehabilitation of existing and under-prepared villages do not take into account the specificities of low-density territories and the current socio-economic situation. ▪ Absence, at the local level, of public services, private services, commerce (demotivating factor for the fixation of new residents). ▪ Current unfavorable scenario for investment in real estate <p>Social politics</p> <ul style="list-style-type: none"> ▪ Lack of housing supply in the existing rental / offer market at a price that is out of step with the economic capacity of families. ▪ Employment with too much dependence on the public sector <p>Culture and heritage</p> <ul style="list-style-type: none"> ▪ Degradation and lack of conservation or maintenance of heritage ▪ Tendency to population desertification <p>Environment</p> <ul style="list-style-type: none"> ▪ Threat to replace native species with fast-growing species ▪ Threat to environmental quality due to forest fires <p>Territorial competitiveness</p> <ul style="list-style-type: none"> ▪ High risk of forest fires ▪ With the exception of tourism, the territory has not been able to fix / encourage the creation of companies to leverage the economic and social development of the region. ▪ There is no agro-rural tax policy that conditions unproductive uses, non-uses or speculative uses of land. ▪ The governance mechanisms of collective efficiency strategies with performance below initial targets and expectations.

IV. INTERVENTION LOGIC

The strategy to be developed stems from the Strategic Urban Rehabilitation Programme of Ferrara de São João, a very comprehensive document that defines the interventions to be carried out. This document is the result of the strategic planning for the village, comprising projects and actions already and to be developed over the next 10 years.

This program was planned in October 2019, and was developed following the delimitation of the village's rehabilitation area, with the aim of encouraging private investment in the requalification of the village's properties, whether for own housing or for tourism.

In this sense, it should be noted that the intervention logic was not specifically defined for the present smart strategy, but the result of an analysis prepared for the Municipality strategy papers. Notwithstanding, the components related with the smart approach are properly identified in Tables 5 and 6.

4.1 Main goal

With the contribute of the residents' association, it was possible to define the vision for the smart village approach.

Affirm Ferrara de São João in the national and international context, as an example of good practices in the reconciliation between respect for the village's socio-cultural matrix and the practice of sustainable tourism that promotes and stimulates economic, social and environmental development, contributing to leverage the low-density territories, increasing the quality of life of resident populations, contributing to the settlement of people and the inversion of the depopulation phenomenon.

4.2 Specific and operational objectives in response to the SWOT analysis

The pursuit of the Vision and the response to the challenges identified in the diagnosis of the territory, takes place through 5 Strategic Objectives (STO). Each Strategic Objective is associated to Specific Objectives (SO), that are materialized in a detailed portfolio of projects and structuring actions.

In this context, 27 structuring projects were established, which are subdivided into 72 actions, which are discerned according to their ability to promote an effective development process and to leverage other investments (namely private). With the efficient implementation of the foreseen projects and actions, it is expected a wide impact at the village and even at municipal levels.

Given its innovative character, it can assume a replicating effect in villages with similar characteristics at national and international level.

STRATEGIC Objective 1 (STO1) - PRESERVING AND PROTECTING

It focuses on enhancing the natural heritage of the village and the surrounding territory, enhancing the enhancement of its rural and community identity, as well as the intergenerational dialogue based on traditional values. The specific objectives associated with STO1 are as follows:

Specific objective 1.1: Conservation of natural heritage

- Preservation and conservation of the natural heritage

Specific objective 1.2: Promotion of environmental sustainability

- Valuing the surrounding natural space of the village as an element of protection and enhancement of the built space, as a space for collective enjoyment and as an example of preservation, qualification and incentive and promotion of environmental sustainability.

Specific objective 1.3: Promotion of the protection and security of people and goods

- Provide the village with equipment, multifunctional and sustainable, that contribute to leverage the sense of belonging, community and security of citizens.

STRATEGIC Objective 2 (STO2) - INTEGRATE

Strategic Objective 2 is mainly aimed at creating new cultural, social and entertainment activities that enhance the integration between residents and tourists, including aggregating activities of an annual nature and a set of activities that, related to the needs of the primary sector, can be used as way to boost tourism activity throughout the year, thus, contributing to reduce seasonality and increase the length of the stay, with the specific objectives of those indicated in the following points:

Specific objective 2.1: Strengthening social and territorial cohesion

- Promotion of integration between residents and tourists, on the one hand, and the promotion of sharing and knowledge networks, on the other.

Specific objective 2.2: Reinforce social and cultural dynamics

- Promotion of social and cultural innovation; creation of a co-creation community; and, establishment of connectivity networks.

STRATEGIC Objective 3 (STO3) - REHABILITATE

Strategic Objective 3 is focused on improving the urban environment through the requalification and enhancement of public and built space, as a stage for urban experiences par excellence, endowing it with the necessary conditions for the enjoyment of the population and creating conditions for the fixation and attraction residents and investors. Its specific objectives are as follows.

Specific objective 3.1: Promote the improvement of the quality of the urban environment through the requalification of public space as well as the increase of better accessibility and mobility

- Requalify spaces for collective use of living and leisure and promote them as places of experience and enjoyment for the population and visitors;
- Promote the adaptation of public spaces to people with special needs (residents and visitors);

- Provide the village with adequate infrastructure and equipment and qualified support structures.

Specific objective 3.2: Reinforce the attractiveness and improve the urban image through the rehabilitation and qualification of the housing stock and the development of social and cultural dynamics

- Rehabilitate housing, promote own housing, the short and medium term rental market and activities related to tourism and training.

Specific objective 3.3: Create conditions that encourage the settlement and attraction of residents and economic activities

- Requalify buildings for hosting entrepreneurial activities and activities of a social and / or cultural scope;
- Requalify connection paths between the village and the natural / agricultural / forest areas.

STRATEGIC Objective 4 (STO4) - VALUING THE TERRITORY

Strategic Objective 4 focuses on enhancing the local identity, through the recovery of the village's material and immaterial heritage, as a fundamental resource for the development of the local economy, through the creation of visitation programs, educational programs and the practice of sport in nature, having as specific objectives the following:

Specific objective 4.1: Enhancement of cultural heritage and strengthening of local identity

- Safeguard and preserve the natural, historical and cultural heritage (material and immaterial);
- Promote and disseminate the identity and history of the village;
- Promote cultural tourism associated with local heritage and identity;
- Promote the promotion of events that promote the connection between local identity and urban culture.

