



PROJECT H2020

LIVERUR

Living Lab Research Concept in Rural Areas

DELIVERABLE 2.4:

Report on the creation of the Benchmark Study



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773757.



LIVERUR - 773757

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PROJECT TITLE	Living Lab Research Concept in Rural Areas
PROJECT ACRONYM	LIVERUR
GRANT AGREEMENT NUMBER	773757
CALL AND TOPIC	Call H2020-RUR-2017-2
FUNDING	Research and Innovation Action (RIA)
PROJECT DATES	1st of May 2018 - 30th of April 2021
COORDINATOR BENEFICIARY	Fundación Universitaria San Antonio (UCAM)
WEBSITE	www.liverur.eu

DELIVERABLE NUMBER	D2.4
DELIVERABLE TITLE	Report on the creation of the Benchmark Study
WORK PACKAGE	WP2: Conceptualization of existing rural Business Models in EU and regional areas
LEAD PARTNER	CEA
AUTHOR(S)	CEA
TYPE	Report
DISSEMINATION LEVEL	Public
DELIVERY DATE	30/04/2019
LAST MODIFIED DATE	30/03/2020

HISTORY OF CHANGES		
Date	Content	Author
05/04/2019	First report for peer review	Françoise Cadiou CEA
08/04/2019	Peer review	Jelena Mazaj CESIE
08/04/2019	Peer review	Klaus Wagner AWI
08/04/2019	Peer review	Heidelinde Grueneis AWI
09/04/2019	Peer review	Sigrird Egartner AWI
12/04/2019	Peer review	Laura Martínez García
30/03/2020	Midterm revision request – WPL review	Françoise Cadiou CEA
06/05/2020	Doc. design, grammar and spelling changes	Communication Team

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EXECUTIVE SUMMARY

This WP2 final task is depicted by the creation of the first **LIVERUR** milestone: the benchmarking study on rural traditional business models in Europe. **“This study will be a fruitful exercise for entrepreneurs and entrepreneurs to-be in rural context that will utilize this study in order to improve and renovate their business activities.”** (Source: **LIVERUR** Grant Agreement).

Following the existing business model analysis of the rural area in EU and neighbouring countries (T2.1), the first benchmark criteria identification to compare the traditional value chain approach (T2.2), the SWOT analysis on the 13 regions taking into account the specificities of each territories (T3.3), this study compares the pilot territories (with a NUTS 2 scale) regarding a set of 20 criteria, addressable and fully described (see fig 10).

The criteria used to do this comparison fit into the categories defined in T2.2, with 2 circular economy criteria that have been added regarding **LIVERUR** issues:

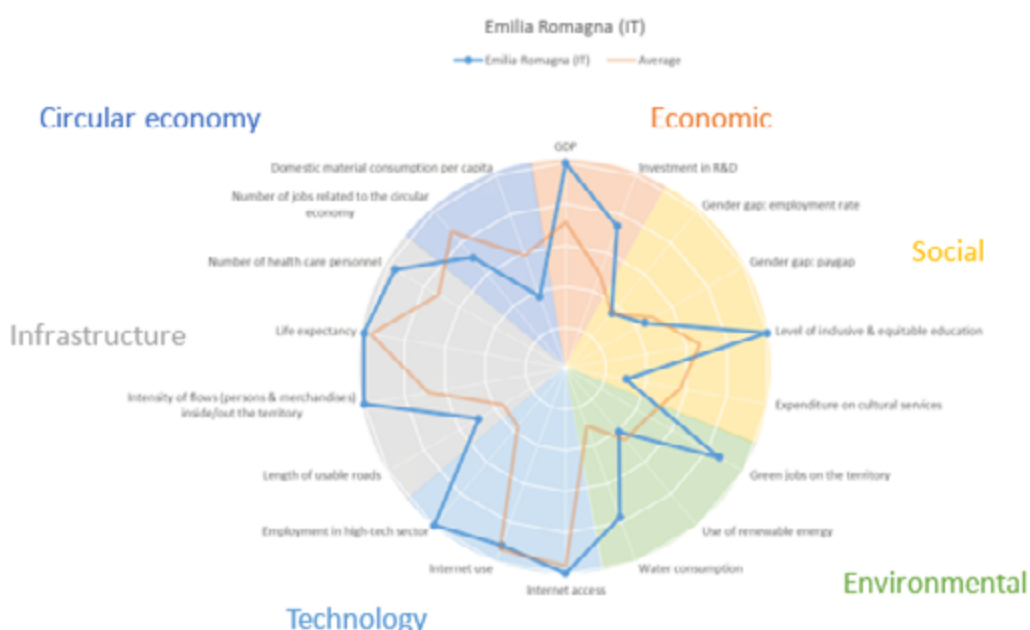
- Economical
- Social
- Environmental

- Technological/Innovation
- Infrastructure
- Circular Economy

Visual graphs give a profile for each of the 13 regions, highlighting the “strong” points and “weaknesses” regarding an average for the **LIVERUR** global territory (in the limit of quite significant standard deviation on several criteria) and regarding the other profiles.

Thus, this study shows the specificities of each region, but also the benefits that each region may take from the **LIVERUR** global territory to identify, exchange best practices in other countries and implement changes to improve the weaknesses.

Example of a region profile:



Thanks to the great involvement of the partners, the whole WP2 report gives a relevant diagnostic of the rural territories situation, highlighting the diversity, specificities of each region, in term of traditional business models, strengths and weaknesses, which may be dynamic levers for change to a suitable business model connected to the living lab concept.

It also provides a reliable and consistent database with:

- 256 projects/initiatives,
- 30 cases representative of 6 typologies of business models,
- 13 swots coming from representative external stakeholders for each region,
- 20 benchmark criteria with completed data for each region (using mostly Eurostat source at NUTS 2 level),
- 13 profiling graphs of the regions, as a simple visualisation of the situation regarding the benchmark criteria.

All these data base should foster the sharing of best practices inside **LIVERUR** community, the development of cooperation and transition to innovative circular living lab business models.

Their integration in the RAIN entrepreneurial digital tool should allow the stakeholders to use it to improve and renovate their business activities. This will be managed by WP6 “Development of the regional circular living lab tool for entrepreneurs in rural areas”.

Finally, as some overall conclusions of the WP2 existing business models, SWOT analysis and benchmark study, a specific attention should be given to the following points, giving orientation for the next steps:

The global **LIVERUR** area covers a diversity of 6 types of business models described on CANVAS models:

- Conventional farming (annex 1)
- Diversify farming (annex 2)
- Food and drink industry (annex 3)
- Rural SMEs (out of agri-agro sector) (annex 4)
- Rural Tourism (annex 5)
- Rural Services (annex 6)

The two existing mainstream value chain are Conventional Farming and Food & Drink industries (50% of the 256 projects/initiatives gathered in the database, and 7 of the 12 **LIVERUR** regions involved in the SWOT analysis), with key challenges to face in term of key resources, position in the value chain, partnerships and revenue streams. Relevant examples include:

- For Food & Drink Industry : food safety and healthiness increasing requirement, environmental responsibility, local channel and circular economy development covering the global industrial chain (raw material, traceability, environmental footprint reduction, logistic optimization ...), new customer expectations (lifestyle choices vs mass market, pleasure, health ...).
- For Conventional Farming: profitability of the farms, adaptation to changing environment, climate and customer expectations, direct sale to consumer, e commerce development, cooperative structure to share equipment and lower costs, valuing ecosystems services provided by agriculture.

Beside these mainstream business models, **LIVERUR** covers also innovative trends such as development of services, social and business support (38% of **LIVERUR** projects), showing the great dynamic of rural areas in development of activities, and opportunities for the future : growing demand from touristic sector and for local/traditional products, attractiveness for entrepreneurs , cooperation between sectors and actors traditionally partitioned (including citizen involvement), business digitalization...

Thus, regions that are mainly positioned on “out of mainstream” business model such as diversified farming (CZ, Emilie Romagna), rural SMEs (Murcia, Latvia), rural tourism (Malta) have local resources and strengths (biodiversity, tourism experience, craftsmen and artisanal workers...) to benefit from these opportunities.

Nevertheless, this macro picture shows also that big challenges still have to be faced to move towards new business models that are both socially inclusive and economically viable.

This is confirmed at the “micro level”, through the SWOT analysis, which highlights as weaknesses profitability of the farms, dependence on EU findings, lack of specific skills (ICT, e commerce ...), low investment in renewable energy and green transportation, and as a major threat the climatic change with loss of resources.

We may also observe from the benchmark study a large disparity of the level of economic, social, environmental, technological criteria:

- On the global **LIVERUR** territory, the lowest average evaluation criteria are social (gender gap), environmental (water consumption, use of renewable energy), infrastructures (usable roads) and

employment in high-tech sector. The highest average evaluation are for life expectancy, internet use and access.

- At the regional levels, some territories have a significant positive gap regarding the average. For example :
 - Manisa (TR) and Malta on the gender gap (employment rate)
 - Jihozapad (CZ) on the level of inclusive and equitable education
 - Malta on water consumption
 - Umbria (IT), Brittany and PdL (Fr) on the green jobs
 - Burgenland (AT) on the use of renewable energy
 - Murcia (ES) in road infrastructures
 - Western Slovenia (SI) in R&D investment

So, in the transition to “circular Living Lab” model, were both social, economic, environmental and technological dimensions should be positively impacted, we recommend to rely on these existing strengths inside the **LIVERUR** territories to balance weaknesses and drive changes.

INTRODUCTION

The LIVERUR project

The short term objective of **LIVERUR** is to improve knowledge of business models growing in rural areas, including an understanding of their potential.

Work package number: WP2

Work package title: Conceptualization of existing business models in EU and regional areas.

“The objective of this WP is to iterate a complete and extensive analysis of existing business models in European rural areas with specific attention to the following sectors:

- fruits and vegetal products (Latvia, Turkey),
- dairy products (Malta, Azores),
- cultivation from arid territories (Spain, South of France),
- agritourism and specific regional production (Czech Republic),
- organic farming (Slovenia),
- handcraft (Tunisia),
- agribusiness favouring social inclusion / providing social services (Italy),

- smart rural sector (Austria),
- livestock (West of France).

Capitalizing upon past European projects on rural economic development and rural jobs, this WP will create a benchmarking study where **10 traditional value-chain approaches** (such as mass production, development of prices, optimising the cost structure of the enterprises, rationalisation, etc..) will be identified and compared taking into account the circular economy principles. The number of 10 will guarantee a highly diversified analysis without losing sight of the target aim, which is creating a benchmarking study between rural living lab techniques and the most currently utilized business models and value – chain approaches.

The aim is to identify, describe and benchmark different business models in terms of starting conditions, obstacle faced, enabling factors, financing mechanisms, generation of added value, jobs and other potential environmental and social benefits, gender issues, attractiveness to young workers, and the distribution of the value generated.

Specific objectives:

- Creation of **an extensive analysis of the existing business models in rural territories** in order to foster collection and capitalization of existing knowledge
- Development of **a comprehensive approach to rural business models analysis** which will identify relevant benchmarking criteria and suggest innovative comparison strategies”.

TASK 2.4: Creation of the benchmark study

Consortium role: all the partners will equally contribute to the milestone assembly and creation.

WP2 final task is depicted by the creation of the first LIVERUR milestone: the benchmarking study on rural traditional business models in Europe. **“This study will be a fruitful exercise for entrepreneurs and entrepreneurs to-be in rural context that will utilize this study in order to improve and renovate their business activities”** (Source: LIVERUR Grant Agreement).

1

WHAT HAS BEEN FOUND DURING WP2

1.1 Report of existing Business Model

Task T2.1 consisted in reviewing and analysing the existing business models that are operating at the European and regional/local level, in rural areas, providing a framework and basic state of the art for the benchmark study, and further steps of **LIVERUR**.

The consortium proceeded in three steps to reach the objectives of Task T2.1:

- Desk research to get a **general overview of the rural area** in EU and neighbouring countries (inside and outside the consortium area) and of the main issues to address.
- **Data collection from partners through an online questionnaire and database of 256 projects/initiatives**, giving a much more micro-picture of the rural areas panorama, and highlights specificities and main challenges among EU countries, which should be addressed in **LIVERUR** further steps.
- **Conceptualization of six existing business models** types and seven innovative trends, through the analysis of the macro and micro-picture. Finally, the 256 cases of the database were split into these categories, and around 30 cases from the database were used to exemplify the conceptualization.

Results of the conceptualisation: business model analysis

Task T2.1 conceptualized six **existing business model types** representative of rural areas (for each business model, see corresponding business model canvas in annex):

1. **Conventional farm** or mainstream farm: there are three typical kinds of conventional farm holdings through Europe
 - a. Subsistence households where more than half of production is self-consumed. The part of production that is not self-consumed is mainly sell directly to consumers (on the farm, on markets ...).
 - b. Farm household that sell their products to industries, cooperatives or dealers. After the first and second transformation, products are sold to wholesalers or medium and large retailers. This is the predominant business model for large and very large farms. The labour force is composed of family members (either sole holders or other family members) and non-family-members.
 - c. The third model is a mix between direct sales and long value chain.
2. **Diversified agriculture**: many farm holdings tend to diversify their activity and source of revenue with the willingness to ensure more added value. The new activity can be:
 - Agritourism: beside the agricultural production, farmers propose accommodation (bed and breakfast, rural lodgings, farm campsite), catering (evening meals), leisure activities (pedagogical farms, sports, horse-riding, farm visits).
 - Processing of farm products: primary agricultural products are processed on the holding (meat processing, cheese, yoghurt or jam making, olive oil, cider, fruit juice, etc.).
 - Energy production: farmers can produce renewable energy for their own consumption or for sale on the market (photovoltaic panels on the roofs, windmills, biogas production from organic waste or crop residue).
 - Contractual work: covers services provided outside of the farm using the means of the farm. They can be related to agriculture (ploughing, harvesting) or not (haulage work, maintenance of the landscape, clearing snow). The work can be carried out for another farmer, a local community or a company.

3. **Food and beverages industry:** many industries and industrial zones still are not located in urban nor intermediate areas but in predominantly rural territories. This is especially true of the food and drink industry, which primarily deals with the transformation of rural primary productions. This includes low transformation processes such as cleaning and packaging fresh products, as well as far more complex, energy consuming or workforce intensive processes. Depending on the indicators, main subsectors are meat industries, drink industries, bakery and farinaceous products, oils and fats, grain mill, starch products...
4. **Rural SMEs and craft business:** this business model covers other activities contributing to rural economy than agricultural ones (construction, business services, accommodation & food, manufacturing, etc.). If not in the heart of **LIVERUR** target, It's important to consider it as a huge potential to boost rural circular economy approach.
5. **Rural tourism:** tourism is one of the three major sectors in rural areas (with agriculture & forestry) and is particularly important in areas characterised as coastal, upland/mountainous, and where there is a form of protective land use designation in place. Indeed, tourism has the potential to play a significant role in the economic aspirations of many EU regions. Infrastructure that is created for tourism purposes contributes to local and regional development, while jobs that are created or maintained can help counteract industrial or rural decline.
6. **Rural services to inhabitants:** the activities covered are all services to inhabitants (citizens as well as economic actors) of rural areas, in the fields of education, sport, culture, leisure, information, health, mobility, transport, logistic, infrastructures (energy, water, communications, roads).

