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Education for Rural Entrepreneurship & Innovation

IO2. Rural Development Potential for Innovation and Entrepreneurship – Analysis Framework

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IO2: Rural Development Potential for Innovation and Entrepreneurship - Analysis Framework

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List of Abbreviations

Acronym	Full term
E&I	Entrepreneurship & Innovation
RD	Rural Development
HEIs	Higher Education Institutions
WP	Work Package
IO	Intellectual Output
KSC	Knowledge, Skills and Competencies
RES	Renewable Energy Sources
E&I Initiative	Entrepreneurial & Innovative Initiative

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1. Preface

Nowadays, sustainability, multifunctionality, endogeneity, as well as entrepreneurship and innovation (E&I) are fundamental determinants for shaping rural development. These factors enable rural areas to capitalize on emerging social, economic, and environmental trends and address specific rural challenges (Żmija, 2022). A holistic approach to rural development (RD) must involve mobilizing and leveraging the endogenous potential of rural areas, including knowledge, skills, and competences of local communities, as well as other local resources (Reidolf & Graffenberger, 2019). E&I are perceived as key factors in finding one's own path to rural development by exploiting latent or not fully exploited local potential, with the assistance of external support (Chatzichristos et al., 2021). Higher Education Institutions (HEIs) can act as initiators and facilitators to create synergies between the E&I education and rural development through appropriate design of their E&I education programs.

Studies have shown that students' decisions to start a business in rural areas are strongly influenced by factors such as entrepreneurial education, entrepreneurial environment and personal skills (Alshebami et al., 2020; Alshebami 2022). While EU university curricula prioritize the development of entrepreneurial and innovative skills (Reichert, 2019), they often focus on urban contexts, overlooking the specific needs of rural areas (Pett et al., 2021). There is an evident demand for more targeted E&I programs that address the specific challenges and opportunities of rural regions (Zollet et al., 2024). Changes to university curricula and the improving students' perceptions of rural E&I can effectively improve the current situation, given the low number of students moving back to rural areas to start their professional career.

ENGINE takes on this challenge, with a particular emphasis on creating educational programs that respond to the actual needs of socio-economic development in rural areas. The identification of the development potential of rural areas and how it can be harnessed for entrepreneurship and innovation in selected European regions is the starting point for the review of E&I university programs and the identification of gaps in knowledge, skills, and competencies useful for future rural entrepreneurial leaders. By developing an original educational tool (EDUPACK), which is tailored to the unique challenges and opportunities of rural entrepreneurship and innovation, and integrating this tool into university curricula, the project aims to equip students with the specific knowledge, skills, and competencies needed to drive innovation and sustainable development in rural regions.

This document - Rural Development Potential for Innovation and Entrepreneurship - Analysis Framework is the intellectual output (IO) of the first empirical component of ENGINE project. It offers different institutions across Europe a user-friendly framework to identify rural development potential and to understand the types and scope of knowledge, skills, and competences necessary to effectively activate this potential through innovative and entrepreneurial initiatives.

The aim of the guide is to provide a practical and universal tool that enables various

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institutions—schools and universities, training institutions, non-governmental and community organizations, as well as authorities at different levels—to identify and leverage the potential of rural areas for the development of innovative and entrepreneurial initiatives.

It is intended to support education, strategic planning, community engagement, and economic development by fostering a better understanding of local resources and the development potential of rural areas, along with the competencies needed to make effective use of them.

The use of this guide enables its users to conduct a comprehensive assessment of the development potential of rural areas in terms of innovation and entrepreneurship. It is designed to support users in answering the following key development questions:

1. What local resources are available in the rural areas of a given region?
2. What development potentials do these resources create?
3. What existing and future entrepreneurial and innovative initiatives can harness this potential?
4. What knowledge, skills, and competences are required to effectively implement these initiatives?

These objectives can be achieved by applying the methodology outlined in Chapter 2 of this guide. Developed and validated within the ENGINE project by partners and stakeholders, this methodology walks users step-by-step through the process of resource and potential mapping, stakeholder consultation, and identifying the specific knowledge, skills, and competence needs related to entrepreneurship and innovation in the context of each rural area.

Its application leads to the main output which is **Rural Development Potential Map** – a comprehensive overview of rural local resources and rural development potentials in a studied region, including examples of current and potential entrepreneurial and innovative initiatives that can make use of them. In addition, the map identifies the key competency needs associated with these initiatives, helping to align education and training efforts with regional development goals. The map is built using both secondary data and primary inputs gathered through stakeholder engagement.

This guide not only supports analysis but also inspires action by linking the identification of rural local resources and development potential with competency development, entrepreneurship education, and the practical implementation of locally grounded innovation initiatives adapted to the realities of rural regions.

Although originally designed as a foundation for developing an educational tool tailored to the rural context and intended for integration into university curricula, this framework has a much broader range of applications. It can be effectively used by **higher education institutions, research centers, local authorities, NGOs, training providers, rural development agencies** and other entities interested in **identifying local rural resources and unlocking their innovative and entrepreneurial potential**. The practical use of this guide allows these institutions to:

- Diagnose and map rural development potential using a standardized,

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evidence-based approach;

- Identify the knowledge, skills, and competences necessary to activate this potential, particularly in relation to entrepreneurship and innovation;
- Design or revise educational and training programs to align them with real opportunities and challenges in rural areas;
- Support local leaders, entrepreneurs, and grassroots organizations in creating context-sensitive, place-based initiatives;
- Engage communities and stakeholders in dialogue about the sustainable future of their region.

The mapping and assessment methodology presented in the guide can support a wide variety of concrete applications, such as:

- Informing public policies aimed at promoting employment, youth engagement, and sustainable local economies;
- Guiding private and public investment in strategic sectors like agribusiness, rural tourism, circular economy, renewable energy, and digital services;
- Revitalizing declining or depopulated rural areas by identifying underused assets and potential for reactivation;
- Supporting the creation of rural incubators and innovation hubs tailored to local realities;
- Designing environmental sustainability and food security projects grounded in local knowledge and natural assets;
- Promoting culturally respectful and sustainable tourism;
- Strengthening short value chains, circular business models, and community resilience;
- Providing a strong evidence base for regional, national, and EU funding applications by creating coherent and well-documented territorial profiles.

In each of these cases, the use of this guide and its methodology should be adapted to the specific regional context and, where possible, aligned with peer-reviewed and locally validated guidance. By doing so, institutions and communities can move beyond general assumptions and apply concrete, competency-driven, and resource-based approaches to build sustainable, innovative, and resilient rural futures.

The rest of this document is structured as follows: Chapter 2, presents the universal methodology for identifying the rural development potential for innovation and entrepreneurship of each European region. Chapter 3 – Regional case studies – provides a summary of the rural development potential maps for each HEI ENGINE's partner region. It begins with a socio-economic profile of the region, outlines local rural resources, and identifies key rural development potentials. The Chapter concludes with 15 inspiring entrepreneurial initiatives from each region, highlighting four of them. Chapter 4 presents the main conclusions of this document. The Appendix presents the tools and templates useful in developing the rural development potential map.

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2. Identifying and Mapping Rural Development Potential for Entrepreneurship and Innovation

2.1. Introduction

Chapter 2 presents the methodology developed within the ENGINE project for identifying the rural development potential of European regions and related competency needs in the context of entrepreneurship and innovation. It outlines a universal, step-by-step framework applicable across diverse rural contexts, enabling users to systematically assess rural local resources and development potentials and link them to entrepreneurial and innovative opportunities. A key component of this methodology is the parallel identification of the knowledge, skills, and competences required to activate the identified opportunities. The Appendix contains a set of practical tools and templates designed to support the application of this methodology.

Together, these components offer a replicable model that can be applied by universities, training institutions, local governments, NGOs, and other stakeholders to explore and document untapped or underutilized rural resources and potentials. This methodological framework sets the foundation for the case studies presented in Chapter 3, which illustrate how it has been implemented in the partner regions of the ENGINE project.

The methodology consists of six major steps, each of which relies on different types of data and sources (see figure 1).

Step 1 concerns determining the territorial scope of the study, i.e. defining the region and its rural areas.

Step 2 provides the first overview of the local resources available in rural areas in the region and includes the selection of rural local resources for further analysis; this analysis is based on available secondary sources of information.

Step 3 details rural development potentials existing in the region which can utilize 5+ local resources identified in Step 2; the analysis is based on available secondary sources of information.

Step 4 identifies current and potential entrepreneurial and innovative initiatives that can leverage rural development potentials of the region identified in step 3 and develops a draft Rural Development Potential Map for the region; it is based on available secondary sources of information.

In Step 5 the draft Rural Development Potential Map is further verified and refined through inputs collected during a rural consultation meeting with regional stakeholders. The information used in this step is therefore of a primary nature.

Finally, in Step 6, the draft Rural Development Potential Map undergoes a peer review, followed by necessary revisions to produce the final version.

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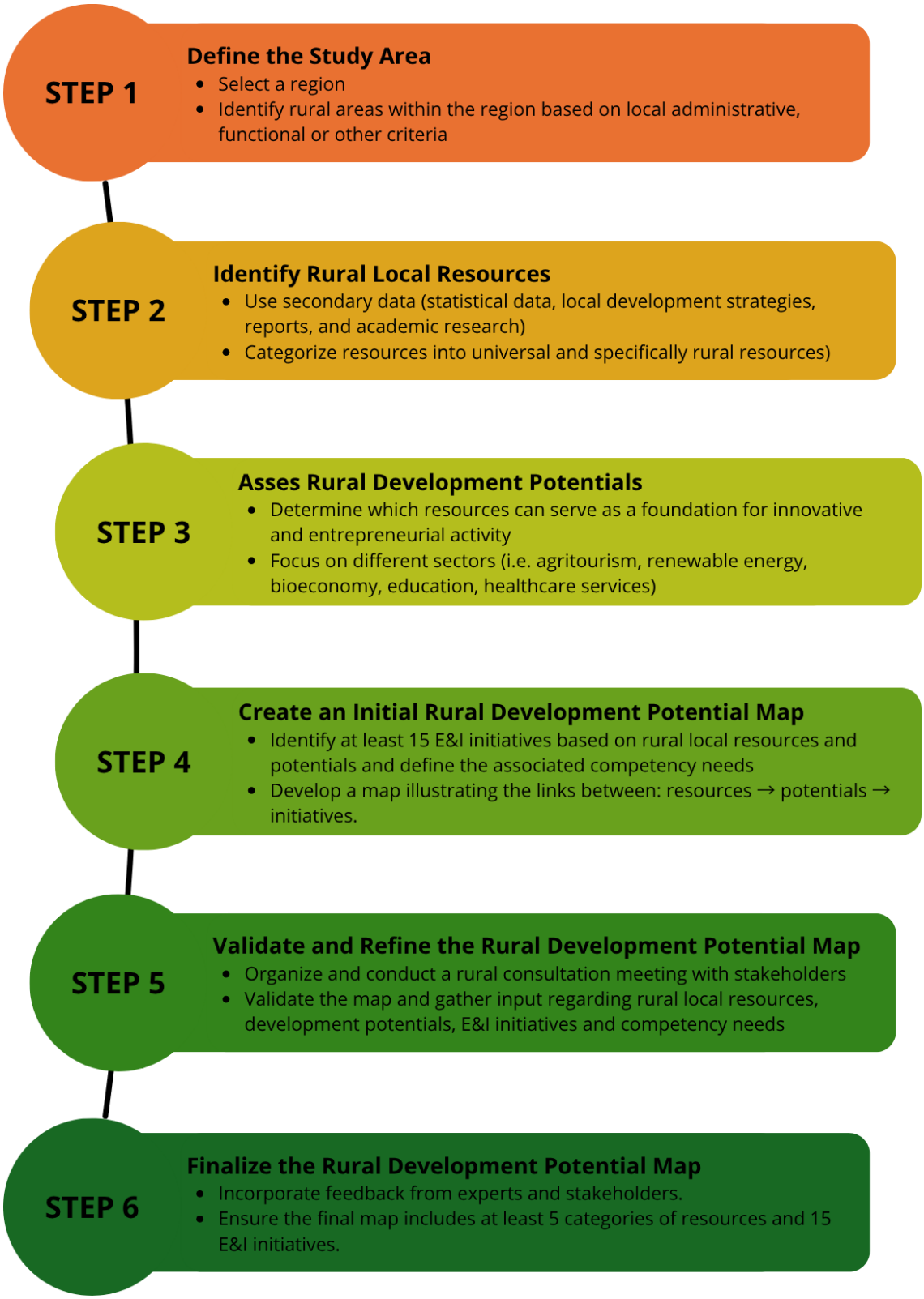
Figure 1. Key Methodological Steps



Source: ENGINE Project elaboration

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2.2. Methodological steps for rural development potential mapping

2.2.1. Step 1. Define the study area

The first step in applying this methodology is to clearly define the territorial scope of your analysis. This involves identifying both the region and the rural areas within it. These definitions will guide all further stages of the process, from data collection to stakeholder engagement.

Defining the region

The concept of a region is complex and challenging to define with precision. An economic region is a system operating within a specific geographic, socio-economic, and cultural area. It encompasses various elements that exhibit both internal interconnections and external linkages with its environment. A region can be defined as a spatially delineated economic and social unit characterized by specific endogenous resources (both tangible and intangible), social and institutional embeddedness, and the ability to generate innovation and create economic networks that support its development and competitive advantage in the changing conditions of the global economy (Korenik, 2011).

In European studies, regions are defined in various ways depending on the context and purpose of the research. Therefore, a distinction is made between administrative, functional, program, and natural regions, among others.

One of the most common approaches to defining a region is to interpret it as an administrative unit. Administrative regions are established on the basis of legal regulations and consist of territorial units classified according to the NUTS system (Nomenclature of Territorial Units for Statistics), which divides each EU country into three levels of administrative units (Regulation (EC) No 1059/2003):

- ➔ **NUTS 1:** Major socio-economic regions
- ➔ **NUTS 2:** Basic regions (for regional policies)
- ➔ **NUTS 3:** Small regions (for specific diagnoses)

This classification of regions corresponds to the structure used in the European Union for statistical purposes and regional policy planning.

A functional region is a unit defined by significant economic, social, or cultural linkages. Unlike administrative regions, the boundaries of functional regions do not have to align with official territorial divisions. These types of regions reflect actual interactions and processes, which makes them useful for analysing socio-economic dynamics (Churski et al., 2023).

A program region is a unit designated to implement specific measures under the European Union's regional policy. These regions are defined within operational programs, such as the European Regional Development Fund or Cross-Border

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Cooperation Programs (Interreg) (European Commission: Directorate-General for Regional and Urban Policy & Dijkstra, 2014).

A natural region is an area characterized by uniform environmental features, such as topography, climate, or natural resources (Bailly, 1998). These regions are particularly significant in the context of environmental protection and sustainable development, as their natural features influence potential threats and opportunities for resource utilization.

Thus, the concept of a region is highly flexible, allowing its definition to be tailored to diverse objectives and research needs. In this guide, we recommend using **administrative NUTS 2 regions** (according to the EU Nomenclature of Territorial Units for Statistics) as the default territorial unit. This choice ensures compatibility with official statistics and facilitates regional-level analysis and comparison. However, if a region displays significant internal diversity, it may be more appropriate to use a lower administrative level (e.g., NUTS3), with a brief justification provided for this choice.

However, in certain cases, you may prefer to use a different type of region, depending on the objectives of your analysis. When in doubt, prioritize regions that allow for access to reliable data, strong stakeholder engagement, and practical implementation of activities that this analysis is intended to support.

Defining rural areas

There is no single, universally accepted definition of "rural areas". Contemporary rural areas are difficult to define unequivocally due to the multitude of diverse phenomena and processes shaping them (Kudełko et al., 2020). Generally, rural areas are understood as spaces consisting of villages and their surroundings. Rural areas situated outside large and medium-sized cities, are usually extensive. Unlike urban areas, rural areas are often associated with a distinct human-nature relationship, lifestyle, landscape, settlement and economic structure compared to urban ones. However, even highly urbanized units with dense settlement patterns and predominantly non-agricultural functions, resembling small towns or suburban districts, can be considered rural.

Rural areas perform important functions related to the supply of agricultural products, land and water resource management, and environmental protection (Heley & Jones, 2012). However, currently, many rural areas are changing their traditional functions, usually associated with agriculture and the food industry. Ongoing processes of urbanization, industrialization, and socio-economic transformations in rural areas, resulting in a growing share of the service sector, have led to a significant diversification of their functional structure (Bański & Mazur, 2016; Casini et al., 2021; Stanny et al., 2021). For this reason, limiting the concept of rural areas only to those where agricultural functions and related activities play a decisive economic role is a significant and unjustified restriction of their delimitation given current conditions. It can be observed that contemporary definitions of rural areas created by scholars are evolving towards a concept of multifunctional space, taking into account the diversification of communities and the functional structure

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of the local economy (Johansen & Nielsen, 2012).

On the other hand, the precise definition of rural areas is of great importance from a practical point of view for statistics, administration and development policies (Goździewicz-Biechońska, 2024). The challenge of defining rural areas for practical purposes often comes down to selecting a key characteristic that qualifies an area as rural. In practice, rural areas in individual European countries are most often defined using an administrative division criterion, or a demographic criterion based on a fixed population threshold, or a geodemographic criterion such as a population density indicator in a given administrative unit. However, current classifications of "rural" and "urban" areas are moving away from simple typologies based on population density and are evolving towards more complex delimitations that consider geographical continuity (neighbourhood) or are based on functional links between rural and urban areas (Eurostat, 2024a; Eurostat, 2024b; Statistics Poland, 2024).

Rural territories differ widely across countries and regions. Therefore, you should adopt a flexible, context-sensitive definition based on your local circumstances.

You may consider the following criteria:

- Administrative (e.g., municipalities not classified as urban)
- Demographic (e.g., population below a given threshold)
- Geodemographic (e.g., population density)
- Functional (e.g., distance to urban centres, economic activity)
- Natural or geographic (e.g., landscape features, protected areas)

The key is to choose a definition that best reflects your analytical goals and practical realities, especially in relation to identifying development potential.

Expected Outcomes of Step 1

1. **A clearly defined region** (preferably NUTS 2 level)
2. **A well-justified delimitation of rural areas** within the region

2.2.2. Step 2. Identify rural local resources

Once the region and rural areas are defined, the next step is to identify the key rural local resources that can serve as the foundation for rural development, innovation, and entrepreneurship. This step shifts the focus from rural problems to rural potential by recognizing the value of endogenous resources – the assets already present in rural areas.

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Rural development is no longer seen only through the lens of disadvantages or deficits. Instead, it is increasingly about recognizing and mobilizing what rural areas already have — including their human, economic, natural, social, cultural, and environmental capital (Perpar & Udovc, 2012). These resources can be used to generate new activities, support entrepreneurship and innovation, attract investment, and strengthen community resilience.

A resource can be defined as "a supply of something that a country, an organization or a person has and can use, especially to increase their wealth" (Oxford Learner's Dictionary) or "a useful or valuable possession or quality of a country, organization, or person" (Cambridge Dictionary). In regional economics, a resource is any asset or factor that can be used to produce goods and services or to achieve a specific goal within a particular territory. In this context, resources can be defined as all elements of reality that are significant tothe economy or community of a given area, often having a specific, unique character, exclusive (or almost exclusive) to a given local system (Korenik, 2016). Bearing in mind the specific development conditions of each spatial unit, the concept of local resources becomes relevant.

Empirical studies show that local resources can significantly contribute to the development of various business and social initiatives provided they are actively mobilized and strategically utilized (Eder & Trippl, 2019). Regarding rural areas, they have the potential to extend and upgrade development paths of these areas by introducing new economic functions while making them more future-oriented (Reidolf & Graffenberger, 2019; Żmija, 2022). However, the uneven quantitative and qualitative geographical distribution of these resources, coupled with their varying use in rural regions, contributes to differences in socio-economic outcomes (Capello, 2009).

Numerous studies have analysed the definition and classification of local resources in rural areas, which in this guide are referred to as "rural local resources" (Cannarella & Piccioni, 2011; Copus et al., 2011; Sánchez-Zamora et al., 2014; Gobattoni et al., 2015; Brańka & Kudłacz, 2017; Müller & Korsgaard, 2017; Grabher, 2018; Bański, 2019; Zagata et al., 2020; Gamito et al., 2021, Żmija, 2022; Salukvadze et al., 2024). Since the concept of local resources lacks a single, universal definition, authors often define them based on their research needs or interests. Some adopt a broad perspective, considering rural local resources to encompass all resources available within a particular rural area (Reidolf & Graffenberger, 2019; Gamito et al., 2021; Żmija, 2022). Others use a narrower definition, focusing on unique (or rare) and useful features, factors, and phenomena within a specific territory that shape its internal potential for social and economic development (Bański & Kiniorska, 2021).

What counts as a rural local resource?

In this guide, we define **rural local resources** broadly, as diverse assets, both tangible and intangible, available in a given rural area, which are currently being used or have the potential to be used in entrepreneurial and innovative initiatives in rural areas. These may include everything from natural raw materials and local traditions to infrastructure and social networks.

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Keep in mind:

- A resource is not just something that exists — it must be recognized and activated by local actors.
- The same asset may be overlooked or underused unless its value is identified and made visible.

How to identify rural local resources – recommended activities:

1. Collect and review data and information from various secondary sources.
2. Use the resource classification provided below to organize findings.

Classification of Rural Local Resources

The classification proposes a three-level division of rural local resources, dividing them into two main categories to which individual groups and sub-groups of resources were assigned.

Two main categories include:

- universal resources– local resources commonly found in rural areas but not exclusive to them. They are characterized by their universal and replicable nature and can be found in any territory regardless of the region's internal specificities or the capabilities of local actors. Universal resources are commonly utilized in business ventures that treat the local spatial context as a location for business, i.e. a form of entrepreneurship that has very limited engagement with the location of the venture as a meaningful place (Korsgaard et al., 2015).
- specifically rural resources – assets that are intrinsically tied to rural areas, deriving their significance and utility from the distinctive environmental, social, and economic characteristics of rural settings. These resources are closely linked to agriculture, forestry, natural landscapes, and rural community practices, and their availability and use are shaped by the rural context. They are often unique and rooted in the local space and community, local institutions, social capital, knowledge and competencies specific to the territory. Their replication or creation elsewhere is often either impossible or associated with disproportionately high costs compared to the benefits achieved through relocation.

The universal resources are categorized into two distinct groups:

1. human capital: universal knowledge and skills – knowledge and skills that are widely applicable across various fields and contexts. They are not specific to a particular region (and its rural areas) but have broader applications.

2. physical capital and technologies - the tangible assets and technological tools used in various non-agricultural sectors. They comprise machinery and equipment, different technologies, including ICT, as well as infrastructure used in various

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branches. These assets contribute to increased productivity, efficiency, and innovation in various sectors of the economy.

Within specifically rural resources, seven groups are identified:

1. natural resources - resources that occur naturally in the environment and can be used for economic gain. They are particularly important for traditional activities in rural areas (mainly agricultural and forestry, but also processing, craft, and handicraft, etc.), but also for more modern sectors of the economy, such as renewable energy production. This group includes the following subgroups of resources:

- mineral resources and renewable energy resources – this subgroup includes naturally occurring substances found in the Earth's crust that can be extracted and utilized for economic or industrial purposes (such as metallic minerals, non-metallic minerals or fossil fuels) as well as renewable energy resources like sunlight, wind, water and geothermal energy.

- natural productive assets - environmental conditions that favour specific agricultural crops, enable certain production or service activities, such as soil, water or climate.

- raw materials of agricultural or forestry origin - all materials that come directly from agricultural production or forests. These are natural products that can be used in a variety of production processes, from food production to the manufacture of building materials and biofuels, e.g., in the food, textile, construction, paper, chemical, and energy industries.

2. natural heritage - refers to natural features, geological and physiographical formations, and specific areas that serve as habitats for various animal and plant species and natural sites, which are valued from the point of view of science, conservation, or natural beauty (UNESCO, 2009). Natural heritage constitutes a fundamental attribute of tourist-recreational spaces, determining the range of tourist and recreational activities that can be accommodated. It is also a key driving force for the development of environmental industry enterprises.

3. tangible cultural, historical and architectural heritage - refers to physical objects, sites, and structures that have cultural, historical, or artistic significance. These tangible assets can be preserved and passed down from generation to generation, providing insights into the past and shaping the understanding of human history and culture.

4. intangible cultural heritage - comprises practices, representations, expressions, knowledge, and skills recognized by communities or groups as part of their cultural heritage (UNESCO, 2021). This intangible heritage is passed down through generations continuously adapting and renewing as communities, undergoing continuous adaptation and renewal as communities and groups engage with their environment, history, and cultural traditions, and provides them with a sense of identity and continuity.

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5. resources of agriculture, forestry and other typical rural activities (i.e. local processing, handicraft) - assets and elements used in these sectors which can simultaneously be employed in other types of economic activity in different sectors (e.g., agrotourism, leisure industry, gastronomy, processing, manufacturing, services).

6. local and traditional knowledge and skills - this group includes knowledge, skills, and practices that are specific to a given region or community and have been passed down from generation to generation. They can relate to agriculture or forestry, traditional crafts, food production and processing or natural environment and are often deeply rooted in local culture, history, and environment.

7. social capital - refers to the networks of relationships, trust, and cooperation among individuals and groups within a rural community. This includes the functioning of various types of associations and social organizations working towards broad-based local and regional development, such as artistic groups, housewives' circles, producer groups, agricultural cooperatives, as well as local development activists.

Table 1 shows examples of resources classified into different groups.

Table 1. Classification of rural local resources

Category	Group	Examples
Universal resources	Human capital: universal knowledge and skills	knowledge and skills of a universal nature, provided by schools, universities, research centres, etc.
	Physical capital and technologies	machinery equipment, and technologies, including transport, telecommunications, and ICT infrastructure, used across various non-agricultural sectors.
Specifically rural resources	Natural resources: -Mineral resources and renewable energy resources	metallic minerals (i.e. iron ore, gold, silver, copper, aluminium); non-metallic minerals (i.e. limestone, gypsum, sand, clay), fossil fuels (coal, oil, gas); energy resources (sunlight (solar energy), wind, water (hydropower), and geothermal energy.
	- Natural productive assets	soil (fertile land used for agriculture), water bodies like rivers, lakes, and groundwater (used for irrigation, drinking water, industrial processes etc.); climatic conditions (suitable for specific crops or industries, such as temperate climates for agriculture or cold climates for winter sports tourism).
	- Raw materials of agricultural or forestry origin	fruits, vegetables, meat, milk, cereals, wood, cork, wool, leather, biomass, plant extracts, berries, mushrooms, herbs, honey, fish, etc.