Specific objective 4.2: Environmental and social education / awareness through local resources

- Promote sports and nature tourism;
- Establish a set of rules for intervention in the building, guaranteeing the convenient homogeneity of treatments and respect for the traditional formal language.

Specific objective 4.3: Development of training actions

- Reinforce the feeling of self-esteem and belonging of the local population through a culture of valuing local knowledge and training actions that contribute to improving the quality of life and strengthening family economies.

STRATEGIC Objective 5 (STO5) - DYNAMIZE AND BOOST THE ECONOMY

Strategic Objective 5 focuses on boosting the village, boosting the local economy and implementing Structural projects, as a means of achieving the Vision “Affirming the São João Ferrara in the national and international context, as an example of good practices in reconciliation between respect for the socio-cultural matrix of the village and the practice of sustainable tourism that promotes and stimulates economic, social and environmental development, contributing to leverage low-density

territories, increasing the quality of life of resident populations, contributing to the settlement people and reversing the depopulation phenomenon ”.

This Strategic Objective has the following specific objectives:

Specific objective 5.1: Perform integrated management of actions and activities

- Establishment of the condominium management model in consortium, self-protection and communication;
- Definition and implementation of the village management model.

Specific objective 5.2: Contribute to the sustainable development of the village and the well-being of the local population

- Streamlining economic, cultural and social activities.

Specific objective 5.3: Reversing the depopulation phenomenon

- Brand creation and implementation and Marketing and communication strategy.

Specific objective 5.4: Contribute to leverage regional development

- Promotion of short marketing chains;
- Encouraging circular economy entrepreneurship.

Table 4. Setting goals in response to SWOT

Strategic Objectives	Specific objectives	Challenges and threats	Strengths and opportunities
STO1. PRESERVING AND PROTECTING	1.1 Conservation of the natural heritage	<ul style="list-style-type: none"> ▪ Risk of soil degradation due to monoculture and fast-growing species ▪ Lack of clean water lines ▪ Threat to replace native species with fast-growing species ▪ Environmental degradation resulting from the occurrence of forest fires 	<ul style="list-style-type: none"> ▪ High air quality ▪ High water quality and availability of available water resources (mines, wells, ...) ▪ Low noise levels ▪ Areas of high interest and landscape value ▪ Landscape diversity and quality as a quality tourist resource ▪ Existence of projects and actions aimed at enhancing the landscape and natural heritage
	1.2 Promotion of environmental sustainability	<ul style="list-style-type: none"> ▪ Landscape degradation associated with intensive exploitation and reforestation with eucalyptus ▪ Threat to environmental quality due to forest fires ▪ Low level of use of microgeneration and renewable energy systems 	<ul style="list-style-type: none"> ▪ High standards of environmental quality ▪ Landscape, environmentally diverse and quality heritage ▪ Natural conditions for the production of renewable energies (wind, solar, biomass ...) ▪ Integration in the intermunicipal system for the selective collection of solid urban waste
	1.3 Promotion of the protection and security of people and goods	<ul style="list-style-type: none"> ▪ Absence, at the local level, of public services, private services, trade. ▪ Occurrence of forest fires 	<ul style="list-style-type: none"> ▪ Support in the provision of primary care to vulnerable people (food, health, domestic organization)
STO2. TO INTEGRATE	2.1 Strengthening social and territorial cohesion	<ul style="list-style-type: none"> ▪ Dispersed and low density population ▪ Lack of capacity for demographic attraction and fixation of human resources, namely middle and upper management staff 	<ul style="list-style-type: none"> ▪ Trend towards the occupation / use of the village for tourism projects
	2.2 Reinforcing social and cultural dynamics	<ul style="list-style-type: none"> ▪ Progressive loss of population and high rate of ageing ▪ Lack of an active policy for the elderly, that makes it possible to incorporate value in the local economy ▪ Difficulty in financing cultural activities / initiatives 	<ul style="list-style-type: none"> ▪ Support and / or monitoring of families at risk ▪ Proximity to cultural and sports facilities, research centers, incubators of internationally renowned companies, reference educational institutions ▪ Existence of cooperation networks based on the specificities of the territory

Strategic Objectives	Specific objectives	Challenges and threats	Strengths and opportunities
STO3. REHABILITATE	3.1 Promote the improvement of the quality of the urban environment through the requalification of public space as well as the increase of better accessibility and mobility	<ul style="list-style-type: none"> ▪ Deficit in the supply of public transport ▪ Road network in poor condition ▪ High cost of the highway to access the region ▪ Peripheral position in relation to urban centers 	<ul style="list-style-type: none"> ▪ Proximity to population centers
	3.2 Reinforce the attractiveness and improve the urban image through the rehabilitation and qualification of the housing stock and the development of social and cultural dynamics	<ul style="list-style-type: none"> ▪ Low private investment in the rehabilitation of the building, accompanied by the lack of incentives for it ▪ Models of incentives for urban rehabilitation that are in preparation are not taking into account the specificities of low-density territories and the current socio-economic situation. 	<ul style="list-style-type: none"> ▪ Uses, customs and traditions still rooted in local cultures ▪ Diversity and quality of ethnographic heritage
	3.3 Create conditions that encourage the settlement and attraction of residents and economic activities	<ul style="list-style-type: none"> ▪ Deficit in the digital network service ▪ Absence, at the local level, of public services, private services, commerce (demotivating factor for the fixation of new residents). 	<ul style="list-style-type: none"> ▪ Proximity to cultural and sports facilities, research centers, incubators of internationally renowned companies, reference educational institutions ▪ Integration in cooperation and knowledge sharing networks
EE4. VALUING THE TERRITORY	4.1 Enhancing cultural heritage and strengthening local identity	<ul style="list-style-type: none"> ▪ Absence of policies to encourage property preservation / rehabilitation ▪ Degradation and lack of conservation or maintenance of heritage ▪ Non-existent registration of ethnographic heritage 	<ul style="list-style-type: none"> ▪ Cultural diversity of the territory influenced by history ▪ Diversity and quality of ethnographic heritage ▪ Uses, customs and traditions still rooted in local cultures ▪ Preserved cultural landscape
	4.2 Environmental and social education / awareness through local resources	<ul style="list-style-type: none"> ▪ Local resources underutilized by the local population 	<ul style="list-style-type: none"> ▪ Quality offer of activities related to nature ▪ Areas of high interest and landscape value ▪ Landscape diversity and quality as a quality tourist resource
	4.3 Development of training actions	<ul style="list-style-type: none"> ▪ Weak investment by the business fabric in continuous improvement processes (e.g., strengthening skills, investing in innovation and market diversification). 	<ul style="list-style-type: none"> ▪ Existence of projects and actions aimed at enhancing the landscape and natural heritage ▪ Investment of public policies in promoting the economy and social entrepreneurship