1.2 Report on benchmarking criteria creation

Task T2.2 consisted in the systemisation of benchmarking criteria in order to compare traditional value – chain approaches. The objective of this task was to identify criteria of analysis and the weights attached to these criteria in order to create a benchmarking scale.

Three steps were followed:

1. Revision of literature, projects and initiatives aiming at identifying relevant criteria for the evaluation of the rural business models and development of the tool for data collection from the internal and external stakeholders.
2. Collection of feedback from partners regarding the proposed tool and criteria.
3. After receiving a first review of the criteria, all the comments were summarised, guidelines on how to use the tool were prepared and disseminated between the consortium members.

Piloting partners were asked to contact their stakeholders, who are implementing the analysed business models in T2.1. and to collect information about criteria importance to their business models, in this way, proposing a weigh for each indicator.

The output for this task is this table of criteria the consortium should attach the most important weights to (all criteria considered during this task can be found in annex):

Most relevant indicators	
Economics	<ul style="list-style-type: none"> ● Investments in innovation and research; ● Relationship with clients at national level; ● Relationship with clients at local level; ● Relationship with suppliers at local level; ● Relationship with clients at regional level.
Environmental	<ul style="list-style-type: none"> ● Green jobs in the local economy; ● Use of raw materials; ● Use of renewable energy; ● Energy efficiency and consumption reduction - Number of internal policies for staff, targeting energy consumption reduction; ● Water consumption reduction - Number of internal policies for staff, targeting water consumption reduction.
Social	<ul style="list-style-type: none"> ● Recruitment of personnel in relation to the community where the company operates; ● Relations with the Public Administration and Territorial Community - Total public contributions received in EUR; ● Gender equality - Percentage of women in organization; ● Gender equality - Percentage of men in organization; ● Gender equality - Female wage rate (average).
Innovation	<ul style="list-style-type: none"> ● Number of improved products/services - Total number; ● Lifetime of an innovative product/services - (average duration); ● Number of products/services launched - (in the last years).
Technology	<ul style="list-style-type: none"> ● Integration of Digital Technology; ● Digital performance - use of internet services; ● Digital performance – Business digitization - Percentage of online marketing activities (using social media, website, etc.); ● Digital performance – Business digitization - Percentage of e-invoices.
Infrastructure	<ul style="list-style-type: none"> ● Contribution to newly developed transport services; ● Logistics - Percentage of goods exports (regional) (production output).

Figure 1. Result of T2.2 - Most relevant indicators for the benchmark study. Source: D2.3.

1.3 SWOT analysis

Task T2.3 consisted in identifying the weaknesses and challenges of the conceptualized business models. This task was crucial in order to depict the potential for new business strategies in rural context and was specifically developed in order to overcome structural and conceptual challenges of existing models when it comes to build and picture a totally new value creation mechanism.

As so, the SWOT analysis was implemented to provide in-depth findings and to develop appropriate strategies. For this, internal and external environments were studied and a list of strengths, weaknesses, opportunities and threats was developed and finalised by the partnership. Such findings highlight the future directions, which should be taken into account, for the elaboration and co-creation of appropriate strategies for rural territories in partner countries.

The steps followed were:

1. This task was based on the analysis of the regions, which project partners are representing. All the partners were asked to get an overview about the research results on existing rural business models in partner countries from D2.1.
2. After this, all the Partners had to classify their region for one of the mentioned typologies (based on the results of the T2.1). Based on their knowledge about the region the most representative existing business model for the region was selected for further analysis.
3. To implement the task, the Consortium members had to select and to contact one external regional stakeholder aiming to fill in the SWOT for the one selected existing business model. The external stakeholder represents local body/regional authority, etc., who can provide relevant data for the region for the most representative typology. Tool for SWOT analysis and list of primary questions was proposed.
4. Finally, the provided SWOTs were mapped based on the business model presented. Overview of internal (strengths and weaknesses) and external (threats and opportunities) factors for the business models were summarised looking for similarities and differences between them.

The outputs from this task are:

- A main business model corresponding to each region (see Figure 2)

Partner	Country	NUTS2 Region	Main business model
UHLAVA	Czech Republic	Pošumaví	Diversified farming
UL	Slovenia	Western Slovenia Eastern Slovenia	Food & Drink Industry
ADRI & UCAM	Spain	Murcia	Rural SMEs
TRA	Malta	Malta	Rural tourism
ZEKA	Turkey	Manisa	Food & Drink Industry
SOG & UCT	Italy	Umbria	Food & Drink Industry
ZSA	Latvia	Latvia	Rural SMEs
RMB	Austria	Burgenland	Food & Drink Industry
CRAPDL & CEA	France	Pays de la Loire	Conventional Farming
CRAB & CEA	France	Bretagne	Conventional Farming
E35	Italy	Emilia Romagna	Diversified Farming
FRCT	Portugal	Azores	Conventional Farming

Figure 2. Main business model corresponding to each region. Source: D2.3 and updated during T2.4.

- A SWOT analysis for each business model, taking into account the specificities of each territory. Following Figures 3 to 7 summarise for each business model the general (common to all territories) and specific strengths and weaknesses, opportunities and threats.

Conventional Farming	
Strength	Weakness
<p>General</p> <ul style="list-style-type: none"> - source of growth for the area, increasing market shares and the rate of employment, - the high quality of the local food is prioritised - investments in new and modern equipment are considered important as well as the presence of infrastructures that support innovation <p>Specific</p> <ul style="list-style-type: none"> - funding opportunities from European programs - thanks to initiatives of public authorities and relevant stakeholders, local actors in some regions have the possibility to gain know-how from external sources 	<p>General</p> <ul style="list-style-type: none"> - high costs of production - profitability of the farms - rural areas are often difficult to reach, and they lack ICT skills and access to internet connection <p>Specific</p> <ul style="list-style-type: none"> - dependence on funding opportunities from European programs - in some regions, local producers lack access to specialized trainings - some regions experience gender inequality among farmers and workers in rural businesses
Opportunities	Threats
<p>General</p> <ul style="list-style-type: none"> - exploitation of technologies and renewable energies <p>Specific</p> <ul style="list-style-type: none"> - funding opportunities from European programs 	<p>General</p> <ul style="list-style-type: none"> - the economic crisis - the increment of unemployment rate - the meteorological instability - the changes in consumption habits at the international level - the competition in the global market <p>Specific</p> <ul style="list-style-type: none"> - some region suffer from oscillation of cohesion policies and European funds - some report low national funds allocated for innovation and rural areas

Figure 3. SWOT for conventional farming. Source: deliverable D2.3.

Diversified Farming	
Strength	Weakness
<p>General</p> <ul style="list-style-type: none"> - the market of local products is growing - environmentally friendly activities are implemented (use of renewable sources of energy, reduction of land consumption, etc.) - IT services are integral part of the production, especially ecommerce infrastructure are applied in the business - integration of new techniques and production technologies. 	<p>General</p> <ul style="list-style-type: none"> - low skilled workers (a need of continuous training for unskilled people) - lack of population in rural areas - public investments are located more in urban areas than in rural areas - lower access to internet connection than urban areas - poor and old transport infrastructures hinder the communication among municipalities - low support for innovation (limited by strict and unpredictable rules and bureaucracy, by the availability of funding to support innovative ideas, by the age of the business managers)

<p>Specific</p> <ul style="list-style-type: none"> - for regions with high employment of disadvantaged communities, frequent staff turnover (disabled people, drug users, usually remains for limited periods, according to the reintegration plans) 	<p>Specific</p> <ul style="list-style-type: none"> - lack of replacement for the livestock farm due to seniority of workers
<p>Opportunities</p>	<p>Threats</p>
<p>General</p> <ul style="list-style-type: none"> - importance is given to diversification in the production system - high opportunities exist in the local/traditional production (growing demand of products and services from the nature, locally produced) - growing demand from touristic sector - involvement of citizens in creativity workshops for public/specialized workshops and transfers of good practices for entrepreneurs - digitalization and innovation are prioritized, especially in rural areas <p>Specific</p> <ul style="list-style-type: none"> - sharing local and regional experience through local community schools and courses - export and international ties, with youngsters, who show a rising interest in agriculture - support the cohesion of the local community by generating employment and income 	<p>General</p> <ul style="list-style-type: none"> - eventual natural disasters or drastic weather changes - global warming - lower development of services and infrastructures in rural areas - loss of natural resources due to natural disasters - low investments in renewable energies - aging population - loss of workforce <p>Specific</p> <ul style="list-style-type: none"> - the growing bureaucratic load prevents businesses from growth - poor flexibility of the tax/funding system - low interest of entrepreneurs from the agricultural-sector towards the international dimension - resistance towards innovation and digitalization (from regional policies, from older generations of producers or because of the dependency of public funds related to agriculture)

Figure 4. SWOT for diversified farming. Source: deliverable D2.3.

Food & Drink Industry	
Strength	Weakness
<p>General</p> <ul style="list-style-type: none"> - EU and regional funding promoting the use of renewable energies and zero-land consumption strategies - direct marketing and good relations with customers - very fast-growing market (attract consumers and tourists) - networking and self-organising is a way to solve management and logistical aspects (associative model) - growing presence of young entrepreneurs and farmers in rural areas - attention to the inclusion of groups usually excluded from society 	<p>General</p> <ul style="list-style-type: none"> - reluctance towards innovation - poor immediate regional funds available - shortage of capital and lack of information on access to finance and funds - insufficient public transportation and bad road conditions in rural areas - lack of e-commerce activities and of human resources in ICT - lack of green transportation initiatives

<ul style="list-style-type: none"> - investments in improved water management in regions with a long historical tradition in the saving and use of water. <p>Specific</p> <ul style="list-style-type: none"> - lot of technological transformations in last 20 years - significant investments in new production technologies 	<p>Specific</p> <ul style="list-style-type: none"> - excessive monocultures - weak networking and cooperation - depopulation of country sides - lack of water resources in the summer - lack of awareness on anti-air pollution and water management and of innovation on water management - lack of practices on renewable energy
<p style="text-align: center;">Opportunities</p> <p>General</p> <ul style="list-style-type: none"> - promotion and increase of cultivation techniques that are more respectful for the environment, like organic agriculture - strong formal education at regional level on agricultural and agro-food sectors - use the Support of the Common Agricultural Policy, its various rural development measures and other European policies, through the aid programs for agriculture - raising awareness to inform society about the characteristics of a product of excellence (through certificates, etc.) - business digitalisation: web market, e-commerce, web tourist's information, access to apps, full access to basic ICT <p>Specific</p> <ul style="list-style-type: none"> - In some regions, youngsters are increasingly interested in this sector thanks to culinary TV formats 	<p style="text-align: center;">Threats</p> <p>General</p> <ul style="list-style-type: none"> - the economic crisis - the increment of unemployment rate - the meteorological instability - the changes in consumption habits at the international level - the competition in the global market <p>Specific</p> <ul style="list-style-type: none"> - some region suffer from oscillation of cohesion policies and European funds - some report low national funds allocated for innovation and rural areas

Figure 5. SWOT for the food and drink industry. Source: deliverable D2.3.

Rural SMEs and craft business	
Strength	Weakness
<p>General</p> <ul style="list-style-type: none"> - increasing presence of local entrepreneurship on the territories - interest in implementing environment protection activities as well as strong partnerships between the public administration and the territorial community - openness to IT solutions (increased use of internet services) 	<p>General</p> <ul style="list-style-type: none"> - insufficient level of awareness about waste management and circular economy - lack of skilled workers in rural areas, able to attract potential clients at EU level, which leads to obsolete business models - IT technologies not widespread due to the lack of financing - road infrastructure are still to be improved

Specific	Specific - lack of financial resources to invest in the business model and in R&D for rural SMEs - lack of innovative approach and business capacities
<p style="text-align: center;">Opportunities</p> <p>General</p> <ul style="list-style-type: none"> - available public funds to invest in innovation and research - existence of financing opportunities to improve energy efficiency - trainings to improve entrepreneurial skills - access to the Business Incubators for innovation in SMEs <p>Specific</p> <ul style="list-style-type: none"> - funding 	<p style="text-align: center;">Threats</p> <p>General</p> <ul style="list-style-type: none"> - difficulties in meeting the environmental requirements - migration of people from the rural areas to the cities looking for more job opportunities <p>Specific</p> <ul style="list-style-type: none"> - vulnerability of the local economy - existence of regional policies to favour woman employability in the territory - difficult to follow the technological revolution because of its own nature (it is difficult to continuously and quickly renovate in IT) - lack of regional support to able rural SMEs to implement innovative approaches - bureaucracy and the lack of support for start-ups in using the available national/ international funding

Figure 5. SWOT for rural SMEs and craft business. Source: deliverable D2.3.

Rural tourism*	
<p style="text-align: center;">Strength</p> <p>Specific</p> <ul style="list-style-type: none"> - high share of multiple-visit tourists - high quantity of craftsmen and artisanal workers - good climate conditions, rich biodiversity and attractive geo-physical characteristics - strong networks of actors - skilled workforce - high innovation capability and high ICT penetration rate 	<p style="text-align: center;">Weakness</p> <p>Specific</p> <ul style="list-style-type: none"> - lack of economy of scale - high input cost for businesses - limited infrastructure capacity and feasibility - cultural/ecological sites needing an upgrade - lack of funds for rural development - use of technology limited by age of farmers
<p style="text-align: center;">Opportunities</p> <p>Specific</p> <ul style="list-style-type: none"> - create enterprise clusters - shift towards low-carbon methods - Promote active and healthy ageing - Large variety of digitalisation in eco-tourism - Improve the supply of renewable energy 	<p style="text-align: center;">Threats</p> <p>Specific</p> <ul style="list-style-type: none"> - shifts in the global and national economy - severe changes in weather patterns and sea conditions - introduction of pests and diseases - decrease in birth rates and working population - limited regional policy to support technological development due to bureaucracy - increasing demand for water supply

Figure 7. SWOT for rural tourism. Source: deliverable D2.3.

*only one SWOT representing this type of rural business model was collected, therefore the data is considered as specific as no similarities of differences can be evidenced with other examples.

