Deliverable 3.1
First Living Lab Report
Osrednjeslovenska regija

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Contents

Summary and overview

The Pilot Region (PR) is a highly diverse central region of Slovenia with 25 municipalities and nine urban settlements. Despite being the most densely populated and urbanized region, over half of the area is covered by agricultural or forest areas, and the majority of municipalities are considered rural. While some settlements have strongly developed central functions, others are insufficiently equipped with them, resulting in lower quality of living and additional traffic burden in the larger urban centres.

Living Lab achievements
The majority of cycle 1 was devoted to narrowing down the Living Lab's (LL) topical focus, contacting potential LL members (mainly representatives of research and policy, but also business, with whom the LLC and/or PRP had fruitfully collaborated during previous work) and discussing the specific research question / topic(s) of experimentation in subsequent cycles. The majority of discussions were semi-structured brainstorming sessions revolving around the LLC and PRP's skills and the way to turn challenges into win-win solutions.

Key learning to date
Finding a common language between research and practice and linking top-down theory with bottom-up action continues to be a challenge. Narrowing down numerous interlinked issues on the ground to 'clean' research questions is at risk of being seen as overly theoretical and sterile. The PR, being a statistical region with not regional administration, is affected by decisions at the national and municipal level, and has a development programme, but relatively little real autonomy and funding. Its constituent municipalities face very different socio-economic and environmental challenges, but the twin challenges described below may provide a useful bridge between them, especially across the urban-rural divide.

Living Lab challenge
The LL's challenge tries to link the partners' knowledge and expertise in two fields: food loss and waste (FLW) and social inclusion. The specific challenge will be to see whether it is possible to acquire real-time data of excess food, provide these data to underprivileged segments of rural society (directly or through intermediaries) and assess how/whether social innovation in this field can improve subjective wellbeing.

Emerging data needs
The main data gaps relate to real-time information about availability of excess food and need for it (number and location of people). Another data-related need is the complexity (and availability) of data required to assess subjective wellbeing and potential changes in it.

Next steps
Contacting stakeholders relevant to the 'social' side of the experiment; conduct a literature review on socio-cultural aspects of access to good food.

Figure 1 Meeting with broader LL members on Food Loss & Waste

1. Part 1: Progress Review

1.1. Pilot Region introduction

The central Slovenian statistical (NUTS3) region is the most densely populated and urbanized Slovenian region, especially in the central part, along the edge of the Ljubljana Marshes and on the south-eastern edge of the region. There are six administrative units (LAU 1) (Domžale, Grosuplje, Kamnik, Ljubljana, Logatec and Vrhnika) (Statistični urad Republike Slovenije [Statistical office of the Republic of Slovenia] - SURS, n.d.) and 25 municipalities (LAU 2) in the region (Figure 1). Nine urban settlements have city status, but most municipalities are considered rural (Nared et al., 2019).

Figure 1: Municipalities in the Osrednjeslovenska region (Regionalna razvojna agencija Ljubljanske urbane regije [Regional Development Agency of the Ljubljana Urban Region] - RRA LUR, 2022)

Ljubljana, the country capital, has a branched system of local and state social infrastructure, providing social infrastructure for all central national institutions. Social infrastructure for the performance of higher-level functions is also being strengthened in some other settlements (Ministrstvo za okolje in proctor [Ministry of spatial planning and environment] – MOP, 2019). While some settlements have strongly developed central

functions (administrative, services, maintenance etc.), others are insufficiently equipped with such functions. The situation is worsened by the continued centralization of local care functions (medical centres, post offices, banks, etc.), lowering the quality of living and generating additional traffic burden in larger urban centres (RRA LUR, 2022).