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	Natural heritage	landscape and quality of environment, relief, surface waters and vegetation, natural monuments, reserves, national parks, biodiversity, thermal waters, etc.
	Tangible cultural, historical and architectural heritage	monuments, museums, open-air museums, religious or historical sites and buildings; different forms of rural architecture (traditional spatial layout of the countryside with homesteads, dwelling houses, palaces, castles, sacred buildings, barns, granaries); rural industry buildings (e.g. mills, forges, sawmills, distilleries); engineering structures, etc.
	Intangible cultural heritage	ethnographic heritage: customs, traditions of family, neighbourhood and community life, dances, songs, music, costumes, language; traditional design, traditional recipes and production methods for local and regional products, e.g. food products based on traditional recipes and production methods, crafts and handicrafts, etc.
	Resources of agriculture, forestry and other typical rural activities (i.e. local processing, handicraft)	buildings, machinery and equipment, livestock, products of local processing and handicrafts.
	Local, traditional knowledge and skills	specific knowledge and skills related to traditional farming practices, knowledge of local plant varieties, and forest management techniques; knowledge and skills related to various local crafts, such as woodworking, pottery, weaving, and blacksmithing, building houses; understanding local ecosystems, including knowledge of plant and animal species, their habitats, and their interactions with the environment; creating works of artistic value.
	Social capital	social networks related to the functioning of various rural organizations: artistic ensembles, housewives' circles, producer groups, animators of local development.

Source: ENGINE Project elaboration based on: UNESCO Institute for Statistics, 2009; Cannarella & Piccioni, 2011; Copus et al., 2011; Sánchez-Zamora et al., 2014; Gobattoni et al., 2015; Korsgaard et al., 2015; Brańka & Kudłacz, 2017; Müller & Korsgaard, 2017; Grabher, 2018; Bański, 2019; Reidolf & Graffenberger, 2019; Zagata et al., 2020; UNESCO, 2021; Gamito et al., 2021, Żmija, 2022; Salukvadze et al., 2024.

Using the proposed classification of rural local resources collect and review secondary data and information to build an initial overview of rural local resources available in your region. This desk research phase will help you compile a preliminary list of tangible and intangible assets that may support entrepreneurial and innovative initiatives.

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Gather data and information from reliable secondary sources. Analyse the collected materials to identify relevant groups of rural local resources. Use this information to create a comprehensive inventory of rural local resources in the region.

Secondary data sources used in this step, as well as in subsequent steps, include publicly available data and information on rural local resources, rural development potentials, and various business and social initiatives in rural areas. These sources include:

- quantitative data characterizing existing resources, such as population size, education levels, employment structure, and the number and sectoral structure of enterprises. This type of data can be obtained from official statistical databases (local, regional or national) provided by statistical offices or public institutions.
- information provided by regional and local government units, development agencies, industry associations, chambers of tourism, cooperatives, Local Action Groups, NGOs or various community organizations in the form of publications, reports, development strategies, case studies, working papers or information available on websites.
- information from research papers, reports on the implementation of research projects prepared by academic institutions and research institutions and centres.

Tip: *Document each source clearly for future reference and validation during stakeholder consultations (see Step 5)*

Expected Outcome of Step 2

1. **Comprehensive Resource Inventory:** A detailed inventory of rural local resources available in the region, including the groups of local resources outlined in Table 1.

2.2.3. Step 3. Assess rural development potentials

In this step, you will identify and evaluate **the most significant rural development potentials** based on the rural local resources identified in Step 2. This analysis is based on available secondary sources of information and helps uncover which economic, social, or environmental opportunities can realistically be developed in rural areas in the region. It forms the foundation for linking rural local resources with

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specific entrepreneurial and innovative initiatives in later steps.

This step includes the following activities:

A. **Initial rural development potentials assessment** - identification and assessment of rural development potentials based on secondary data and information on rural local resources collected in Step 2.

B. **Rural development potentials prioritization** - prioritizing the most significant rural development potentials in the region.

A. Initial rural development potentials assessment

What is rural development potential?

The development potential of rural areas is the sum of the resources, opportunities, and conditions present in rural areas that can be effectively utilized to support economic growth, improve quality of life, and maintain ecological balance. This potential includes both the natural and cultural assets of rural areas, as well as human, institutional, and technological capacities that support the development of various economic sectors (Perpar & Udovc 2012). In other words, rural local resources serve as the foundations upon which different types of capital (economic, human, social, cultural, and environmental) can be built, while potential refers to the possibility of developing these resources. It involves identifying opportunities in rural areas and taking actions to realize them.

Use the secondary data and information on rural local resources collected in Step 2 to identify development areas where rural local resources can be leveraged. Look for existing or emerging opportunities in:

- traditional sectors (e.g., agriculture, forestry, food processing)
- modern or hybrid sectors (e.g., renewable energy, creative industries, agritourism)
- new economy fields (e.g., digital services, circular economy).

Recognizing the diversity and multifunctionality of rural areas, this methodology proposes a broad set of development potentials that go beyond traditional agricultural uses (Figure 2). These include both established sectors and emerging opportunities where innovation and entrepreneurship can thrive.

These potentials are illustrative and can be adapted and/or complemented depending on the specific context and resources of rural areas in the region.

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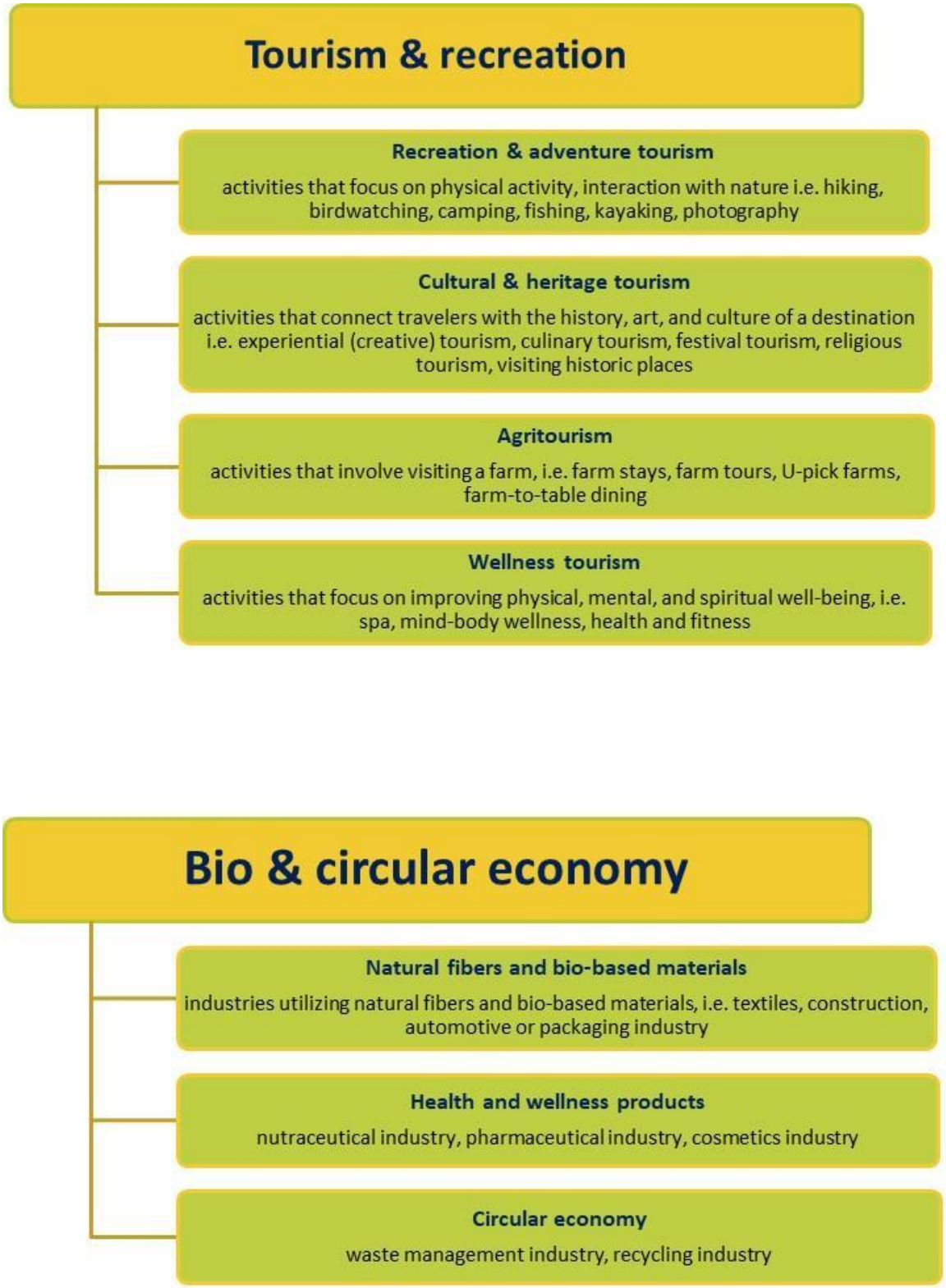
Figure 2. The key rural development potentials of rural areas



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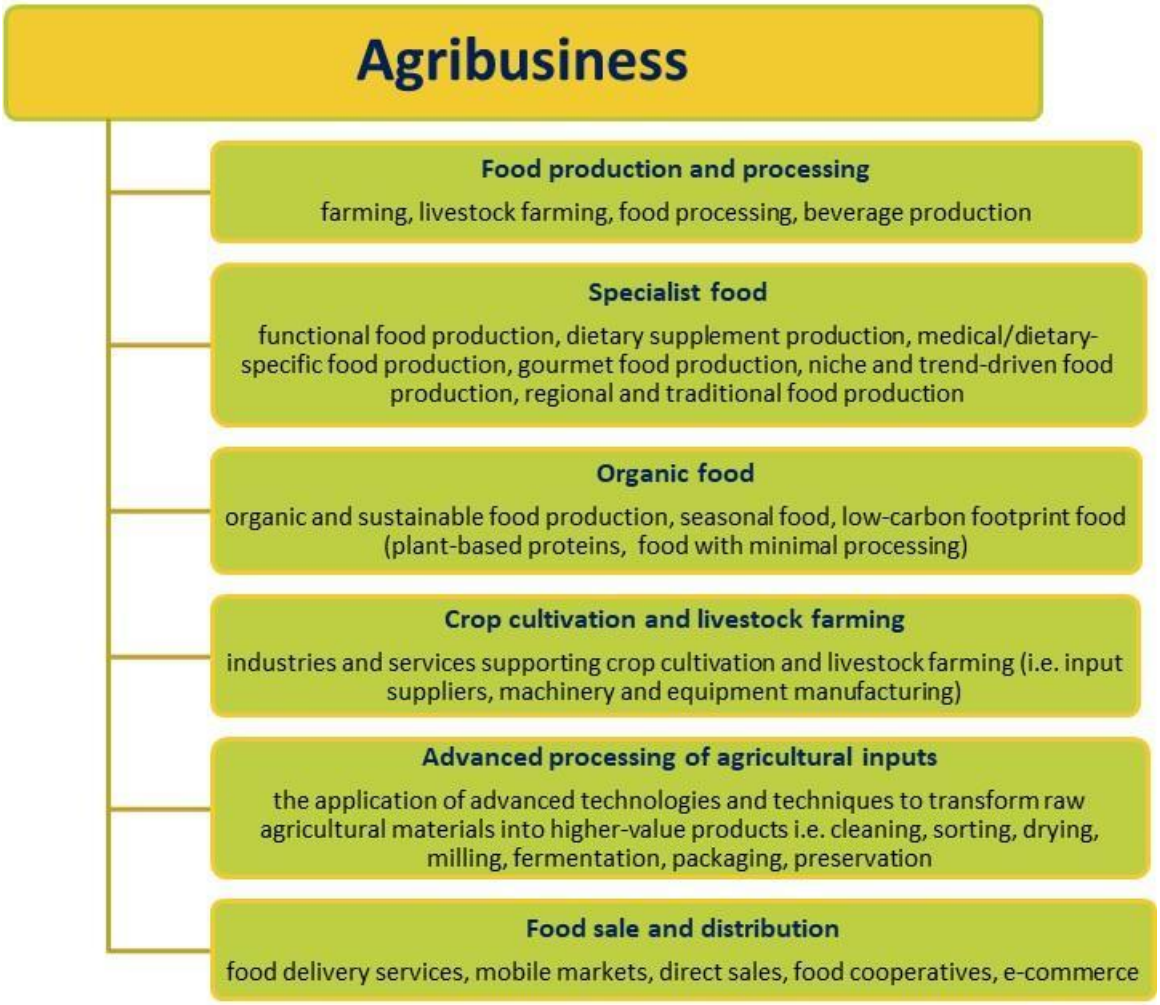

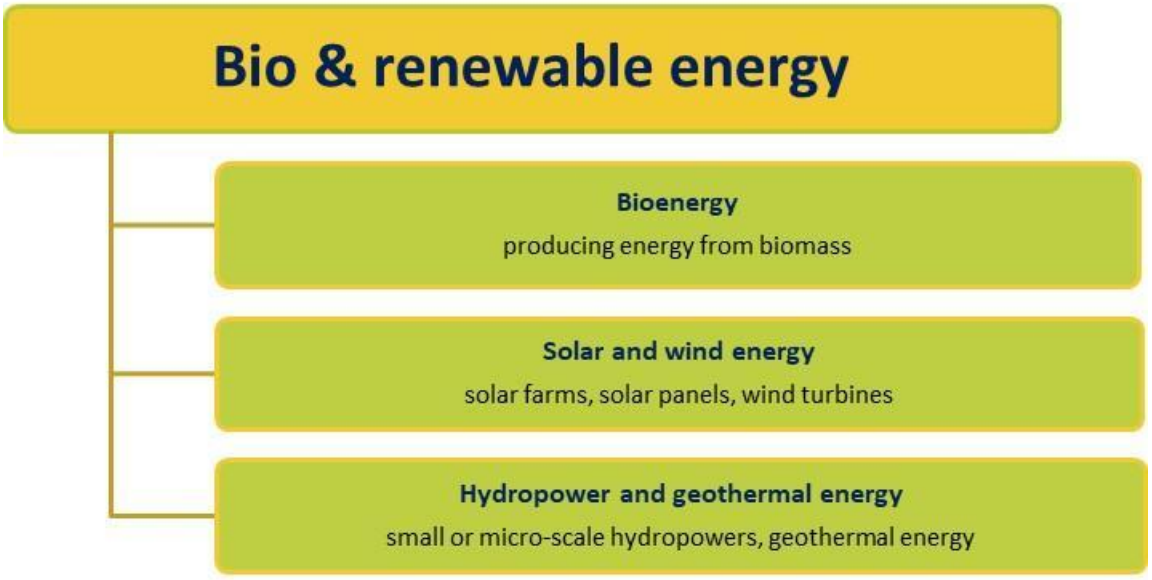

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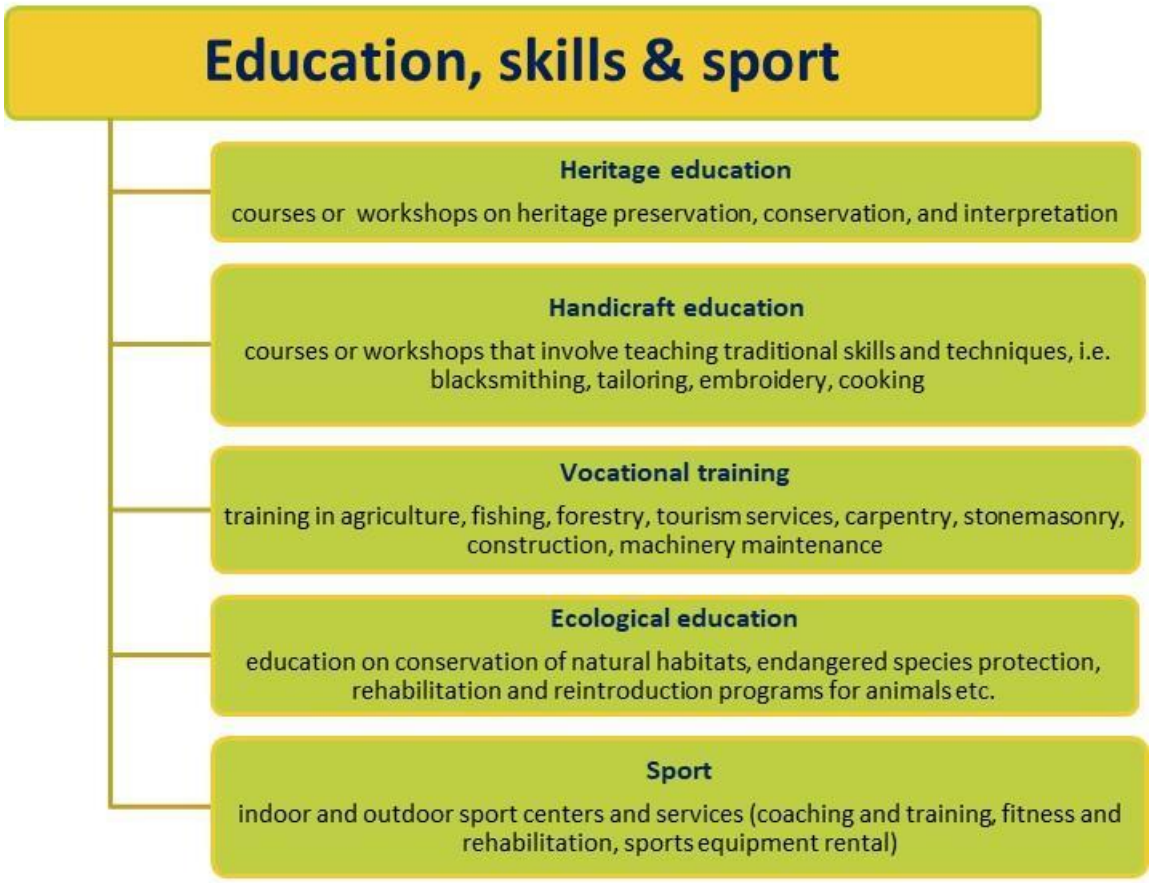

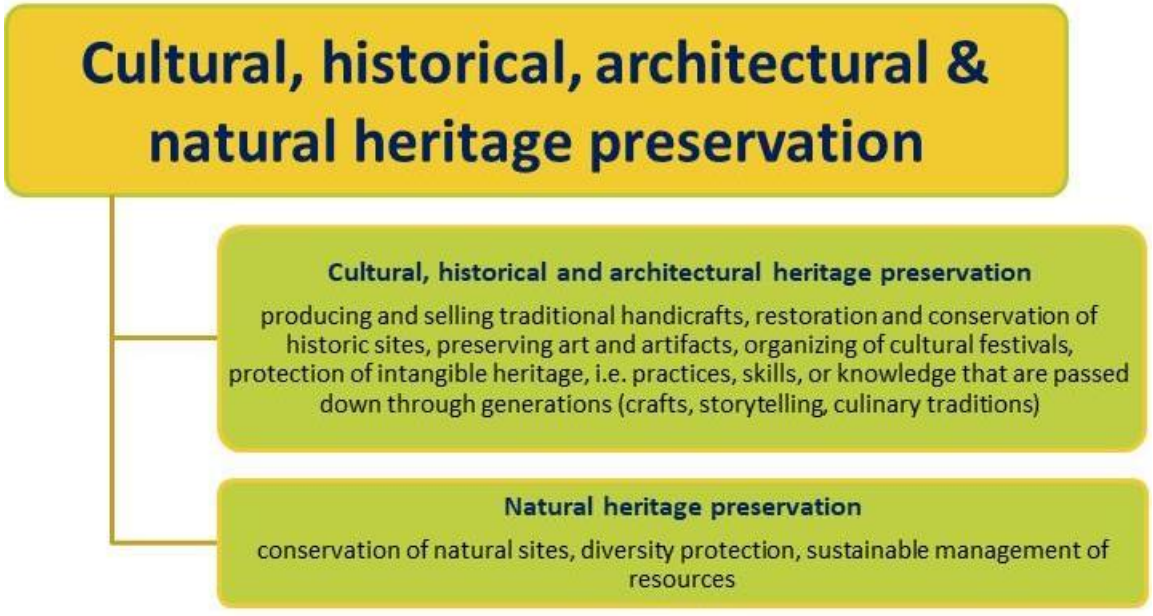

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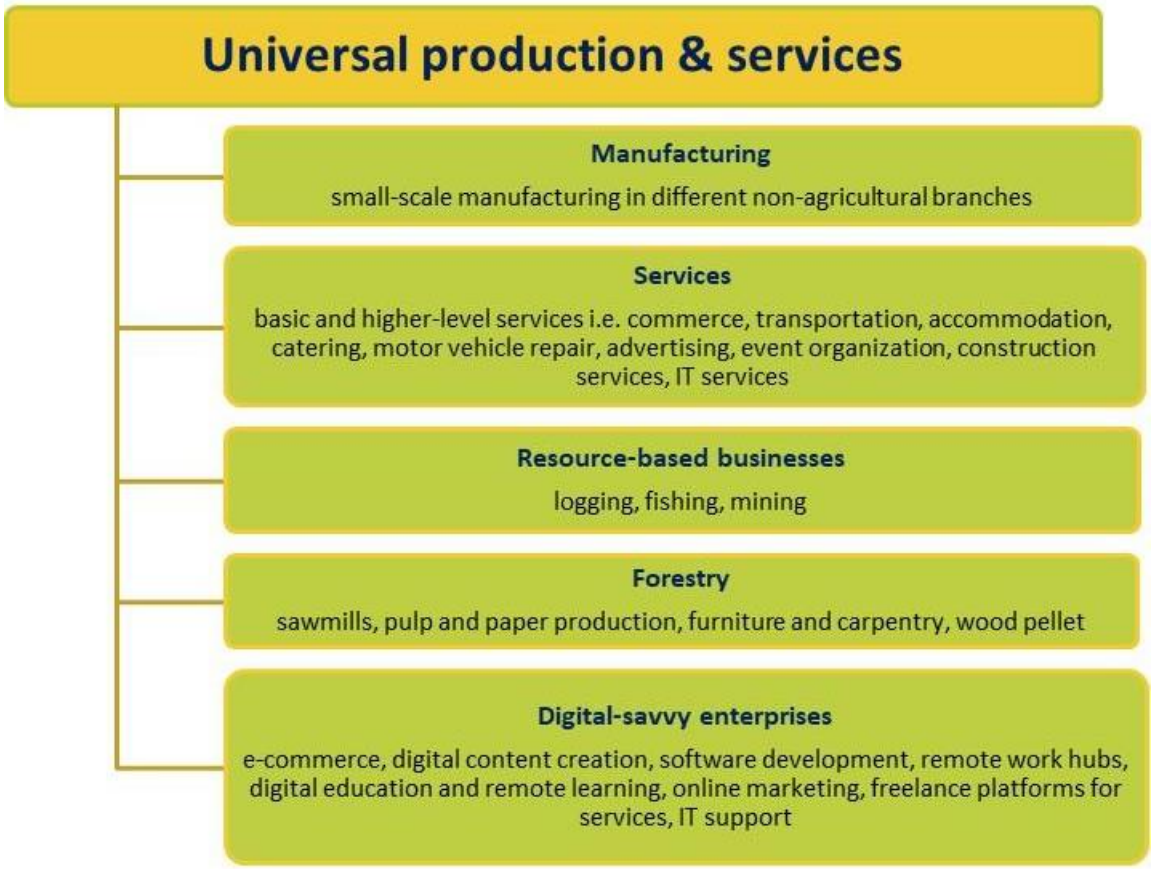

Source: ENGINE Project elaboration based on: Gebre & Gebremedhin, 2019; Pato, 2020; Galli et al., 2020; OECD, 2020; Cejudo & Navarro, 2020; Standar et al., 2021; Ahlmeyer & Volgmann, 2023.

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Identified development potentials must correspond to the rural local resources that are abundant in the region. Ensuring this alignment is crucial to guarantee that proposed fields for innovation and entrepreneurship are both realistic and rooted in the actual assets available in the local context. Below are a few examples of how rural local resources can be linked to rural development potentials:

Mineral resources can be extracted and processed to create valuable goods (➞Universal production& services)

Local, traditional knowledge and skills can be used to develop traditional crafts (➞Cultural, historical, architectural & natural heritage preservation), traditional or regional food products (➞Agribusiness) or cultural tourism (➞Tourism & recreation).

Tangible cultural, historical and architectural heritage can be developed as tourist attractions (➞Tourism & recreation) or become the basis for restoration and conservation services (➞Cultural, historical, architectural & natural heritage preservation)

Resources of agriculture (buildings, machinery or equipment) can be utilized in Agritourism (➞Tourism & recreation), vocational training (➞Education, skills & sport), or shared services such as sharing equipment with other farmers or businesses to reduce costs and increase efficiency (➞Agribusiness)

Universal technologies such as ICT can be used to develop activities in different sectors i.e. in agriculture (precision agriculture) or food sale (e-commerce) (➞ Agribusiness) for providing remote healthcare services (➞Health & care services) or freelancing (➞Universal production& services).

As the examples above illustrate, a single resource can lead to multiple development opportunities and help identify the different development potentials of rural areas in the region.

B. Rural development potentials prioritization

After identifying a broad list of development potentials, the next task is to **prioritize those that are most significant** for rural areas in your region. This analytical step helps focus efforts on the most promising areas for innovation and entrepreneurship. Consult previous research, strategic documents, and academic literature to support the prioritization of the most significant rural development potentials in the region.

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When reviewing secondary sources, pay particular attention to potentials that:

- ➔ are based on resources that are abundant in the region,
- ➔ have economic value i.e. they generate significant income and employment, which in turn stimulate higher economic growth,
- ➔ have social significance i.e. align with local priorities and preferences; ensure equitable distribution of benefits and reduce disparities; preserve and promote local culture and heritage,
- ➔ have environmental impact, i.e. they minimize negative impacts on the environment, promote efficient use of natural resources, enhance resilience to climate change,
- ➔ have the potential for innovation and entrepreneurship

Interlinkages and synergies should also be considered:

- ➔ **identify potential synergies:** examine how the selected potentials can be combined to support each other and/or to create new opportunities,
- ➔ **consider weaknesses, barriers, and risks:** identify internal limitations such as resource constraints, structural weaknesses, or internal threats that may hinder development.
- ➔ **consider external factors:** analyse how external factors like climate change, market trends, and public policies may affect this potential.

It is important to note that no fixed weighting is prescribed for the recommended criteria in identifying key rural development potentials. However, analysts may assign weights, if appropriate, to better reflect the specific characteristics of their region. This flexibility can contribute to a more precise identification of key development potentials.

Expected Outcome of Step 3:

1. **Prioritized List of Rural Development Potentials in the Region:** A list of the most important rural development potentials utilizing at least 5 rural local resources.

2.2.4. Step 4. Create an initial Rural Development Potential Map

In step 4 you will identify current and potential entrepreneurial and innovative initiatives that can leverage rural development potentials of the region outlined in Step 3 and create a draft Rural Development Potential Map for the region. This step is also based on available secondary sources of information and includes the

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following activities:

A. Review of case studies and best practices: identification of case studies showcasing successful rural entrepreneurial and innovative initiatives that leverage rural development potentials of the region identified in Step 3 (at least 15 initiatives)

B. Drafting the Rural Development Potential Map: the collected data will be used to draft the Rural Development Potential Map.