Rural services to inhabitants	
Strength	Weakness
<p>General</p> <ul style="list-style-type: none"> - cooperation is important to provide SMEs with qualifying measures and efficient investments - working towards relationships inside the region <p>Specific</p> <ul style="list-style-type: none"> - great strength in investments for green economy 	<p>General</p> <ul style="list-style-type: none"> - difficult access to complex and expensive technologies for farmers (metanation, etc.) - lack of coordination of different services <p>Specific</p> <ul style="list-style-type: none"> - complicated regulations that slow down environmental-friendly projects
Opportunities	Threats
<p>General</p> <ul style="list-style-type: none"> - increase of territory attractiveness, give youth the “desirability to stay - development of services for ageing people, - agriculture production needs to have a good image - capitalise the creativity of citizen - cooperation with restaurants, spas, hotels, nature parks, ... <p>Specific</p> <ul style="list-style-type: none"> - keeping traditional knowledge 	<p>General</p> <ul style="list-style-type: none"> - difficulties in the infrastructure system - difficult accessibility using public and private transportation <p>Specific</p> <ul style="list-style-type: none"> - need for fossil energies for the commuters - too many short-term initiatives that can be confusing for the customers (brands, labels, etc.)

Figure 8. SWOT for rural services to inhabitants. Source: deliverable D2.3.

2 METHODOLOGY FOR THE BENCHMARK STUDY

2.1 Global steps implemented

The objective of this task is the realisation of a **benchmark study**. In order to provide a **global picture of the rural traditional business models in Europe**, this study compares the pilot territories (with a NUTS 2 scale) regarding a set of criteria that have been defined in the task. The criteria used to do this comparison fit into the categories defined in T2.2:

- Economical
- Social
- Environmental
- Technological/Innovation
- Infrastructure

One category was added after discussion with the WPL:

- Circular Economy

Once the criteria were defined and approved by the consortium, partners from pilot zones provided the data from their territory. The CEA then analysed this data and compiled the analysis into this benchmark study.

The final deliverable is meant to be used by entrepreneurs and entrepreneurs to-be to improve and renovate their business activities. Therefore, this task “benchmark study, is closely linked to the following steps and WP of **LIVERUR**:

- WP3 : extension of the benchmark criteria to Rural Circular Economy
- WP4 : use of the benchmark profiling (cf graphs §III.2) to identify the suitable profile connected to living lab concept
- WP6: integration in the RAIN Platform, providing territories and RAIN users an “entrepreneurial benchmark tool” to understand their situation compared to other territories, and identify the counterpart territories they could take as example and with who they can discuss.

2.2 Benchmark methodology and steps

Benchmarking is the practice of comparing business processes and performance metrics to industry bests and best practices from other companies. Dimensions typically measured are quality, time and cost.

Benchmarking is used to measure performance using a specific indicator (in industry typically: cost per unit of measure, productivity per unit of measure) resulting in a metric of performance that is then compared to others.

This process is used in management, in which organizations evaluate various aspects of their processes in relation to best practice companies' processes, usually within a peer group defined for the purposes of comparison. This then allows organizations to develop plans on how to make improvements or adapt specific best practices, usually with the aim of increasing some aspect of performance. Benchmarking can be used as a one-off event, but is often treated as a continuous process in which organizations continually seek to improve their practices.

Here the objective is to compare pilot regions to one another regarding a given set of criteria, and taking into account the dominant business model attached, to identify the best practices and weaknesses in order for everyone to be able to know what they can change to improve.

The steps followed during the drafting of the benchmark study are adapted from *A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry* (2010). In this methodology, eight steps are described, but in this case, as the objective is peer comparison (a level 2 benchmarking exercise), only steps 1 to 4 will be needed. (Ref *A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry*).

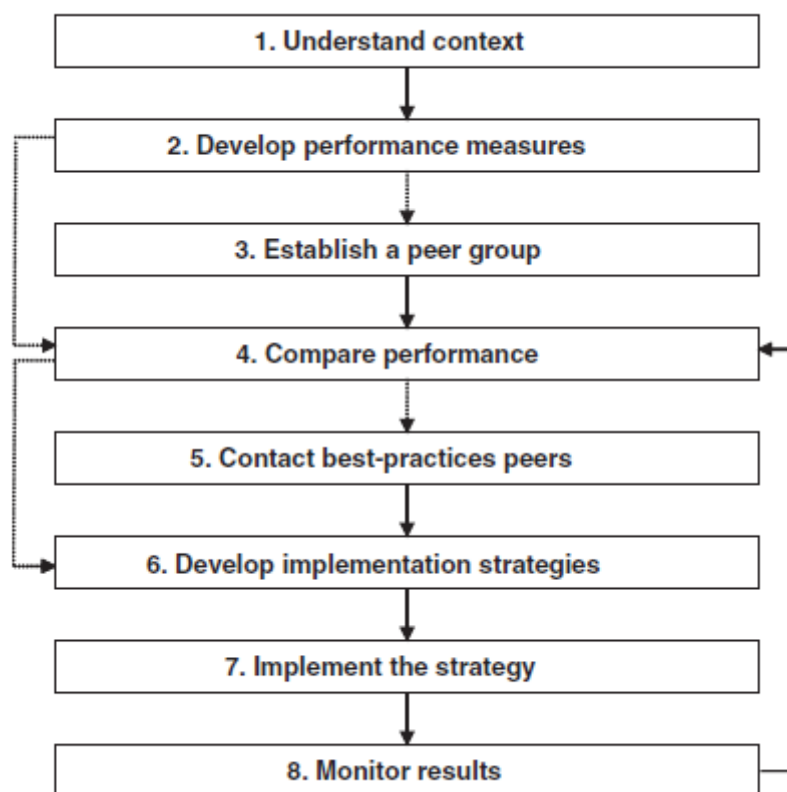


Figure 9. Benchmarking steps. Source: *A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry - 2010*.

Step 1: Understand the context of the benchmarking exercise

This first step of the process is to define the goal of the benchmarking exercise in order to determine the kind and amount of data needed. Here the objective is to conduct a one-time peer comparison; therefore, this is a level 2 benchmarking exercise.

Step 2: Develop performance measures

The performance measures used in a peer comparison depend on the performance question asked. In this case, the objective is to qualify the pilot zones, therefore the study will focus on business model and social/environmental/economical/technological impacts.

As each performance question is unique, there are no standard set of measures to use. Therefore, the set of measures should be developed specifically for each benchmarking exercise.

LIVERUR benchmark criteria were originally sourced from D2.2 (see I.2. Report) and completed with the early draft of criteria from T4.1. The first list obtained was sent to work package leaders for feedback and then improved.

The table below gives the final list of criteria.

Category	Type of criteria	Criteria	Indicator	Unit
Economical	Quantitative	Gross Domestic Product	GDP/capita	PPS
	Quantitative	Investment in innovation and research	% of GDP	%
Social	Quantitative	Gender equality: difference between men and women employment rate	Gender gap for the employment rate	%
	Quantitative	Gender equality: gender pay gap	Average gross hourly earnings for male paid employees - female paid employees, as a percentage of average gross hourly earnings of male paid employees	%
	Quantitative	Do the activities of the territory foster inclusive and equitable quality education and promote lifelong learning opportunities?	no / moderate efforts / very important issue within the territory	-
	Quantitative	Are there specific programs targeting the social inclusion of disadvantaged* groups	yes / no	-
	Quantitative	Expenditure on cultural services	% of GDP	%
Environmental	Quantitative	Green jobs on the territory	Percentage of green jobs on the territory (Number FTE/ total FTE of region)	%
	Quantitative	Use of renewable energy	Percentage of renewable energy (/total energy used)	%
	Quantitative	Water consumption	Water consumption/hab	million cubic meter / capita
Technological / Innovation	Quantitative	Internet access	Percentage of households with internet access	%
	Quantitative	Internet access	Regular use of the internet, (% of persons who accessed the internet on average at least once a week)	%
	Quantitative	ICT	Employment in high-tech sector (% of total employment)	%

Infrastructure	Quantitative	Length of usable roads	Length(km)/surface area(km ²)	km
	Quantitative	Intensity of flow (persons and merchandise) inside and out of the territory	low/medium/high	-
	Quantitative	Public health and safety: life expectancy	Life expectancy	years
	Quantitative	Public health and safety: number of healthcare personnel	Number of health care personnel / 100 000 inhabitants	-
Circular Economy	Quantitative	Number of jobs related to the circular economy	Number of jobs (% total employment)	%
	Quantitative	Domestic material consumption per capita		tones / capita

Figure 10. List of criteria.

Step 3: Establish a peer group

The selection of a peer group is an essential part of the benchmarking process. Done well, the selection of an appropriate, credible peer group can provide solid guidance, point towards appropriate directions. On the other hand, selecting an inappropriate peer group at the start of the process can produce results that are not relevant to the situation, or can produce targets or expectations that are not realistic.

Ideally, between eight and ten peers will make up the peer group. This number provides enough breadth to make meaningful comparisons without creating a burdensome data-collection or reporting effort.

In this case, the peer group chosen was already defined in the Grant Agreement as the pilot zones. See Figure 11 for more details.

Name	Partner	Country	NUTS2 Region
Living Lab in agro-tourism and selling of niche products from the farm	UHLAVA	Czech Republic	Pošumaví
Living Lab in organic farming and agro-ecology framework Slovenia	UL	Slovenia	Eastern Slovenia
Living Lab in organic farming and agro-ecology framework Slovenia	UL	Slovenia	Western Slovenia
Living Lab in Cultivation activities (Mediterranean climate) with short supply of water and technological penetration	ADRI & UCAM	Spain	Murcia
Living Lab in double insularity ecosystem Specific aim: attraction of young entrepreneurs In the dairy sector	TRA	Malta	Gozo

Living Lab in raising production and transition from traditional to modern business models	ZEKA	Turkey	Manisa
Living Lab in Lake Trasimeno ecosystem	SOG & UCT	Italy	Umbria
Living Lab in the production of fibre	ZSA	Latvia	Latvia
Living Lab in Short supply chain in agriculture	RMB	Austria	Burgenland
Living Lab in the West of France for the livestock production chain improvement	CRAPDL & CEA	France	Pays de la Loire
Living Lab in boosting exportation of high quality products; social inclusion framework	E35	Italy	Reggio-Emilia
Azores Living Lab: Quality and Sustainable production	FRCT	Portugal	Azores
Living Lab in traditional craft sector: circular handmade Berber carpet production	DAR	Tunisia	ND

Figure 11. Pilot zones list (cf. Grant Agreement).

Step 4: Compare performance

This step focuses on gathering the performance data for the peer group defined and analysing it.

The analysis itself consists in two steps:

- data checking: once the data is gathered, it is necessary to check for potential data problems, such as unusually high or low values for a given criteria for a given peer
- data interpretation: each measure, is compared to the average of the peers and interpreted. Interpretation takes also into account the main business model of the region, identified during T2.3.

3 BENCHMARK

3.1 Data collection

The data was gathered with the collaboration of pilot zones partners: each one of them had to fill in an Excel file containing the final list of criteria and precise sources where the data could be found (mostly Eurostat). When data could not be found on EUROSTAT, partners were invited to look for a more local source of data.

The data was then checked for outlier values and normalised with a scale of 5 (5 being the biggest value for each criteria), in order for the data to be displayable on a radar graph, which facilitates the comparison and interpretation. Through these visual profiles, regions can easily compare their profile to the other ones, identify their strengths and weaknesses and the criteria to boost to move to their circular Living Lab model.

These graphs for the pilot regions, combined with the graphs of WP4 for projects in the pilot regions will give a good overall picture of existing situation and transition to circular economy criteria.

See Annex 8 with all data gathered.

Limits of this data collection

The data was gathered using mostly EUROSTAT source. However, some problems appeared:

- The data was not available at the NUTS 2 scale, in which case the data gathered was either at the national level or was provided by a more local source (data not harmonized)
- The data provided by EUROSTAT did not include all European NUTS 2 areas, in which case missing data was provided by a more local source (data not harmonized)
- The data provided by EUROSTAT has not been actualised at the same time for all NUTS 2 regions, which means that some of the data gathered is old enough for its relevance to be questioned

3.2 Data analysis

3.2.1 Average

An average profile is given on each graph, as a referential for the region to compare itself to the global **LIVERUR** territory (fig.12)

But this “average referential” has to be taken with great precaution, as the standard deviation of the data are often quite significant (fig.13)