Overall, the region is developed above the average, characterized by demographic development, growing urbanization and intensive daily labour migration. The economic orientation of the municipalities is diverse and moderately concentrated on the service sector. Population density ranges between 37,4 and 1.065,4 inhabitants/km² (RRA LUR, 2022). The average population is about 22.200 inhabitants, ranging from about 3.000 (Horjul) to 293.000 (Ljubljana) (SURS, 2022). The municipalities, whether urban or rural, generally have positive population growth, with significant differences in terms of the extent and cause of population change; all are also characterised by population aging. Figure 2 shows the classification of Slovenian municipalities by rurality and population increase/decrease.
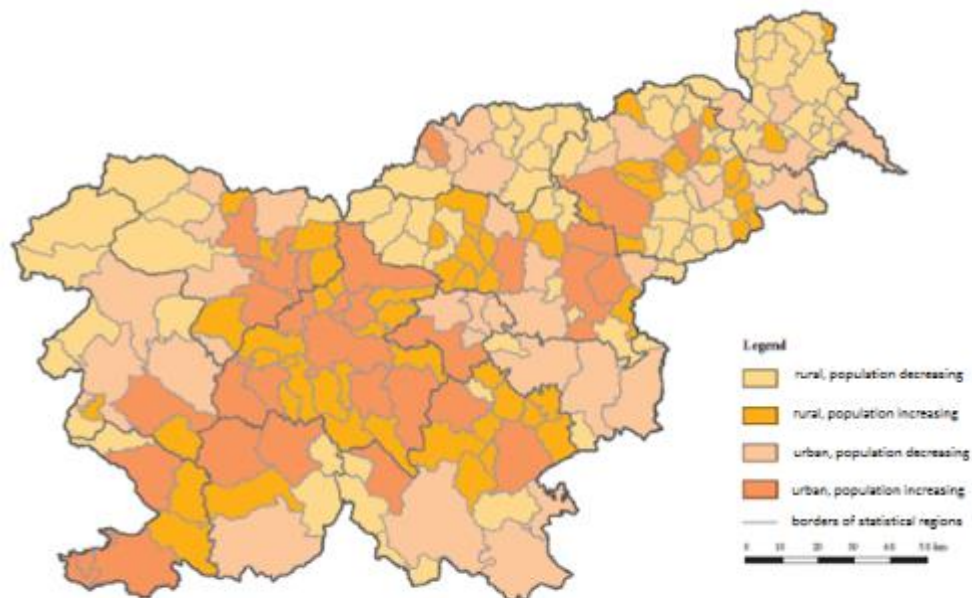

Figure 2: Classification of Slovenian municipalities in terms of rurality and population trends; Source: Nared et al., 2019.

The region has a large proportion of preserved natural areas and extent of forest cover; agricultural and forest areas cover over 50 %. There are 67 ecologically important areas and the Natura 2000 (N2K) network covers 26,7 % of the region (RRA LUR, 2022). There is a strong presence of agriculture even in the more urbanised, wealthiest municipalities.

All parts of the PR are reasonably well connected to highways and/or expressways and the PR is relatively well covered by public transport.

1.1.1. Pilot Region Partner

Allium is a farm, social cooperative, and employment centre. It enables work and career development by employing individuals from vulnerable groups. It is a member of the Etri group, committed to raising awareness and creating a healthy and inclusive society while acting in a socially responsible way. The group is guided by the principles of care for the environment (ecology), well-being at work (ergonomics) and responsible consumption (ethical economy).

1.1.2. Living Lab Coordinator

The University of Ljubljana Biotechnical faculty's scientific and research work combines basic, applied and developmental research in life sciences and related fields. One of its goals is to help understand the relationship between the environment and society, and this is among the main tasks of the researchers included in RUSTIK, members of the chair of Agricultural economics, policy and law. They focus on the societal aspects of natural resource management and issues related to rural areas generally. With a variety of backgrounds in animal science, agronomy, biology and related fields, they are engaged in research, teaching and consulting on agricultural and environmental policy, economics and law, as well as the bioeconomy. They employ a variety of methods, ranging from economic modelling through economic experiments to qualitative methods such as interviews and focus groups.

1.2. Functions and transitions

1.2.1. Functions

The PR is highly diverse: there are large disparities both between and within municipalities; these could be roughly divided into the central urban area, intermediate (peri-urban) areas with a lower population density and strong presence of agriculture and forestry, and relatively remote and agricultural rural areas with somewhat lower incomes. Thus, it can be said that production, consumption and ecosystem functions are all intertwined, scattered across the region.

Figure 3: A view of the northern part of the region, demonstrating its diversity.

Consumption functions

The region has a polycentric system of settlement with a high concentration and development of central and service activities. Geomorphological characteristics and traffic corridors have the greatest influence on settlement patterns: from the dense urban core inside Ljubljana's motorway ring , settlement spreads in a star pattern in 5 development directions (NW, N, E, SE and SW); these are the areas of employment centres and their hinterlands, which stretch along the highway system, and the areas between them are dominated by scattered settlement and intensive construction. The RRA LUR development strategy sees urban centres as areas where conditions for the development of larger production plants and service activities should be ensured, and they are also seen as the main places of housing supply. New building surfaces are to be avoided, however.