A. Review of case studies and best practices

In this activity, you will collect examples of entrepreneurial and innovative initiatives operating in rural areas (preferably within your region or comparable regions) that utilize the development potentials identified in Step 3. These initiatives will serve as real-world illustrations of how rural local resources and potentials can be transformed into impactful, sustainable activities.

Entrepreneurial and innovative initiatives in rural areas are those initiatives that introduce new ideas, products and services, technologies, or business models to address local challenges and opportunities. These initiatives will be evaluated based on their ability to leverage local resources, meet social needs, and foster sustainable business practices. Examples of such initiatives are:

- developing new products or services, such as value-added food products or eco-friendly tourism experiences.
- adopting new technologies or techniques to improve efficiency and productivity, such as precision agriculture or digital tools for farm management.
- creating new business models, such as social enterprises or cooperatives, to address social and environmental issues.

Collect secondary data on initiatives in both traditional rural sectors, such as agribusiness, tourism, and handicrafts, and innovative, knowledge-intensive sectors including emerging ones like digital technologies, biotechnologies or renewable energy. The analysis should consider the evolving focus on entrepreneurship and innovation in rural areas, where the emphasis now extends beyond economies of scale, specialization, labour productivity growth, and new industrial technologies. Increasingly, attention is shifting toward economies of scope, diversification, value creation, and leveraging the opportunities offered by information and communication technologies, alongside new marketing and organizational solutions (Bosworth et al, 2020). These broader development logics should guide your understanding of how rural initiatives use local resources to create new opportunities, added value, and community impact.

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Consider the following key features when identifying E&I initiatives:

Mandatory:

➔ **local resource and potential-based:** leverage identified rural local resources and the most significant rural development potentials,

Non-mandatory:

➔ **community-oriented:** engage local communities and foster local economic and social development.
➔ **sustainable:** focus on minimizing environmental impact and promote long-term sustainability.
➔ **resilient:** adapt to changing market conditions and address social or environmental challenges.

Various rural stakeholders involved in developing entrepreneurial and innovative initiatives can be identified and analysed. Below are some key types of stakeholders to consider:

- inhabitants of rural areas in the region,
- entrepreneurs operating in rural areas (micro-, small and medium-sized enterprises, large companies),
- farmers, food producers and processors,
- cooperatives, civic enterprises, community organizations and associations, Local Action groups, and NGOs.

You are encouraged to use the template provided in the Appendix (Business or Social Initiative Description Form) to structure your description of each initiative.

Tip: *Highlight both existing initiatives and conceptual ones that show strong potential but require further development or support.*

B. Drafting the Rural Development Potential Map

In this activity, you will create a draft version of the Rural Development Potential Map for rural areas in your region. The map will visually and structurally connect the key elements identified so far:

- rural local resources (Step 2),
- development potentials based on those resources (Step 3),
- concrete entrepreneurial and innovative initiatives that activate them (Step 4A).

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This map serves as a core analytical tool that helps understand how available resources can be strategically transformed into real development opportunities.

You are encouraged to use the template provided in the Appendix (Rural Development Potential Map) to structure your map. The draft map should include:

1. a description of the socio-economic profile of the region and its rural areas, which includes key characteristics of the region and a brief overview of how rural areas are positioned in the broader regional context.
2. a graphic presentation which showcases the links between identified rural local resources, the most significant rural development potentials and E&I initiatives, providing a better understanding of current and potential opportunities for entrepreneurship and innovation in rural areas of the region.
3. a description of the profiles of various E&I Initiatives in rural areas of the region that utilize identified rural local resources and development potentials with a list or description of the knowledge, skills, and competences necessary to implement and sustain the initiative.

The content of the graphic presentation (p. 2) should be developed, with consideration of the following elements:

- Contour map of the studied region:

  Use a contour map to visually represent the administrative boundaries of the studied region, serving as the primary spatial framework for presenting further thematic data.

- Thematic layers:
  - Layer representing specific groups of rural local resources (RLR) – including at least 5 different resource groups

    RLR groups should be placed on the left side of the contour map of the studied region, following the layout proposed in the template.

  - Layer representing key rural development potential (RDP) categories

    RDP categories are placed directly below the corresponding resource groups.

  - Layer of Entrepreneurial & Innovative Initiatives (E&II) – including at least 15 different E&I Initiatives

    E&I initiatives should be placed on the right side of the contour map of the studied region, following the layout proposed in the template. This layer should include the number and name of each E&I initiative, along with references to the resource group(s) it draws upon and the development potential(s) it reflects or supports — using the

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corresponding numbers or labels from the left section of the map. A detailed description of each initiative, including required competencies, should be provided in the third part of the map (Overview of E&I initiatives in the region's rural areas).

The graphic design should be clear and aesthetic, providing a clear presentation of data.

Expected outcomes of Step 4:

List of Case Studies on E&I Initiatives in Rural Areas of the Region: a collection of case studies (at least 15) showcasing successful entrepreneurial and innovative initiatives in rural areas that effectively leverage identified rural local resources and the most significant rural development potentials.

Draft Rural Development Potential Map: a preliminary version of the Rural Development Potential Map, prepared using the template provided in the Appendix, that illustrates the links between resources, development potentials and E&I initiatives in rural areas of the region.

2.2.5. Step 5. Validate and refine the Rural Development Potential Map

In this step, you will organize and conduct a **rural consultation meeting with regional stakeholders** to gather primary data that will help validate and refine the draft version of the Rural Development Potential Map.

This step includes three key activities aimed at ensuring the Rural Development Potential Map is both accurate and co-created with local actors:

A. Identifying and inviting rural stakeholders to the consultation meeting: To ensure a successful rural consultation it is necessary to identify and invite a diverse range of stakeholders. Detailed guidance on this is provided in the reminder of this section.

B. Conducting the rural consultation meeting: the purpose of the rural consultation meeting is to consult rural stakeholders and improve the draft Rural Development Potential Map, as well as to obtain information on the knowledge, skills and competencies relevant to rural entrepreneurial leaders.

C. Refining the Rural Development Potential Map: Refining the Rural Development Potential Map involves reviewing, validating, and enhancing the initial map based on

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feedback gathered during the rural consultation meeting.

A. Identifying and inviting rural stakeholders to the consultation meeting

A key activity of Step 5 is to **identify and engage rural stakeholders** who can contribute valuable perspectives on rural local resources, development potentials, and E&I initiatives in the studied region. For this reason, it is important to carefully select stakeholders whose perspectives, experiences, and engagement can meaningfully contribute to the consultation process. Users of this guide are encouraged to independently identify and invite individuals and organizations who are actively involved in, or directly affected by, rural development in the region.

Who are rural stakeholders and why are they important:

Stakeholders are individuals and organizations that have an interest in or impact on rural development. Rural development has far-reaching implications, affecting the quality of food, water, energy, leisure, biodiversity, and other essential public goods. For this reason, it concerns everybody. However, to optimize stakeholder involvement in rural development, it is advisable to categorize individuals into groups based on their specific interests and roles. This categorization can help to identify the unique contributions that each group can make to the development process (ENRD, 2015; Kusio & Fiore, 2022), while also ensuring balanced representation and enabling targeted engagement and dialogue. The key rural stakeholder groups typically include:

- inhabitants of rural areas in the region,
- entrepreneurs operating in rural areas (micro-, small and medium-sized enterprises, large companies),
- farmers, food producers and processors,
- representatives of local and regional governments (i.e. mayors, council members),
- community leaders (i.e. village heads),
- public agencies (i.e. local and regional development agencies, regulatory bodies),
- cooperatives, civic enterprises, community organizations and associations, Local Action Groups and other NGOs,
- advisory organizations (i.e. agricultural extension services),
- representatives of educational and research institutions (schools, universities, research institutions, training centers),
- representatives of financial institutions (i.e. microfinance institutions),
- representatives of different professional groups important for rural areas in the region.

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An initial list of regional rural stakeholders should be compiled, including individuals and organizations relevant to rural development in the region. It is recommended to start with a broad selection — ideally at least 40 contacts — to ensure a diverse pool of potential participants. From this list, aim to involve a minimum of 20 stakeholders in the consultation process, representing a wide range of stakeholder groups and ensuring diversity in gender, age, sector, and geographic location.

While identifying and establishing cooperation with stakeholders:

- ➔ prioritize key stakeholders: focus on individuals and organizations with significant influence and interest in rural development,
- ➔ seek recommendations: ask local experts and community leaders to identify key stakeholders,
- ➔ consider diverse perspectives: include diverse stakeholder groups, representing different sectors and interests, diverse in terms of socio-economic characteristics (gender, age, location in the region)
- ➔ build relationships: establish strong relationships with key stakeholders through regular communication.

To identify stakeholders, you can draw on existing personal or institutional networks, including contacts established through previous projects or activities in the region. It is also recommended to engage with established rural networks, such as agricultural cooperatives, community organizations, and Local Action Groups (LAGs), which can help reach a broader and more representative audience.

In cases where certain groups are difficult to reach, additional efforts should be made, by exploring alternative ways to engage them, such as participation in local community events, partnerships with local banks, or targeted invitations via trusted intermediaries. A well-structured and diverse list of potential participants significantly increases the effectiveness of contact efforts.

Invitation to cooperation:

Next, reach out to selected rural stakeholders and invite them to participate in the consultation process. You can do this through personal meetings, email, phone, or traditional mail. However, Engine partners experience showed that potential participants demonstrate more interest when contacted directly— personally or through phone calls—rather than via emails. A direct approach helps build trust and encourages participation. It's important to clearly outline their role and encourage their involvement.

Once a stakeholder agrees to take part, you can add them to your stakeholder database. This database should include all individuals and organizations who have confirmed their willingness to participate in the consultation and related activities.

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Create the database in a simple, editable format — for example, in Excel or Google Sheets. You can organize entries by region, stakeholder type, or sector, depending on your needs. You can use the template of the database provided in the Appendix (Rural stakeholder database).

Remember: the database is for internal use only. Before adding a stakeholder, make sure they sign a consent form allowing their personal data to be used for consultation and communication purposes.

B. Conducting the rural consultation meeting

The rural consultation meeting should take the form of interactive workshops that generate ideas, gather feedback, and build engagement among a diverse group of rural stakeholders.

The organization of a successful rural consultation meeting requires a participatory, well-structured, and flexible approach. To ensure the meeting is effective and inclusive, follow these key recommendations:

1. **Collaborative Planning**
   The entire team should be actively involved in planning, with responsibilities distributed across contact identification, communication, preparation of materials, meeting facilitation, and post-meeting follow-up. This ensures ownership and smooth execution of all phases.

2. **Pre-Meeting Engagement**
   To maximize attendance, potential participants should be consulted in advance regarding suitable dates and times. Early engagement helps secure broader participation and demonstrates respect for stakeholders' availability.

3. **Format and Platform**
   Meetings can be conducted online—e.g., using Microsoft Teams or Zoom platforms — to facilitate broad and inclusive participation across geographically dispersed regions. To ensure smooth execution, technical aspects (platform access, audio/video quality, and interactive features) must be tested beforehand.

4. **Agenda and Time Management**
   The agenda should balance structured presentations with open discussions. Moderators must manage time carefully, especially given the diverse topics and high engagement levels. It is recommended to extend the total meeting duration beyond one hour, ideally allowing additional time for open questions and comments. This final segment is crucial for capturing reflections, concerns, and ideas that may not arise during structured sessions.

5. **Facilitation Style**
   A respectful and interactive atmosphere encourages active participation

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and fosters a sense of co-ownership over the outcomes. Moderators should adopt an inclusive facilitation style, ensuring that all voices — across sectors and community levels — are heard.

6. **Post-Meeting Follow-Up**
   A thank-you email should be sent to all participants, including a meeting evaluation form to gather feedback. This feedback loop not only informs improvements for future meetings but also reinforces ongoing stakeholder engagement.

7. **Consideration of In-Person Meetings**
   While online meetings provide flexibility and accessibility, the consultation meeting may also be held in person, where feasible. Physical meetings may further enhance relationship-building, experience-sharing, and knowledge exchange.

To ensure the meeting is structured, participatory, and results-oriented, we recommend the following scenario for organizing the stakeholder consultation meeting:

1. Welcome and Introduction

A moderator or organizer briefly introduces the session, outlines the agenda, and explains the objectives of the consultation.

2. Presentation of the Meeting Objectives

The facilitator presents the overall purpose of the meeting and highlights the following goals:

- validate and refine the draft Rural Development Potential Map
- identify gaps, missing elements, or corrections
- collect feedback from stakeholders based on their local knowledge and experience

It is also recommended to explain how stakeholders' input will influence the next stages of the work.

3. Presentation of the Draft Map

The draft version of the Rural Development Potential Map is presented, including:

- its purpose and how it will be used
- the methodology and structure of the map
- the types of data and sources applied
- an overview of symbols, categories, and results

Tip: *Keep the presentation short, clear, and visual to leave more time for discussion.*

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4. Discussion and gathering of opinions

Participants are invited to discuss the map and share their knowledge about local resources, the development potentials of rural areas in the region, examples of E&I initiatives they are aware of, as well as other opportunities and challenges that could be used to improve the map. They submit their comments, suggestions, and proposed changes.

Tip: *A skilled moderator should guide the discussion to ensure it is inclusive, focused, and constructive.*

Suggested Discussion Points:

Point 1: Comprehensiveness and accuracy of the draft map

- Does the draft map comprehensively present the most important resources and potentials of rural areas in the region?
- Are there any key elements that have been omitted or not emphasized enough?
- What additional rural local resources or development potentials could be included to make the map more complete?

Point 2: Expanding the knowledge base about E&I initiatives

- What other local entrepreneurial and innovative initiatives could serve as inspiration or examples of best practices? Are there any other case studies that should be included on the map?
- What additional data or information could improve the map and make it even more useful?

Point 3: Knowledge, skills and competencies necessary for entrepreneurial development

- What knowledge, skills and competencies are required to effectively implement the identified initiatives?
- What knowledge, skills and competencies are lacking in the region to effectively implement the identified initiatives?

Recommended Tools and Methods: To facilitate participation and collect input efficiently, consider using brainstorming or mind maps. If an online format is chosen for the meeting, digital platforms (e.g., Padlet) can be leveraged to facilitate the efficient collection of information and feedback from stakeholders. For collecting information on E&I Initiatives the Business or Social Initiative Description Form should be used (template included in the Appendix).

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Additional tips for the rural consultation meeting:

- ➔ **engagement:** it's important to involve rural stakeholders in the process of validating and refining the map to ensure its usefulness.
- ➔ **communication:** clear and effective communication with stakeholders should be maintained throughout the meeting.
- ➔ **accessibility:** the final version of the map should be made available to all interested parties, e.g. via the project's website.

Following the consultation meeting, it is recommended to prepare a Rural Consultation Meeting Summary Report that synthesises the course of the consultation meeting, key discussion points, main conclusions and stakeholder recommendations. A template for this report is provided in the Appendix.

C. Refining the Rural Development Potential Map

After the rural consultation meeting, you should revise and improve the draft version of the Rural Development Potential Map based on stakeholder feedback. This process ensures that the final version is accurate, complete, and grounded in local knowledge. Follow the steps below:

Feedback analysis: carefully review the comments and suggestions provided by stakeholders during the rural consultation meeting,

Identifying key themes: identify recurring themes raised by stakeholders,

Prioritizing recommendations: determine which recommendations can be incorporated into the map, considering their relevance to the accuracy and completeness of the map,

Refining the map: adjust the map, by enhancing its details to better reflect new ideas suggested by the stakeholders. Make the necessary changes concerning rural local resources, the most significant development potentials and E&I initiatives in the region.

Validating the map: make sure the map is accurate, relevant, and easy to understand.

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Expected Outcomes of Step 5:

1. **Rural Stakeholder Database.** A compiled list of rural stakeholders from the region, including contact details and organizational affiliation. This database should include at least 20 confirmed stakeholders whose input supports the identification and validation of rural development potential map. *Use the stakeholder database template provided in the Appendix.*
2. **Rural Consultation Meeting Summary Report.** A short report summarizing the course of the consultation meeting, key discussion points and main conclusions and stakeholder recommendations. *A summary report template is available in the Appendix.*
3. **Refined and Validated Rural Development Potential Map.** An updated version of the Rural Development Potential Map that incorporates stakeholder feedback, additional data or corrections, revised resource listings, development potentials, and initiatives.

2.2.6. Step 6. Finalize the Rural Development Potential Map

To ensure credibility, practical value, and wider applicability of the Rural Development Potential Map, it is recommended that the refined version undergo an external evaluation. This evaluation should be conducted by individuals or entities not directly involved in the development of the map.

The external evaluation may be carried out by:

- **Peer reviewers** — experts in rural/regional development, entrepreneurship and innovation (e.g. researchers, academic staff, policy analysts)
- **Independent rural stakeholders** — representatives of local communities, business owners, NGO leaders, or public officials who can assess the local relevance and usability of the map
- **External facilitators or institutions —** such as rural development agencies, consultants, or umbrella organizations with experience in regional/rural development strategies

These evaluations can be collected using a standard feedback form or a short questionnaire focused on accuracy, completeness, clarity, and practical applicability of the map.

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Suggested Evaluation Process

1. Share the map completed in Step 5 with:
    - peer reviewers (academic or sectoral experts)
    - a selected group of rural stakeholders
    - independent reviewers (e.g. rural development consultant, external NGO, or regional advisor)
2. Use a simple evaluation form or set of guiding questions to collect feedback, focusing on clarity and usability of the map, accuracy of resources and potentials, relevance and feasibility of the proposed E&I initiatives, missing elements or areas for improvement
3. Based on received input, apply final adjustments to the map
4. Document the evaluation results and integrate feedback into a final version ready for use and distribution.

Expected Outcome of Step 6:

1. **A Finalized Rural Development Potential Map** that is based on a current review of secondary data and information sources; incorporates feedback from a rural consultation meeting with at least 20 participants, representing a diverse range of stakeholder groups, and reflecting variation in gender, age, and geographic location; positively evaluated by independent reviewers (peer reviewers, rural stakeholders, external entity or facilitator); covers a minimum of 5 groups of rural local resources and includes at least 15 concrete examples of E&I initiatives relevant to the rural context of the region with a list or description of the knowledge, skills, and competences necessary to implement and sustain the initiative. This version should be clear, complete, and ready for use in further work (e.g. educational activities, planning processes, or policy discussions).

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3. Regional case studies

This chapter presents summarised versions of the Rural Development Potential Maps for the regions of Małopolska, Münsterland, Alto Minho, and the Province of Foggia, developed respectively by the four HEI partners of the Engine project: Krakow University of Economics, FH Münster – University of Applied Sciences, Polytechnic Institute of Viana do Castelo, and the University of Foggia.

Each summary includes a concise profile of the region and its rural areas, a brief overview of local resources with their connection to the identified development potentials, and four selected E&I initiatives, chosen from a wider list of at least fifteen identified in each region, considered to be the most inspiring.

While these summaries do not constitute full Rural Development Potential Maps, they provide a representative snapshot of the key steps and outcomes of the mapping process conducted in each partner region, in accordance with the methodology outlined in this guide.

3.1. Małopolska

Socio-economic profile of the region and its rural areas

Socio-economic profile of the Małopolska region

Małopolska, located in southern Poland, is known for its cultural, natural heritage, and economic growth. Its capital, Kraków, is Poland's second-largest city and a key academic, cultural, and economic hub. The region consists of 22 counties and 182 municipalities, covering 15,200 km² (4.8% of Poland's area). Though it ranks 12th in size (Urząd Statystyczny w Krakowie, 2024a, p. 1), it is the 4th most populous region, with 3.4 million residents (9.1% of Poland's population) (Urząd Statystyczny w Krakowie, 2024b, p. 10), making it the second-most densely populated, with 226 people/km² (Statistics Poland, 2023, Population density and indicators). Rural areas make up 88.8% of the region, housing 52.1% of its population (Urząd Marszałkowski Województwa Małopolskiego, 2024a, p. 9).

Małopolska is one of Poland's fastest-growing regions, ranking 5th in GDP and contributing 8% to the national total (Statistics Poland, 2023, Total gross domestic product). It has the 4th-largest labour market, with around 1.4 million employed (Statistics Poland, 2022, Employed in the national economy by section of PKD). The region benefits from a young, well-educated workforce, with 59.4% of residents of working age. 25.9% of residents hold higher education degrees, exceeding the national average of 24.6% (Statistics Poland, 2011, 2021, National census - Population).

Małopolska is a leading investment hub, driven by its strategic location, well-

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developed infrastructure, and an extensive road-rail network (Urząd Marszałkowski Województwa Małopolskiego, 2024a, p. 267). The region excels in R&D, skilled talent, and business support, playing a major role in national innovation alongside Mazovia. Innovation is fueled by research institutes and technology parks (Marshal Office of the Małopolska Region, Department of Ownership Supervision and Economy, 2020, p. 30). Małopolska also offers extensive support through development agencies, incubators, clusters, chambers of commerce, and coworking spaces, fostering a dynamic business ecosystem (Kubaś et al., 2021, p. 28; Urząd Marszałkowski Województwa Małopolskiego, 2021, p. 54).

Małopolska's economy blends tradition with innovation, driving balanced growth across key sectors like chemicals, pharmaceuticals, metals, electrical engineering, machinery, and food processing. Modern industries such as ICT, creative sectors, and business services are accelerating development. The region ranks 2nd in ICT employment, with global tech giants like Google, IBM, Motorola, and Cisco (Business in Małopolska), and is a leading shared services hub (SSC/BPO) (Związek Liderów Sektora Usług Biznesowych (ABSL), 2023). Creative industries contribute about 6% of GDP, while tourism, entertainment, and recreation thrive due to the region's natural and cultural assets. Key smart specializations include life sciences, sustainable energy, ICT, chemistry, metals and mineral products, electrical engineering and machinery, and creative and leisure industries (Marshal Office of the Małopolska Region, Department of Ownership Supervision and Economy, 2020, p. 4-30).

Rural Małopolska, home to 1.8 million people, has a relatively young population with 57.5% of pre-productive age. Rural residents make up 52.5% of the working-age population, playing a key role in the regional labour market (Statistics Poland, 2023, Demographic changes). However, demographic shifts due to aging and migration are underway. Although rural areas age more slowly (19.1% of rural residents are retirement-age vs. 24.0% in cities) (Statistics Poland, 2023, Demographic changes), this trend is accelerating in many municipalities, affecting socio-economic structures and increasing demand for healthcare and long-term care services (Urząd Marszałkowski Województwa Małopolskiego, 2022, p. 22). Migration also contributes to depopulation as young people move to cities, hindering local economic growth, though areas near large cities, especially Kraków, benefit from suburbanization. Educational attainment is rising, but rural areas lag behind urban ones, with 17.7% of rural residents holding higher education degrees, compared to 34.4% in cities (Statistics Poland, 2021, National census - Population).

Małopolska's rural economy blends tradition with modern industries. Agriculture remains important, though fragmented land, diverse geology, and areas with an unfavourable climatic and soil conditions limit growth. Small farms focus on high-quality production using traditional methods (Wojcieszak-Zbierska & Bogusz, 2020, pp. 351-359). The region's natural and cultural heritage, including culinary traditions, supports a thriving local food processing industry with traditional and organic products (Pajdzik, 2019, p.7).

Rural entrepreneurship in Małopolska has grown rapidly, with business entities making up 38.1% of all regional entities—well above the national average of 29.8% (Statistics Poland, 2023, National economy entities in the REGON register). This growth is uneven, concentrated near Kraków, in western Małopolska, and in

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southern tourist areas, with Tatra County leading in entrepreneurship (Urząd Marszałkowski Województwa Małopolskiego, 2021, p. 107). Tourism diversifies rural incomes, alongside a strong tradition of crafts and folk arts. Rural communities are highly civically engaged, with many local partnerships and organizations (Binda, 2022, p. 77). Rural areas play a key role in the Małopolska development strategy, which emphasizes the need to support education, innovation, and entrepreneurship as well as the development of social and technical infrastructure in rural areas (Urząd Marszałkowski Województwa Małopolskiego, 2021, p. 107).

Rural local resources

Table 1 – Universal Resources

Group	Resources
RLR 1 – Human capital: universal knowledge and skills	1.8 million people in rural Małopolska (2023). A significant pool of individuals with advanced skills and competencies across various sectors supported by: strong educational foundation at all levels, active participation in skills development initiatives, a robust ecosystem for generating and transferring new knowledge, technologies, and innovations: universities, research institutes and R&D centers, business support institutions. Increasing share of the population with higher education (9.8% in 2011 to 17.7% in 2021). Availability of skilled labour: better in rural zones near urban centers (universities, training, upskilling); northern/peripheral areas struggle with fewer institutions, limited up-skilling schemes and youth out-migration.
RLR 2 – Physical capital and technologies	High entrepreneurial density: 12% of all Polish rural enterprises are located in Małopolska, ranking 3rd in the country. Sectoral make-up (rural, non-farm entities): Construction 24.4%, Trade & vehicle repair 19.1 %, Manufacturing 11.1%, Professional / scientific / technical activities 7.1%, Transport & storage 6.2%, Health & social assistance 4.0%, Agriculture, forestry &fishing only 1.6% (farms excluded). Widespread availability of buildings, machinery, equipment, ICT, vehicles and infrastructure that are transferable across industries and can be applied in various locations.

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Table 2 - Specifically rural resources

Group	Resources
RLR 3 - Natural resources: **RLR 3.1-** Mineral resources and renewable energy	Nearly 700 documented mineral deposits with 40 % currently exploited. Significant energy reserves: coal, oil, gas, peat. Metallic ores: zinc & lead. Industrial rocks: sandstones, limestones, sands, clay minerals. Thermal & mineral waters – abundant; base for health-tourism resorts. Renewables: 2nd-best solar potential in Poland; small hydro delivers ≈ 78% of all region's RES electricity. Only ~1% of land is suitable for wind turbines. Southern districts possess strong geothermal potential already heating households and swimming-pool complexes.
RLR 3.2- Natural productive assets	Topographic amplitude: 2 341 m (158 m a.s.l. in Vistula valley → 2 499 m on Mt Rysy), the highest in Poland. Climate: 7 macro-zones plus many mountain microclimates (some therapeutic); temperate-continental regime with sharp local contrasts in temperature, snow duration and growing season. Hydrology: Upper-Vistula basin affords abundant surface water for agriculture, industry and municipal supply; groundwater crucial for public supply, food and pharma. Soils: > 60 % good/very good; prime class I–II soils just 6 % of farmland, concentrated in the north. Lowlands favour arable crops, uplands/mountains fit sheep husbandry, hardy crops and four-season tourism (hiking, skiing, health-resort activity).
RLR 3.3 Raw materials of agricultural or forestry origin	Strong fruit belt (Sądecki & foothills): apples (Łąckie- Protected Geographical Indication), plums, pears, currants, strawberries, raspberries. Vegetables: cabbage (northern part of the region with Charsznica – national hub), carrots, beets, onions, cucumbers, potatoes, leafy greens. Grains: wheat, rye, oats, barley. Animal husbandry: dairy & beef cattle (foothills); Poland's largest sheep populations (Podhale, Beskids, Pieniny). Bioenergy feedstock: potential for farm biomass (straw, hay, green mass) plus manure for biogas. Forestry products: timber, wild mushrooms, berries. Aquaculture: historic Carp Valley (Oświęcimski/ Wadowicki counties); rainbow&brook trout near Ojców.
RLR 4 - Natural heritage	Unique geography and diverse natural features are undeniable assets. Flagship landforms: Tatra (only alpine-type range in PL), Beskids, Pieniny with Dunajec Gorge; Kraków-Częstochowa Upland (limestone formations, gorges, and caves incl. Prądnik Valley, Hercules' Mace), Błędów Desert. 53 % of area under conservation: 6 national parks (incl. Tatra, Pieniny), 11 landscape parks, 10 protected-landscape areas, 83 nature reserves, > 2200 natural monuments. Rich biodiversity: alpine meadows, dwarf pine belts, extensive forests; rare species: brown bear, Tatra chamois, marmot and other rare species, emphasizing ecological importance.