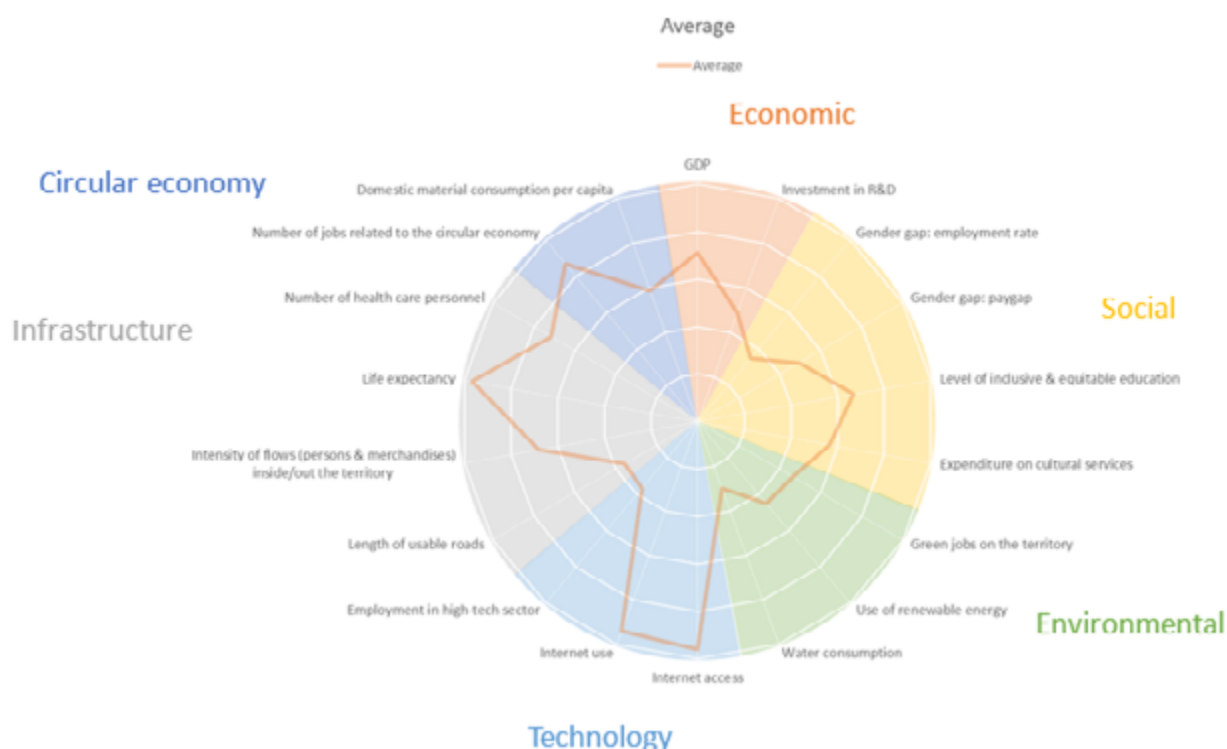
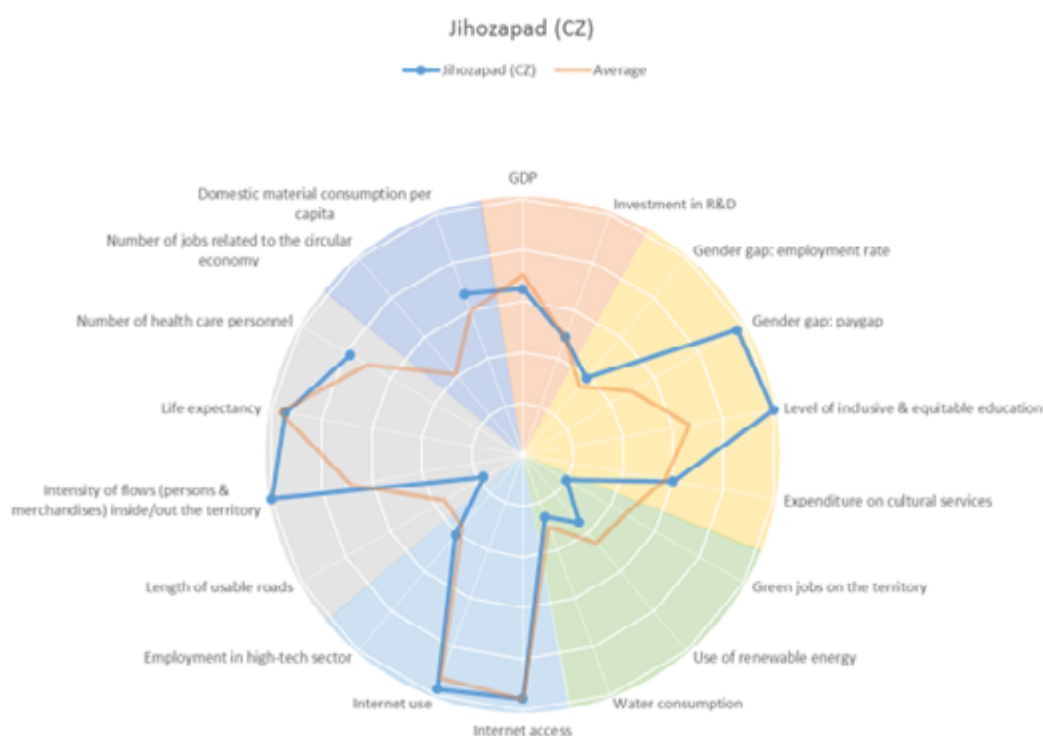


Figure 12. Average profile of the data gathered.

Category	Etiquette	Average data	Standard deviation
Economical	GDP	3,50	0,74
	Investement in R&D	2,45	1,22
Social	Gender gap: employment rate	1,75	1,23
	Gender gap: paygap	2,48	1,59
	Level of inclusive & equitable education	3,33	1,23
	Expenditure on cultural services	2,83	1,15
Environmental	Green jobs on the territory	2,33	1,87
	Use of renewable energy	2,26	1,30
	Water consumption	1,50	1,54
Technological / Innovation	Internet access	4,80	0,18
	Internet use	4,67	0,34
	Employment in high-tech sector	1,83	1,23
Infrastructure	Length of usable roads	1,78	1,80
	Intensity of flows (persons & merchandises) inside/out the territory	3,41	1,69
	Life expectancy	4,83	0,17
	Number of health care personnel	3,50	0,97
Circular Economy	Number of jobs related to the circular economy	2,05	1,00
	Domestic material consumption per capita	2,98	0,96

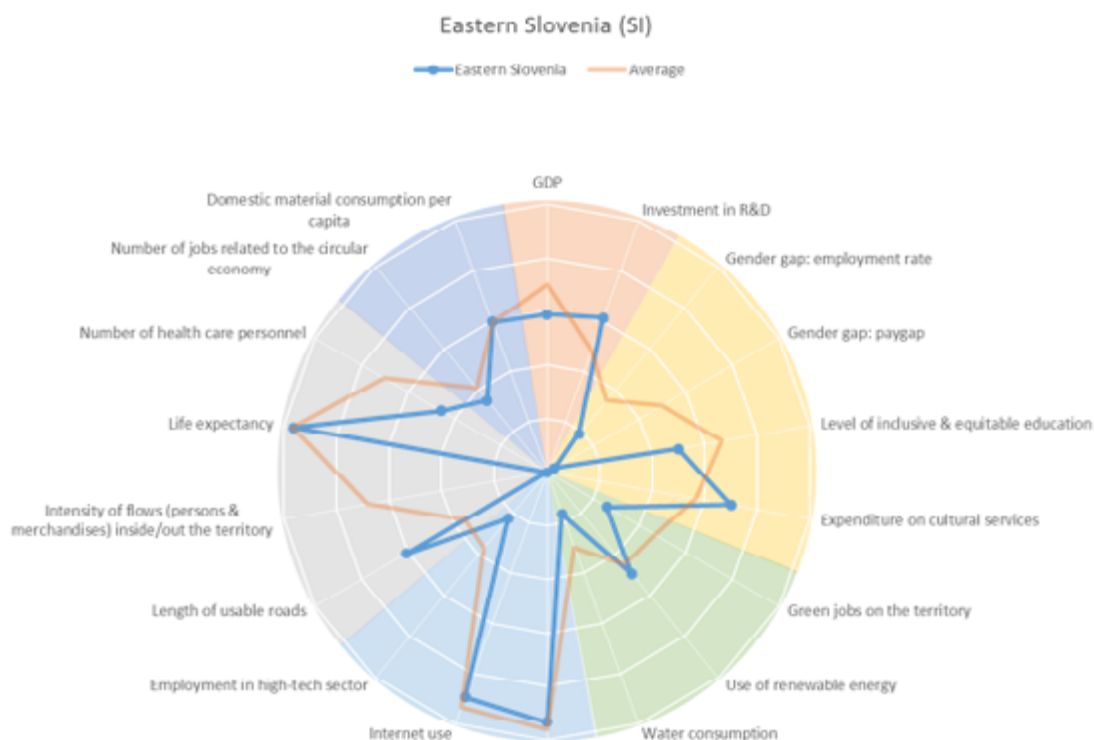
Figure 13. Standard deviation of the data gathered.

3.2.2 Jihozapad (CZ)



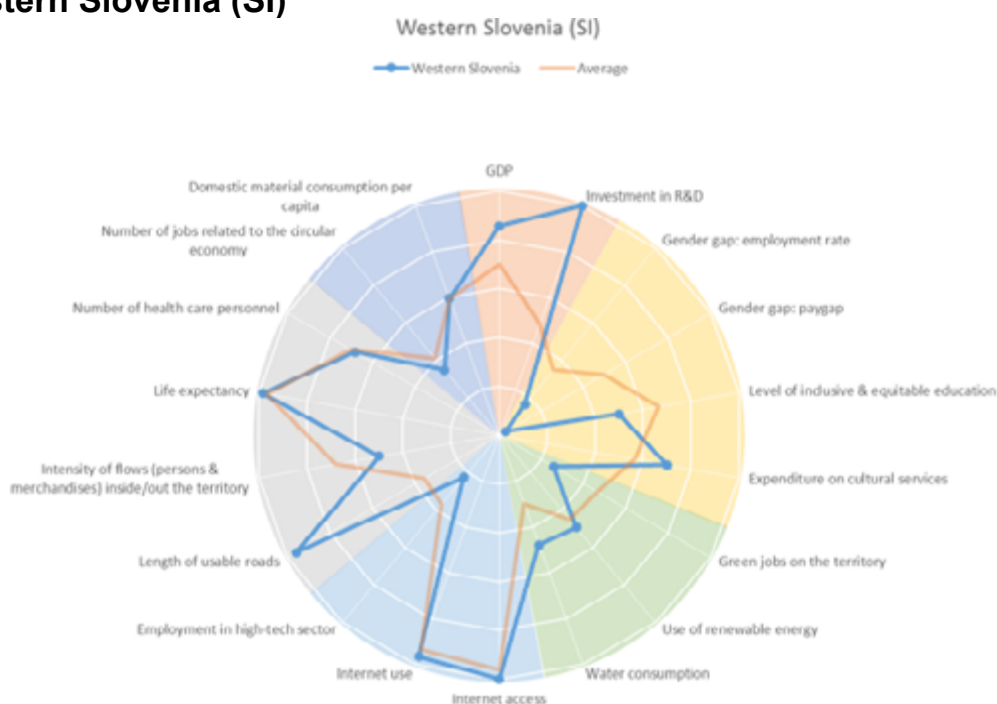
- Dominant Business Model: Diversified Farming
- Strengths (better than average): Social inclusive criteria, flow of persons
- Weaknesses (lower than average): environmental criteria, usable roads
- Lack of data: circular economy

3.2.3 Eastern Slovenia (SI)



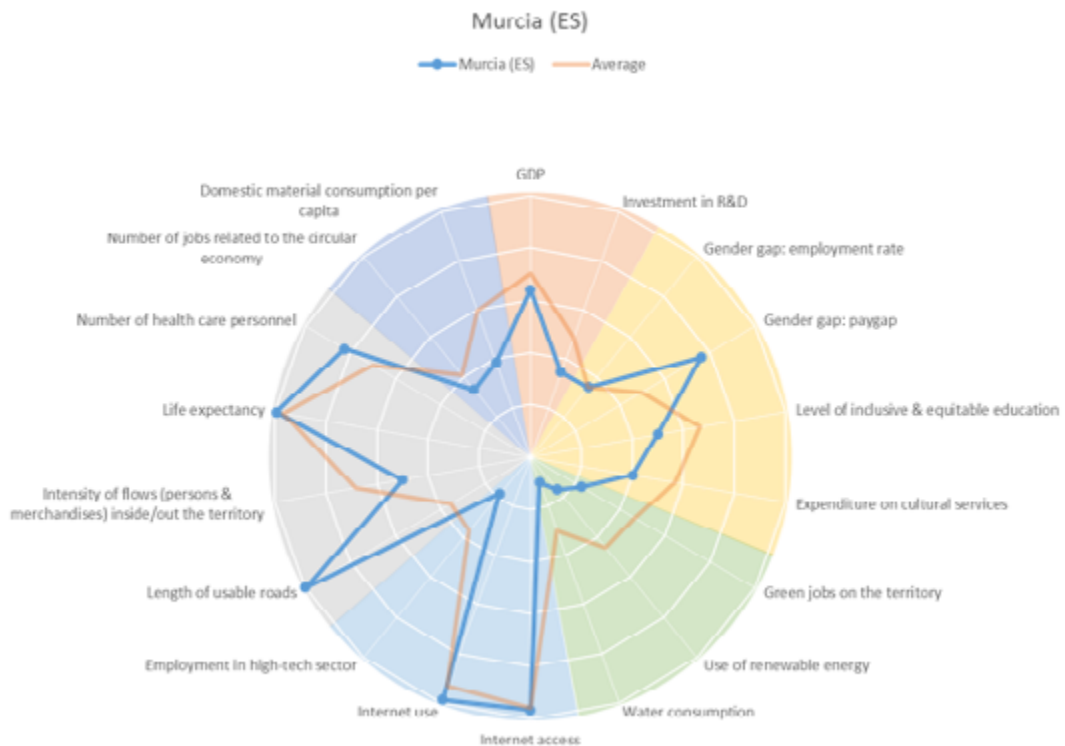
- Dominant Business Model: Food and Drink industry
- Strengths (better than average): cultural services
- Weaknesses (lower than average): gender gap, green jobs, healthcare personal

3.2.4 Western Slovenia (SI)



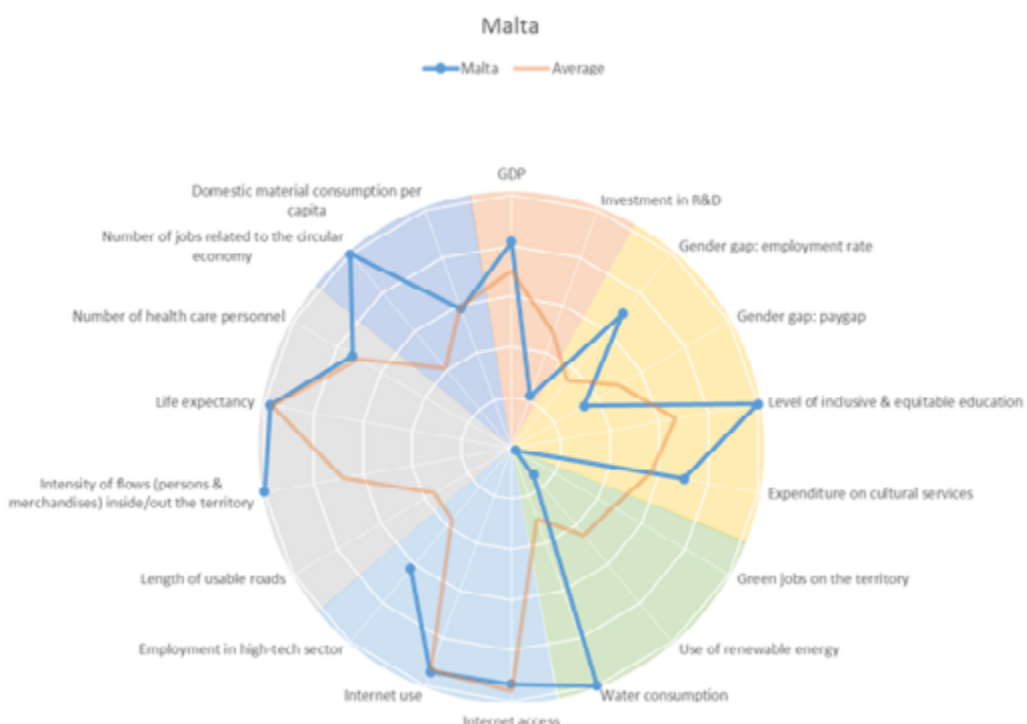
- Dominant Business Model: Food and Drink industry
- Strengths (better than average): economic, infrastructure
- Weaknesses (lower than average): gender gap, green jobs