Strategic Objectives	Specific objectives	Challenges and threats	Strengths and opportunities
EE5. DYNAMIZE AND BOOST THE ECONOMY	5.1 Carry out integrated management of actions and activities	<ul style="list-style-type: none"> - Lack of a management system for the economic aptitudes of rural land and the management of available soil - There is no agro-rural tax policy that conditions unproductive uses, non-uses or speculative uses of land. 	<ul style="list-style-type: none"> Existence of public policies based on the valorization and promotion of endogenous resources Existence of “unique” equipment and natural conditions for mountain biking
	5.2 Contribute to the sustainable development of the village and the well-being of the local population	<ul style="list-style-type: none"> Dispersed and low-density population Low private investment in the rehabilitation of the building, accompanied by the lack of incentives for it 	<ul style="list-style-type: none"> Increasing investment by entrepreneurs in the tourism sector, in outdoor activities and in the primary sector Trend towards the occupation / use of villages for tourism projects Built spaces retain traditional features Tourist potential
	5.3 Reversing the depopulation phenomenon	<ul style="list-style-type: none"> Occurrence of forest fires Tendency to population desertification Lack of housing supply in the existing rental / offer market at a price that is out of step with the economic capacity of families. Employment with too much dependence on the public sector Scarce job supply, upward trend in long-term unemployment Peripheral position in relation to urban centers The governance mechanisms of collective efficiency strategies with performance below initial targets and expectations. 	<ul style="list-style-type: none"> Growing development of the market for land products, organic farming and research related to its valuation (potential uses, medicinal properties, nutrition, functional and nutritional foods) Regional tourism strategy that makes it possible to leverage existing resources (differentiated products and services in the field of tourism, nature, gastronomy and wines, ...).
	5.4 Contribute to leverage regional development	<ul style="list-style-type: none"> High risk of forest fires Difficulty in the entry of new rural entrepreneurs in the primary sector due to the complexity of the land market Lack of scale in primary production that allows the competitiveness of products 	<ul style="list-style-type: none"> Potential for agricultural and / or forestry use Variety and quality of endogenous products and resources Production of endogenous quality products Integration in the Schist Villages Network Investment of public policies in investment in

Strategic Objectives	Specific objectives	Challenges and threats	Strengths and opportunities
		<ul style="list-style-type: none"> Absence of outlets for products from the primary sector Current unfavorable scenario for investment in real estate With the exception of tourism, the territory has not been able to fix / encourage the creation of companies to leverage the economic and social development of the region. 	<p>development and technological innovation.</p> <ul style="list-style-type: none"> Investment of public policies in promoting the green economy and social entrepreneurship Improvement in the dynamics of attracting foreign investment Local resources with the capacity to leverage new companies

4.3 Smart solutions: actions, products and results

All the planned actions were outlined in a context of close collaboration between the Municipality of Penela and ARFSJ, being, however, in most cases, proposed and executed by the association itself. In the next tables, the projects and actions proposed to achieve the expected results are described in a logical manner.

The estimated global investment ascends to € 5,004,130.20. The funding model for each of the interventions may take different formats: made exclusively by public initiative, exclusively by private initiative and made on the basis of partnerships between public and private investment, and mobilizing, when possible, EU funds, depending on their nature. It should be noted that the given investment amounts are only indicative.

As mentioned above, it should be noted that the foreseen actions, products and results were not specifically defined for the present smart strategy. In this sense, components related with the smart approach are properly identified in Tables 5 and 6 (table in green). These Table also identify the interventions that were already carried out (letters in blue).

Table 5. Intervention logic: objectives, activities, achievements and expected results

Specific objectives	Activities planned or carried out	Expected achievements (O)	Expected results (R)
STRATEGIC Objective 1 (STO1) - PRESERVING AND PROTECTING			
1.1. Conservation of natural heritage	<ol style="list-style-type: none"> 1. <i>Intervention project, including: Land registration with identification of owners / Elaboration of a reforestation plan and ecological valorization</i> 2. <i>Execution of preparatory works, including: Preparation and cleaning of land / Cutting, felling, deforestation and debris / Adaptation of paths and construction of fire breaks</i> 	<ul style="list-style-type: none"> • O 1.1.1 - Establishment of a protection zone • O 1.1.2 - Multifunctional agroforestry regeneration 	<ul style="list-style-type: none"> ▪ R 1.1.1 - Increased resilience of forest spaces to fires ▪ R 1.1.2 - Reduced risk of forest fires ▪ R 1.1.3 - Decrease in soil erosion ▪ R 1.1.4 - Increase in the area of water infiltration zones
	<ol style="list-style-type: none"> 3. <i>Implementation of the VPZ, including: Acquisition of trees / Planting and replanting of trees / Organization of voluntary and environmental awareness actions</i> 4. Study for the Recovery and Enhancement of the Riparian Gallery and Adaptation to Climate Change 5. Recovery and Enhancement of the Riparian Gallery of the Stream of Ferrara and surrounding areas (physical rehabilitation, reinforcement of signs, Environmental interventions) 	<ul style="list-style-type: none"> • O 1.1.3 - Rehabilitation and Strengthening of Natural Heritage Corridors 	<ul style="list-style-type: none"> ▪ R 1.1.2 - Contribution to the enhancement of classified areas ▪ R 1.1.3 - Increased attractiveness for visiting classified areas
1.2. Promotion of environmental sustainability	<ol style="list-style-type: none"> 6. Water Retention and Adaptation to Climate Change Project Services 7. Program for the rational use of water and the fight against waste 8. Producing in community for the community - Self-sufficiency in the production of electricity 9. "Waste o" - Adopt 3 Rs as a priority: reduce, reuse, recycle 	<ul style="list-style-type: none"> • O 1.2.1 - Exemplary Climate Change Mitigation Measures 	<ul style="list-style-type: none"> ▪ R 1.2.1 - Increase in the level of use of microgeneration and renewable energy systems ▪ R 1.2.2. - Decrease in solid waste generation ▪ R 1.2.3. - Increased reuse and recycling of solid waste ▪ R 1.2.4 - Increased efficiency in the use of the water resource