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RLR 5 - Tangible cultural, historical and architectural heritage	Numerous objects, structures, and sites of historical, architectural, cultural or social value: Wooden Architecture Route - over 1,500 km long route with 255 sites incl. UNESCO-listed wooden churches: Catholic and Orthodox, manor houses & rural residences, traditional wooden homesteads & cottages, watermills & forges, wooden belfries, ethnographic parks & open-air museums, castles, village chapels and roadside shrines.
RLR 6 - Intangible cultural resources	Very rich intangible cultural heritage, including: folk music and dance, traditional costumes (e.g. the colorful attire of the Podhale region, worn during festivals and cultural events), traditions of crafts and handicrafts (e.g. wood sculpting, blacksmithing, wood carving, pottery, weaving and embroidery), traditional cuisine (Iconic foods: oscypek – smoked sheep-cheese, kwaśnica – sauerkraut soup), folk art (e.g., vibrant paper cuttings, painted ceramics, and decorative woodwork), luthiers (traditional instruments like violins and dulcimers), oral heritage & customs, seasonal rituals such as Dożynki (Harvest Festival), Feast of the Assumption Herb-Blessing, tallest-Easter-palm contests and other church-holiday rites.
RLR 7 - Resources of agriculture, forestry and other typical rural activities	Highly fragmented farms (avg. 5.3 ha vs national 12.7 ha), mostly subsistence-based with small surplus sold locally. Quality & tradition: 739 organic farms (2023), 232 products on the national Traditional Products list. 15 products enjoy EU quality labels. Farms diversification: agritourism, sports & equipment rental, creative/educational activities. Viticulture: ≈ 200 vineyards, ~90 commercially registered. Forestry: outputs limited due to low coverage. Aquaculture: Carp Valley, rainbow&brook trout near Ojców. Strong focus on local food processing and handicraft, wide variety of traditional food products from local ingredients and locally crafted goods.
RLR 8 - Local, traditional knowledge and skills	Rich cultural and craft traditions related to: 1. traditional crafts and handicrafts: woodcarving and ornamental sculpture, artistic blacksmithing, embroidery and lace-making, pottery and ceramics, luthiery, carpentry, handmade folk toys, 2. food production: traditional cheesemaking, production of regional meats and cold cuts, beekeeping, herb cultivation and use, processing of fruits and vegetables, 3. agriculture and forestry: traditional pastoral farming and sheep herding, cultivation in harsh mountain conditions, preservation of traditional local animal breeds (Polish Red cattle), use of forest resources, 4. cultural and seasonal traditions: folk decorative arts, traditional music and dance, seasonal festivals and rituals.
RLR 9 – Social capital	1. Individual level: ~3,000 local councillors, ~1,900 village heads; 25% of residents participate in community activities annually, 6%

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participate regularly. Strong interpersonal ties, self-help culture, neighbourly support. Strong community traditions.

2. Institutional Level: approx. 10,000 social economy entities in Małopolska. Numerous NGOs in rural areas (associations incl. 32 Local Action Groups, 969 rural housewives' circles, numerous volunteer fire brigades, which double as cultural hubs). Strong civic engagement infrastructure: cultural centers, libraries, village halls.

3. International and inter-municipal level: 70 % of small municipalities pursue international partnerships (often with Polish-diaspora regions). Relatively low interest in formal inter-municipal cooperation for regional development.

Rural development potential of the Małopolska region

Table 3 Key rural development potential

Category	Group	Resource	Studies
RDP1 Tourism & recreation	Recreation & adventure tourism	**RLR 1.** Human capital: universal knowledge and skills, **RLR 3.1-** Mineral resources and renewable energy, **RLR 3.2-** Natural productive assets, **RLR 4.** Natural heritage	Gil, 2021; Urząd Marszałkowski Woj. Małopolskiego, 2021; Engine focus group findings, 2025
	Cultural & heritage tourism	**RLR 1.** Human capital: universal knowledge and skills, **RLR 4.** Natural heritage, **RLR 5.** Tangible cultural, historical and architectural heritage, **RLR 6.** Intangible cultural heritage, **RLR 8.** Local, traditional knowledge and skills	Oficjalny portal turystyczny Województwa Małopolskiego, n.d.; Marshal's Office of the Małopolska Region, 2020; Zatorska, 2021; Zaręba 2022; Baturo et al., 2023; Baturo & Bzowski, 2023
	Agritourism	**RLR 1.** Human capital: universal knowledge and skills, **RLR 6.** Intangible cultural heritage, **RLR 7.** Resources of agriculture, forestry and other typical rural activities, **RLR 8.** Local, traditional knowledge and skills	Pajdzik, 2019; Engine focus group findings, 2025
	Wellness tourism	**RLR 1.** Human capital: universal knowledge and skills, **RLR 3.1-** Mineral resources and renewable energy, **RLR 3.2-** Natural productive assets	Tourist sector in Małopolska; Gil, 2021; Engine focus group findings, 2025
RDP2 Bio & circular economy	Natural fibers and bio-based materials	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies	
	Health and wellness products	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies	
	Circular economy	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies	
RDP3 Agri business	Food production and processing	**RLR 1.** Human capital: universal knowledge and skills, **RLR 3.2-** Natural productive assets, **RLR 7.** Resources of agriculture, forestry and other	Pajdzik, 2019; Jaśkiewicz et al., 2023; Wojcieszak-Zbierska & Bogusz, 2020;

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		typical rural activities, **RLR 8.** Local, traditional knowledge and skills	Zatorska, 2021; Engine focus group findings, 2025
	Specialist food	**RLR 1.** Human capital: universal knowledge and skills, **RLR 3.2-** Natural productive assets, **RLR 7.** Resources of agriculture, forestry and other typical rural activities, **RLR 8.** Local, traditional knowledge and skills	Pajdzik, 2019; Wojcieszak-Zbierska & Bogusz, 2020
	Organic food	**RLR 1.** Human capital: universal knowledge and skills, **RLR 3.2-** Natural productive assets, **RLR 7.** Resources of agriculture, forestry and other typical rural activities, **RLR 8.** Local, traditional knowledge and skills	Pajdzik, 2019; Wojcieszak-Zbierska & Bogusz, 2020; Zatorska, 2021; Engine focus group findings, 2025
	Crop cultivation and livestock farming	**RLR 1.** Human capital: universal knowledge and skills, **RLR 7.** Resources of agriculture, forestry and other typical rural activities	Urząd Marszałkowski Województwa Małopolskiego, 2021
	Advanced processing of agricultural inputs	**RLR 1.** Human capital: universal knowledge and skills, **RLR 7.** Resources of agriculture, forestry and other typical rural activities, **RLR 8.** Local, traditional knowledge and skills	Pajdzik, 2019; Wojcieszak-Zbierska & Bogusz, 2020; Engine focus group findings, 2025
	Food sale and distribution	**RLR 1.** Human capital: universal knowledge and skills, **RLR 9.** Social capital	Engine focus group findings, 2025
RDP4 Bio & renewable energy	Bioenergy	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies	
	Solar and wind energy	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies, **RLR 3.1-** Mineral resources and renewable energy	
	Hydropower and geothermal energy	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies, **RLR 3.1-** Mineral resources and renewable energy	
RDP5 Education, skills & sport	Heritage education	**RLR 4.** Natural heritage, **RLR 5.** Tangible cultural, historical and architectural heritage, **RLR 6.** Intangible cultural heritage	Pajdzik, 2019; Urząd Marszałkowski Woj. Małopolskiego, 2021
	Handicraft education	**RLR 6.** Intangible cultural heritage, **RLR 7.** Resources of agriculture, forestry and other typical rural activities, **RLR 8.** Local, traditional knowledge and skills, **RLR 9.** Social capital	Pajdzik, 2019; Engine focus group findings, 2025
	Vocational training	**RLR 1.** Human capital: universal knowledge and skills, **RLR 7.** Resources of agriculture, forestry and other typical rural activities , **RLR 8.** Local, traditional knowledge and skills	Engine focus group findings, 2025
	Ecological education	**RLR 1.** Human capital: universal knowledge and skills, **RLR 4.** Natural heritage, **RLR 7.** Resources of agriculture, forestry and other typical	Pajdzik, 2019; Engine focus group findings, 2025

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		rural activities, **RLR 8.** Local, traditional knowledge and skills	
	Sport	**RLR 1.** Human capital: universal knowledge and skills, **RLR 4.** Natural heritage, **RLR 7.** Resources of agriculture, forestry and other typical rural activities	Goj et al., 2023, ; Baturo et al., 2023; Engine focus group findings, 2025
RDP6 Cultural, historical, architectural & natural heritage	Cultural, historical and architectural heritage preservation	**RLR 1.** Human capital: universal knowledge and skills, **RLR 5.** Tangible cultural, historical and architectural heritage, **RLR 6.** Intangible cultural heritage, **RLR 8.** Local traditional knowledge and skills	Kwaśniewska & Brodka, 2020; Edmunds, 2022; Knapik & Król, 2023; Marshal's Office of the Małopolska Region, 2024; Engine focus group findings, 2025
	Natural heritage preservation	**RLR 1.** Human capital: universal knowledge and skills, **RLR 4.** Natural heritage, **RLR 7.** Resources of agriculture, forestry and other typical rural activities, **RLR 8.** Local traditional knowledge and skills	Baturo et al., 2023; Oficjalny portal turystyczny Województwa Małopolskiego; Engine focus group findings, 2025
RDP7 Health & care services	Rehabilitation and therapy	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies, **RLR 3.1-** Mineral resources and renewable energy, **RLR 4.** Natural heritage	Baturo et al. 2023; Jaśkiewicz et al., 2023; Engine focus group findings, 2025
	Health centres	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies, **RLR 3.1-** Mineral resources and renewable energy, **RLR 4.** Natural heritage, **RLR 9.** Social capital	Urząd Marszałkowski Województwa Małopolskiego, 2022
	Elderly care	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies, **RLR 4.** Natural heritage, **RLR 6.** Intangible cultural heritage, **RLR 7.** Resources of agriculture, forestry and other typical rural activities, **RLR 9.** Social capital	Urząd Marszałkowski Województwa Małopolskiego, 2021, 2022; Regionalny Ośrodek Polityki Społecznej w Krakowie, 2023a, 2023b, Engine focus group findings, 2025
RDP8 Universal production & services	Manufacturing	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies, **RLR 9.** Social capital	
	Services	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies, **RLR 9.** Social capital	
	Resource-based businesses	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies	
	Forestry	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies	
	Digital-savvy enterprises	**RLR 1.** Human capital: universal knowledge and skills, **RLR 2.** Physical capital and technologies, **RLR 9.** Social capital	

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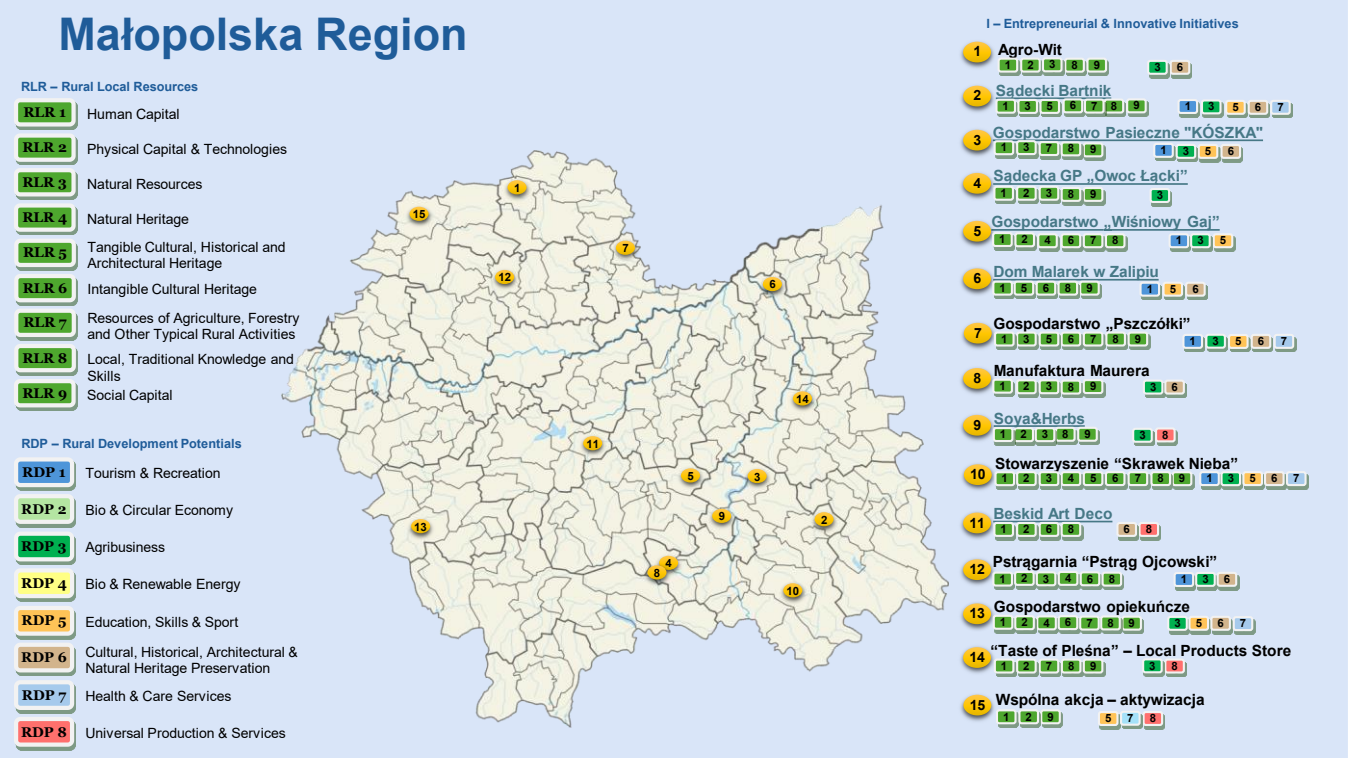
Visualization of the development potential of Małopolska rural areas



LEGEND
RLR 1,2,3… – Specific Group of Rural Local Resource
RDP 1,2,3… – Category of Key Rural Development Potential
I 1,2,3… – Entrepreneurial & Innovative Initiative

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Overview of E&I initiatives in the region's rural areas

Initiative – Gospodarstwo pasieczne "Sądecki Bartnik"

1. **Characteristics:**

   Location of the initiative: Stróże, Grybów municipality, Nowy Sącz county

   Type of stakeholder involved: Entrepreneur in the agriculture, tourism and education sectors

   Initiative type: Business

   Scale of activity: Medium

   Legal form: Limited liability company

   Planned implementation period: Long-term project

2. **Description of initiative:**

   The Sądecki Bartnik, founded in 1973, is located in the Polish Carpathians and manages over 1500 bee colonies. It specializes in beekeeping, producing natural honey and bee products. Beyond beekeeping, it operates a museum, the 'Bartna Chata' restaurant, a publishing house, and a farm shop. Additionally, it offers a granary for meetings, exhibitions and entertainment for organized groups as well as a specially designed houses for api inhalations. Guests can also enjoy accommodations at 'Grandma Marysia's' guest houses. It offers over 340 products, including honey, bee products, honey delicacies, cosmetics, medicines, beekeeping equipment, and queen bees. Continuously raising product quality standards, it has obtained certifications in food safety. It is IFS, BRC, Organic, and Kosher certified.

   The aim of the Sądecki Bartnik initiative is to preserve and promote traditional beekeeping practices, produce high-quality honey and bee products, and support sustainable farming methods. It also seeks to foster environmental conservation, educate the public about the importance of bees, and showcase the region's cultural heritage through its museum, agritourism, and other activities.

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3. The main rural local resources that form the basis of the initiative:

- Human capital - knowledge in food processing and safety standards to ensure high-quality honey products, business management skills encompassing marketing and sales.
- Natural resources: natural productive assets (diverse and rich flora), raw materials of agriculture (high-quality honey and other bee products).
- Tangible cultural, historical, and architectural heritage.
- Intangible cultural heritage (preserving traditional beekeeping methods and knowledge).
- Resources of agriculture, forestry and other typical rural activities: machinery, equipment, and technologies.
- Local, traditional knowledge and skills: expertise in apiculture, including bee biology, hive management, and honey production techniques.
- Social capital: networks, relationships, and trust that facilitate cooperation.

4. The development potential(s) of rural areas that the initiative utilizes:

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	✓
Agribusiness	✓
Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	✓
Universal production & services	

5. Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:

- Management: strategic and operational planning and effective organization of activities, management of financial and human resources.
- Marketing: knowledge of creating a strong brand identity emphasizing authenticity, tradition, and high quality.
- Finances: ability to manage budget, keep accounting records, and secure financing.
- Legal and regulatory knowledge: knowledge of food safety standards and regulations.
- Knowledge and skills in the field of sustainable development and ecology.
- Social conflict management – the ability to analyse sources of conflict and assess risks.
- Innovative competencies: creating and implementing innovative

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solutions.
- Work ethic and respect for the profession.
- Interpersonal and social competencies: collaboration with various stakeholders.

6. **Key rural stakeholders supporting the initiative:**
   - Local beekeepers (provide honey and other bee products, share knowledge and experience).
   - Local farmers (collaborate on sustainable agricultural practices that benefit biodiversity).
   - Local businesses such as hotels, restaurants, and shops.
   - Community members (participate in workshops and guided tours).
   - Tourism agencies.
   - Educational institutions: schools and universities (partners for educational programs).
   - Financial institutions and banks that offer loans and credit.

7. **Socio-economic barriers and challenges related to the initiative:**
   - Market challenges: limited market, intense competition.
   - Environmental challenges: declining bee populations, habitat loss.
   - Labor shortages: difficulty in finding workers knowledgeable in beekeeping methods.
   - Food safety regulations.
   - Natural disasters (extreme weather events like floods and droughts can destroy apiaries).
   - Financial constraints: limited access to funding.

Initiative – Dom Malarek w Zalipiu

1. **Characteristics:**

   Location of the initiative: Zalipie, Olesno municipality, Dąbrowski county

   Type of stakeholder involved: Social organisation of local folk artists

   Initiative type: Social

   Scale of activity: Medium

   Legal form: Association

   Planned implementation period: Long-term project

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2. **Description of initiative:**

The initiative is an example of a local initiative implemented by women, residents of the village of Zalipie, cultivating a local tradition. The village of Zalipie is famous for its homesteads painted in colorful floral compositions. This tradition arose from the need to beautify the sooty rooms, at the turn of the 19th and 20th centuries. The tradition of decorating homesteads (houses, household buildings) with characteristic floral motifs is the greatest and unique cultural heritage of the Zalipie village and its surroundings.
The House of the Painters was established in Zalipie, which also serves as a community cultural centre. In the House of the Painters, the works of folk artists are exhibited and open to the public. The initiative of Women Painters from Zalipie was established in response to a social need to bring together local folk artists.
The main goals of the initiative are the cultivation and promotion of folk art, the promotion and dissemination of the custom of painting Zalipie floral motifs, the care of the tangible and intangible heritage characteristic of this region, activities for the preservation and proper protection of the artistic heritage, support for artists cultivating the characteristic art of the region. The painters are engaged in educational activities to popularize artistic folk traditions. They also disseminate and promote the culinary traditions of the region and other traditional forms of social activity.

3. **The main rural local resources that form the basis of the initiative:**

- Human capital - universal knowledge and skills: knowledge and skills related to the functioning of social entities.
- Tangible cultural, historical and architectural heritage: farmsteads decorated with Zalipie floral patterns
- Intangible cultural heritage: traditional methods of decorating farmsteads, including techniques of painting floral patterns.
- Local, traditional knowledge and skills: local artists possess the knowledge and skills to decorate buildings and household objects with traditional folk patterns.
- Social capital: the ability of local folk artists to cooperate, awareness of the need to cultivate tradition, a strong sense of local identity.

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	✓
Agribusiness	

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Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	
Universal production & services	

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

- Legal and regulatory knowledge: knowledge of regulations governing social activity.
- Management: translating the social mission into concrete operational activities.
- Social marketing and sales: building a brand based on authenticity, cultural heritage, and local identity.
- Finances: financing models and sources of funding for social economy entities.
- Contemporary trends in tourism: cultural tourism, creating tourism products based on local culture and regional heritage.
- Entrepreneurial competencies: creating and developing new business models, adapted to local resources and market competition conditions.
- Innovative competencies: creating and implementing social innovative solutions, adapted to the specificity of the region.
- Interpersonal and social competences: building and managing a network of local partnerships.

6. **Key rural stakeholders supporting the initiative:**

- Local artists: They are the core of the association, providing expertise.
- Local community: promotion of the village, development of local identity and preservation of local traditions and heritage.
- Local governments: can support the local enterprise and benefit from its development.
- Local tourism organizations: can collaborate on joint promotions.
- Customers: visitors to the village and purchasers of products and services.

7. **Socio-economic barriers and challenges related to the initiative:**

- Limited funding and institutional support – difficulties in obtaining external funds.
- Lack of modern marketing tools and managerial competencies.
- Difficulties in passing down traditions to younger generations – decreasing interest in folk art among the youth and an outflow of young people from small towns to larger cities.

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- Risk of losing authenticity – as popularity increases and the desire to attract tourists grows, there is a danger of commercializing art in favor of mass-produced souvenirs.

Initiative – Beskid Art Deco

1. **Characteristics:**

   Location of the initiative: Poznachowice Dolne, Wiśniowa municipality, Myślenice county

   Type of stakeholder involved: Micro-enterprise

   Initiative type: Business

   Scale of activity: Small

   Legal form: Sole proprietorship

   Planned implementation period: Long-term project

2. **Description of initiative:**

   The initiative is an example of an entrepreneurial initiative that combines traditional artistic activities with business. The initiative involves running a business that produces and sells products made in the traditional way as handicrafts.

   The company specializes in the tailor-made sewing of folk and folk styled costumes: corsets, skirts, blouses, kaftans, waistcoats, dresses. All costumes are made from natural fabrics and decorated with handmade embroidery. The company also makes jewellery, mainly beads, hats and other accessories for regional costumes, hand-painted gadgets, e.g. Easter eggs, baubles, Christmas decorations, as well as regional souvenirs.

   Its main strength is the promotion of Polish folk art and the preservation of tradition through the creation and sale of handicrafts. The company cooperates with local artists and craftsmen, commissioning them to create works. The company employs modern sales techniques by selling its products through an online store. As a result, it reaches customers across Poland and internationally.

3. **The main rural local resources that form the basis of the initiative:**

   - Human capital: universal knowledge and skills: knowledge and skills in manufacturing and sales activities.

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- Physical capital and technologies: equipment and facilities used for production and the smooth operation of a business.
- Intangible cultural resources - rural traditions, methods of creating folk costumes and art.
- Local, traditional knowledge and skills: the business owners and employees possess local, traditional knowledge and skills in embroidery, crochet lace, traditional ornamentation and the making of accessories for regional costumes.

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	
Universal production & services	✓

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

- Management: strategic and operational planning and effective organization of activities, management of financial and human resources.
- Legal and regulatory knowledge: knowledge of regulations governing business activities and consumer protection.
- Marketing: Knowledge of marketing tools such as promotion, e-commerce, digital marketing, skills in customer service; knowledge of market trends.
- Knowledge and skills related to the operation and development of family businesses – especially issues related to succession.
- Interpersonal and social competencies: cooperation with various stakeholders, such as employees, suppliers, customers.

6. **Key rural stakeholders supporting the initiative:**

- Local residents, including local artists and craftsmen: have opportunities for employment with this enterprise, enabling them to contribute their skills and services
- Local governments: can support the local enterprise and benefit from its development (e.g. by participating in the taxes paid).
- Customers: folk groups, song and dance groups, cultural organizations,

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individual customers
- Suppliers of materials and components for costume production.

7. **Socio-economic barriers and challenges related to the initiative:**

- High operating costs: high prices of natural fabrics and the costly and time-consuming handmade production process result in high product prices reducing the attractiveness of the offer.
- Labour market: the decline in vocational education, which would otherwise provide the essential workforce for traditional rural trades. This results in difficulties in recruiting skilled artists in the field of embroidery and folk art.
- Social constraints: the retention of young people in rural areas, who are essential for sustaining family business and preserving local traditions and identities.

Initiative - Gospodarstwo sadowniczo-agroturystyczne „Wiśniowy Gaj"

1. **Characteristics:**

Location of the initiative: Kobyłczyna, Laskowa municipality, Limanowa County

Type of stakeholder involved: Micro-enterprise

Initiative type: Business

Scale of activity: Small

Legal form: Sole proprietorship

Planned implementation period: Long-term project

2. **Description of initiative:**

The initiative involves running an agritourism enterprise that, in addition to the typical agritourism service (accommodation, gastronomy), also offers educational services to increase the attractiveness of this farm to various groups of tourists. The offer includes:
- Agrotourism - a place for family holidays, in an attractive location in the garden, surrounded by picturesque orchards, in close proximity to lake and river and the gentle mountain hills; having an open-air playground for

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children, providing tasty regional meals prepared from own products. Children have the opportunity to participate in educational workshops, learning about old customs and life on the farm.

- Educational farm - a place created to organize educational trips for children. Educational activities are organized, alongside fun, engaging experiences. This allows for active outdoor recreation combined with education, offering an enjoyable way to explore the Polish countryside and its traditions.

3. **The main rural local resources that form the basis of the initiative:**

- Human capital - universal knowledge and skills: the owners of the farm possess knowledge and transferable skills in running a tourism business.
- Physical capital and technologies - infrastructure for tourists
- Natural heritage: landscape
- Intangible cultural resources - rural traditions, rural life, farm work methods.
- Resources of agriculture, forestry and other typical rural activities: farm resources
- Local, traditional knowledge and skills: expertise in fruit growing, food production and processing, knowledge on culinary traditions.