3.2.5 Murcia (SP)



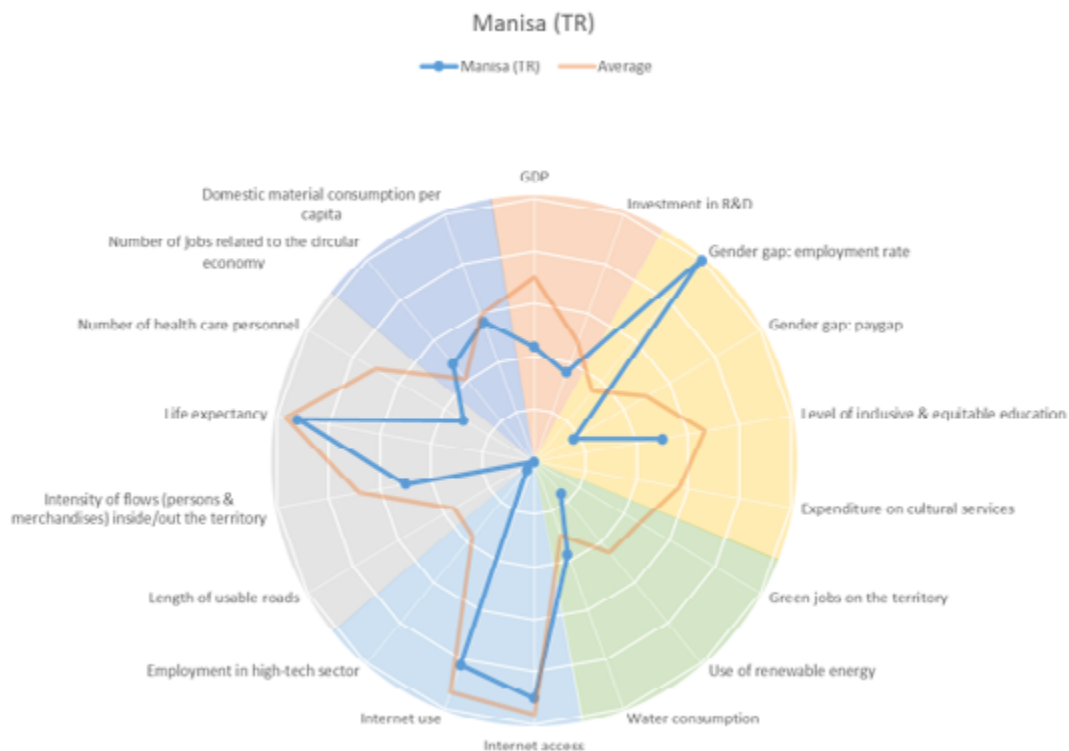
- Dominant Business Model: Rural SME's
- Strengths (better than average): gender Gap, infrastructures (usable roads)
- Weaknesses (lower than average): environmental, social inclusion, circular economy

3.2.6 Malta (MT)



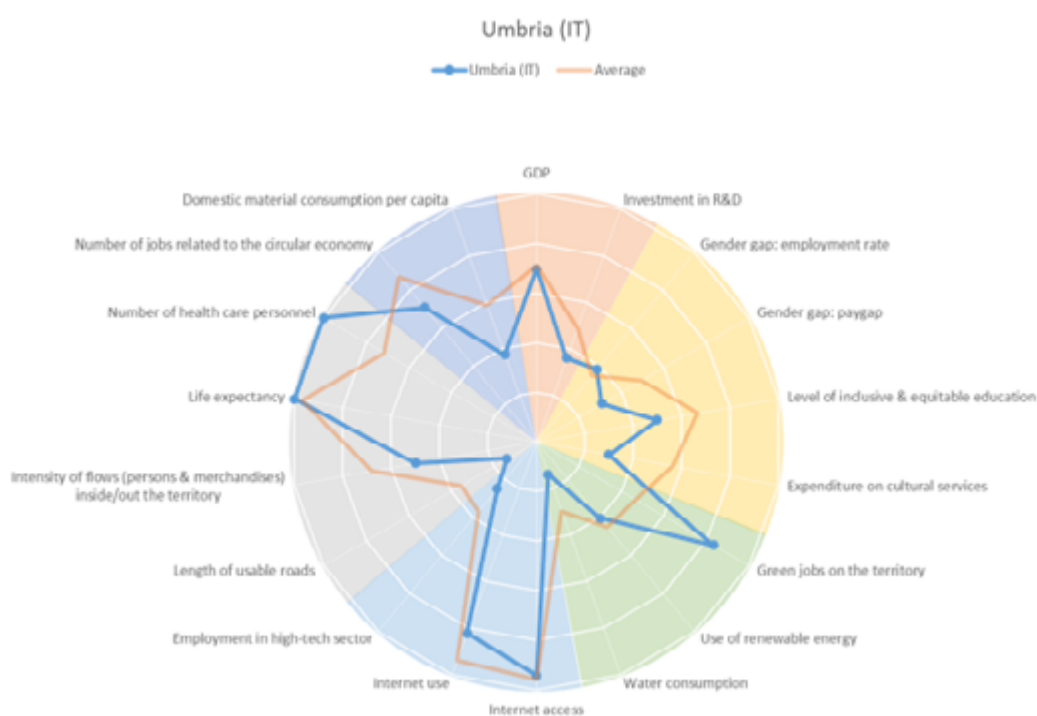
- Dominant Business Model: Rural SME's
- Strengths (better than average): circular economy, social, water consumption
- Weaknesses (lower than average): Green jobs and use of EnR, R&D investment

3.2.7 Manisa (TR)



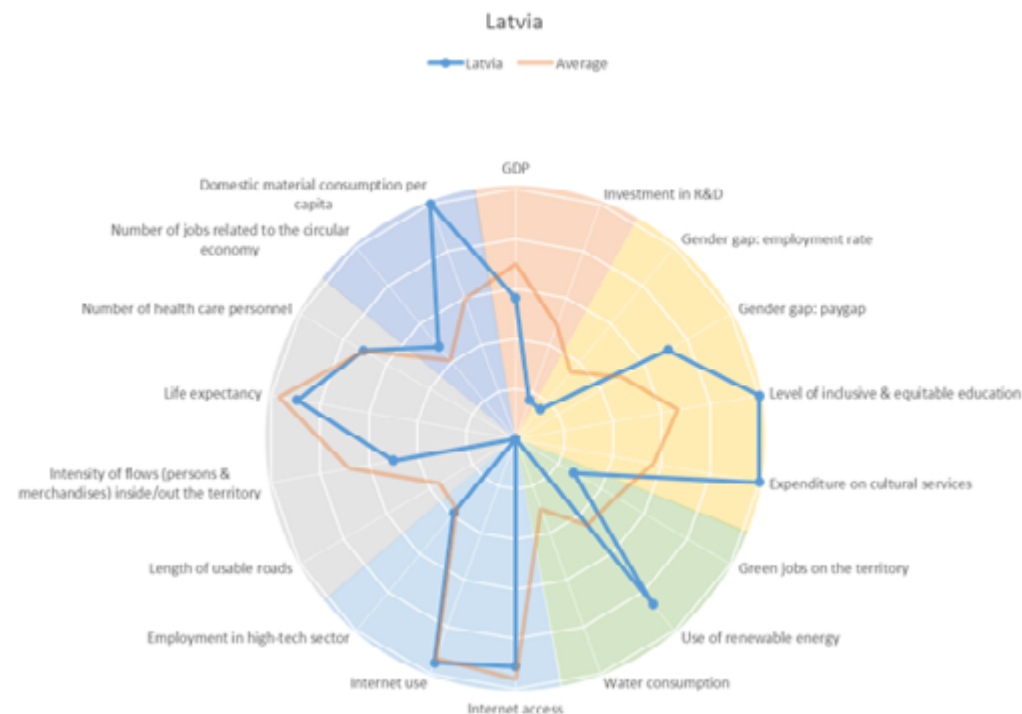
- Dominant Business Model: Food and Drink
- Strengths (better than average): gender gap employment rate
- Weaknesses (lower than average): gendergap paygap, helathcare personnel, infrastructure, technologies

3.2.8 Umbria (IT)



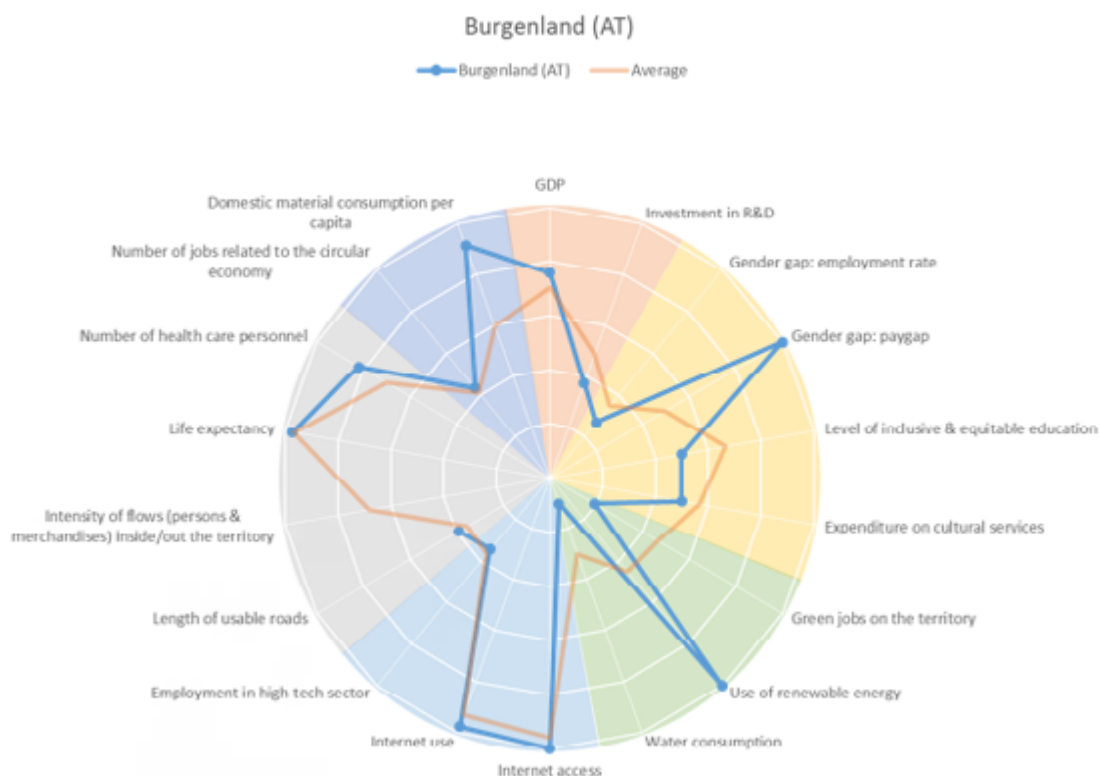
- Dominant Business Model: Food and Drink
- Strengths (better than average): green jobs, health care personnel
- Weaknesses (lower than average): circular economy, social criteria

3.2.9 Latvia (LV)



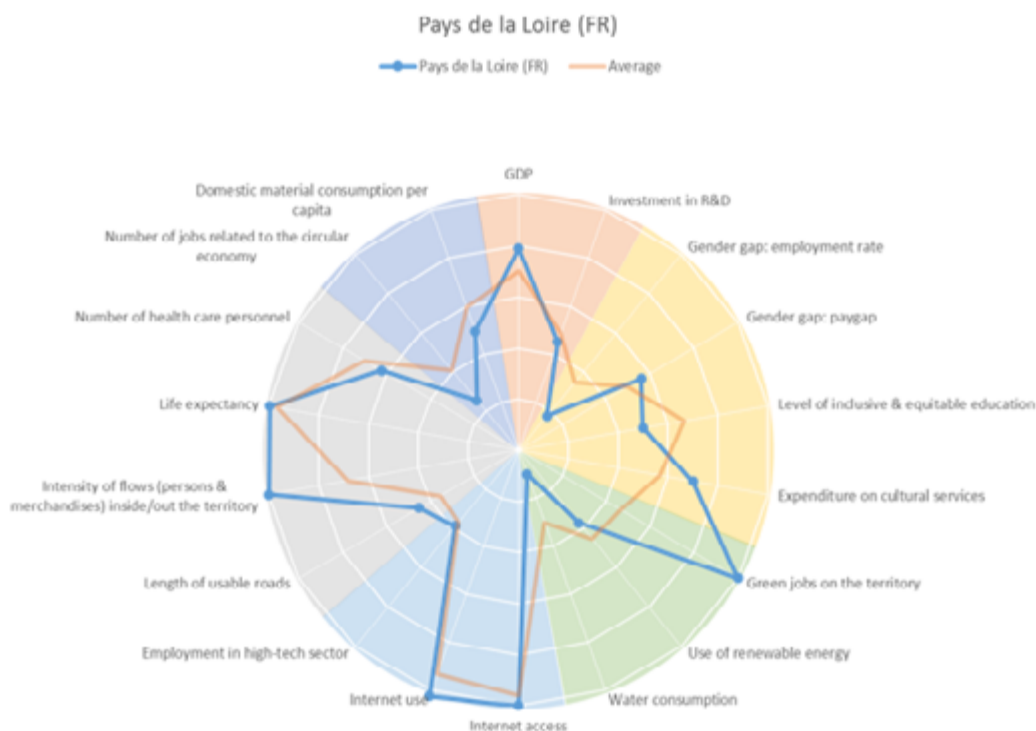
- Dominant Business Model: Rural SME's
- Strengths (better than average): social (except gender gap employment rate), use of EnR
- Weaknesses (lower than average): water consumption, usable roads, R&D investment

3.2.10 Burgenland (AT)



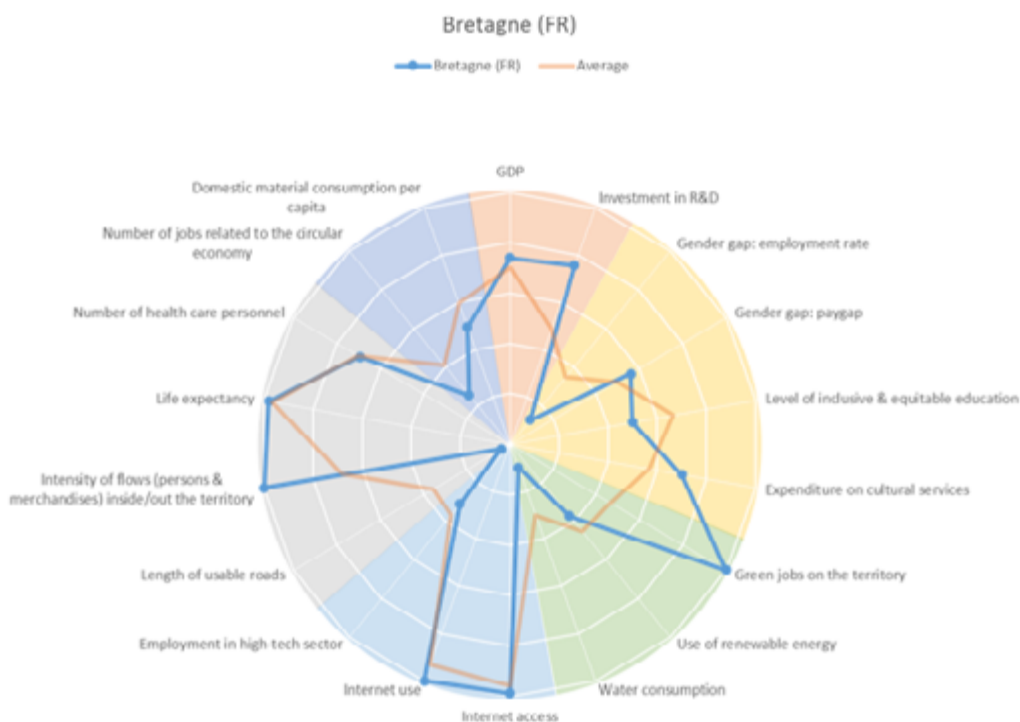
- Dominant Business Model: Food and Drink industry
- Strengths (better than average): use of EnR, gendergap paygap
- Weaknesses (lower than average): water consumption