Specific objectives	Activities planned or carried out	Expected achievements (O)	Expected results (R)
STRATEGIC Objective 1 (STO1) - PRESERVING AND PROTECTING			
1.3. Promotion of the protection and security of people and goods	10. Shelter of Ferrara de São João - Multipurpose space 11. <i>Installation of water point and fire hydrant network</i> 12. Installation of communication equipment 13. Shared resource center for first response to fire (equipment) 14. <i>Training actions and self-protection plans (inhabitants, operators and tourists)</i> 15. Registration through technical design: new look, new line of communication (characters, ambitions, environments)	<ul style="list-style-type: none">• O 1.3.1 - Defense of people and goods in a village space	<ul style="list-style-type: none">▪ R 1.3.1 - Increased security of people and goods in the village area
		<ul style="list-style-type: none">• O 1.3.2 - Shared management model for self-protection of villages	
STRATEGIC Objective 2 (STO2) - INTEGRATE			
2.1. Strengthening social and territorial cohesion	16. Definition, rehearsal and training in an Inclusive Visitation Program	<ul style="list-style-type: none">• O 2.1.1 - Inclusive Visitation Program	<ul style="list-style-type: none">▪ R 2.1.1 - Increased knowledge and management and service skills required by accessible and inclusive tourism
	17. Definition and testing of the Voluntourism Program (exchange and voluntary tourism) 18. Inclusive and sustainable mobility plan	<ul style="list-style-type: none">• 2.1.2 - Volunteer Program• 2.1.3 - Develop voluntary social and / or environmental services	<ul style="list-style-type: none">▪ R 2.1.2 - Increase of the capacity of demographic attraction and fixation of human resources▪ R 2.1.3 - Increased culture of social and environmental responsibility
		<ul style="list-style-type: none">• 2.1.4 - Develop cleaner and more efficient transport and mobility services	<ul style="list-style-type: none">▪ R 2.1.4 - Increase in the degree of inclusion of the accessibility and transport system▪ R 2.1.5 - Reduction of air pollution, noise, greenhouse gas emissions and energy consumption

Specific objectives	Activities planned or carried out	Expected achievements (O)	Expected results (R)
STRATEGIC Objective 2 (STO2) - INTEGRATE			
2.2. Reinforce social and cultural dynamics	19. Creation of the Annual Ferrara Live Village Festival 20. Organization of showcookings (annual event) 21. Organization of thematic workshops and training / action actions led by specialists, in order to achieve the objectives of the smart strategy targeting residents and non-residents, with a view to developing self-esteem and enjoying life-long training and co-creating projects community	<ul style="list-style-type: none"> • O 2.2.1 - Co-creation of community projects • 2.2.2 - Develop events to publicize events • 2.2.3 - Support the emergence of complementary economic activities 	<ul style="list-style-type: none"> ▪ R 2.2.1 - Encouraging the recovery / preservation and enhancement of the village's heritage ▪ R 2.2.2 - Increased stimulus / community involvement to boost the village and its territories ▪ R 2.2.3 - Increasing the attractiveness of the territory ▪ R 2.2.4 - Strengthening the economic and social fabric ▪ R 2.2.5 - Development of the tourism sector ▪ R 2.2.6 - Improvement of services and cultural.
STRATEGIC AXIS 3 (EE3) - REHABILITATE			
3.1. Improvement of the urban environment quality through the requalification of public space as well as better accessibility and mobility	22. Requalification and maintenance of public spaces 23. Implementation of the Sanitation Network with construction of ETAP - Water Treatment Plant with Plants - wastewater treatment system by hydrophyte plants (Fito-WWTP's)	<ul style="list-style-type: none"> • O 3.1.1 - Valuing the use / character of public space • O 3.1.2 - Implement and requalify Infrastructures 	<ul style="list-style-type: none"> ▪ R 3.1.1 - Increase in the quality of life of the local community ▪ R 3.1.2 - Increasing the sustainability of public spaces (e.g., energy efficiency) ▪ R 3.1.3 - Increase in the degree of water reuse ▪ R 3.1.4 - Reduction of water resource waste
3.2. Reinforce attractiveness and improve the urban image through rehabilitation and qualification of housing and the development of social and cultural dynamics	24. Creation of a Technical Office to Support Urban Rehabilitation 25. Preparation of a Good Practice Manual for the rehabilitation of buildings in the historic center 26. Organization of Workshops and Training actions in urban rehabilitation for professionals 27. Organization of awareness-raising actions on the benefits and incentives for urban rehabilitation	<ul style="list-style-type: none"> • 3.2.1 - Create operational tools to facilitate and simplify the absorption of support and incentives for urban rehabilitation of historical, cultural and local identity interest 	<ul style="list-style-type: none"> ▪ R 3.2.1 - Enhancing and safeguarding the built heritage of the village ▪ R 3.2.2 - Increasing the awareness of the general population, technicians and entities, to the issues of safeguarding and enhancing heritage