Opportunities for tourism and leisure can be found in strengthening the tourist offer (sustainably) in the urban centres, especially Ljubljana, promoting them as cultural hubs that can serve as starting points for recreationally interesting, less urbanised nearby

areas. The region also offers ample recreational opportunities for local inhabitants, with several rivers and easily accessible forest and mountain areas.

Production functions

The regional strategy holds that agricultural land with the greatest production potential (in the wider urban area of Ljubljana and in the vicinity of urban settlements) should be preferentially used for agriculture; these areas are seen as supplying cities in short local supply chains, with the support of the green public procurement system. The economic and social role of agriculture in ensuring the vitality and population of the region's rural areas is also acknowledged and is to be promoted. Similarly, agriculture is seen as performing an important environmental and territorial function.

The region has considerable forest cover. With the aim of fostering sustainable development, reducing greenhouse gas emissions and building a circular economy, it is seen as sensible to focus on the renewed or faster development of the wood processing industry and greater use of wood in the construction of buildings while using the residues from use and processing for energy purposes. Solar energy and hydropower, wood biomass and geothermal energy for heat production are seen as having the greatest potential for electricity production.

Ecosystem services

The framework of the green system in the region is formed by a connected system of N2K sites, which are seen as central in ensuring a favourable state of habitats. Landscape areas also represent a potential for tourist or leisure activities. As stated, agriculture and forestry are seen as having a high potential for fostering the sustainable management of natural resources and raw materials, contributing to the mitigation of climate change and conserving cultural (agricultural) landscapes as a public good.

1.2.2.   Transitions

The main (two) transitions addressed in the PR by RUSTIK partners are not the same as those highlighted by the official regional development strategy (RRA LUR, 2022) as key challenges. This seven-year regional strategy (2021-2027), which outlines the substantive, developmental and financial needs for a period that matches the EU's Multiannual financial framework, is broadly based on the Slovenian development strategy 2030 (Strategija razvoja Slovenije – SRS 2030) and the Slovenian Spatial development Strategy 2050 (Strategija prostorskega razvoja Slovenije 2050 – SPRS 2050). It provides a prioritization of needs and an estimate of the funds required to address them, currently clustered in three so-called developmental priorities: A creative region of opportunities, A smart region tailored to people, and A green region of sustainable solutions. More specifically, the strategy highlights and attempts to tackle the issues of centralized services and the associated negative phenomena of daily migration, traffic-related issues and brain-drain in peripheral regions. Furthermore, it focuses strongly on infrastructural issues.

Since the LL's inception, the Slovenian RUSTIK LL partners have agreed to focus on the issue of food loss and waste (FLW) and its relation to aspects of social inclusion and social entrepreneurship. Though perhaps not considered central, these issues do have a place in the regional strategy and some lower-level (municipal) strategies, especially issues related to stimulating a circular bioeconomy, the silver economy and quality of life. These topics were selected due to their increasing societal relevance, but also to build on the partners' strengths.

Socio-economic and demographic transition

While aging populations and the associated financial issues are relatively well researched, there is a notable lack of information about issues surrounding rural poverty, access to food and subjective quality of life. Part of the LL's experiment will be to address this data gap.

Climate and environmental transition

FLW are increasingly recognised as major sources of GHG emissions (and an economically irrational and even morally suspect use of natural resources), while reducing FLW is a low-hanging fruit. However, while certain data do exist on amounts produced by organisations along the food supply chain, they are not provided in real time. Furthermore, data on household production of food waste are quite poor.

1.3. Living Lab Cycle 1: Planning Possibilities

1.3.1. Setting up the Living Lab

Work in the LL so far has mainly revolved around narrowing the focus on specific issues to be addressed within RUSTIK, as well as reaching out to potential broader LL members; so far, mainly members of the partners' networks working on issues of FLW have been contacted, as it was agreed upon by the LLC and PRP first. In the next steps, stakeholders working in the social sphere will be invited to participate.

The majority of work consisted of relatively informal brainstorming meetings between the LLC and PRP, including phone calls and e-mail communication. An initial focus group meeting with potential core LL members was also held, followed up by another broader meeting by stakeholders working on FLW on the side-lines of a bigger FLW-related event marking the first official National day without food waste (April 24th, 2023).

Collaborative methods

Among these, the following may be highlighted (see also Table 2):

- The aforementioned initial focus group with potential core LL members – this was mostly a free discussion, held online and attended by the LLC, PRP, another researcher and officials from the agricultural and environmental ministries
- The broader (rather informal) meeting on April 24th, where mainly data-related issues were discussed with ministry officials, researchers, PRP and LLC representatives and a small number of representatives from business
- Several smaller PRP-LLC meetings to discuss ways forward.