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	✓
Agribusiness	✓
Cultural, historical, architectural& natural heritage preservation	
Health & care services	
Universal production & services	

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

- Legal and regulatory knowledge: knowledge of regulations governing business activities in tourism and education, consumer protection.
- Marketing: Knowledge of marketing tools such as promotion, e-commerce, digital marketing, building a brand based on authenticity, cultural heritage, and locality.
- Innovative competencies: demonstrating creativity in developing and

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implementing innovative ideas for tourist attractions and educational workshops.
- Management: effective management of financial and human resources.
- Interpersonal and social competencies: cooperation with various stakeholders, such as local communities, institutions and entrepreneurs.
- Digital and technological competencies: Integrating innovative digital and e-commerce solutions into business strategies.

6. **Key rural stakeholders supporting the initiative:**
   - Local residents: can find employment in this enterprise and offer their services to it.
   - Local tourism organizations: can collaborate on joint promotions.
   - Local governments: can support the local enterprise and benefit from its development (e.g. by participating in the taxes paid).
   - Customers: tourists visiting the farm.
   - Schools and kindergartens: can benefit from the educational offer of the farm.

7. **Socio-economic barriers and challenges related to the initiative:**
   - Seasonality of tourism: fewer customers outside the tourist season.
   - Low competences: insufficient skills to provide attractive educational activities for children.
   - Market competition: competition from other agritourism farms.
   - High operating costs of the farm: may result in high prices for services and reduce the attractiveness of the offer.

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3.2. Münsterland

Socio-economic profile of the region and its rural areas

Socio-economic profile of the Münsterland region

Münsterland, located in the northwest of North Rhine-Westphalia, comprises the city of Münster and the surrounding districts of Borken, Coesfeld, Steinfurt, and Warendorf. The region is characterized by a relatively young population, with an average age of 43.5 years, below the state average. Münster itself has the lowest average age (41.1 years) due to its large student population. The rural areas, particularly in Borken and Steinfurt, also have higher proportions of children and young adults, contributing to Münsterland's status as the youngest region in NRW.

Education levels in Münsterland vary. The percentage of students leaving school without a diploma is lower than the NRW average, while the share of high school graduates is slightly below the state level. However, Münster stands out with a significantly higher percentage of students achieving higher education qualifications. The region's economy is heavily influenced by vocational education and training, with 63.2% of the workforce holding vocational qualifications, exceeding the NRW average. Conversely, the proportion of workers with academic degrees is lower than in other regions, highlighting a strong focus on practical skill development.

Münsterland has the lowest unemployment rate in NRW at 4.5%, reflecting a robust labor market. The regional economy is dominated by small and medium-sized enterprises (SMEs), particularly in manufacturing, food processing, and construction. The manufacturing sector contributes 29.5% to the gross value added, which is higher than the state average. While Münster has a high GDP per capita (€57,000), the regional average (€38,600) is slightly below NRW's overall GDP per capita (€38,800).

The rural areas of Münsterland maintain a balanced economic structure, with agriculture and traditional industries playing a more significant role than in urban centers. Farming remains an essential sector, contributing 1.8% to the regional gross value added, significantly above the NRW average. The region is a leader in livestock farming and crop production, specializing in dairy, pork, and poultry farming, as well as cultivating cereals, maize, potatoes, and sugar beets. Many farms also engage in direct marketing and local food processing, contributing to Münsterland's strong regional identity. Tourism and cultural heritage also contribute to the rural economy. Münsterland's unique landscapes, cycling tourism, and equestrian activities attract visitors and support local businesses. Additionally, strategic cross-border cooperation with the Netherlands fosters economic and cultural exchanges.

Münsterland has emerged as a "future region," recognized for its economic dynamism and balanced growth. It ranks among the top regions for demographic stability and industrial expansion. Despite these strengths, research and development (R&D) investments remain relatively low, accounting for only 0.9% of

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the gross value added, below NRW's 1.4% average. To address this, the region is investing in digital transformation, renewable energy, and sustainable business practices. Innovative startups and established companies are working on AI-driven quality control, smart manufacturing, and sustainable materials. Green innovation is also a priority, with projects focusing on hydrogen energy, circular economies, and sustainable construction materials. The rural areas of Münsterland face several challenges, including demographic shifts and digital infrastructure gaps. While the region has seen steady population growth, projections indicate a slight decline in rural areas by 2050, contrasting with continued growth in Münster.

In conclusion, Münsterland's rural areas are economically resilient, innovative, and sustainability-focused. With strong agriculture, manufacturing, and renewable energy sectors, they balance tradition with modern advancements. Investments in hydrogen, biogas, and digital infrastructure support long-term growth, while cultural heritage, agritourism, and community initiatives enhance regional attractiveness. Despite demographic shifts, the rural regions remain future-oriented, leveraging innovation and sustainability for continued development.

Rural local resources

Table 1 – Universal Resources

Group	Resources
RLR 1 – Human capital: universal knowledge and skills	**Strong Academic and Educational Infrastructure** • Home to numerous universities and universities of applied sciences, including FH Münster and University of Münster. • Offers a wide range of educational programs and vocational training opportunities. • High concentration of subject-matter experts and researchers across disciplines. **Interdisciplinary Competence** • Strong culture of cross-disciplinary collaboration among institutions, research centers, and businesses. • Promotes innovation through integration of technical, economic, social, and environmental perspectives. • Encourages joint projects and networks across different sectors and expertise areas.
RLR 2 – Physical capital and technologies	Long and complex commuting routes are common, especially for workers commuting into the city or across district borders. Infrastructure and mobility solutions are increasingly relevant for regional development and labor market access.

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Table 2 - Specifically rural resources

Group	Resources
RLR 3 - Natural resources: • **RLR 3.1-** Mineral resources and renewable energy • **RLR 3.2-** Natural productive assets	• Münsterland has a mix of high-quality and moderate soils, mainly used for agriculture. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • The region's soil supports the cultivation of cereals, maize, potatoes, and sugar beets as major crops. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Land consolidation programs optimize soil use for agriculture, conservation, and infrastructure. (Bezirksregierung Münster, 2019) • 5.4% of agricultural land is in water protection zones, promoting sustainable farming. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Water-cooperation initiatives between farmers and local authorities help maintain sustainable land use. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Münsterland is adapting to climate change through renewable energy (wind, solar, hydrogen-based energy). (ARL, 2022; Bezirksregierung Münster, 2019; Kreisstadt Borken, 2022)
• **RLR 3.3** Raw materials of agricultural or forestry origin	• Cereals, maize, potatoes, and sugar beets are major crops grown in Münsterland. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Dairy, beef, pork, and poultry are key livestock products in the region. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Farms also produce wool, honey, plant extracts, and biomass. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • The organic farming sector is small but has associations supporting ecological farming practices. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Münsterland is known for its park-like landscape, featuring a mix of fields, meadows, and forests. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • The region contains numerous nature reserves and conservation areas, supporting biodiversity and sustainable land use. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Biogas plants enhance resource efficiency and productivity in Münsterland's agriculture sector. (Bezirksregierung Münster, 2019
RLR 4 - Natural heritage	• Münsterland is known for its park-like landscape, characterized by a mix of fields, meadows, and forests. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • The landscape supports both agriculture and nature conservation, balancing human activity with environmental protection. (Bezirksregierung Münster, 2019) • Münsterland has numerous nature reserves and protected areas,

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	preserving native plant and animal species. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • The region includes a mix of agricultural and natural areas, supporting diverse flora and fauna. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • There are landscape conservation programs aimed at maintaining biodiversity and sustainable agriculture. (Landwirtschaftskammer Nordrhein-Westfalen, 2022)
RLR 5 - Tangible cultural, historical and architectural heritage	• Münsterland has historic windmills and watermills, some of which are still in operation. (Bezirksregierung Münster, 2019) • The region features engineering structures like old bridges, canals, and industrial heritage sites. (Bezirksregierung Münster, 2019)
RLR 7 - Resources of agriculture, forestry and other typical rural activities	• Infrastructure: The region has well-developed agricultural infrastructure, including local food processing industries and cooperatives that optimize production, sales, and environmental management. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Livestock: Farms focus on animal husbandry, particularly cattle, pigs, and poultry. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Innovation: The region invests in modern agricultural technologies, including biogas plants that enhance resource efficiency and productivity. (Bezirksregierung Münster, 2019)
RLR 8 - Local, traditional knowledge and skills	• Local Knowledge: Many farms participate in cooperatives to optimize production, sales, and environmental management, reflecting traditional knowledge and collaborative agricultural practices. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Traditional Skills: The region maintains a strong tradition of vocational education and training, with a high proportion of workers holding recognized vocational qualifications. (NRW Bank, 2022) • Cultural Heritage: Rural Münsterland preserves local traditions through citizen-driven projects and programs supporting sustainability, mobility, and regional attractiveness. (Bezirksregierung Münster, 2019)
RLR 9 – Social networks	• Community Engagement: Rural development programs, such as LEADER and VITAL, encourage citizen participation in local projects, fostering strong social networks. (Bezirksregierung Münster, 2019) • Cooperatives: Many farms participate in agricultural cooperatives to optimize production, sales, and environmental management, strengthening social and economic ties among farmers. (Landwirtschaftskammer Nordrhein-Westfalen, 2022) • Workforce Networks: Münsterland has a strong vocational education system and a labor market characterized by high employment rates, creating professional networks that connect

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skilled workers and industries. (NRW Bank, 2022)

Rural development potential of the Münsterland region

Table 3 Key rural development potential

Category	Group	Resource	Studies
RDP1 Tourism & recreation	Recreation & adventure tourism	**RLR 3.1-** Mineral resources and renewable energy: **RLR3.3 -** Raw materials of agricultural or forestry origin; **RLR 7** - Resources of agriculture, forestry and other typical rural activities	Landwirtschaftskammer Nordrhein-Westfalen (2022)
	Cultural & heritage tourism	**RLR 4 -** Natural heritage	Bezirksregierung Münster (2019)
	Agritourism	**RLR 8** - Local, traditional knowledge and skills	
RDP2 Bio & circular economy	Natural fibers and bio-based materials	**RLR 2** -Physical capital and technologies	
	Health and wellness products		
	Circular economy	**RLR 1 -** Human capital: universal knowledge and skills; **RLR 2** -Physical capital and technologies	ARL (2022); Bezirksregierung Münster (2019); Kreisstadt Borken (2022)
RDP3 Agri business	Food production and processing	**RLR 1 -** Human capital: universal knowledge and skills	Landwirtschaftskammer Nordrhein-Westfalen (2022)
	Advanced processing of agricultural inputs	**RLR 2 -** Physical capital and technologies; **RLR 8** - Local, traditional knowledge and skills; **RLR 1 -** Human capital: universal knowledge and skills	
RDP4 Bio & renewable energy	Bioenergy	**RLR 1 -** Human capital: universal knowledge and skills; **RLR 8** - Local, traditional knowledge and skills; **RLR 5** - Tangible cultural, historical and architectural heritage	Bezirksregierung Münster (2019)
	Solar and wind energy	**RLR 1 -** Human capital: universal knowledge and skills; **RLR 8** - Local,	

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		traditional knowledge and skills; **RLR 5** - Tangible cultural, historical and architectural heritage	
RDP5 Education, skills & sport	Heritage education	**RLR 8** - Local, traditional knowledge and skills	Landwirtschaftskammer Nordrhein-Westfalen (2022)
RDP6 Cultural, historical, architectural & natural heritage	Cultural, historical and architectural heritage preservation	**RLR 8** - Local, traditional knowledge and skills; **RLR 9 –** Social networks	Bezirksregierung Münster (2019)
RDP7 Health & care services	Elderly care	**RLR 9 –** Social networks	NRW Bank (2022); Bezirksregierung Münster (2019)
RDP8 Universal production & services	Manufacturing	**RLR 1 –** Human capital: universal knowledge and skills;	
	Digital-savvy enterprises	**RLR 2 –** Physical capital and technologies; **RLR 1 –** Human capital: universal knowledge and skills;	

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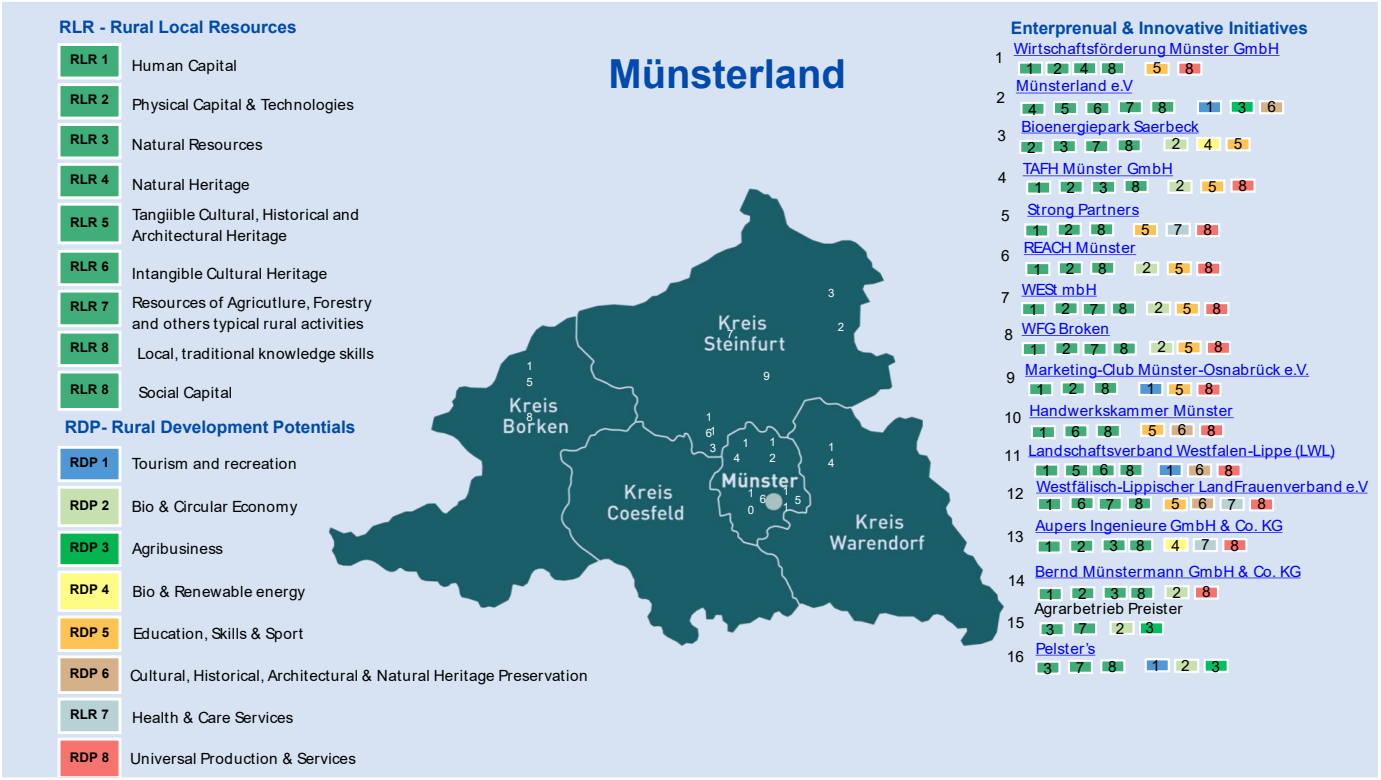
Visualization of the development potential of Münsterland rural areas



LEGEND

RLR 1,2,3… – Specific Group of Rural Local Resource
RDP 1,2,3… – Category of Key Rural Development Potential
I 1,2,3… – Entreprenderia & Innovative Initiative

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Overview of E&I initiatives in the region's rural areas

Initiative – Bernd Münstermann GmbH & Co. KG

1. **Characteristics:**

   Location of the initiative: Telgte (Kreis Warendorf)

   Type of stakeholder involved: Private industrial manufacturer

   Initiative type: Business

   Scale of activity: Medium

   Legal form: Family-owned company (GmbH & Co. KG)

   Planned implementation period: Long-term

2. **Description of initiative:**

   Bernd Münstermann GmbH & Co. KG is a leading manufacturer specializing in plant engineering for material handling, thermal processing, and air pollution control systems. The company provides customized industrial solutions for various sectors, including ceramics, foundry, building materials, and chemicals. In Münsterland's rural context, Münstermann strengthens the industrial base by integrating sustainable technologies, automation systems, and energy-efficient processes into regional production networks. The company also contributes to training local talent through vocational programs and partnerships with educational institutions.

3. **The main rural local resources that form the basis of the initiative:**

   - Physical Capital & Technologies: Advanced production and engineering facilities, machinery, and automation systems
   - Human Capital: Skilled local workforce with expertise in engineering, production, and industrial technology
   - Natural Resources (indirect): Focus on reducing emissions and resource consumption through cleaner production technologies.
   - Social Capital: Strong collaborations with local suppliers, vocational schools, and industry associations

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4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	
Bio & circular economy	✓
Bio & renewable energy	
Education, skills & sport	
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	
Health & care services	✓
Universal production & services	

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**
   - Process optimization and automation technology knowledge
   - Environmental compliance and emissions control management
   - Project management and international logistics skills
   - Innovation in sustainable manufacturing

6. **Key rural stakeholders supporting the initiative:**
   - Regional suppliers of industrial components
   - Municipalities promoting industrial development
   - Chambers of commerce and industry associations
   - Sustainability and environmental protection agencies

7. **Socio-economic barriers and challenges related to the initiative:**
   - Shortage of highly skilled technical workers
   - Volatility of international industrial markets
   - Regulatory challenges related to environmental standards
   - Pressure to transition toward carbon-neutral manufacturing

Initiative – Pelster's

1. **Characteristics:**

   Location of the initiative: Everswinkel, Kreis Warendorf

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Type of stakeholder involved: Private agricultural and food production enterprise

Initiative type: Farm-based food production

Scale of activity: Small to medium

Legal form: Family-owned farm enterprise

Planned implementation period: Long-term

2. **Description of initiative:**

Pelster's is a family-run agricultural business located in Everswinkel, Münsterland, specializing in dairy production and direct-to-consumer food marketing. The farm offers fresh milk through automated milk vending machines ("Milchtankstellen") and sells additional local farm products.Through direct marketing strategies and innovative customer services, Pelster's strengthens regional food supply chains and fosters stronger connections between local producers and consumers.The initiative also contributes to sustaining traditional rural livelihoods while promoting awareness of sustainable agriculture and regional products.

3. **The main rural local resources that form the basis of the initiative:**

- Natural Resources: Agricultural land, dairy livestock, and sustainable food production systems.
- Resources of Agriculture and Typical Rural Activities: Traditional dairy farming and innovative direct marketing.
- Social Capital: Strong ties with local consumers, regional branding initiatives, and participation in short supply chains.

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	
Bio & circular economy	✓
Bio & renewable energy	
Education, skills & sport	
Agribusiness	✓
Cultural, historical, architectural& natural heritage preservation	
Health & care services	
Universal production & services	

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5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**
   - Knowledge of marketing strategies for direct farm sales
   - Customer service and community engagement skills
   - Knowledge of local food certification and labelling regulations
   - Innovation in sustainable product distribution (e.g., automated vending technologies)

6. **Key rural stakeholders supporting the initiative:**
   - Chambers of agriculture and food marketing associations
   - Municipalities supporting local food initiatives
   - Environmental agencies promoting sustainable rural food systems

7. **Socio-economic barriers and challenges related to the initiative:**
   - Compliance with strict food safety and hygiene regulations
   - Competition with supermarkets and industrial-scale food suppliers
   - Fluctuating production costs (feed, energy, logistics)
   - Digitalization of marketing and payment systems (e.g., for milk vending)

Initiative – Bioenergiepark Saerbeck

1. **Characteristics:**

Location of the initiative: Saerbeck, Kreis Steinfurt

Type of stakeholder involved: Renewable Energy Park

Initiative type: Mixed

Scale of activity: Large

Legal form: Public-private partnership (Municipal-led initiative with business and cooperative involvement)

Planned implementation period: Long-term

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2. **Description of initiative:**

Bioenergiepark Saerbeck is a flagship renewable energy project that focuses on producing biogas and renewable energy from agricultural residues, including plant waste and livestock manure. The park integrates biogas, solar, wind, and battery storage systems to create a decentralized and resilient energy network. The park supports climate-neutral energy production, regional energy independence, and circular economy principles, serving as a model for sustainable rural energy systems.

3. **The main rural local resources that form the basis of the initiative:**

- Natural Resources: Agricultural residues, livestock manure, and plant waste utilized for biogas production.
- Agricultural and Forestry Resources: Infrastructure for waste collection and conversion into energy.
- Natural Productive Assets (Soil, Water, Climate): Supporting climate adaptation and sustainable land use with energy-efficient projects.
- Human and Social Capital: Farmers, engineers, and researchers contribute expertise in bioenergy and sustainable farming.
- Social Networks: Collaborations with cooperatives, municipalities, and research institutions.

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	
Bio & circular economy	✓
Bio & renewable energy	✓
Education, skills & sport	✓
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	
Health & care services	
Universal production & services	

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

- Business Planning: Developing sustainable energy business models and investment strategies.

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- Renewable Energy Expertise: Technical knowledge of biogas, hydrogen, and smart grid integration.
- Financial Management: Budgeting, securing grants, and optimizing energy production costs.
- Policy and Regulatory Knowledge: Understanding energy policies, subsidies, and environmental regulations.
- Digital & Data Analytics: Implementing smart grid technology and optimizing energy distribution.

6. Key rural stakeholders supporting the initiative:
   - Entrepreneurs: Energy technology developers and biogas plant operators.
   - Public Agencies and Regulatory Bodies: Municipalities and regional energy authorities supporting policy frameworks.
   - Farmers, Food Producers, and Processors: Providing organic waste for biogas production.
   - Cooperatives and Associations: Supporting shared infrastructure and circular economy principles.
   - Representatives of Local and Regional Governments: Facilitating incentives, funding, and regulatory support.
   - NGOs: Advocating for climate-friendly energy solutions and sustainability awareness.
   - Representatives of Educational and Research Institutions: Conducting research on bioenergy innovations and providing training programs.

7. Socio-economic barriers and challenges related to the initiative:
   - Regulatory and Permitting Barriers: Complex approval processes for new energy infrastructure projects.
   - Financial Constraints: High investment costs for advanced bioenergy and hydrogen technologies.
   - Technical Limitations: Managing seasonal fluctuations in organic waste availability.
   - Market Uncertainty: Dependence on fluctuating energy prices and government incentives.
   - Stakeholder Coordination: Ensuring collaboration between farmers, industries, and regulatory bodies.
   - Public Awareness and Acceptance: Educating local communities on the benefits and feasibility of bioenergy solutions.

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Initiative - Münsterland e.V

1. **Characteristics:**

   Location of the initiative: Münster

   Type of stakeholder involved: Regional Tourism association

   Initiative type: Mixed

   Scale of activity: Medium to Large (depending on tourism demand and seasonal activities)

   Legal form: Association

   Planned implementation period: Long-term (minimum 3 years)

2. **Description of initiative:**

   Münsterland e.V. aims to enhance regional tourism by promoting the natural, cultural, and historical heritage of Münsterland. The initiative focuses on sustainable tourism, agritourism, and cultural heritage tourism. Activities include developing digital platforms (mobile apps, virtual tours) for visitors, organizing local festivals and guided tours, and supporting farm stays and rural experiences. By leveraging AI and big data analytics, the initiative seeks to optimize visitor experiences, promote off-the-beaten-path destinations, and support local businesses through joint promotional efforts.

3. **The main rural local resources that form the basis of the initiative:**

   - Natural Heritage: Münsterland's forests, meadows, and historic landscapes serve as a backdrop for eco-tourism and outdoor recreation.
   - Agricultural and Forestry Resources: Local farms supply fresh produce, host agritourism activities, and promote sustainable rural living.
   - Tangible Cultural, Historical, and Architectural Heritage: Historic castles, mills, and museums serve as tourism focal points and educational hubs.
   - Social Networks: Cooperatives and associations support regional tourism and community involvement.
   - Local, Traditional Knowledge and Skills: Farmers and artisans share expertise in sustainable farming, local crafts, and historical preservation.

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4. The development potential(s) of rural areas that the initiative utilizes:

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	
Agribusiness	✓
Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	
Universal production & services	

5. Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:

- Business Planning: Developing a tourism model integrating sustainability, heritage, and agribusiness.
- Marketing & Digital Promotion: Utilizing branding, digital marketing, and AI-driven visitor engagement tools.
- Financial Management: Managing investments in tourism infrastructure, securing funding, and maximizing returns.
- Legal & Regulatory Knowledge: Navigating tourism, conservation, and business regulations.
- Sustainable Practices & Circular Economy Integration: Implementing green energy solutions, eco-friendly accommodations, and waste management in tourism.

6. Key rural stakeholders supporting the initiative:

- Entrepreneurs: Local tourism operators, farm owners, and digital platform developers.
- Public Agencies and Regulatory Bodies: Regional and municipal authorities responsible for tourism and environmental conservation.
- Farmers, Food Producers, and Processors: Providers of agritourism experiences and local food products.
- Cooperatives and Associations: Organizations supporting tourism promotion, cultural heritage conservation, and business development.
- Representatives of Local and Regional Governments: Policy-makers providing infrastructure support and regulatory guidance.

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- NGOs: Groups advocating for sustainable tourism, cultural heritage preservation, and community engagement.
- Representatives of Educational and Research Institutions: Universities and training institutions offering research, innovation, and workforce development.

7. **Socio-economic barriers and challenges related to the initiative:**
   - Limited Digital Infrastructure: Some rural areas may lack connectivity for digital tourism tools.
   - Financial Constraints: Securing investment for eco-tourism infrastructure and marketing.
   - Regulatory and Bureaucratic Challenges: Compliance with conservation laws and land-use regulations.
   - Seasonal Tourism Variability: Ensuring year-round visitor engagement despite seasonal fluctuations.
   - Stakeholder Coordination: Aligning interests among farmers, tourism businesses, and regulatory bodies.
   - Sustainability Challenges: Balancing visitor growth with environmental conservation.

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3.3. Alto Minho

Socio-economic profile of the region and its rural areas

Socio-economic profile of the Alto Minho region

The territory of the destination area considered in this study is part of NUTS II North of Portugal and is embodied in NUTS III—Alto Minho, which covers 10 municipalities: Arcos de Valdevez, Caminha, Melgaço, Monção, Paredes de Coura, Ponte da Barca, Ponte de Lima, Valença, Viana do Castelo and Vila Nova de Cerveira.

Alto Minho, which coincides with the district of Viana do Castelo, stretches from the Atlantic Ocean, on the coastal strip of Viana do Castelo and Caminha, to the border of Galicia, in the municipalities of Arcos de Valdevez, Melgaço and Ponte da Barca. Alto Minho is located between two large population areas, to the south is the triangle formed by Porto, Braga and Guimarães and to the north is the metropolitan area of Vigo (Eiriz & Miranda, 2018).