Specific objectives	Activities planned or carried out	Expected achievements (O)	Expected results (R)
3.3. Create conditions that encourage the settlement and attraction of residents and economic activities	28. Incentive program for the settlement of people and companies and the rehabilitation of the built park 29. Property management system and database	<ul style="list-style-type: none"> O 3.3.1 - Implement measures aimed at re-inhabiting the village Ferrara de São João 	<ul style="list-style-type: none"> R 3.3.1 - Building improvement R 3.3.2 - Increased use of benefited spaces R 3.3.3 - Increase in the capacity to set up businesses in the village R 3.2.4 - Increase in the capacity of settling citizens within the village
STRATEGIC Objective 4 (STO4) - VALUING THE TERRITORY			
4.1. Enhancement of cultural heritage and strengthening of local identity	30. Creation of the physical space Live Village 31. Creation / installation of an indoor exhibition 32. Implementation of areas for immersion, sensory pathways, observatories, childcare, etc. 33. Landscape Reader Installation 34. Development and implementation of applications and support materials for tourism activities (e.g., app) 35. Rehabilitation and conservation of the trail network (pedestrian, mountain bike (MTB)) 36. Conservation and maintenance of MTB Center 37. Design and implementation of paths, paths and trails 38. Conservation/restoration/requalification of built heritage 39. Study and Projects of Recovery / Valorization of Traditional Mills 40. Rehabilitation and recovery of Traditional Mills 41. Interpretive signage to support the enhancement of the cultural and natural heritage of the corn cycle 42. Execution of agricultural works - recovery of traditional corn farming activity 43. <i>Cornfield Installation</i> 44. Apiary installation 45. Herd's House Village space - center for tourist, agricultural and pastoral activities (Community corrals) 46. Survey, Study and Projects for requalification and recovery of wells, irrigation and water devices 47. Requalification and recovery of wells, irrigation	<ul style="list-style-type: none"> 4.1.1 - Install routes, tracks and paths 4.1.2 - Increase the supply of goods and services 4.1.3 - Recover and enhance traditional activities 4.1.4 - Incorporate elements of territorial distinction 4.1.5 - Ensure the safeguarding of cultural heritage. 4.1.6 - Develop territorial marketing initiatives 4.1.7 - Increase the wealth of local heritage 4.1.8 - Increase income from traditional agricultural activities 4.1.9 - Increase water availability 	<ul style="list-style-type: none"> R 4.1.1 - Revitalization / enhancement of traditional activities R 4.1.2 - Increase in the affirmation of territorial identity R 4.1.3 - Increase in territorial competitive advantage R 4.1.4 - Enhancement of territorial potential R 4.1.5 - Increase in tourist attractiveness R 4.1.6 - Increased sustainability in resource management R 4.1.7 - Increasing the importance of traditional agricultural activities for the local economy

Specific objectives	Activities planned or carried out	Expected achievements (O)	Expected results (R)
4.2. Environmental and social education / awareness through local resources	48. Corn Bread Cycle - Design and implementation project, including production of didactic material for exhibition, workshops and training / action actions 49. Honey Cycle - Design and implementation project, including production of didactic material for exhibition, workshops and training / action actions 50. Water Cycle - Design and implementation project, including production of didactic material for exhibition, workshops and training / action actions	<ul style="list-style-type: none"> • 4.2.1 – Develop technical and scientific meetings • 4.2.2 – Promote educational and training actions • 4.3.1 – Promote coordination between the various agents of the territory • O 4.3.2 – Inform the public about the schedule and activities • 4.3.3 – Raising public awareness of the importance of cultural heritage / territorial identity • O 4.3.4 – Promote the rational management of natural resources 	<ul style="list-style-type: none"> ▪ R 4.2.1 – Increased knowledge of the school community about the patrimonial reality, know-how, ... ▪ R 4.2.2 – Increasing the school community's awareness of traditional activities ▪ R 4.3.1 – Increase in the training of tourist agents, residents ▪ R 4.3.2 – Increased efficiency in the use of natural resources
4.3. Development of training actions	51. Herd Cycle – Design and implementation project, including the production of teaching material for exhibitions, workshops and training / action actions 52. Cork Cycle – Design and implementation project, including production of didactic material for exhibition, workshops and training / action actions 53. Creation of a new interpretative trail in the village's century-old cork oak – studies, definition and implementation 54. Creation of a stay / leisure area in the centenary cork oak of the village		
	55. Gastronomy Training and preparation of recipes 56. Workshops and training actions on “How to communicate, “sell” the “Ferraria Live Village” project		

Specific objectives	Activities planned or carried out	Expected achievements (O)	Expected results (R)
STRATEGIC Objective 5 (STO5) - DYNAMIZE AND BOOST THE ECONOMY			
5.1. Perform integrated management of actions and activities	57. Development of the institutional and management model for the village condominium 58. Support in the implementation of a village condominium management model 59. Support services for structuring / submitting the application 60. Support and technical assistance services for the execution and monitoring of the “Ferraria, Live Village” project 61. Account review / classification and financial execution reporting services 62. Support services to boost complementary activities 63. Support and technical assistance services for the implementation of the Strategic Urban Rehabilitation Program 64. Requalification / Improvement Works of the Headquarters of the Association of Residents of Ferrara de São João	<ul style="list-style-type: none"> • 5.1.1 - Design and implement a new village management model (condominium concept) • 5.1.2 - Establish an effective articulation between the valorization of endogenous resources and the local community • 5.1.3 - Establish a technical team to implement and monitor the “Live Village” Project and the Strategic Urban Rehabilitation Program • 5.1.4 - Promote integration between the population and local actors and agents • 5.1.5 - Reinforce the participatory model of integrated village management • 5.1.6 - Mobilize local actors in the selection and participation in key projects for village development 	<ul style="list-style-type: none"> ▪ R 5.1.1 - Improvement of the governance system of the “Live Village” Project ▪ R 5.1.2 - Increased participation and involvement of all age groups in village management ▪ R 5.1.3 - Increased protection of the natural and built heritage ▪ R 5.1.4 - Improving spatial planning ▪ R 5.1.5 - Increase in the intervention capacity of economic and social actors
5.2. Contribute to the sustainable development of the village and the well-being of the local population	65. Community Herd - Construction and requalification of capris and implementation of fences 66. <i>Purchase of equipment and animals</i> 67. Dynamization of the project, including management model, computer applications, human resources	<ul style="list-style-type: none"> • 5.2.1 - Streamline the FARM REAL application • 5.2.2 - Creation of the FSJ goat breeding center • 5.2.3 - Encourage the multi-activity and multi-income of the local community 	<ul style="list-style-type: none"> ▪ 5.2.1 - Strengthening and increasing the multifunctionality of rural areas ▪ 5.2.1 - Improvement of the living conditions of the local community