3.2.11 Pays de la Loire (FR)



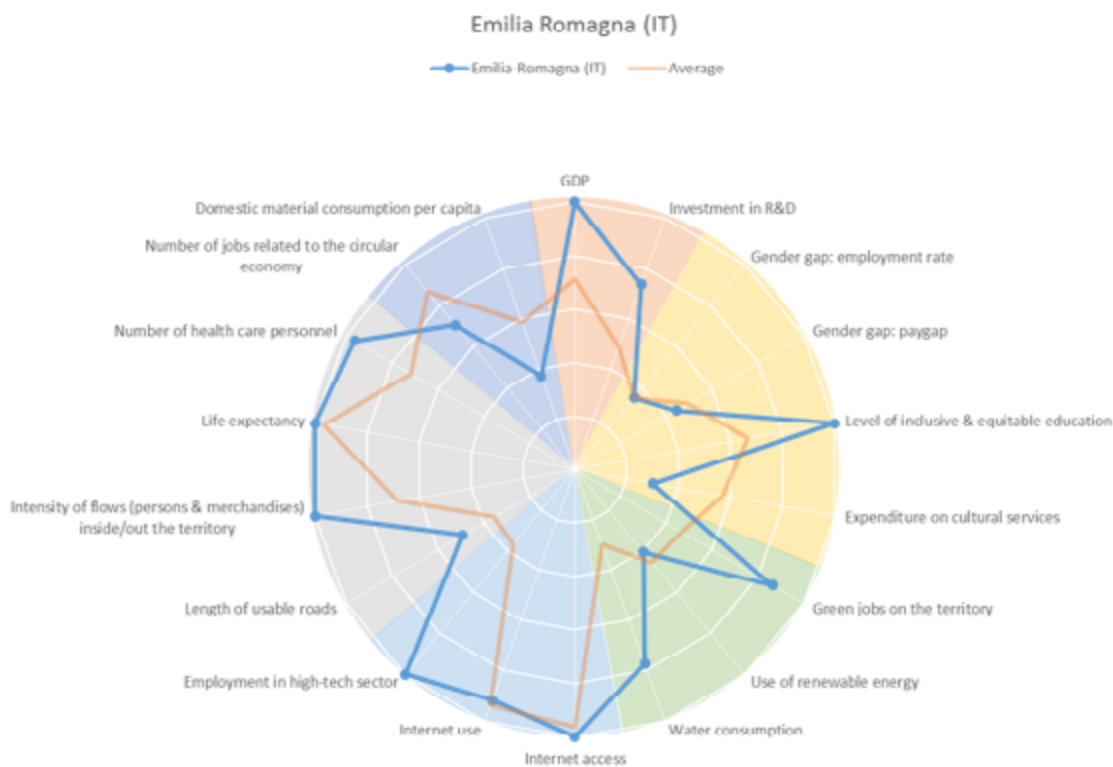
- Dominant Business Model: Conventional farming
- Strengths (better than average): green jobs, intensity of flows
- Weaknesses (lower than average): water consumption, gender gap employment, circular economy

3.2.12 Bretagne (FR)



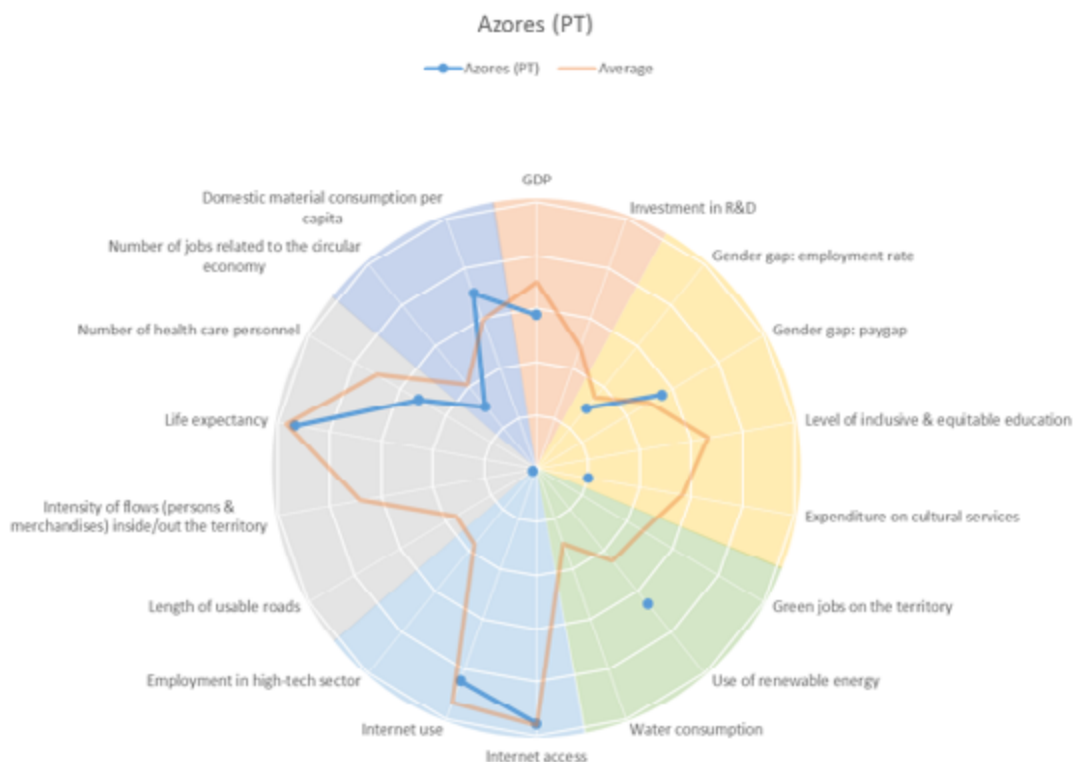
- Dominant Business Model: Conventional farming
- Strengths (better than average): green jobs, intensity of flows
- Weaknesses (lower than average): usable roads, circular economy, water consumption, gender gap employment

3.2.13 Emilia Romagna (IT)



- Dominant Business Model: diversified farming
- Strengths (better than average): economic, high tech equipment, inclusive education, green jobs, water consumption
- Weaknesses (lower than average): circular economy, cultural services

3.2.14 Azores (PT)



- Dominant Business Model: conventional farming
- Strengths (better than average): use of EnR
- Weaknesses (lower than average): cultural services
- Lack of data: R&D invest, infrastructure, water consumption, green jobs, inclusive educ.

4 WHAT'S NEXT WITH WP3 & 4

WP2, WP3 and WP4 are closely linked and work together to give a comprehensive and useful guide for the regions to move from their current situation to Living lab innovative business models, based on identification and comparison of existing strengths and weaknesses coming from the traditional business models, and on innovative criteria to foster the transition towards circular economy models and Living Lab development in the pilot zones.

Therefore, WP3 delivers in the same time as this report, the “benchmarking of traditional value vs platform based living lab concept” (D3.4), highlighting the main differences between innovative but traditional value chain (linear approach) and the platform circular economy based approach in the rural circular living labs. Both systems could potentially reinforce each other to support the development of a broad, self sustainable innovation facility.

This will be followed in July by the two reports for Living Lab concept deployment in the pilote zones:

- WP3 (D3.5) : report on development of innovative models
- WP4 (D4.1) : report on the suitable business models identified for each piloting territory.

“On the basis of WP2 results, the outcome is the identification of the suitable rural business model connected to the living lab concept. This will be achieved by applying WP3 results for a categorisation of the WP2 business models” (source: Grant agreement, WP4 description).

CONCLUSION

This report is the final step of WP2 “Conceptualization of existing rural business models in EU and regional areas”.

Thanks to the great involvement of the partners, it gives a relevant diagnostic of the rural territories situation, enlighten the diversity, specificities of each region, in term of traditional business models, strengths and weaknesses, which may be dynamic levers for change to a suitable business model connected to the living lab concept.

It also provides a reliable and consistent database:

- 256 projects/initiatives,
- 30 cases representative of the 6 traditional business models
- 13 swots coming from representative external stakeholders for each region,
- 20 benchmark criteria with completed data for each region (using mostly Eurostat source at NUTS 2 level)
- 13 region profiling, giving in a visual way their position regarding the benchmark criteria

All these data base should foster the sharing of best practices inside **LIVERUR** community, the development of cooperation and transition to innovative circular economy models.

Their integration in the RAIN platform (WP6) through a simple interface should allow the stakeholders to use it to improve and renovate their business activities.

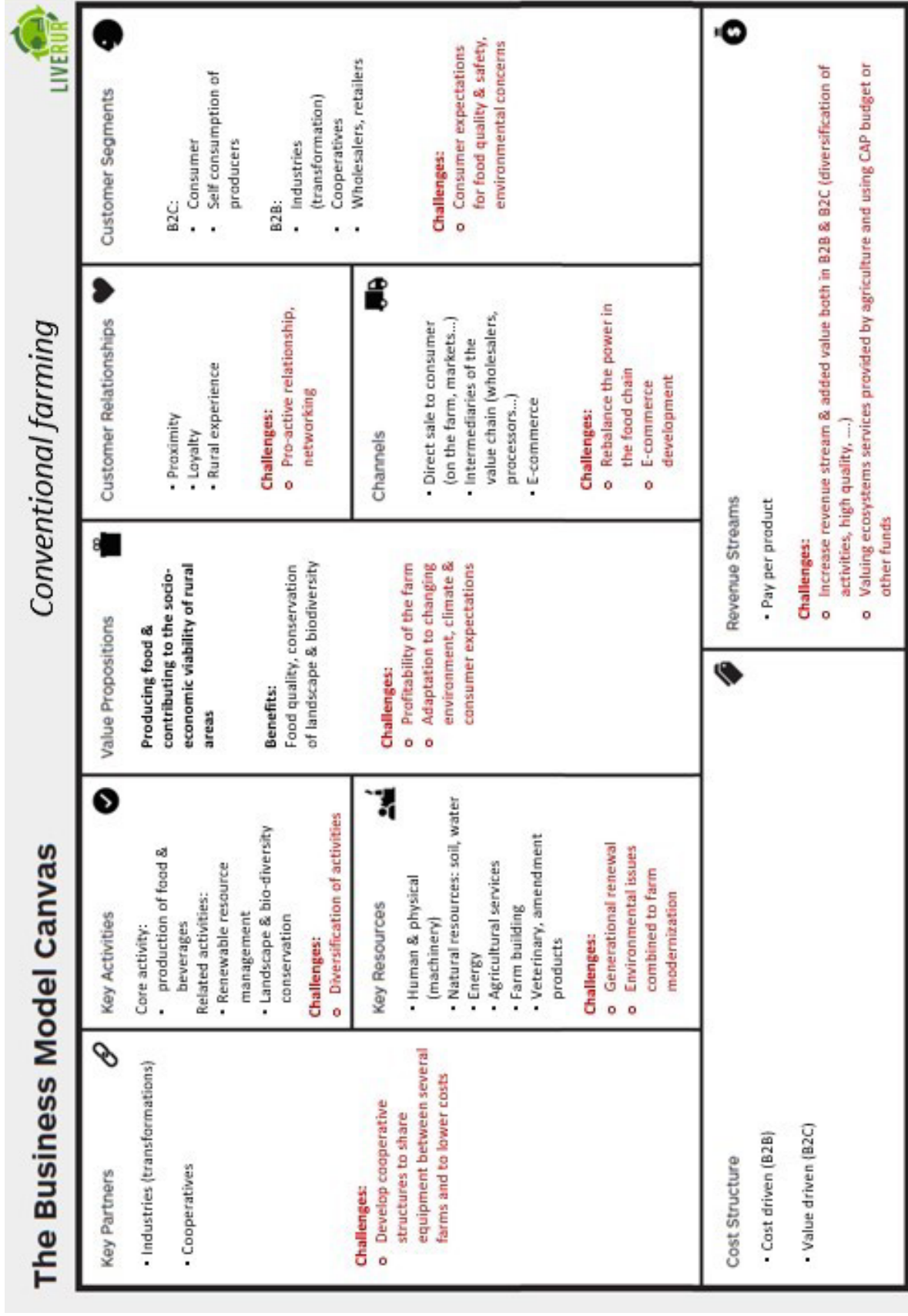
This benchmark study will also provide relevant information for workpackage 5, namely task 5.2 “Testing piloting areas orientations for the toolbox” and task 5.5 “New rural business model catalogue”.