The region has a remarkable heritage diversity. Natural heritage is one of the main assets of the region's tourism offering. The mountains, valleys and rivers form a verdant landscape that culminates in the white sands of the beaches and the Atlantic Ocean (Consorcio Minho IN, 2022).

It is a very heterogeneous territory, stretching from the Atlantic Ocean to the high mountain ranges of Peneda and Soajo in the heart of the Peneda Gerês National Park. The territory is divided into two distinct zones, separated by the valley of the River Vez (national road 101 that connects Ponte da Barca, Arcos de Valdevez and Monção). In the easternmost part, an area clearly marked by the large mountain ranges of Peneda, Soajo and Amarela, unproductive and uncultivated soils predominate. In the westernmost part, an area clearly marked by the valleys of the Lima and Minho rivers, agricultural and forestry lands predominate (Eiriz & Miranda, 2018).

With a gross area of 2,219 km2 and a resident population of 234,215 (Ministry of Economy, 2023), with an average annual growth rate (2011/2023) of -0.3%, Alto Minho has a population density of 105.6 inhabitants per km2. Population density varies significantly across its municipalities. Only 4 out of the 10 councils exceed a density of 100 inhabitants per km², with Viana do Castelo leading at 272. In contrast, Melgaço has the lowest population density, with just 31.9 inhabitants per km²."(CCDR-Norte, 2023). The Alto Minho region is predominantly rural, with remote areas largely uninhabited. In contrast, urban areas, which account for only one-third of the territory, concentrate over 75% of the population (Miranda, 2017).

There is also a progressive aging of the population with a rate of 28.9% of the resident population over 65 years of age (Ministry of Economy-Portugal, 2023). In 2023, there are 263 residents aged 65 or older for every 100 young people under 15, compared to 188.1 in Portugal. This ratio has been steadily increasing over the years (CCDR-Norte, 2023). The region is aging faster than the national and northern

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averages, driven by widespread population aging across all municipalities and challenges in population renewal. The two youngest age groups (up to 24 years old) represent only a modest share of the total population. Additionally, Alto Minho faces low educational attainment levels, and a less pronounced entrepreneurial spirit compared to regional (Northern Region) and national benchmarks (Miranda, 2017).

GDP per capita has generally shown positive growth in recent years, reaching an index of 80.4 in 2020 (Portugal index = 100). However, it declined to 78.6 in 2022 due to the impact of COVID-19 (CCDR-Norte, 2023). In 2021, the distribution of the active population by sector of activity has a higher incidence in the tertiary sector with 52.9%, followed by the secondary sector with 45,5% and the primary sector with 1.6% (Ministry of Economy, 2023).

The following section presents a summary of the most important rural resources identified through the studies analyzed in the Alto Minho region.

Rural local resources

Table 1 – Universal Resources

Group	Resources
RLR 1 - Human capital: universal knowledge and skills	• IPVC, with 3 internal Research Units: CISAS (Mediterranean agri-food systems and sustainability issues); proMetheus, (materials, energy, and environment for sustainability; ADiT-Lab's (digital transformation); and associated with: UNIAG, CIMO, UICISA:E ; CIDESD, CITUR, CIAUD, SPRINT-IPVC, and InED • Excellent Higher and Professional Education network – Univ. Porto, Univ. Minho and Univ. Vigo • Regional network of innovation, research and technological development • CiTin: It aiming to develop Applied R&D, Technology Transfer and Advanced Training Activities, • In.Cubo: Incubator of Innovative Business Initiatives located in Arcos de Valdevez. • Project "Amar o Minho" aims to support endogenous tourism businesses in the Minho region.
RLR 2 - Physical capital and technologies	• Key Transport and Communications Infrastructures in the 60-minute hinterland: Porto and Vigo International Airports, Viana do Castelo, Leixões, and Vigo Seaports, and excellent Road Network • Technologies in: ship building and repair; automotive components manufacturing; components for wind energy production • Floating offshore wind farm: wind turbines installed offshore, 18 kilometers off the coast of Viana do Castelo • Hospitality and restaurant infrastructure on regional beaches, aligned with coastal management plans. Development of beach support infrastructure (e.g., APM, APS, APC) (Focus Group, 2025)

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Table 2 - Specifically rural resources

Group	Resources
RLR 3 - Natural resources: **RLR 3.1-** Mineral resources and renewable energy	• Due to its mountainous terrain and geographical location, the region experiences strong and consistent wind currents, making it an ideal area for wind energy production. Over the past decades, several wind farms have been established, contributing to the region's reputation as a hub for renewable energy. • Use of seawater for thalassotherapy • Mineral resources: clay, kaolin, ornamental stones (granite, schist), sand
RLR 3.2 - Natural productive assets	• Alto Minho has 36 km of coastline; 290 km of large rivers and 12 Atlantic beaches distinguished with the "Gold Quality" award (CIM Alto Minho, 2019a) • The presence of the sea promotes maritime activity (water sports and recreational boating, sustainable fishing, shipbuilding and repair activities; the improvement of operational conditions and road and sea access to the seaport and the most recent implementation of ocean renewable energy projects) (CMVC, 2024) • Pluma fishing and river-based activities (Focus Group, 2025) • Marine and estuarine resources for aquaculture (e.g., oysters, fish farming) (Focus Group, 2025)
RLR 3.3 - Raw materials of agricultural or forestry origin	• Fruits, vegetables, meat, and fish (in eg.: Barrosã, Cachena da Peneda, and Garrana Beef; Bísaro pigs; Alto Minho Kid (Goat); Ermelo Orange; Tarreste Bean; Alvarinho Wine; Loureiro Green Wine; Minho River Lamprey) • High-quality fish and seafood resources: sea bass, conger, sea bream, octopus, squid, crabs, shrimp, sea urchins, mussels, oysters, limpets (Focus Group, 2025) • Valorisation of marine algae and microorganisms for food, pharmaceutical, and industrial uses (Focus Group, 2025) • Products with certification as: PDO - Protect Designation of Origin (eg Mel das Terras Altas do Minho; PGI - Protected Geographical Indication (eg Cabrito das Terras Altas do Minho (Focus Group, 2025) • Maritime pine and eucalyptus represent 82% of the total forest area, allowing to produce a relevant value of biomass in the future (Alves et al., 2022)
RLR 4 - Natural heritage	• Region characterized by the richness of its natural landscapes: maritime, river and terrestrial. • The Peneda-Gerês National Park, with natural resources and built heritage (reservoirs, marinas, parks, trails, viewpoints, eco-paths, gardens and tracks) and the complementary network of natural areas: Protected Landscape of Lagoa de Bertiandos and São Pedro de Arcos (Ponte de Lima); Protected Landscape of Corno do Bico (Paredes de Coura); Site of Community Importance of the River Minho and Special Protection Zone of the Minho and

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	Coura Estuaries; Site of Community Importance of the River Lima; Site of Community Importance of Serra de Arga; Site of Community Importance of the North Coast (Viana do Castelo and Caminha). • Viana do Castelo Coastal Geopark, a project based on the conservation of geological sites of significant importance and undeniable beauty, with evident historical-cultural interest and biodiversity. • Variety and richness of fauna and flora, characterized by vegetation cover: scrubland, oak forests, cork oaks, chestnut trees, strawberry trees, holly and pine forests, birch or birch woods, abundant vegetation bordering water courses, cultivated fields and pastures. As for the fauna community, the presence of wild boar, deer, badger, wolf, golden eagle, red kite, falcon and the region's native breeds: Garrana, Barrosã, Cachena and Bísaro pigs stands out in the mountain areas. The rivers are home to an abundance of shad, lamprey and trout, among other fish species, which have enormous potential for local gastronomy and for enhancing the landscape ("Recursos Naturais", 2025)
RLR 5 - Tangible cultural, historical and architectural heritage	• Rich historical and heritage and cultural heritage, (rock art, castrejo villages, dolmens, burial mounds, necropolis, milestones, various remains) • "Aldeias de Portugal" network, namely the villages of Lindoso, Soajo, Germil, Cabração, Sistelo, Branda da Aveleira, Covas, Castro Laboreiro, Bico e Vascões, Porreiras and Serra d'Arga (Arga de Baixo, Arga de Cima and S. João d'Arga), which preserve a unique environmental and built heritage. • The region also has civil heritage (fortresses, castles and forts, the 19th Roman road, the Roman mining complex, bridges, pillories, palaces, mansions, towers, palaces and manor houses) and religious heritage (churches, chapels, crosses, monasteries, convents). ("Recursos Culturais e Patrimoniais", 2025)
RLR 6 - Intangible cultural resources	• Food products based on traditional recipes: sausage products (blood sausage, sausage and ham), cornbread, bolas de Berlim, pão de ló, torta de Viana. Chouriça de Crane de Melgaço, Chouriça de Sangue de Melgaço, Presunto de Melgaço, Salpicão de Melgaço); TSG - Traditional Speciality Guaranteed (eg Arroz de Sarabulho à Moda de Ponte de Lima • Traditional production methods for handicraft: Viana embroidery • Traditional design of Viana jewelry (eg. Heart of Viana, other Filigree jewels) • Portuguese Saint James Way (Lima Way, Northwest Way, Northern Way, Celanova Way, Roman Geira Way and Coastal Way). All these routes cross the Alto Minho through sections of the three main routes, providing very interesting experiences in terms of cultural, natural and religious heritage ("Caminho Português de Santiago de Compostela", 2025) • Pilgrimages involve participation in religious rituals ("Santuários e Romarias", 2025) • "100% Alto Minho" brand, launched and registered by CEVAL – Alto Minho Business Confederation and its Associates, to identify

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	and promote the endogenous resources of the Alto Minho region ("100% Alto Minho", 2025) • Traditional Folk songs, traditional Legends and traditional Folklore Groups (Alto Minho, 2025). Originating as a way to preserve and celebrate local traditions, these groups play a vital role in maintaining the cultural identity of the Minho region. Their performances are an enchanting fusion of music, dance and traditional customs, captivating spectators of all ages ("Ranchos Folclóricos do Minho", 2025).
RLR 7 – Resources of agriculture, forestry and other typical rural activities	• Region's native breeds: Garrana, Barrosã, Cachena and Bísaro pigs
RLR 8 – Local, traditional knowledge and skills	• Knowledge of traditional recipes for food production • Knowledge of traditional production methods for handicraft: Viana embroidery • Knowledge of traditional design of Viana jewelry (eg. Heart of Viana, other Filigree jewels)
RLR 9 – Social capital	• Business associations: CEVAL; AEPL; AEVC • Winery: Alvarinho Producers Association; Avitiminho; Quintas de Melgaço; AVITILIMA ; Cooperative Winery of Ponte de Lima; Cooperative Winery of Ponte da Barca and Arcos de Valdevez, CRL • Agricultural: AGRESTA; Vessadas; ADAM ; COOPALIMA • Forestry: Minho Valley Forestry Producers Association; ACEB; AFL • Nature: ADERE ; ICNF-PNPG • Cooperatives: Adega Cooperativa Regional de Monção; COOPECOURA Tourism and entertainment: TURIHAB; Mostra Coura; AACPS • Local development: ADRIMINHO; ADRIL; ARDAL; Valdelima, CRL

Rural development potential of the Alto Minho region

Table 3 Key rural development potential

Category	Group	Resource	Studies
RDP1 Tourism & recreation	Recreation & adventure tourism	**RLR 3.2 –** Natural productive assets; **RLR 4 –** Natural heritage; **RLR 9** - Social networks	Martins, H. (2022); Neiva, M. (2021); CMVC (2024) Engine Focus Group (2025)
	Cultural & heritage tourism	**RLR 4 –** Natural heritage; **RLR 5** - Tangible cultural, historical and architectural heritage; **RLR 9 –** Social networks; **RLR 6** - Intangible cultural resources; **RLR 8** - Local, traditional knowledge and skills	Gonçalves et al. (2022); Gonçalves, M. O., & Gonçalves, E. (2022); Oliveira, M., & Silva, G. (2023); Remoaldo, P. C. A. et al. (2024); Bettencourt & Boas (2021); Engine Focus Group (2025)
	Agritourism	**RLR 3.3 –** Agricultural and forestry resources; **RLR 4 –** Natural heritage **RLR 8** - Local, traditional knowledge and skills; **RLR 9** - Social capital; **RLR 7** - Resources of agriculture, forestry and other typical rural activities	Bento et al. (2022); Engine Focus Group (2025)
	Wellness tourism	**RLR 3.2–** Natural productive assets **RLR 4 –** Natural heritage	Esteves, A. (2014)

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		RLR 9 - Social capital	Engine Focus Group (2025)
RDP2 Bio & circular economy	Natural fibers and bio-based materials	**RLR 3.2 -** Natural productive assets; **RLR 3.3 -** Agricultural and forestry resources; **RLR 7** - Resources of agriculture, forestry and other typical rural activities	Engine Focus Group (2025)
	Health and wellness products	**RLR 1** - Human capital: universal knowledge and skills; **RLR 7** - Resources of agriculture, forestry and other typical rural activities	Engine Focus Group (2025)
	Circular economy	**RLR 1** - Human capital: universal knowledge and skills; **RLR 2** - Physical capital and technologies **RLR 3.2 -** Natural productive assets; **RLR 9** – Social capital; **RLR 7** - Resources of agriculture, forestry and other typical rural activities	Consórcio Minho In (2022); Ferraz et al. (2023); Engine Focus Group (2025)
RDP3 Agri business	Food production and processing	**RLR 1** - Human capital: universal knowledge and skills; **RLR 3.2 -** Natural productive assets; **RLR 3.3 -** Agricultural and forestry resources; **RLR 4 -** Natural heritage; **RLR 7** - Resources of agriculture, forestry and other typical rural activities; **RLR 8**- Local, traditional knowledge and skills; **RLR 9** - Social capital	Gonçalves et al. (2022) CIM Alto Minho (2019a) Santos, M. (2021) Aguiar, L. (2020) Engine Focus Group (2025)
	Specialist food	**RLR 1** - Human capital: universal knowledge and skills	
	Organic food	**RLR 1** - Human capital: universal knowledge and skills; **RLR 3.3 -** Agricultural and forestry resources **RLR 4 -** Natural heritage; **RLR 8** - Local, traditional knowledge and skills; **RLR 9** - Social capital	
	Crop cultivation and livestock farming	**RLR 3.3 -** Agricultural and forestry resources; **RLR 4 -** Natural heritage; **RLR 7** - Resources of agriculture, forestry and other typical rural activities; **RLR 9** - Social capital	
	Advanced processing of agricultural inputs	**RLR 1** - Human capital: universal knowledge and skills; **RLR 3.3 -** Agricultural and forestry resources; **RLR 9** - Social capital	
	Food sale and distribution	**RLR 3.3 -** Agricultural and forestry resources; **RLR 7** - Resources of agriculture, forestry and other typical rural activities; **RLR 8 -** Local, traditional knowledge and skills; **RLR 9 -** Social capital	Kusio et al. (2022)
RDP4 Bio & renewable energy	Bioenergy	**RLR 1** - Human capital: universal knowledge and skills; **RLR 2** - Physical capital and technologies; **RLR 3.2-** Natural productive assets **RLR 3.3 -** Agricultural and forestry resources	Alves et al. (2022) Engine Focus Group (2025)
	Solar and wind energy	**RLR 1** - Human capital: universal knowledge and skills; **RLR 2** - Physical capital and technologies; **RLR 3.2-** Natural productive assets	Fontes et al. (2022) CMVC (2024) Engine Focus Group (2025)

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	Hydropower and geothermal energy	**RLR 9** - Social capital	CMVC (2024)
RDP5 Education, skills & sport	Heritage education	**RLR 4 -** Natural heritage; **RLR 5** - Tangible cultural, historical and architectural heritage; **RLR 6** - Intangible cultural resources **RLR 8** - Local, traditional knowledge and skills; **RLR 9** - Social capital	Alto Minho (2025) Engine Focus Group (2025)
	Handicraft education	**RLR 5** - Tangible cultural, historical and architectural heritage; **RLR 6** - Intangible cultural resources; **RLR 8** - Local, traditional knowledge and skills; **RLR 9** - Social capital	Alto Minho (2025)
	Vocational training	**RLR 9** - Social capital	
	Ecological education	**RLR 3.2 -** Natural productive assets; **RLR 9** - Social capital	
	Sport	**RLR 1** - Human capital: universal knowledge and skills; **RLR 4 -** Natural heritage	CMVC (2024)
RDP6 Cultural, historical, architectural & natural heritage	Cultural, historical and architectural heritage preservation	**RLR 1** - Human capital: universal knowledge and skills; **RLR 5** - Tangible cultural, historical and architectural heritage; **RLR 6** - Intangible cultural resources; **RLR 9** - Social capital	Bettencourt & Boas (2021) Engine Focus Group (2025)
	Natural heritage preservation	**RLR 1** - Human capital: universal knowledge and skills; **RLR 3.2-** Natural productive assets **RLR 3.3 -** Agricultural and forestry resources; **RLR 4 -** Natural heritage **RLR 8** - Local, traditional knowledge and skills; **RLR 9** - Social capital	CIM Alto Minho (2019b) CMVC (2024) Engine Focus Group (2025)
RDP7 Health & care services	Rehabilitation and therapy	**RLR 1** - Human capital: universal knowledge and skills	Engine Focus Group (2025)
	Health centres	**RLR 1** - Human capital: universal knowledge and skills	
	Elderly care	**RLR 1** - Human capital: universal knowledge and skills; **RLR 9** - Social capital	
RDP8 Universal production & services	Manufacturing	**RLR 1** - Human capital: universal knowledge and skills; **RLR 2** - Physical capital and technologies; **RLR 9** - Social capital	CMVC (2024) Engine Focus Group (2025)
	Services	**RLR 2** - Physical capital and technologies; **RLR 5** - Tangible cultural, historical and architectural heritage; **RLR 8 -** Local, traditional knowledge and skills; **RLR 9** - Social capital	CMVC (2024) Engine Focus Group (2025)
	Resource-based businesses	**RLR 1** - Human capital: universal knowledge and skills; **RLR 3.2 -** Natural productive assets; **RLR 9** - Social capital	CMVC (2024) Engine Focus Group (2025)
	Forestry	**RLR 1** - Human capital: universal knowledge and skills; **RLR 3.2 -** Natural productive assets; **RLR 9** - Social capital	CMVC (2024) Engine Focus Group (2025)

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	Digital-savvy enterprises	**RLR 1** - Human capital: universal knowledge and skills; **RLR 2** - Physical capital and technologies; **RLR 9** - Social capital	Engine Focus Group (2025)

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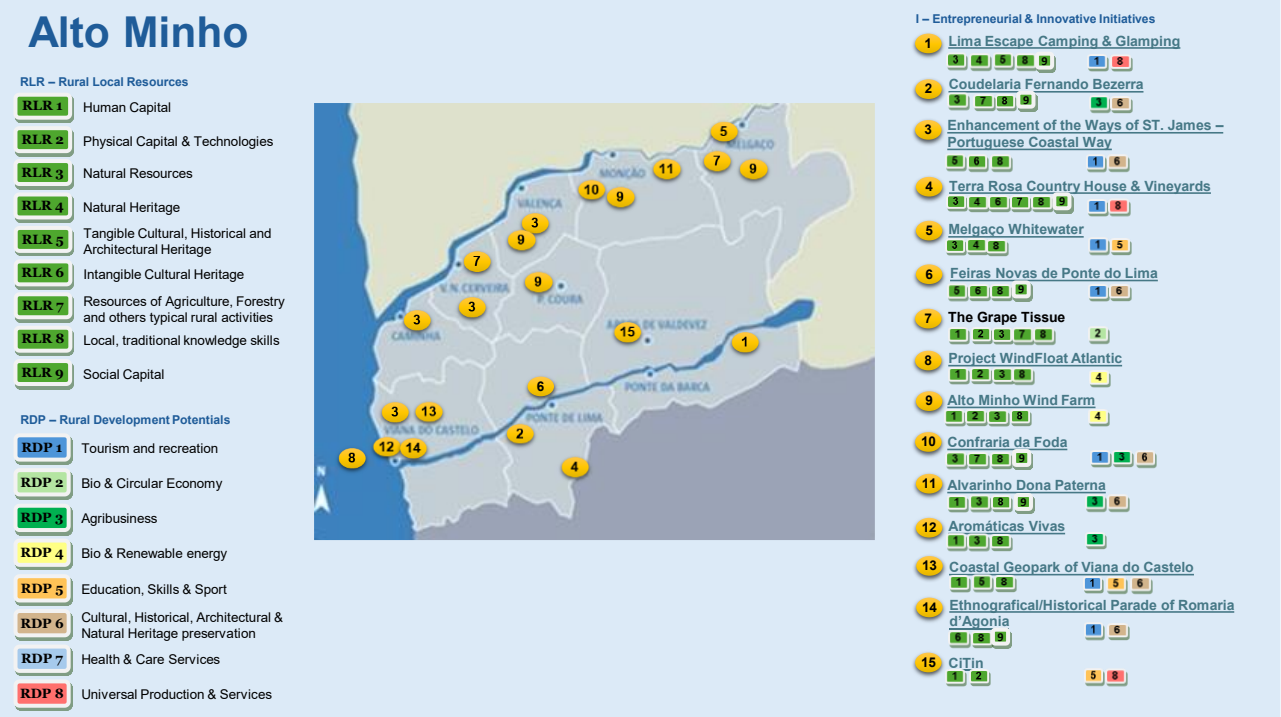
Visualization of the development potential of Alto Minho rural areas



LEGEND
RLR 1,2,3… – Specific Group of Rural Local Resource
RDP 1,2,3… – Category of Key Rural Development Potential
I 1,2,3… - Entrepreneurial & Innovative Initiative

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Overview of E&I initiatives in the region's rural areas

Initiative – Terra Rosa Country House & Vineyards

1. **Characteristics:**

   Location of the initiative: Ponte Lima

   Type of stakeholder involved: Medium company

   Initiative type: Business

   Scale of activity: Small

   Legal form: Private company, limited liability company

   Planned implementation period: Long term project

2. **Description of initiative:**

   Terra Rosa Country House & Vineyards in Ponte de Lima, located in northern Portugal, is a rural property that blends a country house experience with wine production. It is situated in the Minho region, known for its lush landscapes and Vinho Verde. The property includes Vineyards: Producing local wines, likely focusing on Vinho Verde; Rural tourism: Offering visitors a chance to stay in a charming country house and participate in wine tastings, vineyard tours, local events; and accommodation and events: The estate provides a peaceful environment for relaxation and private events, such as weddings or celebrations.

3. **The main rural local resources that form the basis of the initiative:**

   RLR 3.1- Natural productive assets
   RLR 3.2 - Agricultural and forestry resources
   RLR 4 - Natural heritage
   RLR 6 - Intangible cultural resources
   RLR 7 - Resources of agriculture, forestry and other typical rural activities
   RLR 8 - Local, traditional knowledge and skills
   RLR 9 - Social capital

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4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	
Agribusiness	✓
Cultural, historical, architectural& natural heritage preservation	
Health & care services	
Universal production & services	✓

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

- Viticulture and Winemaking: Knowledge of grape cultivation, vineyard management, and sustainable farming practices; Expertise in winemaking
- Hospitality and Tourism Management: Skills in managing guest services, accommodation, and event coordination; Knowledge of the wine tourism industry.
- Sustainability and Environmental Management: Expertise in sustainable agricultural practices and eco-friendly business operations; Understanding of environmental impact assessment and resource management.
- Business and Financial Management: Strong financial planning, budgeting, and resource management to ensure profitability; Marketing skills.
- Cultural and Community Engagement: Understanding of local culture and traditions; Communication skills for engaging with local stakeholders.
- Event Planning and Coordination: Skills in organizing private and public events.

6. **Key rural stakeholders supporting the initiative:**

Property Owners and Management; Local Farmers and Agricultural Workers; Wine Distributors and Retailers; Tourists and Guests; Local Government and

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Tourism Authorities; Local Suppliers and Service Providers; Environmental and Sustainability Organizations; Investors and Financial Partners

7. **Socio-economic barriers and challenges related to the initiative:**
   - Climate and Environmental Risks – Unpredictable weather, pests, or diseases could impact grape production and quality.
   - Market Competition – Standing out in the global market may require significant marketing efforts and investment.
   - Financial Sustainability – Ensuring consistent revenue from wine production, tourism, and events can be challenging.
   - Regulatory and Legal Barriers – Compliance with local regulations regarding land use, tourism, and environmental impact may present administrative hurdles.
   - Changing Consumer Preferences – Shifting trends in wine consumption or tourism preferences could impact demand for the winery's products or services.
   - Operational Costs – High upfront costs for vineyard establishment, property maintenance, and marketing can strain cash flow in the early stages.
   - Community and Cultural Integration – Building strong relationships with the local community and stakeholders may take time and effort.

Initiative – Enhancement of the Ways of St. James - Portuguese Coastal Way

1. **Characteristics:**

Location of the initiative: Joint application by 10 municipalities (4 of them - Viana do Castelo, Caminha, Vila Nova de Cerveira e Valença, from the Alto Minho region)

Type of stakeholder involved: Municipalities of Alto Minho

Initiative type: Social

Scale of activity: Medium

Legal form: n.a.

Planned implementation period: Long term project

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2. **Description of initiative:**

The "Valorização dos Caminhos de Santiago - Caminho Português da Costa" is the result of a joint application by the 10 municipalities of Alto Minho to Norte 2020, with the aim of valuing and officially recognizing this Way as a pilgrimage route to Santiago. This intermunicipal network presents a brand image considered unique and integrated communication that aims to enhance the intrinsic value of the Caminho Português da Costa.

3. **The main rural local resources that form the basis of the initiative:**

RLR 5 - Tangible cultural, historical and architectural heritage
RLR 6 - Intangible cultural resources
RLR 9 – Social capital

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	
Universal production & services	

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

- Cultural and historical knowledge: understanding the history, heritage, and significance of the Caminho Português de Santiago.
- Project management: strong planning, organization, and coordination.
- Sustainability and environmental awareness: expertise in sustainable tourism practices.
- Tourism and marketing skills: ability to develop promotional strategies, attract visitors, and collaborate with tourism agencies.
- Community engagement: building partnerships with local communities, businesses, and municipalities.
- Infrastructure development: knowledge in improving and maintaining

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paths, facilities, signage, and accommodations.

- Stakeholder relations: ability to engage government bodies, local authorities, NGOs, and businesses for funding and collaboration.
- Language and communication skills: to communicate effectively with both international and local tourists.
- Fundraising and financial management: skills in securing funding, managing budgets, and ensuring financial sustainability for the project.
- Health and safety management: ensuring that the infrastructure and services along the route meet safety standards for pilgrims.