Specific objectives	Activities planned or carried out	Expected achievements (O)	Expected results (R)
STRATEGIC Objective 5 (STO5) - DYNAMIZE AND BOOST THE ECONOMY			
5.3. Reversing the depopulation phenomenon	68. Definition and Implementation of Brand and Communication / Marketing Plan	<ul style="list-style-type: none"> • 5.3.1 - Implement Brand and Communication and Marketing Plan 	<ul style="list-style-type: none"> ▪ R 5.3.1 - Increased fundraising that can foster development (investments, residents, tourists, events, ...)
5.4. Contribute to leverage regional development	69. Interior adaptation / remodeling works for the installation of a Village Store 70. Computer Equipment for Village Store 71. Furniture for village shop equipment 72. Study and implementation of a project to revitalize production and develop new innovative forms of trade, focusing on short chains and / or new markets	<ul style="list-style-type: none"> • 5.4.1 - Increase the diversification of the village's economic activities • 5.4.2 - Stimulating the development of agricultural activities • 5.4.3 - Creating new business opportunities 	<ul style="list-style-type: none"> ▪ R 5.4.1 - Increase in job creation ▪ R 5.4.2 - Improving the income of the local population ▪ R 5.4.2 - Increased production, processing and marketing of agricultural products ▪ R 5.4.4 - Improvement of conditions for the establishment of new residents ▪ R 5.4.5 - Improving the consolidation of the rural economy

Table 6. Actions planned or carried out

Notes: the needed human resources for the planned actions are from Municipality of Penela and ARFSJ

Actions planned or carried out <i>[Actions planned to achieve the objective]</i>	Schedule <i>[From to]</i>	Necessary financial resources <i>[estimate] (€)</i>
1. Intervention project, including: Land registration with identification of owners / Elaboration of a reforestation plan and ecological valorization	2020	€ 5,000.00
2. Execution of preparatory works, including: Preparation and cleaning of land / Cutting, felling, deforestation and debris / Adaptation of paths and construction of fire breaks	2020-2021	€ 22,500.00
3. Implementation of the VPZ, including: Acquisition of trees / Planting and replanting of trees / Organization of voluntary and environmental awareness actions	2020-2022	€ 25,500.00
4. Preparation of a Study for the Recovery and Enhancement of the Riparian Gallery and Adaptation to Climate Change	2020-2021	€ 23,616.00
5. Recovery and Enhancement of the Stream of Ferrara Riparian Gallery and surrounding spaces	2020-2029	€ 15,020.76
Physical rehabilitation and reinforcement of signage - Enhancement of Natural Heritage Corridors	2020-2022	€ 5,000.00
Environmental interventions - Rehabilitation and Strengthening of Natural Heritage Corridors	2020-2022	€ 10,000.00
6. Water Retention and Adaptation to Climate Change Project Services	2021-2023	€ 6,263.00
7. Program for the rational use of water and the fight against waste	2022-2029	€ 50,000.00
8. Producing in community for the community - Self-sufficiency in the production of electricity	2024-2029	€ 1,200,000.00
9. “Waste o” - Adopt the 3 R's as a priority: Reduce, reuse, recycle	2021-2029	€ 50,000.00
10. Casa Abrigo da Ferrara de São João - Multipurpose space	2020-2022	€ 400,000.00
11. Installation of water point and fire hydrant network	2020	€ 30,750.00
12. Installation of communication equipment	2020	€ 10,000.00
13. Shared resource center for first response to fire (equipment)	2020-2029	€ 3,416.67
14. Training actions and self-protection plans (inhabitants, operators and tourists)	2020-2021	€ 3,416.67
15. Registration through technical design: new look, new line of communication (characters, ambitions, environments)	2020-2021	€ 2,050.00
16. Definition, rehearsal and training in an Inclusive Visitation Program	2020-2022	€ 4,563.32
17. Definition and testing of the Volunteer Program	2020-2022	€ 39,544.51
18. Inclusive and sustainable mobility plan (Transport on request using an electric vehicle)	2024-2029	€ 150,000.00
Mobility system with shared-use electric vehicles	2025-2029	€ 100,000.00
19. Creation / organization services of the Annual Ferrara Live Village Festival	2021-2029	€ 22,025.80
20. Showcooking - annual event	2021-2029	€ 2,952.00
21. Organization of thematic workshops and training actions led by specialists, in order to achieve the objectives of the smart strategy targeting residents and non-residents, with a view to developing co-creating projects community	2020-2029	€ 30,000.00