REFERENCES

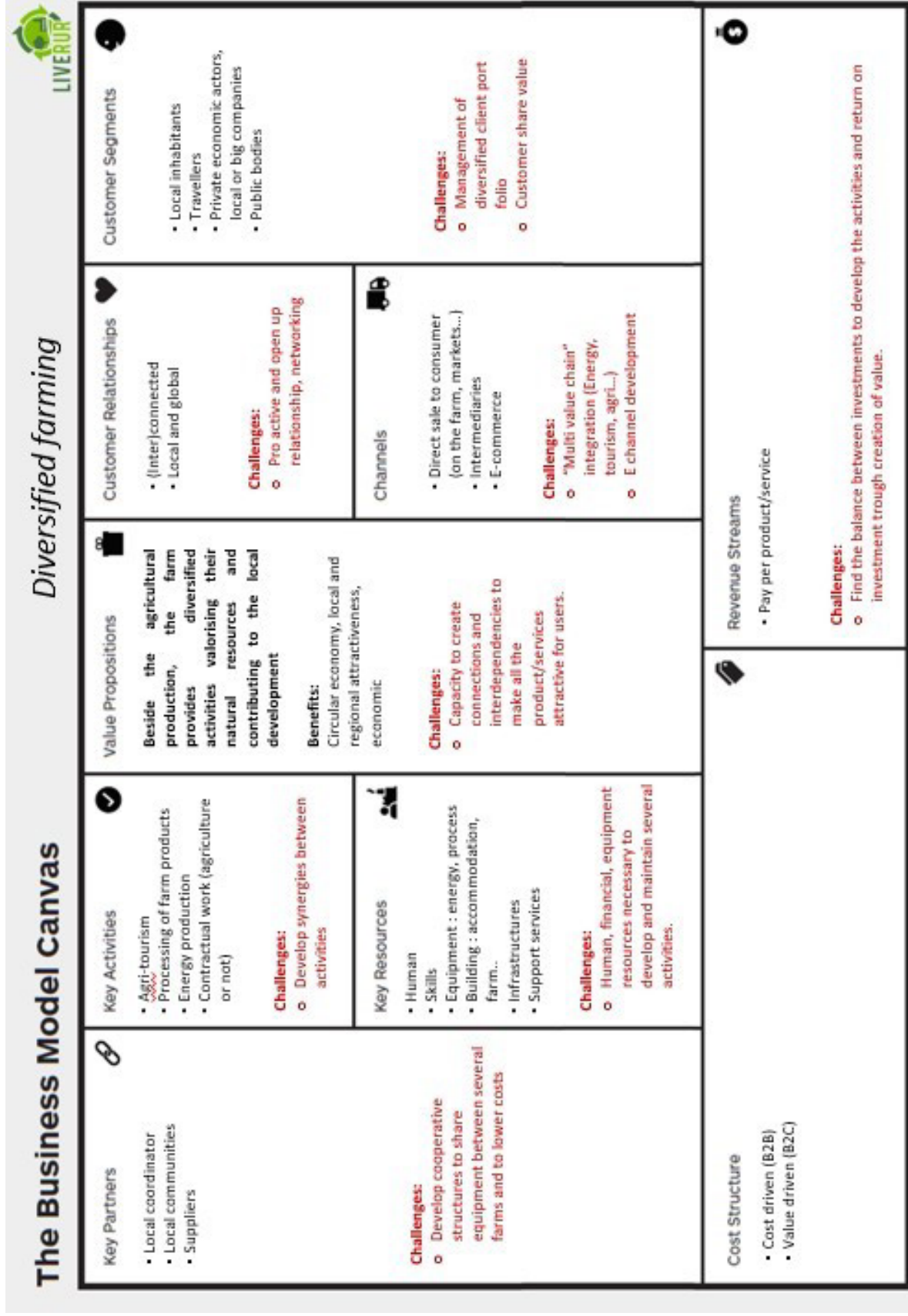
- (1) LIVERUR D2.1 : Report of existing business model in EU countries and regions
- (2) LIVERUR D2.2 : Report on benchmark criteria creation
- (3) LIVERUR D2.3 : Report on identified weaknesses and challenges
- (4) A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry (2010), Chapter: Chapter 4 - Benchmarking Methodology, <https://www.nap.edu/read/14402/chapter/6>

ANNEXES

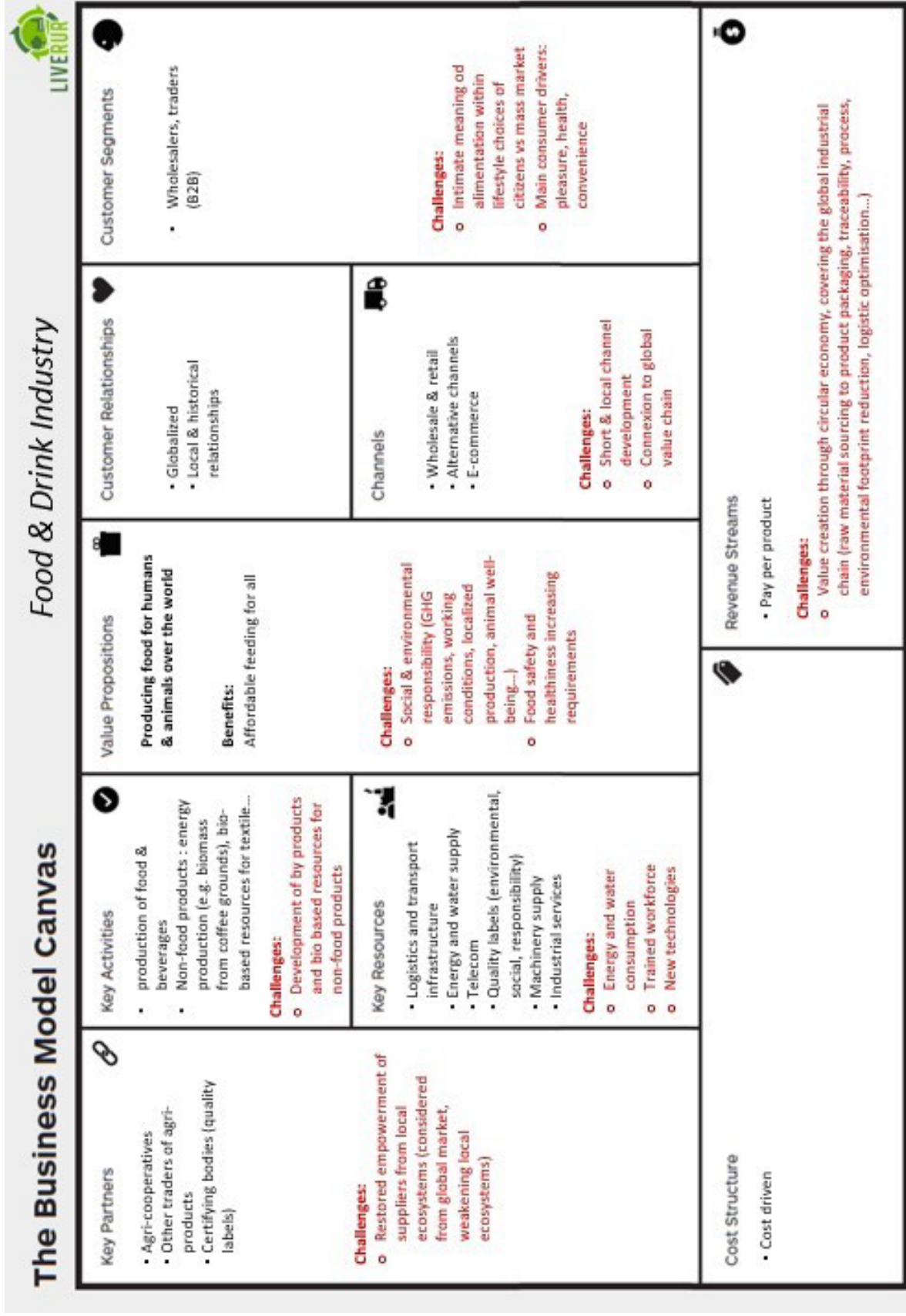
ANNEX 1: Business model canvas – Conventional farming



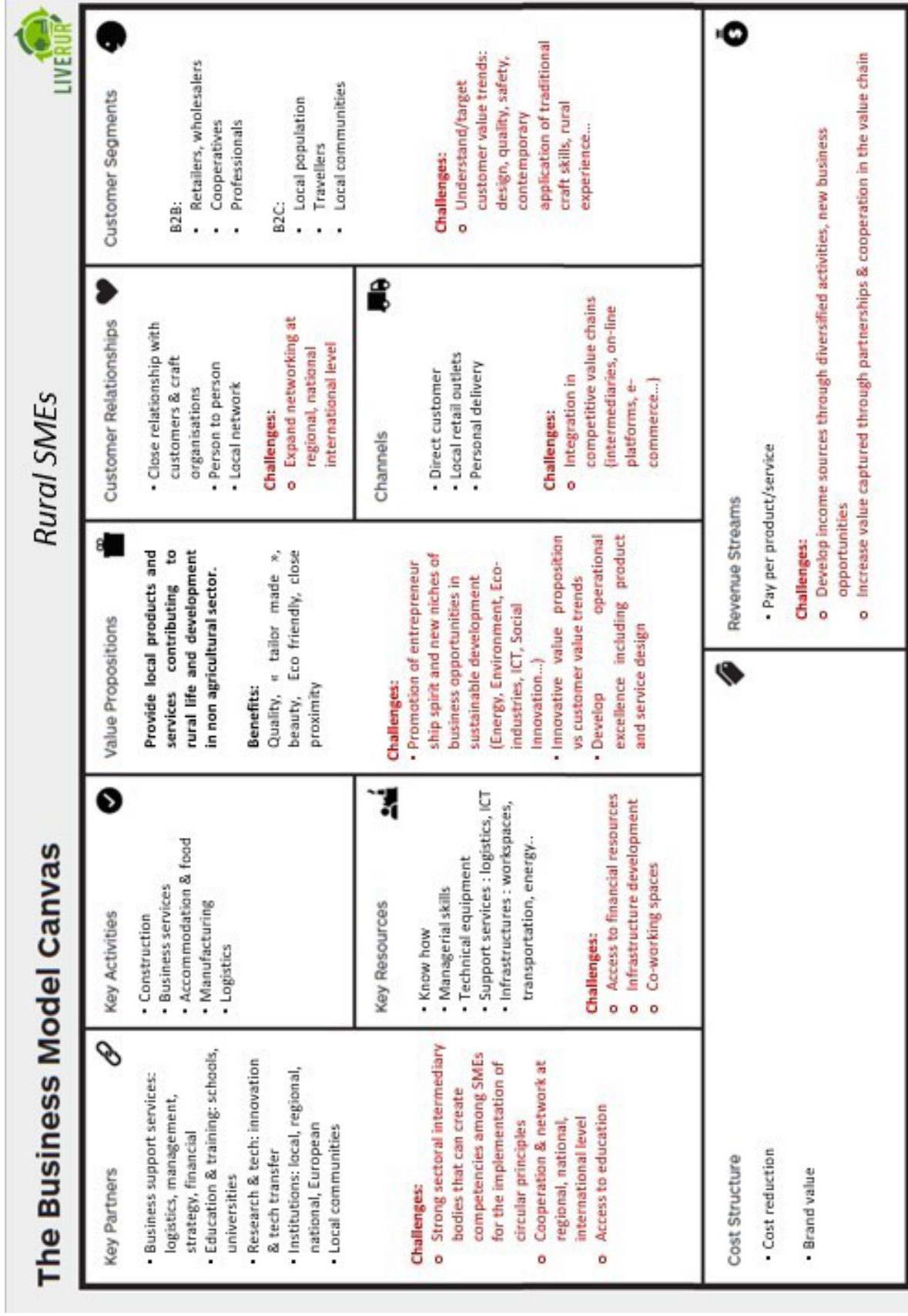
ANNEX 2: Business model canvas – Diversified farming



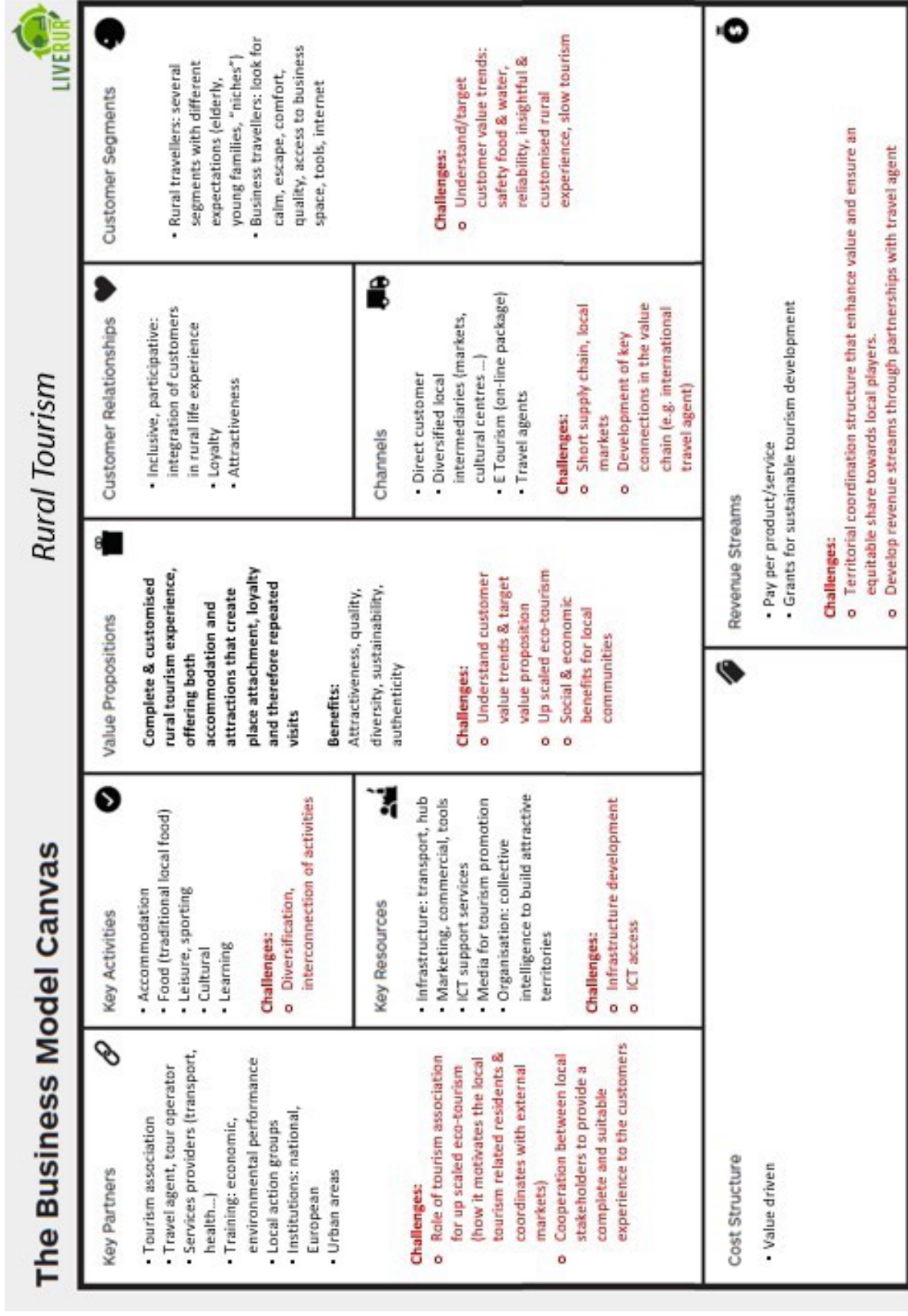
ANNEX 3: Business model canvas – Food & drink industry