6. **Key rural stakeholders supporting the initiative:**

   Local Municipalities and Government Bodies; Tourism Agencies; Local Communities and Businesses; Cultural and Heritage Organizations; Pilgrims and Tourists; Environmental and Sustainability Groups; Non-Governmental Organizations (NGOs)

7. **Socio-economic barriers and challenges related to the initiative:**

   - Infrastructure maintenance: ensuring that the path, accommodation, signage, and facilities are well-maintained and accessible year-round can be challenging, especially in remote areas.
   - Environmental impact: over-tourism could lead to environmental degradation, including damage to natural ecosystems.
   - Funding and financial sustainability: securing sufficient funding for ongoing maintenance, promotional efforts, and infrastructure development may be difficult.
   - Balancing modernization with preservation: striking a balance between enhancing amenities for pilgrims and preserving the historical and cultural integrity of the Caminho can be complex.
   - Stakeholder coordination: managing the diverse range of stakeholders, including local authorities, businesses, NGOs, and the community, may result in conflicts or lack of alignment in objectives.
   - Safety and health concerns: ensuring the safety of pilgrims, especially in areas with limited healthcare services or challenging terrain, can present risks.

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Initiative – Alto Minho Wind Farm, from Ventominho, SA

1. **Characteristics:**

   Location of the initiative: Paredes de Coura, Melgaço, Valença e Monção

   Type of stakeholder involved: Ventominho is the promoting company, located in Melgaço

   Initiative type: Business

   Scale of activity: Large

   Legal form: Public limited company

   Planned implementation period: Long term project

2. **Description of initiative:**

   Opened in November 2008 in the municipality of Monção, the Alto Minho I Wind Farm represents an infrastructure consisting of 120 wind turbines, which has made Alto Minho one of the main exporting regions of renewable energy in the country. It is an investment of 320 million euros, for an installed capacity of 240 megawatts. The wind energy produced in the region is equivalent to the electricity consumption of 140 thousand inhabitants, saving around 500 thousand tons per year in CO2 emissions into the atmosphere.

3. **The main rural local resources that form the basis of the initiative:**

   RLR 1 - Universal knowledge and skills
   RLR 2 – Physical capital and technologies
   RLR 3.2 – Natural, productive assets
   RLR 9 – Social capital

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:
Tourism & recreation
Bio & circular economy

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Bio & renewable energy	✓
Education, skills & sport	
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	
Health & care services	
Universal production & services	

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**
   - Renewable Energy Expertise – Knowledge of wind power generation, turbine technology, and grid integration.
   - Environmental and Regulatory Compliance – Understanding of environmental impact assessments, licensing, and sustainability practices.
   - Project Management – Skills in coordinating large-scale infrastructure projects, budgeting, and timeline management.
   - Engineering and Technical Skills – Competence in wind farm construction, maintenance, and operational efficiency.
   - Stakeholder Engagement – Ability to collaborate with local communities, government agencies, and investors.
   - Logistics and Infrastructure Planning – Expertise in site selection, transport, and installation of wind turbines.
   - Financial and Risk Management – Knowledge of funding sources, investment strategies, and mitigation of financial risks.
   - Operations and Maintenance – Ensuring long-term efficiency through predictive maintenance and troubleshooting technical issues.

6. **Key rural stakeholders supporting the initiative**:

   Government and Regulatory Bodies; Renewable Energy Companies; Local Municipalities and Communities; Environmental Organizations; Investors and Financial Institutions; Electricity Transmission Operators; Research and Academic Institutions.

7. **Socio-economic barriers and challenges related to the initiative:**
   - Regulatory and Environmental Constraints – Obtaining permits and ensuring compliance with environmental protection laws can be complex and time-consuming.
   - Community Opposition – Concerns over noise, landscape impact, and effects on local biodiversity may lead to resistance from environmental

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groups.

- Grid Integration Challenges – Ensuring that the electricity generated is efficiently integrated into the national grid without instability or energy losses.
- High Initial Investment – The significant costs of wind turbine installation, infrastructure, and grid connection can be a financial challenge.
- Maintenance and Operational Costs – Long-term efficiency depends on regular maintenance, requiring skilled labor and ongoing investment.
- Intermittency of Wind Power – Wind energy depends on weather conditions, requiring backup systems or energy storage solutions to maintain reliability.
- Supply Chain and Logistics Issues – Transporting and installing large wind turbines in remote or mountainous areas can pose logistical difficulties.
- Technological Advancements – Rapid developments in renewable energy may require continuous updates to maintain efficiency and competitiveness.

Initiative – Lima Escape Camping & Glamping

1. **Characteristics:**

Location of the initiative: Ponte da Barca

Type of stakeholder involved: Medium company

Initiative type: Business

Scale of activity: Small

Legal form: Private company, limited liability company

Planned implementation period: Long term project

2. **Description of initiative:**

Lima Escape is a tourism initiative with camping areas prepared for stays in tents, caravans or motorhomes, and glamping. It also offers adventure activities like kayaking, hiking, and cultural experiences such as wine tastings. Its main objectives are to promote sustainable tourism, support the local economy, and highlight the region's natural beauty and heritage.

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3. **The main rural local resources that form the basis of the initiative:**

   RLR 3.2 - Natural productive assets
   RLR 4 - Natural heritage
   RLR 5 - Tangible cultural, historical and architectural heritage
   RLR 8 – Local, traditional knowledge and skills
   RLR 9 – Social capital

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	
Health & care services	
Universal production & services	✓

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

   - Outdoor & Camping Expertise: Knowledge of campground management, and environmental education, with a focus on eco-friendly practices.
   - Adventure Activity Facilitation: Ability to organize and guide kayaking, hiking, and cycling, with a focus on safety and customer engagement.
   - Sustainability & Conservation: Expertise in sustainable camping, Leave No Trace principles, and promoting environmental conservation.
   - Tourism & Hospitality: Strong customer service, booking systems management, and tourism promotion to attract visitors.
   - Event Planning: Coordination of special events, workshops, and themed experiences to enhance the camping offerings.
   - Community Engagement: Building partnerships with local businesses and fostering cultural exchange with the community.
   - Financial & Strategic Management: Budgeting, cost management, and creating sustainable revenue streams for the campsite.
   - Legal & Regulatory Compliance: Knowledge of necessary permits, health and safety regulations, and insurance for camping operations.
   - Marketing & Branding: Developing a strong brand identity, digital marketing, and content creation to promote the camping experience.

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6. **Key rural stakeholders supporting the initiative:**

   Local Government; Tourism Sector: Hotels, guesthouses, restaurants, and tourism agencies; Local Communities: Residents, artisans, and producers; Outdoor Activity Providers; Experts offering guided adventures; Environmental Organizations; Educational Institutions; Tourism Associations; Investors; Media & Influencers; Local Suppliers.

7. **Socio-economic barriers and challenges related to the initiative:**

   - Environmental impact: managing resources sustainably and minimizing ecosystem disruption can be challenging with increasing visitors.
   - Weather and seasonality: unpredictable weather and fluctuating seasonal demand can affect operations and revenue.
   - Infrastructure and accessibility: limited transportation options and the high cost of infrastructure development could hinder accessibility.
   - Competition: other tourism destinations and global eco-tourism trends may create strong competition.
   - Regulatory compliance: navigating licensing, permits, and health and safety standards can be complex.
   - Financial sustainability: high initial investment and inconsistent revenue, especially in off-peak seasons, could strain finances.
   - Marketing and visibility: building brand recognition and maintaining a strong online presence may require significant effort and resources.
   - Labor force: seasonal labor shortages and an aging workforce could impact staffing.
   - Visitor experience: balancing rustic experiences with modern comfort.

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3.4 Province of Foggia

Socio-economic profile of the region and its rural areas

Socio-economic profile of the Province of Foggia

The province of Foggia, located in the northern part of Apulia, consists of three main areas: Daunian Mountains, Gargano and Tavoliere delle Puglie. The Daunian Mountains, covering approximately 1,884.8 km2, struggle with land abandonment due to hydrogeological instability, and are primarily used for forestry, pasture and limited agriculture (Alhajj Ali et al., 2024a; Contillo et al., 2022; Conversa et al., 2020). Gargano spanning about 1,960 km2, is characterised by rugged terrain, with agriculture (forage and cereals, olive orchards and intensive livestock grazing) and tourism being its economic mainstays (Alhajj Ali et al., 2024a; Agenzia per la Coesione Territoriale, 2020; Giordano, 2020). Meanwhile, Tavoliere delle Puglie, the largest plain area in Apulia, covering approximately 3,524 km2, stands as one of the most productive agricultural areas in the region, cultivating wheat, barley, tomatoes, olive orchards, legumes and vineyards (Conversa et al., 2020).

According to the National Strategic Plan's rurality classification, Foggia city and its immediate surroundings are urban and peri-urban, Tavoliere and parts of Gargano are rural areas with intensive farming, while the Daunian Mountains and most of Gargano are classified as rural areas with development challenges (Regione Puglia, 2021). Regarding inner areas classification, Foggia city provides most essential services, and Tavoliere is mostly outlying or intermediate area, whilst the Daunian Mountains are largely peripheral and intermediate. The Gargano region spans all categories (intermediate, peripheral, and ultra-peripheral), with the most distant municipalities facing the greatest challenges in accessing essential services (Fondazione IPRES, 2024).

The Province of Foggia is home to 15.2% of Apulia's inhabitants and deals with several socio-economic issues, such as a demographically ageing population, low income, high unemployment rates, and low levels of education (Agenzia per la Coesione Territoriale, 2020; Vendemmia et al., 2020). Furthermore, as services are concentrated in the main municipalities, this contributes to the depopulation of less connected localities (Vendemmia et al., 2020). In 2023, the unemployment rate for individuals aged 15-64 was 18%, higher than the regional average (11.8%) and the national rate (7.8%) (ISTAT, 2024). Additionally, in 2022, Apulia recorded a population decline of 15,258 residents (0.4%), exceeding the national average decline of 0.1%. Notably, the Province of Foggia experienced a decrease of 3,346 residents (-0.6%) — one of the most significant demographic contractions in the region. This trend is further intensified by a decline in the birth rate (-80 across the entire region), which is consistent with Italy's record-low birth rates (ISTAT, 2024). Similarly, the NEET rate (not in education, employment or training, aged 15-29) in the

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Province of Foggia stood at 34.9% in 2022, the highest percentage in Apulia (ISTAT, 2024). This figure has remained consistently high in recent years, reflecting persistent challenges in youth employment. Currently, there are 69,940 companies registered with the Chamber of Commerce of Foggia. The municipalities of San Severo and Manfredonia have the highest concentration of commercial activities, while Foggia, Carapelle, Vieste, Peschici, Rodi Garganico, and the Isole Tremiti are specialised in the service sector. All other municipalities primarily focus on agriculture (InfoCamere, 2024).

The rural areas of the Province of Foggia need to align economic growth with socio-environmental necessities, improving living standards, competitiveness, and access to services. This can be achieved through enhanced mobility, better public services, investments and innovation, helping to mitigate marginalisation and depopulation, ultimately paving the way for sustainable development (Tejada-Gutiérrez et al., 2023).

Rural local resources

Table 1 – Universal Resources

Group	Resources
RLR 1 - Human capital: universal knowledge and skills	• Higher education: University of Foggia: Faculties in Economics, Agriculture, Medicine, Law, and Humanities. Ranked internationally in Times Higher Education (THE) and considered one of the best universities in Southern Italy. Actively participates in research projects such as Horizon2020, PRIN, and PON. (Università degli studi di Foggia, 2025). • Research centres: Bonassisa Lab (food, environmental safety, and microbiology); CREA (agricultural and forest ecosystems); DaRe (technology transfer process between the research system and the agri-food sector); Giepi s.r.l (specialising in materials used in the construction industry);Istituto Zooprofilattico Sperimentale di Puglia e Basilicata (animal health, food safety, and zoonoses); ISPA-CNR (post-harvest management of horticultural products). (Prosperi et al., 2020; Bonassisa Lab, 2022; CREA, 2025; CNR, n.d.; Giepi, n.d; IZSPB, n.d.) • Vocational & professional: Italian tertiary educational institution.
RLR 2 - Physical capital and technologies	• Industrial area in Incoronata, Bovino, Lucera, San Severo and Manfredonia (Consorzio ASI Foggia, n.d.). • Foggia airport potential for cargo and passenger transport

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	(Aeroporti di Puglia, n.d.). • Railway connecting Foggia to central and northern Italy. • Autostrada Adriatica, connecting south to north. • Adriatic coast port supporting transport, logistics, fishing, and tourism, with ferry services to Isole Tremiti. • Fibre-optic networks and 5G connecting urban and rural areas.

Table 2 - Specifically rural resources

Group	Resources
RLR 3 - Natural resources: • **RLR 3.1**- Mineral resources and renewable energy • **RLR 3.2**- Natural productive assets • **RLR 3.3** - Raw materials of agricultural or forestry origin	• Onshore windmills can be seen in the Daunian Mountains, and a project for offshore windmills in Gargano has been approved. • Apricena is home to important limestone quarries, which is crucial for construction and other industries in the region. • Fortore River is dammed by the Occhito Dam—one of Europe's largest—built for irrigation and flood control (Magliulo et al., 2023). • Key watercourses include the Celone, Vulgano, Salsola, and Triolo, which cross the Tavoliere plain and flow into the Candelaro torrent (Consorzio per la Bonifica della Capitanata, 2025). Cervaro and Carapelle are important torrents facing the Gulf of Manfredonia (De Santis et al., 2023). • Ofanto River supports the cultivation of vineyards, olive groves, and fruit trees in the surrounding areas (Campanale et al, 2020). • Groundwater is also crucial for meeting irrigation needs. • Marginal lands can be used for biomass feedstocks (Alhajj Ali et al., 2024b). Biomass is produced throughout the entire Province. • Mostly rainfed arable crops (cereals, forage) and permanent crops (mainly olives), while Tavoliere focuses on durum wheat, vegetables, and tree crops (Conversa et al., 2020). • The coastline is rich in marine life, supporting both fishing and aquaculture, including sea and land-based fish breeding in the Gargano area. • Recreational activities such as sailing, canoeing, kayaking, windsurfing, and snorkelling are popular, particularly in the

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	summer. • Livestock grazing, olive groves mostly cropped in Gargano (Conversa et al., 2020). Furthermore, woodworking and timber processing from Gargano and Daunian Mountains.
RLR 4 - Natural heritage	• Gargano National Park features diverse habitats, including rocky coasts, Mediterranean pine forests, and rare flowers, making it Europe's richest orchid location (56 species, 5 subspecies). Its fauna includes roe deer, foxes, and woodpeckers. Notable areas include the Umbra Forest with beech woodlands at low altitudes, and wetlands such as Lesina and Varano lagoons, Frattarolo and Lago Salso, Fortore River mouth, Sant'Egidio swamp, and Sfinale marsh, important for migratory birds. Oasi Laguna del Re is also a key bird habitat (Ente Parco Nazionale del Gargano, 2025). • Bosco Incoronata Regional Park spans about 1,000 hectares, preserving natural vegetation like oak forests within a cultivated landscape. It is crossed by the Cervaro stream and features a mix of high-trunk forests and grasslands (Comune di Foggia, 2025). • Path connecting Monte Cornacchia, the highest peak in Apulia (1,151 m), to Faeto's rich beech forests and fauna (Visit Monti Dauni, 2025).
RLR 5 - Tangible cultural, historical and architectural heritage	• Prehistory: Grottone di Manaccore and Grotta Paglicci (caves), as well as Passo di Corvo Archaeological Park (CartApulia, n.d.). • Pre-Roman and Roman periods: The Siponto and Herdonia archaeological site, among others. Also, Via Traiana, an ancient Roman road, connected Benevento to Brindisi (CartApulia, n.d.). • Medieval religious architecture and pilgrimage route. • Castles: Castelpagano, Castello di Monte Sant'Angelo, Castello di Manfredonia, Castelfiorentino, the Svevo-Angioino Fortress in Lucera, Castello Ducale di Bovino and Castello di Sant'Agata di Puglia (CartApulia, n.d.). • Fortified farmhouses, grain and oil mills. (CartApulia, n.d.). • The granary pits of Cerignola.
RLR 6 - Intangible cultural resources	• Foraging wild vegetables and selling them on the street corners of Foggia, a tradition once carried out by the terrazzani and still practiced by local people today (Alhajj Ali, 2024b). • Soft drinks, spirits, and liqueurs made with local fruits. Meat, sausages, prosciutto (e.g., Prosciutto di Faeto), pancetta, ricotta, mozzarella, and honey, all traditionally produced locally. Seafood and legumes. Musciska, a traditional dried

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	meat from Rignano Garganico, made from marinated and air-dried goat, sheep, or beef, originally eaten by shepherds (Didonna et al., 2022). • Local cheeses (Caciocavallo Podolico del Gargano, Canestrato Pugliese DOP). Taralli, fresh pasta, various types of olives (e.g., Bella di Cerignola), and products preserved in olive oil (e.g., lampascioni). Wine (e.g. Nero di Troia), bread (e.g., pane di Monte Sant'Angelo), rustic pastries (e.g., Farrata di Manfredonia, Calzone di Ischitella, paposcia), as well as traditional sweets (Didonna et al., 2022). • Local dishes: each town has its own traditional specialities (Didonna et al., 2022). • Each city has its own dialects. Particularly, the province is home to the Arbëreshë, descendants of Albanians who settled in several villages, preserving their unique culture and dialect, and Franco-Provençal, a French dialect spoken by the inhabitants of Faeto, descendants of French émigrés from Provence. • Handcrafted ceramics from Gargano. • Dance and music: Tarantella del Gargano, quadriglia.
RLR 7 - Resources of agriculture, forestry and other typical rural activities	• Sheep bread Gentile di Puglia; goat breed Capra Garganica; cattle breed Vacca Podolica del Gargano; pig breed Suino Nero Pugliese (Fondazione Slow Food, n.d.). • Masserie, educational farms, rural accommodations. • Km0 food networks: supporting local economies, community, and sustainability (Contò and Fiore, 2020; Nemes et al., 2021; Silvestri et al., 2023).
RLR 8 - Local, traditional knowledge and skills	• Generational recipes using local ingredients. • Growing local crops with traditional farming methods. • Traditional food processing, such as cheese, ricotta, unstuffed cured meats, vegetables preserved in oil, and handmade pasta. • Wild and aromatic plants, edible mushrooms (Alhajj Ali, 2024b).
RLR 9 – Social networks	• Agriculture, food and wine associations. • Local development agencies (24 in total), and grassroots promotional association (Pro Loco). • Business and trade associations. • Cultural, tourism, environmental and forestry associations.

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Rural development potential of the Province of Foggia

Table 3 Key rural development potential

Category	Group	Resource	Studies
RDP1 Tourism & recreation	Recreation & adventure tourism	Digital detox, yoga retreats, trekking, birdwatching, water-based activities and mindfulness.	Reitano (2024).
	Cultural & heritage tourism	Historic towns and villages exploration, traditional and cultural immersion.	Contò and Fiore (2020), Alhajj Ali et al. (2024b), Carta Apulia (n.d.).
	Agritourism	Eco-agritourism, off-grid accommodations, hands-on activities.	Reitano (2024).
	Wellness tourism	Spirituality experiences, regenerative tourism.	Alhajj Ali et al. (2024b), Reitano (2024).
RDP2 Bio & circular economy	Natural fibers and bio-based materials	Cardoon (*Cynara cardunculus L.*) for multiple purposes. Biochar as soil amendment.	Alhajj Ali et al. (2024b).
	Health and wellness products	Wild plants (e.g., *Salicornia patula* for saline soil management) and cardoon extracts for pharmaceutical reasons.	Alhajj Ali et al. (2024b).
	Circular economy	Green certifications and ecomuseums.	Contò and Fiore (2020).
RDP3 Agri business	Food production and processing	Integration of underutilised crop species (figs, almonds, pistacchi) in marginal lands. Wild plants cultivation.	Alhajj Ali et al. (2024b).
	Specialist food	Traditional local cuisine.	Alhajj Ali et al. (2024b), Didonna et al. (2020).
	Organic food	Apulia ranks second only to Sicily for the largest area of organically cultivated land in Italy, measured in hectares.	Sinab (2024).
	Crop cultivation and livestock	Eco-friendly techniques (water management, crop rotation, climate-smart agriculture).	Alhajj Ali et al. (2024a, 2024b), Fondazione Slow

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	farming	Livestock breeding in marginal lands can contribute to biodiversity.	Food, n.d.).
	Advanced processing of agricultural inputs	Adoption of Agriculture 4.0 technologies (e.g., sensors, robotics, cloud computing, data analytics) to enhance monitoring, control, prediction, and logistics in the processing and quality management of agricultural inputs.	Silvestri et al. (2023).
	Food sale and distribution	Short supply chains, direct sales and farmer's markets.	Contò and Fiore (2020), Nemes et al. (2021), Silvestri et al. (2023).
RDP4 Bio & renewable energy	Bioenergy	Biofuel production from marginal lands and biochar for storing carbon in soil and reducing greenhouse gas emissions.	Alhajj Ali et al. (2024b).
	Solar and wind energy	The Province of Foggia is one of the three regions in Europe with the highest concentration of wind turbines. Solar energy is also highly developed.	Castiglioni et al. (2021).
	Hydropower and geothermal energy	Hydroelectric potential in Italy is concentrated in the Alpine slopes, with only limited applications in the South. The Province of Foggia, due to its lack of major watercourses is not suitable for this type of energy. As regards geothermal energy, low-enthalpy applications (with reservoir temperatures below 90°C) are feasible across much of the province, particularly for heating and cooling.	Stucchi et al. (2023); Amedei (2024).
RDP5 Education, skills & sport	Heritage education	Realisation of educational activities for citizens, especially the youth, the training of educators, and the promotion of digitalisation and mobility improvements to enhance access to cultural heritage.	Ministero della Cultura (2021).
	Handicraft education	Learning traditional craft techniques, such as pottery, or making musical instruments.	Reitano (2024).
	Vocational training	Courses with a duration of 3 to 6 months, particularly in the tourism and services sectors, as well as	Casalone et al. (2023), Sistema

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		highly specialised post-diploma courses of 2 years' duration, especially in the technology and agriculture sectors, are offered. In the South, individuals from all educational backgrounds are eager to participate in vocational training courses, although there is still debate about the effectiveness of these courses.	ITS Puglia (2024).
	Ecological education	First-year university students tend to have a high level of knowledge about environmental topics such as the greenhouse effect and ecological footprint. However, the economic and social aspects of sustainability, including the Sustainable Development Goals (SDGs), are areas that require improvement. Another important approach to teaching ecology is through masserie didattiche—that are recognized and accredited by the Apulia Region.	Smaniotto (2022), Regione Puglia (n.d.).
	Sport	Bike touring, trekking, water sports, active tourism, sports events, and wellness.	Rosato (n.d.).
RDP6 Cultural, historical, architectural & natural heritage	Cultural, historical and architectural heritage preservation	Historical rural buildings (e.g., masserie) have been progressively abandoned due to high restoration costs and lack of functional use; one proposal is to create joint ventures between tourist operators and owners, which could be extended to other historical buildings.	Sardaro et al. (2021).
	Natural heritage preservation	Natural features such as isolated trees, hedgerows, embankments, walls, copses, and canals. Fauna and flora of the Gargano National Park.	Giordano (2020).
RDP7 Health & care services	Rehabilitation and therapy	Shortage of professionals, especially in rural areas, and gaps in data collection and analysis.	Maccarone et al. (2021), Amore et al. (2024).
	Health centres	Southern regions lag behind the north in essential services standards, leading to increased patient mobility. GDP and healthcare spending per capita remain lower in the south.	Ricciardi and Tarricone (2021).

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	Elderly care	Enhancing the availability and accessibility of medical services for elderly residents in underserved, non-urban areas.	Kusio and Fiore (2022).
RDP8 Universal production & services	Manufacturing	Strategic location in the Mediterranean, favourable for logistics and transition industries.	Ministro per gli Affari Europei, il Sud, le Politiche di Coesione e il PNRR (2024).
	Services	Foggia's territory is strategically positioned along the A14 highway corridor and is served by essential railway connections (intercity and intraregional at regulated fares, along with commercial routes) linking the south to the north. However, the potential of the local airport remains limited due to the dispersed rural population, which reduces accessibility. Population decline in rural areas, often accompanied by aging demographics and low-income levels, is closely linked to a reduction in provision of services.	Laurino et al. (2019), Vendemmia et al. (2020), Tejada-Gutiérrez et al. (2023).
	Resource-based businesses	Well developed. Mostly non-irrigated arable crops. Marine and land-based aquaculture.	Alhajj Ali et al. (2024a), Agenzia per la Coesione Territoriale (2020), Giordano (2020).
	Forestry	Medicinal herbs, fruit trees, and terraced agroforestry in marginal areas.	Alhajj Ali et al. (2024b).
	Digital-savvy enterprises	Apulia, while primarily agricultural, is fostering digital-savvy enterprises by diversifying into sectors like aerospace, digital systems, and innovative technologies. The region is also a national leader in energy and tech-related funded projects.	Ministro per gli Affari Europei, il Sud, le Politiche di Coesione e il PNRR (2024).

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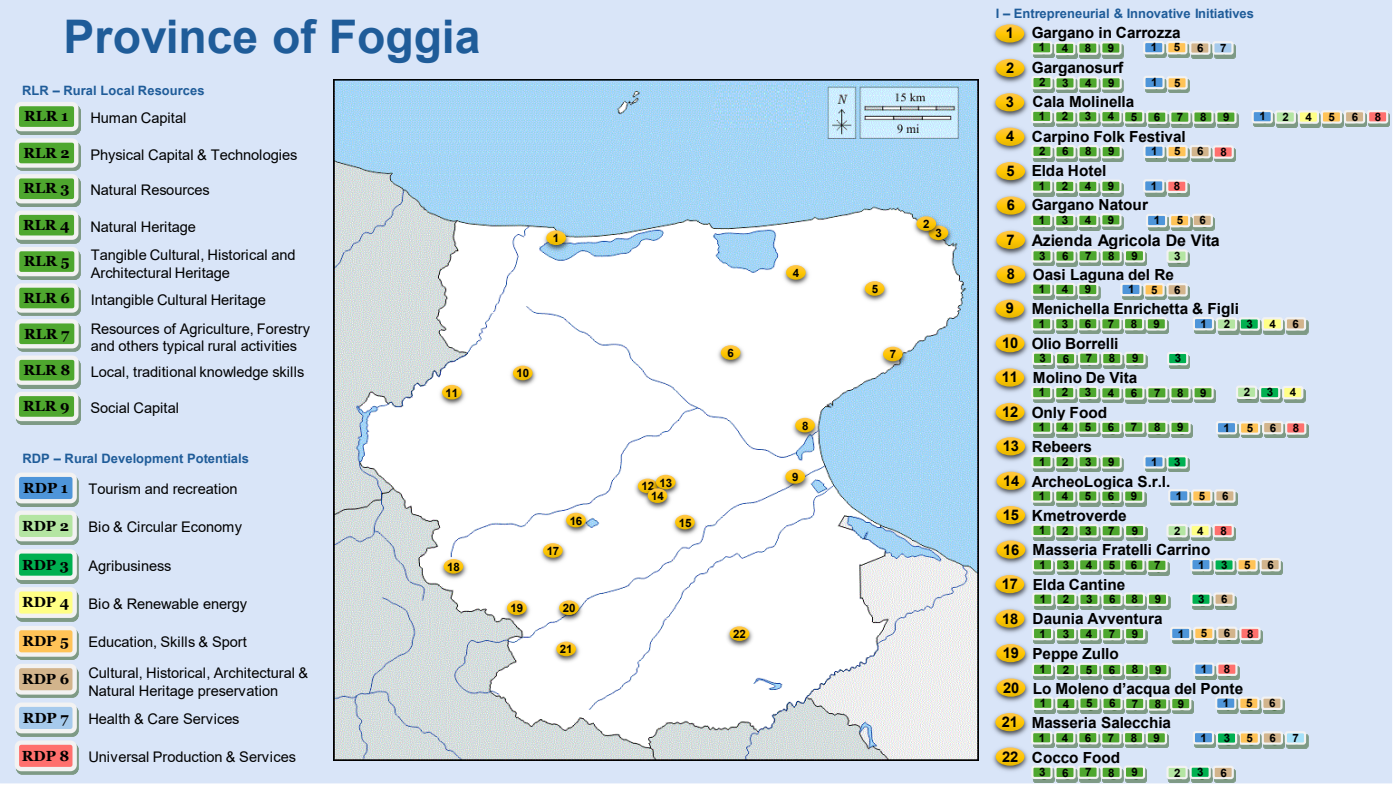
Visualization of the development potential of Province of Foggia rural areas



LEGEND

RLR 1,2,3… – Specific Group of Rural Local Resource
RDP 1,2,3… – Category of Key Rural Development Potential
I 1,2,3… – Entrepreneurial & Innovative Initiative

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Overview of E&I initiatives in the region's rural areas

Initiative – Masseria Salecchia

1. **Characteristics:**

   Location of the initiative: Bovino

   Type of stakeholder involved: Micro-enterprise.