Actions planned or carried out <i>[Actions planned to achieve the objective]</i>	Schedule [From to]	Necessary financial resources[estimate] (€)
22. Requalification and maintenance of public spaces		
North Gate - Rehabilitation of Public Space	2022	€ 50,000.00
North Gate - Requalification of Public Space	2022	€ 75,000.00
Requalification and maintenance of public spaces	2020-2029	€ 50,000.00
23. Implementation of the Sanitation Network with construction of ETAP - Water Treatment Plant with Plants - wastewater treatment system by hydrophyte plants (Fito-WWTP's)	2023-2025	€ 1,100,000.00
24. Technical Office for Urban Rehabilitation Support	2020-2029	€ 75,000.00
25. Preparation of a Good Practice Manual for the rehabilitation of buildings in the historic center	2021-2022	€ 2,000.00
26. Workshops and training actions in urban rehabilitation for professionals	2022-2024	€ 50,000.00
27. Awareness-raising actions on the benefits and incentives for urban rehabilitation	2020	€ 1,000.00
28. Incentive program for the settlement of people and companies and the rehabilitation of the built park	2021-2029	€ 200,000.00
29. Property management system and database	2020-2021	€ 10,000.00
30. Physical space Live Village	2021-2023	€ 30,000.00
31. Creation / installation of an indoor exhibition	2020-2022	€ 22,140.00
32. Implementation of areas for immersion and diversification of activities and sensory pathways, observatories, childcare, etc.	2021-2022	€ 20,000.00
33. Landscape Reader	2020	€ 3,072.54
34. Development and implementation of applications and support materials - Support Materials for Tourism Activities (board game, app)	2020-2021	€ 29,421.60
35. Rehabilitation and conservation of the trail network (pedestrian, mountain bike)		
Rehabilitation and conservation of mountain bike routes	2020-2029	€ 25,000.00
Rehabilitation and conservation of the walking network	2021-2029	€ 10,000.00
36. Ferrara de São João MTB Center - Conservation and maintenance works	2021	€ 30,000.00
37. Design and implementation of paths, paths and trails		
Path from Shale to Limestone - Design and implementation	2022-2023	€ 50,000.00
Faith trail - From the Chapel of São Sebastião to São João do Deserto	2023-2025	€ 10,000.00
Corn Path - Requalification of access roads to corn lands	2021-2022	€ 5,000.00
38. Conservation, restoration and requalification works of the built heritage		
São Sebastião Chapel and surrounding space - Conservation works	2022	€ 50,000.00
Alminhas - Restoration and / or conservation / requalification works	2022	€ 35,000.00
Serra do Espinhal Chapel - Conservation and Restoration Works	2023	€ 25,000.00

Actions planned or carried out [Actions planned to achieve the objective]	Schedule [From to]	Necessary financial resources [estimate] (€)
39. Study and Projects of Recovery / Valorization of Traditional Mills	2020	€ 5,166.00
40. Rehabilitation and recovery of Traditional Mills	2023-2026	€ 150,000.00
41. Interpretive signs to support the enhancement of cultural and natural heritage associated with the corn cycle	2020-2021	€ 3,447.08
42. Execution of agricultural works - Recovery of the traditional activity of maize culture - contracting of services and equipment (tractor services and / or other equipment)	2020-2022	€ 3,200.00
43. Fence assembly for cornfield installation	2020	€ 2,509.20
44. Fence assembly for apiary installation	2020	€ 2,509.20
Apiary Installation	2020-2021	€ 1,500.00
Tourism promotion of beekeeping	2020-2022	€ 963.06
Tourism promotion of grazing	2020-2022	€ 963.06
45. Herd's House / Village space - Reception centers for tourist, agricultural and pastoral activities (Community corrals)	2020-2021	€ 49,200.00
46. Survey, Study and Projects for Recovery / Valorization of wells, irrigations and water harvesting devices	2020-2022	€ 5,000.00
47. Requalification and recovery of wells, irrigation and water extraction devices	2022-2025	€ 150,000.00
48. Corn Bread Cycle - Design and implementation project, including production of didactic material for exhibition, workshops and training / action actions	2020-2022	€ 10,000.00
49. Honey Cycle - Design and implementation project, including production of didactic material for exhibition, workshops and training / action actions	2020-2022	€ 10,000.00
50. Water Cycle - Design and implementation project, including production of didactic material for exhibition, workshops and training / action actions	2020-2022	€ 10,000.00
51. Herd's Cycle - Design and implementation project, including the production of teaching material for exhibitions, workshops and training / action actions	2020-2022	€ 10,000.00
52. Cork Cycle - Design and implementation project, including production of didactic material for exhibition, workshops, ...	2020-2022	€ 10,000.00
53. Creation of a new interpretative trail in the village's century-old cork oak - studies, definition and implementation	2020-2021	€ 8,909.51
54. Creation of a stay / leisure zone in the village's centennial cork oak - studies, definition and implementation	2020	€ 3,567.00
55. Gastronomy Training and preparation of recipes	2020-2022	€ 15,744.00
56. Workshops and training actions on "How to communicate and "sell" the "Ferraria, Live Village" project	2020-2022	€ 20,000.00
57. Elaboration of the institutional and joint management model	2020-2021	€ 3,412.11
58. Support in the implementation of a village condominium management model	2020-2022	€ 3,644.44
59. Structuring Support Services / Application Submission	2020-2029	€ 4,286.00
60. Support services and technical assistance for the execution and monitoring of the "Ferraria, Live Village" project	2020-2029	€ 29,520.00

Actions planned or carried out [Actions planned to achieve the objective]	Schedule [From to]	Necessary financial resources [estimate] (€)
61. Account review / classification and financial execution reporting services	2020-2022	€ 4,428.00
62. Support services to boost complementary activities	2020-2029	€ 29,520.00
63. Support services and technical assistance for the implementation of the Strategic Urban Rehabilitation Program	2020-2029	€ 150,000.00
64. FSJ Residents' Association Requalification / Improvement Works	2020-2021	€ 25,000.00
65. Community Herd - Construction and requalification of capris and implementation of fences	2020-2021	€ 49,200.00
66. Purchase of equipment and animals	2021-2022	€ 5,000.00
67. Dynamization of the project, including management model, computer applications, human resources	2021-2029	€ 15,000.00
68. Definition and Implementation of Brand and Communication / Marketing Plan	2020-2021	€ 17,589.00
69. Interior adaptation / remodeling works for the installation of Loja de Aldeia	2020-2021	€ 43,185.50
70. Computer Equipment for Village Store	2020-2021	€ 1,100.85
71. Furniture for village shop equipment	2020-2021	€ 6,498.83
72. Study and implementation of a project to revitalize production and develop new innovative forms of trade, focusing on short chains and / or new markets	2021-2029	€ 15,000.00
	2020-2029	€ 5,004,130.20

V. MANAGEMENT AND MONITORING

5.1 Management

The implementation of the strategy and objectives defined in this document is based on the realization of an investment program associated with a set of projects and actions with different types and physical and financial dimensions as identified in the Table above.