Participants and stakeholders

At the moment, the PRP and LLC (with several people on both sides) form the core of the LL, although they both have a number of related activities and networks that overlap to a certain extent. The work has thus involved between 2 and 12 people. At the moment, most of the other LL members are researchers and officials working on the issue of FLW, but this is expected to expand as the social sphere is explored more. While other members have been consulted, the main discussions about research questions have been between the LLC and PRP.

Data collection methods

Mainly desk research of data bases, strategies and other policy documents have been used to feed formally into the work conducted under WPs 1, 2 and 4.

1.3.2. Living Lab activities in 2023

The table below lists activities that were strictly related to the work under RUSTIK. It should be highlighted that both the PRP and LLC engage in a range of activities that inform their work under RUSTIK in some way and can be seen as loosely related. This includes project work, consultancy and other activities related to food waste and food systems in

general, agriculture and agricultural policy, as well as rural issues, social inclusion and social entrepreneurship.

Table 2 You can use a table to list the activities

date	event
22.11.2022	Brainstorming LLC-PRP on the LL's topical focus. FLW proposed and broadly agreed upon.
3.2.2023	Phone call LLC-PRP to discuss potential LL members
15.2.2023	Introductory online meeting with potential LL members
19.-22.2.2023	Participation in LL kick-off event (LLC & PRP)
4.4.2023	LLC-PRP meeting on participation in national FLW event
24.4.2023	National FLW event, introductory meeting with broader group of LL members
3.7.2023	Brainstorming LLC-PRP on research questions and addressing data gaps
16.-19.10.2023	Consortium meeting, Parma
By end 2023	Planned: further discussions of specific activities in cycle 2

1.3.3.   Reflections from Cycle 1

Some issues relate to the fact that the region selected is to some extent an artificial one: Slovenia is not regionalized and Osrednjeslovenska region is actually a statistical region. There is therefore no level of government between the municipal and state level and discussions in the future will have to take place with representatives from both levels.

Although there have been no issues related to this so far, there may be some difficulties in the future related to the fact that the PRP holds no formal powers. Stronger engagement with policy- and other decision-makers specifically related to RUSTIK's activities will therefore be necessary.

Certain discussions between the PRP and LLC have been marked by the fact that one partner is practice-oriented, while the other is research-oriented, but this was to be expected. Rather than seeing this as a deficiency, it can be seen as a strength: both 'sides' bring equally important, valuable knowledge and skills to the table, and have learned in the past year to communicate in a fruitful manner, aiming to use the project to provide outputs that are both practically relevant and scientifically sound, thus providing replicable results with a high level of policy relevance.

1.4. Cycle 1 results

While there are some quantitative data available related to the two issues addressed (e.g.annual data on food waste per segment of the food supply chain, which have very limited utility; in the social field, aggregated information such as risk of material deprivation or social exclusion at the level of statistical regions (NUTS3) and per year), there are certain issues for which there are not, especially in areas that can be assessed using qualitative data and indicators, such as subjective quality of life, dignity and similar (elusive) concepts. While some existing data may prove to be useful, new and/or composite indicators may have to be devised to accommodate the needs of the experiment.

In the (nationally) very fresh field of FLW, the policy environment is developing, but unlike other issues related to food production, it seems to be less contentious; however, due to its novelty, there is fairly little tangible in the field, including financing.

On social issues in rural areas, certain statistics exist, but there is a great deal of hidden poverty and exclusion, which does not make it into official statistics and is at the moment only known and knowable through interviews with practitioners in the field.

While functions and transitions may be useful framing concepts for policy and research, they have limited utility for specific situations on the ground, where all these concepts occur at the same time (and sometimes the same space).

No radical decisions were made other than the selection of the topic for experimentation in the next cycle.

2. Part 2: Challenge and next steps

2.1. Living Lab challenge

The challenge that the LL has selected is (at least) two-fold: excess food of not well-known quantities on the one hand (environmental issue) and limited access to food for marginalized people of, again, not well-known magnitude. The latter issue is closely related to other forms of material and social deprivation. The current idea behind the 'experiment' is to see whether it is possible to gather current data on excess food, mobilise this food towards those who need it (for which, again, some novel source of information or ways of acquiring it must be tapped), and how this may improve quality of life and subjective wellbeing in vulnerable groups in rural areas. The next step might be to see whether and how such practices could be made more systematic.