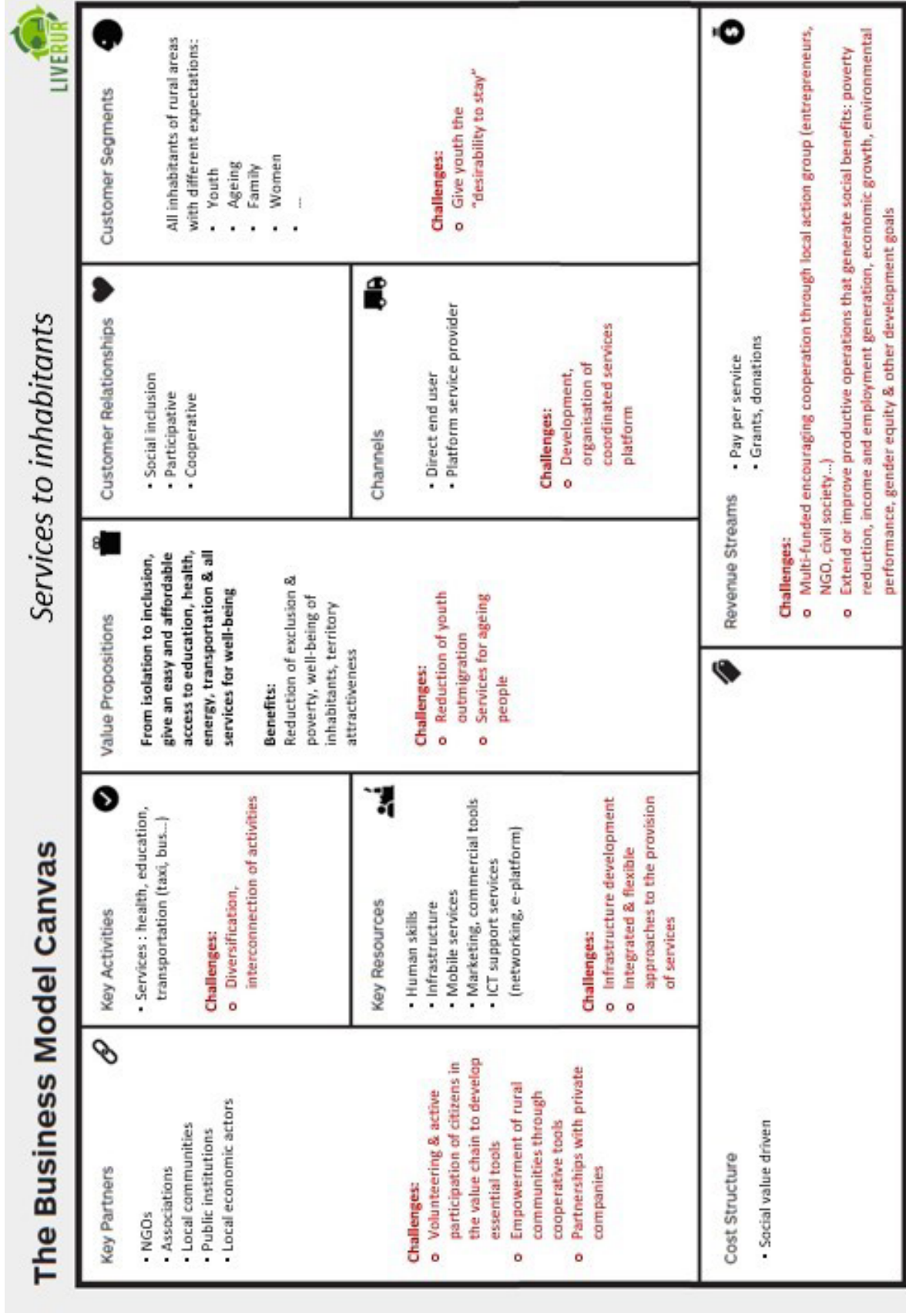
ANNEX 4: Business model canvas – Rural SMEs



ANNEX 5: Business model canvas – Rural tourism



ANNEX 6: Business model canvas – Rural services ton inhabitants



ANNEX 7: Complete list of criteria

Criteria	Category	Indicator
Economic	Investments in innovation and research	Total amount in EUR
	Innovative financing (such as micro-contributions, taxes, public-private partnerships. It aims generate additional development funds by tapping new funding sources; enhance the efficiency of financial flows; make financial flows more results-oriented. Source: https://goo.gl/SjSqjr)	Percentage of incomes from Innovative financing schemes (comparing with total incomes)
	Relationship with suppliers at local level	Total number of contracts
	Relationship with suppliers at regional level	Total number of contracts
	Relationship with suppliers at national level	Total number of contracts
	Relationship with suppliers at European level	Total number of contracts
	Relationship with suppliers outside EU (at international level)	Total number of contracts
	Relationship with clients at local level	Total number of clients
	Relationship with clients at regional level	Total number of clients
	Relationship with clients at national level	Total number of clients
	Relationship with clients at European level	Total number of clients
	Relationship with clients at international level (except EU member states)	Total number of clients
	Number of long term contracts with employees	Total number of contracts
	Number of short term contracts with employees	Total number of contracts
Environmental	Green jobs in the local economy	Percentage of green jobs of the total number in organization (<i>Note: Green jobs are to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high efficiency strategies; decarbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution. For more: https://en.wikipedia.org/wiki/Green_job</i>)
	Use of raw materials	Percentage of recycled materials used for production processes (comparing with the total number of materials)
	Use of renewable energy	Percentage of energy produced by renewable sources (comparing to the total amount of energy used)

	Energy efficiency and consumption reduction	Costs incurred in the application of energy efficient technologies (for ex.: improving maintenance practices; utilizing equipment that has been manufactured to the best modern standards of efficiency, e.g. electric motors, steam and gas turbines, transformers, boilers; energy efficiency in buildings; more efficient equipment and appliances in lighting, air conditioning systems, etc.)
	Energy efficiency and consumption reduction	Number of internal policies for staff, targeting energy consumption reduction
	Water consumption	Water consumption per year
	Water consumption reduction	Costs incurred in the application of water efficient technologies
	Waste management	Percentage of waste sorting
	Waste management	Number of internal policies for staff, targeting waste management
	Anti-air pollution processes	Total investments, in EUR (for example: how much do you spend to make sure that the activities do not impact on air quality (e.g. avoiding polluting weeds killers, switching from diesel generators to low/no emissions tech))
	Other actions aimed at environmental protection	Estimated expenditures for environmental protection
	Other actions aimed at environmental protection	Estimated investment on cleaner/ less impactful processes/technology on environment
	Other actions aimed at environmental protection	Number of people / hours-man dedicated to environmental protection activities
Social (community and territory)	Democratic civil society	Costs incurred to finance social, cultural, charitable and recreational initiatives
	Recruitment of personnel in relation to the regional territory where the company operates	Percentage of all staff members
	Relations with the Public Administration and Territorial Community	Total public contributions received in EUR
	Relations with the Public Administration and Territorial Community	Number of territorial networking actions (innovation, attraction of talents, etc.)
	Education (curriculum & learning)	Number of developed curriculum and/or learning approaches for community/territory

	Gender equality	Percentage of women in organization
	Gender equality	Percentage of men in organization
	Gender equality	Percentage of others (intersex, transgender, etc.) in organization
	Gender equality	Male wage rate (average)
	Gender equality	Female wage rate (average)
	Gender equality	Wage rate average of others (intersex, transgender, etc.)
	Inclusion of various disadvantaged groups in work/volunteering processes	Number of people involved (people that experience a higher risk of poverty, social exclusion, discrimination and violence than the general population, including, but not limited to, ethnic minorities, migrants, people with disabilities, isolated elderly people, etc.)
Public health & safety (air/water/food quality)	Number of internal policies/certifications for public health standards / food products , etc.	
Innovation	Number of innovative ideas by staff	Total number (per person that provides an innovative idea)
	Number of managers having training in the methods and tools of innovation	Total number
	Number of meetings for co-creation of innovations	Total number
	Number of meetings with end users	Total number
	Number of innovation awards received / publications published	Total number
	Number of improved products / services	Total number
	Lifetime of an innovative product/service	(average duration per product/service)
Number of products/services launched	(per year)	
Technology	Integration of Digital Technology	Number of jobs using new functionalities (<i>Integration of Digital Technology covers (a) 'business digitization' and (b) 'ecommerce'. 'Business digitization'</i>)
	Digital performance - human capital	Number of people taking part in the tests (lab-trials & field trials etc.)
	Digital performance - human capital	Percentage of ICT (including jobs like ICT service managers , ICT professionals, ICT technicians) specialists in organization

	Digital performance - human capital	Percentage of workers with a degree in a science, technology, math's or engineering related subject
	Digital performance - use of internet services	Percentage of workers who use the internet for their duties
	Digital performance - Business digitization	Percentage of processes, which are digitalized
	Digital performance - Business digitization	Percentage of online marketing activities (using social media, website, etc.)
	Digital performance - Business digitization	Percentage of e-invoices
	Digital performance - Business digitization	Percentage of selling implemented online
	New technology transfer from RTO	Percentage of R&D spending (of total turnover)
	New technology transfer from RTO	Number of patents per year
	New technology transfer from RTO	Number of new products/services released per year
	Knowledge creation	Number of trainings/seminars/etc. for technology use
	Technology support	Percentage of investments in development of new technologies per year
	Technological products/systems at rural/mountain/remote context	Number of standalone systems (for ex.: smart farming, smart fishery, smart rural food /fruit processing factories, smart forest. For more information, please see 19 use cases of the Horizon 2020 - IoF2020 project: https://www.iof2020.eu/communication-materials/iof2020-booklet-2018-def.pdf)
Infrastructure	Contribution to newly developed transport services	Number of projects
	Contribution to newly developed transport services	Total investments, in EUR
	Contribution to newly developed transport services	Number of services offered % green/soft mode transports (for ex.; walking and cycling)
	Impact on other infrastructures (health cultural, education...)	Percentage of investments in the development of these infrastructures

Internet infrastructure	Percentage of investments in development of internet infrastructure (for ex.: development of broadband/radio (LoraWan)/ terrestrial (satellite) infrastructure and broadband and/or related another services)
Accessibility	No of single operator (in case of ICT : LoRa, SigFox or NB-IoT)
Accessibility	No of hybrid system (In case of ICT, combined indoor: WiFi, BLE & outdoor:, LoRa, SigFox or NB-IoT)
Accessibility	No of internet hubs (in case of ICT, Wireless Mesh Network (WMN)
Logistics	Percentage of good exports (national) (production output)
Logistics	Percentage of goods exports (regional) (production output)
Logistics	Percentage of goods imports (national) (production input)
Logistics	Percentage of goods imports (regional) (production input)
Logistics ICT Lab in Rural/Mountain/Remote area	Percentage of goods imports (regional) (production input) Number of Labs in the local community/ small region (like computer labs, tele centers, internet-connected buses, solar powered internet schools)
VET or technical centers in the local community/small region	Number of VET or technical centers in the targeted local community/ smart region

ANNEX 8: Data collected

Category	Type of criteria	Criteria	Indicator	Unit	DATA												
					Umbria (U1)	Malia-Homagna (H)	Murcia (E5)	ays de la Loire (L)	Bretagne (FR)	Malia	Jihocapad (CZ)	Eastern Slovenia	Western Slovenia	Latvia	Munsta (ITR)	Darpenland (AI)	Acres (PT)
Social	Quantitative	Gross Domestic Product	% of EU average	%	63%	15%	76%	34%	66%	57%	77%	70,00%	102,00%	87%	52%	50%	65%
	Quantitative	Investment in innovation and research	% of GDP	%	0,96%	1,96%	0,92%	1,2%	2,0%	0,58%	1,30%	1,63%	2,66%	0,44%	0,96%	0,9%	0,30%
	Quantitative	Gender equality: difference between men and women employment rate	Gender gap for the employment rate	%	16,40%	14,30%	14,00%	7,30%	5,10%	27,00%	16,70%	7,50%	6,60%	6,20%	40,20%	10,00%	10,00%
	Quantitative	Gender equality: gender pargap	earnings of male - female paid employees, as a % of average gross hourly earnings of male paid employees	%	6,70%	9,70%	16,60%	12,20%	12,20%	7,30%	21,20%	0,70%	0,70%	16,50%	3,80%	21,80%	12,30%
	Qualitative	Do the activities of the territory foster inclusive and equitable quality education and promote lifelong learning opportunities?	no / moderate efforts / very important issue within the territory	-	moderate efforts	very important issue within the territory	Moderate efforts	moderate efforts	moderate efforts	very important issue within the territory	moderate efforts	moderate efforts	moderate efforts	very important issue within the territory	moderate efforts	moderate efforts	moderate efforts
	Qualitative	Expenditure on cultural services	% of GDP	%	0,30%	0,30%	0,40%	12%	0,70%	0,70%	0,22%	0,60%	0,70%	1,0%	no data	0,50%	0,20%
	Quantitative	Green jobs on the territory	Percentage of green jobs on the territory (Number FTE/hourly FE of region)	%	10%	10,40%	2,74%	12%	12,00%	0,22%	0,22%	2,30%	3,10%	3,27%	no data	2,30%	0,20%
	Quantitative	Use of renewable energy	Percentage of renewable energy (hourly energy used)	%	11,4%	11,40%	7,00%	76%	16,00%	6,0%	14,30%	21,30%	21,30%	37,2%	6,30%	43,30%	29,50%
	Quantitative	Water consumption	Water consumption per household	m3	64,89	380,07	48	48	48	484,8	120	77	222,85	175	47,45	30,00%	no data
	Quantitative	Internet access	Percentage of households with internet access	%	85%	30%	87%	30%	83,00%	84,00%	86%	84%	30%	82%	81%	80,00%	86%
Technological innovation	Qualitative	Internet access	Regular use of the internet. (% of persons who accessed the internet on average at least once a week)	%	70%	76%	84%	87%	85,00%	80,00%	83%	76%	82%	70%	83,00%	72%	
	Quantitative	ICT	Employment in high-tech sector (% of total employment)	%	2,30%	9,30%	1,70%	3,60%	2,30%	5,60%	3,60%	2,10%	2,10%	0,40%	3,20%	no data	
Infrastructure	Quantitative	Length of usable roads	Length (km/surface available)	km ^{1000k} /m2	7	25	51	23	2	n/a	9	31	49	0	20	0	
	Qualitative	Intensity of flow (persons and merchandise) inside and out of the territory	low/medium/high	-	medium	high	medium	high	high	high	high	low	medium	medium	medium	medium	
	Quantitative	Public health and safety: life expectancy	Life expectancy	years	82,9	82,9	82,40	82,6	81,3	80,9	78,3	79,9	81,50	74,1	80,6	77,5	
	Quantitative	Public health and safety: number of family doctors/healthcare personnel	Number of health care personnel / 100,000 inhab	-	443,6	427,9	366,8	277,1	307,6	323,5	345,9	202,3	302,20	313,7	383,9	223,2	
Circular economy	Quantitative	Number of jobs related to the circular economy	Number of jobs (% of total employment)	%	2,05%	2,05%	2,02%	1,52%	1,52%	6,00%	not available	2,09%	2,09%	2,69%	2,59%	1,02%	
	Quantitative	Domestic material consumption per capita	tonne/capita	tonne/capita	8,491	8,491	6,746	11,26	11,26	13,302	15,185	13,537	13,537	22,727	12,862	20,762	15,895