The implementation of this investment plan requires an institutional and operational involvement of public entities and private actors, as well as the consideration and capture of available financial means - public and private - that will ensure the achievement of the objectives defined through the implementation of the projects / actions considered.

The financing for the execution of the actions foreseen in the strategy will be carried out through several funding models, as described above: exclusively municipal financing, community financing, financial instruments and private financing.

The financing denominated exclusively municipal covers the actions promoted by the City Council that will only be leveraged through its own financing / own budget. However, it is noteworthy that this financing is made after an evaluation of the investment priorities defined in the annual budgets, and may be included in future programs and initiatives for public support for investment.

Community funding relates to actions that fall within the investment priorities defined in the Portugal 2020 Partnership Agreement and in the respective Regional and Thematic Operational Programs.

The estimated value of €400,000.00 estimated for the construction of the Shelter House will be entirely supported by a private sponsor.

For an effective management of the implementation of the strategy in FSJ, the creation of a technical team resulting from the partnership between the Municipality of Penela and ARFSJ is foreseen, which will be responsible for the execution and dynamization of all actions, projects and activities. This team, and its duties, will be formalized under a Protocol to be established between these two entities.

Bearing in mind that the current programming period (2014-2020) is terminating, in due time, a review of the planned investments, execution schedule and funding models should be carried out, in order to identify opportunities in which the public support is feasible.

5.2 Monitoring

It is considered premature to define specific provisions for monitoring the implementation of the strategy, namely the set of indicators (how they will be measured, by whom and how often) that will serve to monitor the strategy's implementation process.

VI. STAKEHOLDERS INVOLVEMENT IN STRATEGY DEVELOPMENT

6.1 Stakeholder involvement in needs assessment

The vision understood in this strategy was built with the involvement of FSJ's inhabitants, through village meetings between residents and the Municipality of Penela, its elected representatives, Mr. President and other councilors, as well as technicians from the Municipality.

The greatest example of community involvement in this definition of strategies and policies was the creation of the VPZ (Village Protection Zone) that emerged after the environmental catastrophe of a huge rural fire that devastated the entire area surrounding the village's housing.

Following the fires that occurred in 2017 and that affected the region, and this village in particular, the FSJ Residents' Association played a very important role at the national level, by being the first community of residents to implement the execution of a VPZ - Village Protection Zone. It was a process of social innovation that brought the entire local community together in favor of common interests:

- The security of people and property;
- The economic and environmental enhancement of the forest.

This Association is a non-profit entity, which was created to boost the village by enhancing its endogenous resources (people (know-how), natural and built heritage, cultural practices).

In terms of leadership, the Presidency of the Association is assigned to a new inhabitant of the village, who assumes the role of liaison between the inhabitants of older age groups, having on several occasions the task of conciliation and explanation of the strategy and vision for village development.

Another person, who was already President of the Association, also one of the new inhabitants and investor in a tourist accommodation business at FSJ, stood out for his leadership capacity, namely, the ability to stimulate the involvement of the local community. In addition, due to the fact that he carries out his professional activity in the field of tourism consultancy at national level, the assimilation of his know-how has been very important for the construction of this strategy.

The inhabitants of the village of Ferrara de São João were also involved from the beginning in the development of the former Village Plan and process of integrating the village into the Schist Villages Network.

As this type of process is very much a part of the FSJ, young people also have the opportunity to express their ideas and visions for the development of the village.

On the other hand, there is the Municipality of Penela which is also the party very interested in the development of its villages, this in particular because it is the only one that makes up the Schist Villages Network.

With regard to other entities, there has been close collaboration between HIESE and IPN, and it is necessary to continue to encourage the involvement of the scientific and technological system in

the definition of actions and initiatives that introduce rural innovation as a differentiating factor for the construction of a smart village.

6.2 Stakeholder involvement in strategy development

For the development of this strategy, the inhabitants were involved through face-to-face meetings in the village space, jointly promoted by the Municipality of Penela and the Ferrara de São João Residents Association where everyone had the opportunity to identify the problems and their concerns and needs.

In the aforementioned face-to-face meetings in the village space, the advantages of defining an intelligent development strategy for the village that responded to their wishes, but above all that allowed the resolution of the village's problems, were enunciated. After much discussion on the topic, it was agreed that the vision for the intelligent village of Ferrara de São João would have to be focused on quality tourist development in the village and combating depopulation.

Figure 7. Process of involving the village community (inhabitants)



6.3 Main communication and citizen awareness channels

The main channel of communication with the inhabitants of the village is through community meetings promoted by the Association of Residents or by the Municipality of Penela, where everyone has an active voice on the work to be developed in the village. However, this is more from an internal communication perspective. The method of mobilizing the citizens we seek is to make everyone part of the process and feel that the work they are doing is for the development of the village and its quality of life.

In terms of external communication, it is carried out mainly through social networks (Facebook, Twitter, etc.) and through the dissemination and communication channels of the Municipality of Penela.

The level of mobilization of volunteers to carry out restoration work on the village's surroundings has been done through the dissemination of *mailling list* and the social networks of the Ferrara de São João Residents Association.

6.4 Actions planned to mobilize stakeholders

In the understanding of the Municipality of Penela, the most effective way to implement this strategy in the village of Ferrara de São João will have to go through identifying a person who

works exclusively with the task of bridging the gap between the Municipality, ARFSJ, its inhabitants and who is on the ground in order to coordinate the execution of the planned actions.

This key person must meet criteria such as the following:

- Technical capacity to coordinate projects and people;
- Who is familiar with the territory;
- That it is well accepted by the inhabitants of the village, and may, at times, have to assume the role of conflict mediation;

Finding someone who can meet these requirements is a very difficult task because none of the members responsible for ARFSJ has full-time availability. Bearing in mind this difficulty, residence in the village was not defined as a criterion, which allowed the identification of someone who lives outside the village, but who, through professional channels, created bonds of affinity with the community and who fulfills the requirements mentioned to assume responsibility coordinating the implementation of this strategy from the ARFSJ.