2.1.1. Rationale

The challenge was chosen due to its increasing (general) societal importance and considering partners' expertise. The PRP's activities revolve around dignity and social inclusion, as well as food as a social cohesive. Circumstantial evidence shows that poverty, social exclusion and poor access to quality food are worse in rural areas; conversely, more urbanised areas and their associated institutions such as schools, supermarkets, restaurants and long-term care facilities, may be a significant source of FLW. The Osrednjeslovenska region, where rural and urban areas are interspersed at relatively short distances, may provide a good polygon for testing how/whether these characteristics may be turned into a mutually beneficial relationship, and perhaps yield upscalable good practices.

2.1.2. Knowledge to date

Data on FLW are generally irrelevant (in terms of direct actionability) by the time they are published (they need to be real-time to be useful), as they are only formally reported on a monthly basis by organisations as 'waste'. On the other hand, information on social exclusion (especially in rural areas) is circumstantial and not well reflected by statistics, as these mainly focus only on different aspects of material deprivation and access to services, and less on more complex issues such as disempowerment and dignity. The issues are also sensitive, making it difficult to formulate direct courses of action; new approaches and social innovation are needed. That said, around 10 % of people were estimated to be a risk of poverty in the region in 2022 (SURS, 2023).

2.1.3. Research question/s

The specific research questions might be:

- How can current data on excess food be provided (directly or indirectly) to those who need it in a way that preserves dignity and promotes empowerment and social

inclusion in deprived segments of rural society? How much FLW can be prevented in this way?

- How does food, access to food and the related cultural aspects relate to subjective wellbeing? How can these aspects be measured?

2.1.4. Policy relevance

Generally, there are policy measures in place attempting to mitigate both poverty and FLW (and their adverse climate implications). Concrete numbers on FLW prevented and subjective wellbeing improved can be used to monitor progress towards existing policy goals. Indirectly, improved subjective wellbeing would also affect other policy issues, such as out-migration from rural areas and limited access to general services. Ideally, the experiment would result in upscalable good practices that could be stimulated through policy measures, likely under the Common Agricultural Policy's second pillar. However, a prerequisite for this would also be the formulation of appropriate indicators to monitor such complex measures (in a cost-effective way). Furthermore, upscalable good practices might also find a place in the future Regional development programme, which draws from the Cohesion fund, the Just transition fund and the EAFRD; even in its current version, the Programme does mention food self-sufficiency, rural quality of life and efficient waste management as its goals, albeit very crude indicators are envisaged for monitoring (such as Utilised agricultural area for rural quality of life and kg of municipal waste per person generated for efficient waste management).

The PRP and LLC are already relatively well connected to institutional networks but will continue to strive to improve these connections and exchange knowledge on good (and bad) practices.

2.2. Emerging data needs

While the data needs are outlined above, the main issues related to data are related to acquiring them in real time and dealing with the sensitivity that surrounds information on poverty and social exclusion. Institutions that do keep sensitive data of this kind generally do not share them, and rightly so. Therefore, it will be a challenge to tackle issues related to privacy, and great care will have to be taken not to jeopardize the dignity of those potentially included. The partners are aware that these issues cannot be addressed directly, so some innovative approaches might be needed to bypass them.

2.2.1. Data availability

There are certain emerging software solutions that help mobilise excess food that might be useful, potentially providing information on amounts of food waste mitigated, money saved and numbers of users. On the other hand, institutions working with marginal groups will be consulted to see what good ways of reaching those in need of it are – without breaching confidentiality and jeopardizing dignity. Perhaps with simple upgrades of existing digital solutions, members of target groups may be approached by such institutions (rather than the RUSTIK team or, in the long run if the approach proves to be policy relevant and upscalable, officials) and included in such systems while remaining anonymous, circumventing the need to contact them directly.

Limitations

Data are either not current (on FLW) or even do not exist (on social exclusion in rural areas). Lack of indicators for some forms of information, such as dignity.

Capacities

The data needs are not clearly formulated yet. For the moment, the LL seems to be able to satisfy its data-related needs.

2.3. Next steps

In the near future, the experiment will have to be made even more concrete in terms of timeline, goals and division of labour. Some literature review is also needed on socio-cultural and psychological aspects related to food and access to food. It is very likely that the experiment will begin with a scoping phase during which past local activities in the specific fields selected will be explored through desk research and interviews. A meeting between the LLC and PRP to define further activities, different parts of the experiment and respective duties is already scheduled.

The appropriate stakeholder organisations will have to be contacted and included in the work, especially in the social field, but also officials from municipal governments and perhaps others, such as LAGs and representatives from the HoReCa sector.

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