   Initiative type: Business.

   Scale of activity: Small.

   Legal form: Simple Agricultural company under Italian law.

   Planned implementation period: Long-term.

2. **Description of initiative:**

   Masseria Salecchia, founded in 1933 by the D'Innocenzio family, is a sustainable farm nestled in a 350-hectare EU-protected nature reserve in the Apennines. Once the hunting estate of the Duke of Guevara, it now breeds native livestock, produces local delicacies, and offers immersive rural experiences, such as stables visits, mountain treks, biking, excursions, cheese-making, organic farming, and cooking classes.

   The social project combines agriculture and rehabilitation, offering animal-assisted therapy and training for individuals with disabilities or from disadvantaged backgrounds. The farm also features an adventure park with 18 treetop platforms and expert supervision for a safe and exciting experience in nature. Its educational forest program hosts workshops for school groups of all levels, focusing on farm to fork learning, biodiversity, sustainable agriculture, and hands-on experiences such as grape and olive harvesting, soap making, and discovering animal tracks in the forest.

   Through initiatives like "Adopt a Sheep" supporting the endangered Gentile di Puglia breed, Masseria Salecchia fosters environmental stewardship and cultural heritage. It also provides cozy accommodations and event hosting,

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allowing guests to immerse themselves in authentic rural life and sustainable practices.

3. **The main rural local resources that form the basis of the initiative:**

   RLR 1; RLR 4; RLR 6; RLR 7; RLR 8; RL9

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	✓
Agribusiness	✓
Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	✓
Universal production & services	

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

   - In-depth knowledge of sustainable farming practices, livestock breeding, and comprehensive animal care, with a strong understanding of biodiversity conservation and environmental sustainability.
   - Competences in ergotherapy and animal-assisted therapy for individuals with disabilities or special needs.
   - Experience in training strategies for children, teenagers and disadvantaged groups, especially in agricultural education and heritage conservation.
   - Ability to coordinate workshops, private events, guest visits, seasonal activities, and summer camps, including logistics planning.
   - Professionals trained in safety measures for adventure park operations.
   - Proficiency in marketing strategies to attract visitors.

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6. **Key rural stakeholders supporting the initiative:**

   Slow Food Organisation, Masserie Didattiche Puglia and Boschi Didattici.

7. **Socio-economic barriers and challenges related to the initiative:**

   - Protecting endangered breeds (e.g., Gentile di Puglia sheep) and promoting biodiversity while balancing commercial viability.
   - Finding, training, and retaining skilled workers.
   - Mobility challenges due to the Masseria's rural location, with limited public transportation options, making a car necessary to reach it.
   - High costs associated with animal care and the maintenance of the facilities.

Initiative – Cala Molinella

1. **Characteristics:**

   Location of the initiative: Vieste

   Type of stakeholder involved: Smal enterprise.

   Initiative type: Business.

   Scale of activity: Small to medium.

   Legal form: Limited Partnership (LP).

   Planned implementation period: Long-term.

2. **Description of initiative:**

   Eco-sustainable holiday village, just steps from the sea, offers cozy cottages, a private beach club, a swimming pool nestled among olive trees and dry-stone walls, and a scenic hill with a tree house and educational farm. Guests can enjoy creative workshops in a peaceful garden and participate in

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activities such as hands-on gardening, pasta-making, and outdoor reading under the "Olive Tree of Books"—an open-air library inspired by Apulia.

The educational farm features donkeys, bees, chickens, pigs, and more, offering children and families interactive learning trails. Other activities include fairy-tale in the wooden tree house, creative recycling workshops, and circular economy events in collaboration with local partners. Guests can also savour olive oil produced on-site from the village's own grove.

The village is powered by 130 photovoltaic panels and solar thermal systems, uses a desalination plant for water purification, and offers filtered water at the bar to reduce plastic use. Composting, beach clean-ups, and eco-friendly packaging reflect the village's deep commitment to sustainability.

3. **The main rural local resources that form the basis of the initiative:**

RLR 1; RLR 2; RLR 3; RLR 4; RLR 5; RLR 6; RLR 7; RLR 8; RLR 9

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	✓
Bio & circular economy	✓
Bio & renewable energy	✓
Education, skills & sport	✓
Agribusiness	✓
Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	
Universal production & services	✓

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**

- Strong knowledge of sustainable technologies, innovation, and adaptation to eco-friendly tourism strategies.
- Effective financial planning and risk management are essential for this seasonal business, which requires upfront investment in staff, maintenance, and operations. Past support includes tax credits.
- Compliance with all legal and regulatory standards, including safety,

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environmental, labour, and consumer protection laws.

- The business strategy should account for seasonal demand by promoting off-season event hosting and ensuring staff are well-trained.
- Broad online visibility and strong relationships with local suppliers and the community are key to attracting both national and international tourists.

6. **Key rural stakeholders supporting the initiative:**

   The village supports and collaborates with local suppliers, service providers, and restaurants, strengthening community ties.

7. **Socio-economic barriers and challenges related to the initiative:**

   - As a seasonal business, Cala Molinella faces cash flow challenges in the off-peak months, limiting reinvestment opportunities and making it harder to recruit skilled seasonal staff.
   - Limited public transport in the Gargano region restricts mobility, especially outside the summer season, affecting accessibility for guests.
   - The area's competitive tourism market and vulnerability to external factors (economic shifts, global crises, changing travel trends) pose ongoing challenges, though Cala Molinella distinguishes itself through its sustainable tourism model.

Initiative – Kmetroverde

1. **Characteristics:**

   Location of the initiative: Foggia

   Type of stakeholder involved: Medium enterprise.

   Initiative type: Business.

   Scale of activity: Medium to large.

   Legal form: Joint-stock company (S.p.a).

   Planned implementation period: Long-term.

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2. **Description of initiative:**

In line with Sistemi Energetici's philosophy of eco-sustainability and zero waste, the company has decided to create Kmetroverde by revitalising an industrial site previously abandoned by Ferrovie dello Stato, ensuring zero new land consumption. The aim is to transform the property through industrial activities that align with the company's history, by repurposing the abandoned warehouses and buildings and restoring them to full operability.

Current ongoing projects include:

- Spazio Forma, focused on the production of components for biogas and biomethane plants.
- Spazio Lab, a laboratory and research centre.
- Spazio Vento, dedicated to the maintenance of wind turbine speed multipliers.
- Spazio Bio, a warehouse for the storage, pre-treatment, and stabilisation of organic material for the biomethane production plant.
- Spazio Ciclo, a warehouse designated for the installation of a recycling plant for plastic waste and WEEE (Waste Electrical and Electronic Equipment).
- Spazio Futuro, a warehouse for the installation of a green hydrogen production plant.

3. **The main rural local resources that form the basis of the initiative:**

RLR 1; RLR 2; RLR 3; RLR 7; RL9

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	
Bio & circular economy	✓
Bio & renewable energy	✓
Education, skills & sport	
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	
Health & care services	
Universal production & services	✓

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5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**
   - Expertise in renewable energy (biogas, biomethane, wind), circular economy, sustainability, and Agile project principles, with strong skills in data analysis, communication, and systems thinking.
   - Experience in project management, including stakeholder coordination, budgeting, and timely delivery, along with knowledge of environmental and labour regulations.
   - Competencies in machinery maintenance, manufacturing processes, and building strong partnerships with local stakeholders.

6. **Key rural stakeholders supporting the initiative:**
   - Italian and Apulia governments, investors, environmental NGOs, and sustainability-focused organisations.
   - Key stakeholders include local communities (with around 300 expected jobs), suppliers, industry partners, contractors, and research institutions.

7. **Socio-economic barriers and challenges related to the initiative:**
   - Limited availability of qualified workers in rural areas and the ongoing need to secure both public and private funding.
   - Market volatility, including raw material and energy price fluctuations, can impact renewable energy demand and circular economy practices.
   - Risks related to outdated infrastructure, rapid technological change, and potential environmental impacts depending on project implementation.

Initiative – Molino De Vita

1. **Characteristics:**

   Location of the initiative: Casalvecchio di Puglia

   Type of stakeholder involved: Small enterprise.

   Initiative type: Business.

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Scale of activity: Small to medium.

Legal form: Limited Liability Company (LLC).

Planned implementation period: Long-term.

2. **Description of initiative:**

Molino De Vita employs 45 staff members and produces 5,000 quintals of wheat daily. Known for its biologic durum wheat semolina, the company has earned numerous national and international awards, including a top 10 ranking in Apulia at the Best Value Award. Recognised as an ambassador of "Made in Italy," it blends tradition and innovation, sourcing 100% Italian wheat from its own fields and partner farms across the country to produce high-quality semolina and flours.

Molino De Vita is entirely energy self-sufficient thanks to a 1-megawatt wind turbine and photovoltaic systems, contributing clean energy to the territory. Its processing plants are located away from urban pollution, and all production processes meet certified organic and traceability standards. A Life Cycle Assessment study highlighted the company's positive environmental impact.

Pioneering in traceability, Molino De Vita was among the first in Italy to adopt both technical and territorial tracking systems. The technical traceability uses blockchain (Authentico) to securely document every production stage, whilst the territorial system—via the Localtourism.it project—connects consumers directly to the company and its origins through a QR code on packaging, promoting transparency and regional identity.

3. **The main rural local resources that form the basis of the initiative:**

RLR 1; RLR 2; RLR 3; RLR 4; RLR 6; RLR 7; RLR 8; RLR 9

4. **The development potential(s) of rural areas that the initiative utilizes:**

Development potentials:	
Tourism & recreation	
Bio & circular economy	✓
Bio & renewable energy	✓
Education, skills & sport	
Agribusiness	✓

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Cultural, historical, architectural& natural heritage preservation
Health & care services
Universal production & services

5. **Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:**
   - Expertise in sustainability, environmental impact assessments (including Life Cycle Assessment), and maintaining biological certifications.
   - Proficiency in implementing advanced technologies like blockchain for traceability and using green technologies such as renewable energy systems to reduce environmental impact.
   - Strong knowledge of industry regulations, supply chain coordination, and leadership, with a focus on process innovation while preserving traditional methods.

6. **Key rural stakeholders supporting the initiative:**
   - Main stakeholders include Localtourism.it, TasteAtlas, Biofach organic food and agriculture trade fair and pasta factory Granoro.

7. **Socio-economic barriers and challenges related to the initiative:**
   - Ensuring compliance with organic standards and food safety regulations, whilst managing investment in advanced technologies and machinery.
   - Challenges related to adverse weather conditions, recruiting and retaining skilled workers, and maintaining a steady supply of 100% Italian wheat.
   - Price pressure from cheaper wheat imports (e.g., US, Canada) and disruptions in raw material supply impacting production.

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4. Conclusion

This document has outlined a comprehensive framework for assessing the development potential of rural areas in the context of entrepreneurship and innovation with a strong emphasis on educational applications. By identifying local resources and mapping current and potential opportunities, the framework provides a robust foundation for strengthening rural economies through innovative and sustainable initiatives. The methodology and tools presented herein aim not only to support the ENGINE project's educational objectives but also to serve as a versatile resource for universities, research institutions, NGOs, local authorities, and other stakeholders engaged in rural development.

Through the application of this framework, stakeholders can gain deeper insights into the latent potential of their regions and develop targeted strategies to mobilize local resources effectively. Identifying rural resources and mapping potential for innovation and entrepreneurship can be valuable in several contexts: informing public policy development; guiding private and public investment; revitalizing declining regions; establishing rural innovation hubs and incubators; supporting environmental sustainability projects; promoting sustainable tourism; aligning education and training programs with local needs; enhancing food security and resilience; developing short value chains; and strengthening funding applications through well-documented regional profiles.

Importantly, this process also serves as a strong foundation for competency-based learning, enabling education providers to align their offerings with the actual needs of rural communities. By integrating the analysis of local resources and innovation potential into educational practice, the framework supports the creation of content that enhances students' understanding of sustainable development, rural economies, and context-driven innovation. Additionally, complementing the analysis with the identification and assessment of each region's weaknesses and threats can be valuable, as these often hinder the implementation and development of entrepreneurial initiatives.

This analysis can be used to:

- design field-based learning modules and case studies;
- adapt curricula and training programs to specific regional needs;
- strengthen collaboration between educational institutions and rural communities;
- prepare future professionals to identify, activate, and sustain local development potential.

It is important to highlight that the collaboratively developed methodology is

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essential to achieving a holistic understanding of rural potential, ensuring that diverse perspectives and local realities are fully integrated into the assessment process. However, effective implementation depends on the availability of reliable information and active stakeholder involvement. A lack of data and/or low stakeholder engagement can pose challenges to applying this methodology. In such cases, a more flexible approach tailored to local conditions may be adopted.

Ultimately, this document contributes to a broader understanding of how innovation and entrepreneurship can drive rural development, offering practical guidance for future initiatives and reinforcing the importance of context-specific approaches. Continued collaboration between academia, rural stakeholders, and external experts will be essential to ensure that the potential identified translates into meaningful, long-term impact for rural communities across Europe.

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Appendix - Tools and templates

1. Rural stakeholder database

L.p.	Name and surname / Name of institution or organization	Group of stakeholders	Address (incl. phone, e-mail)	Contact person (Name, position, phone, e-mail)	Gender	Age group (18-34; 35-49; 50-64; 65+)	Consent to processing of personal data (sent/signed)	Comments
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2. Business or social initiative description form

Please use this Business or Social Initiative Description Form during the Rural Consultation Meeting organized in your region to collect information on E&I Initiatives

Business or Social Initiative Description Form

1. Initiative characteristics:

1.1. Name of the initiative:
Example: Artisan's Corner

1.2. Location of the initiative:
Example: Name of the town/village

1.3. Type of stakeholder involved:
Example: micro-enterprise

1.4. Initiative type: (business, social, mixed)
Example: Business

1.5. Scale of activity: (small, medium, large)
Example: Small to medium (depending on the number of workshops and participants)

1.6. Legal form: (e.g., sole proprietorship, social cooperative, association)
Example: Sole proprietorship or civil partnership

1.7. Planned implementation period: (e.g., 1 year, 3 years, long-term project)
Example: Long-term (minimum 3 years)

2. Description of initiative:
(Please describe the initiative, including its scope, activities, and objectives)

Example: Artisan's Corner offers unique handicraft workshops inspired by the cultural heritage of Małopolska region. Collaborating with local artisans, it organizes regular workshops where participants can learn to create a variety of items, such as home decorations, jewellery, bags, dried flower ornaments, and culinary products. The workshops are held in picturesque rural locations, allowing participants to combine learning with relaxation and communion with nature

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3. The main rural local resources that form the basis of the initiative:
(Please indicate the main rural resources which are needed for the initiative)
Example:

- *Universal knowledge and skills: Both the owner and employees of the enterprise possess universal knowledge and skills. / The enterprise's employees have universal knowledge.*
- *Local, traditional knowledge and skills: Local artisans possess local, traditional knowledge and skills.*
- *Natural resources, particularly agricultural and forestry resources used to create handicrafts (fabrics, wood, agricultural raw materials),*
- *Intangible cultural resources - traditional recipes and production methods for local and regional products,*
- *Resources of agriculture, forestry and other typical rural activities: tools, equipment, buildings*
- *Social networks - contacts with local artisans and suppliers of raw materials.*

4. The development potential(s) of rural areas that the initiative utilizes:
(Please select the type of rural area potential that the initiative addresses)

Development potentials:	✓
Tourism & recreation	
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	✓
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	
Universal production & services	

5. Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:
(please detail the specific skills, knowledge, and competencies that are essential for the successful implementation of the initiative)

Example:
Business Planning: The ability to create a solid business plan, including market analysis, financial forecasts, marketing strategy, and operational strategy.
Marketing: Knowledge of marketing tools such as branding, promotion, direct sales, e-commerce, customer relationship building, digital marketing (the ability to

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use digital tools to promote products and build a brand), and local marketing (promoting products in the local market, building brand awareness, building relationships with the local community, building relationships with local processors, restaurants, and stores).
Finance: The ability to manage a budget, keep accounting records, and secure financing (e.g., the ability to write grant applications).
Law: Knowledge of regulations governing business activities and consumer protection.

6. Key rural stakeholders supporting the initiative:
(Please provide a list of key stakeholders whose engagement or support is crucial for the success of the initiative)

Example:
Local Artisans: These are the core of the business, providing expertise.
Local farmers, food producers and processors, other entrepreneurs operating in rural areas – provide raw materials for workshops. Other local businesses, such as hotels, restaurants, and shops, can collaborate on joint promotions and packages
Local residents can be participants in workshops
Micro-finance institutions - They can provide support through funding opportunities.

7. Socio-economic barriers and challenges related to the initiative:
(Please describe the potential challenges and obstacles that may hinder the success of the initiative)
Example: Limited Market: The potential market for handicraft workshops may be limited, especially in rural areas.
Financial constraints: Limited access to funding and credit

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3. The Rural consultation meeting summary report

ENGINE
Education for Rural
Entrepreneurship
& Innovation

Rural Consultation Meeting Summary Report

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Rural consultation meeting

Meeting organizer: [Partner Name]

Date: [Date of the Meeting]

Time: [Start Time] - [End Time]

Venue: [Venue of the Meeting] (if online – please provide the link)

Total Number of participants:

Please provide a summary of the rural consultation meeting, including an overview of the preparation, implementation, and evaluation processes.
Overall Impression: general assessment of the meeting, short description of meeting details: location, date, time, organizer

Meeting preparation: please describe the process of organizing the meeting, including the number of participants contacted and the communication channels used. What networks and contacts did you utilize? Who was involved in the meeting's preparation? Were there any organizational issues or challenges?

Meeting implementation: what methods were used to conduct the rural consultation meeting? Describe the participants' backgrounds (e.g., local residents, entrepreneurs, public authorities, academics etc.). What are your impressions of how the meeting went? How engaged were the participants? Which elements of the meeting were particularly valuable? Did you encounter any obstacles during the meeting?

Meeting evaluation (incl. feedback from the participants)

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Recommendations for future actions and unresolved issues.
Please provide a description of meeting results relating to specific discussion points:
Point 1: Comprehensiveness and accuracy of the draft map
Does the draft map comprehensively present the most important resources and potentials of rural areas in the region?
Key Findings:
Are there any key elements that have been omitted or not emphasized enough?
Key Findings:
What additional rural local resources or development potentials could be included to make the map more complete?
Key Findings:
Point 2: Expanding the knowledge base about E&I initiatives
What other local entrepreneurial and innovative initiatives could serve as inspiration or examples of best practices? Are there any other case studies that should be included on the map?
Key Findings:
What additional data or information could improve the map and make it even

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more useful?
Key Findings:

Point 3: Knowledge, skills and competencies necessary for entrepreneurial development
What knowledge, skills and competencies are required to effectively implement the identified initiatives?
Key Findings:

What knowledge, skills and competencies are lacking in the region to effectively implement the identified initiatives?
Key Findings:

List of participants

Group of stakeholders	Number of participants
inhabitants of rural areas in the region	
entrepreneurs operating in rural areas (micro-, small and medium-sized enterprises, large companies)	
farmers, food producers and processors	
representatives of local and regional governments (i.e. mayors, council members)	
community leaders (i.e. village heads)	
public agencies (i.e. local and regional development agencies, regulatory bodies)	
cooperatives, civic enterprises and community organizations and associations, Local Action Groups	

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and other NGOs	
advisory organizations (i.e. agricultural extension services)	
representatives of educational and research institutions (schools, universities, research institutions, training centres)	
representatives of financial institutions (i.e. microfinance institutions)	
representatives of different professional groups important for rural areas in the region	

4. Participant list of the Rural consultation meeting

Meeting organizer: [Partner Name]

Date: [Date of the Meeting]

Time: [Start Time] - [End Time]

Venue: [Venue of the Meeting] (if online – please provide the link)

(In the case of an online meeting please provide the report including a list of attendees, their join and leave times. You can download this report as a CSV file).

	Name	Organisation and position	E-mail	Signature
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5. Rural Development Potential Map

Contents

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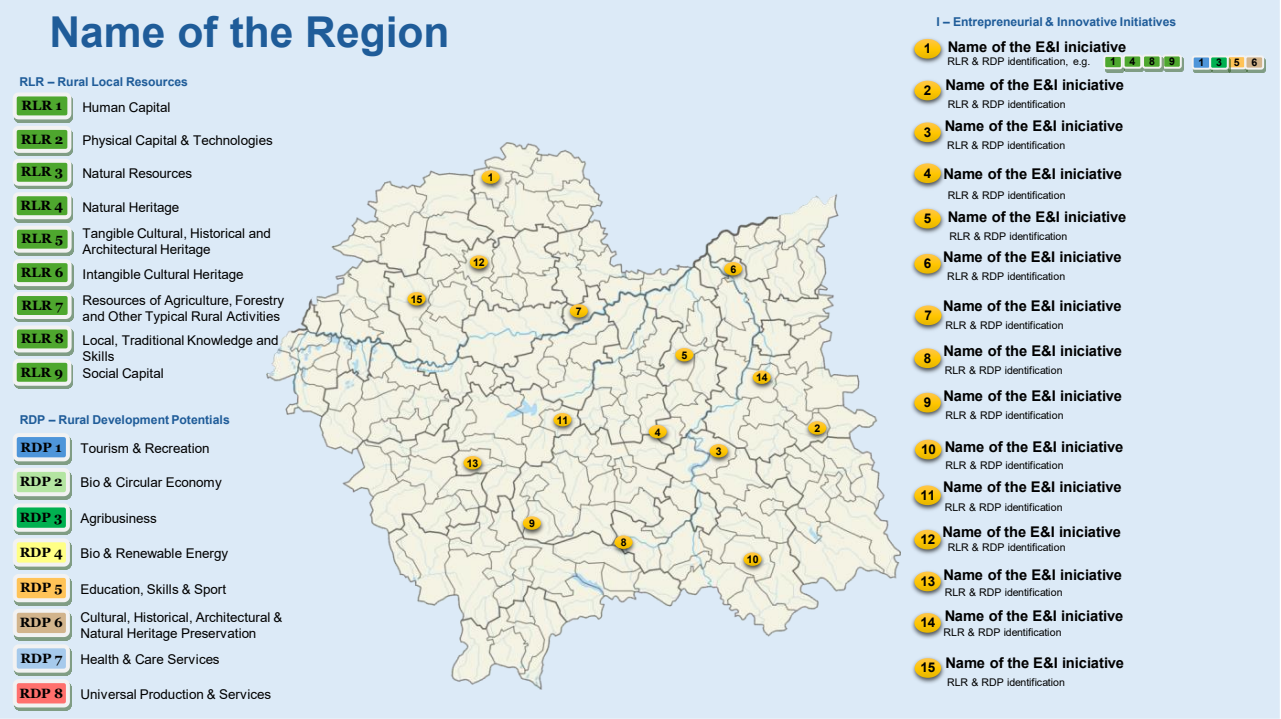
1. Socio-economic profile of the region and its rural areas

[please provide the description, including the following points:

- general description of the socio-economic profile of the region and its rural areas,
- specification of the most important local resources of the region's rural areas,
- description of the identified development potentials of the region's rural areas, including an indication of which of these potentials have been recognized as significant rural development potentials]

2. Visualization of the development potential of rural areas in the region



LEGEND
RLR 1,2,3… – Specific Group of Rural Local Resource
RDP 1,2,3… – Category of Key Rural Development Potential
I 1,2,3… - Entrepreneurial & Innovative Initiative

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3. Overview of E&I Initiatives in the region's rural areas

3.1. Initiative 1

1. Initiative characteristics:

1.1. Name of the initiative:

1.2. Location of the initiative:

1.3. Type of stakeholder involved:

1.4. Initiative type: (business, social, mixed)

1.5. Scale of activity: (small, medium, large)

1.6. Legal form: (e.g., sole proprietorship, social cooperative, association)

1.7. Planned implementation period: (e.g., 1 year, 3 years, long-term project)

2. Description of initiative:
(Please describe the initiative, including its scope, activities, and objectives)

3. The main rural local resources that form the basis of the initiative:
(Please indicate the main rural resources which are needed for the initiative)

4. The development potential(s) of rural areas that the initiative utilizes:
(Please select the type of rural area potential that the initiative addresses)

Development potentials:	✓
Tourism & recreation	
Bio & circular economy	
Bio & renewable energy	
Education, skills & sport	✓
Agribusiness	
Cultural, historical, architectural& natural heritage preservation	✓
Health & care services	
Universal production & services	

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5. Entrepreneurial and innovative knowledge, skills, and competencies required for the implementation of the initiative:
(please detail the specific skills, knowledge, and competencies that are essential for the successful implementation of the initiative)

6. Key rural stakeholders supporting the initiative:
(Please provide a list of key stakeholders whose engagement or support is crucial for the success of the initiative)

7. Socio-economic barriers and challenges related to the initiative:
(Please describe the potential challenges and obstacles that may hinder the success of the initiative)

3.2. Initiative 2

3.3. Initiative 3

3.4. Initiative 4

3.5. Initiative 5

3.6. Initiative 6

3.7. Initiative 7

3.8. Initiative 8

3.9. Initiative 9

3.10. Initiative10

3.11. Initiative 11

3.12. Initiative 12

3.13. Initiative 13

3.14. Initiative 14

3.15. Initiative 15

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