
smart region transition strategy 2030

## Contracting authority

Municipalities of the Ljubljana Urban Region

## Subject

Regional Innovation Strategy of the Ljubljana Urban Region 2030

## Contractor

Regional Development Agency of the Ljubljana Urban Region (RRA LUR)

Tehnološki park 19

1000 Ljubljana

## Project manager for the Contractor

Liljana Drevenšek, M.Sc.

## Members of the project group

Lilijana Madjar, M.Sc. (RRA LUR), Miran Gajšek, M.Sc. (City of Ljubljana), Ivan Stanič, Ph.D. (City of Ljubljana), Aidan Cerar, Ph.D. (Institute for Spatial Policies), Liljana Drevenšek, M.Sc. (RRA LUR), Matej Gojčič (RRA LUR), Tina Pezdirc Nograšek, M.Sc. (RRA LUR), Klemen Koman, M.Sc. (Institute for Economic Research), Damjan Kavaš, Ph.D. (Institute for Economic Research)

October 2022

# TABLE OF CONTENTS

# 1 INTRODUCTION

A regional innovation strategy represents the basis for a region's timely response to important questions of the future deriving from innovation, digital transformation and the development of new technologies around the world. Regions must become increasingly innovative in order to be able to face global social challenges, increase competitiveness and renew the future of the social state (welfare) and public services. All this requires an innovation climate that provides the best possible conditions for innovation on the part of individuals, the business and public sectors, and civil society.

Research and innovation help make life and work in regions easier thanks to improvements in healthcare and transport, the development of digital services and the introduction of innovative products and services. A capacity for innovation and the ability to successfully transfer innovations to the market are key factors in a country's competitiveness. The term "innovation" covers both new products, services and processes and significantly improved products, services and processes. If the main emphasis in the past was on technological innovations (i.e. innovative products/services/processes), considerable emphasis is also placed today on non-technological innovations (i.e. innovations in the spheres of organisation and marketing).In recent years, growing social challenges mean that social innovations are increasing in importance.

A social innovation involves new ideas, concepts and strategies that respond to the needs of society, such as working conditions, education, healthcare services, empowerment and community development. Social innovations can be developed by individuals, groups or organisations and can take place in the non-profit, for-profit and public sectors. Innovation thus makes a significant contribution to addressing key social challenges ranging from environmental issues, mobility, security, access to food, the ageing population, education and research to challenges in the field of healthcare.

Specific innovations frequently involve major investments, major risks and a critical mass of resources (human resources, equipment, financial resources). For this reason, a systematic approach is needed at the level of enterprises, the state, regions, municipalities, supranational communities (such as the EU) and even at the global level (covid-19). Innovations improve the quality of life, the competitiveness of enterprises and, consequently, the competitiveness of the national economy. Innovation is a necessity, not a luxury.

Technological development and innovation are the main sources of economic development (European Parliamentary Research Service, 2018). In terms of the utilisation of its innovation potentials, as measured by the European Innovation

Scoreboard,[1] Slovenia was part of the strong innovators group until 2019, when it slipped from 12th to 15th place in the EU-wide classification and moved from the strong innovators group to the moderate innovators group (European Commission, 2020), where it remained in 2020, 2021 and 2022 (European Commission, 2021a, European Commission, 2022). On average, the innovation performance of the EU-27 has increased between 2015 and 2022. In this period, performance has increased the most in Estonia, Greece and Cyprus and declined most for France, Romania, Luxembourg, Bulgaria and Slovenia.

Innovation is not, however, only important at the national level. The innovation of regions is also important. Regional innovation capacity can be defined as the potential of a region and its economy to create innovative products, services and business models.

Although the promotion of innovation has been an objective of developed countries for at least three decades, innovation has largely been encouraged at the national level, without a regional dimension and without taking into account the regional effects of innovation policy. The publication Regional Innovation Scoreboard 2017 points out that while there is a positive link between the innovation performance of a country and that of its regions, the positive link between regional innovation performance and regional competitiveness is even more statistically significant (European Parliamentary Research Service, 2018).

The complexity, long-term nature and human resources and financial requirements of innovation development mean that it needs to be directed with the help of strategic documents. To this end, regions prepare documents known as regional innovation strategies. A regional innovation strategy or RIS demands an integrated approach to the formulation and implementation of policies that is focused on local environments. Policies need to be formulated in accordance with local conditions and should take into account the fact that different paths to innovation and development exist in regions. In order to achieve a successful innovation dynamic in a given region, it is also important to coordinate regional and national innovation policies so that they facilitate the achievement of synergies and, consequently, the better performance of the region. Since there is no universal model or "good practice" on which to base innovation, all regions have to find their own way to create competitive advantages, on the basis of their own local advantages and assets, while simultaneously seeking inspiration in global networks and trends.

When preparing a regional innovation policy, it is necessary to take into account the administrative and organisational characteristics of the individual country. Slovenia, for example, has no regional authorities or bodies competent to formulate and implement innovation policy at the regional level. For this reason, it is not possible to adopt "established" methods of preparation of regional innovation strategies, where in recent years the Regional Research and Innovation Smart Specialisation Strategy RIS3 approach has predominated. These strategies are prepared at the level of the state and large regions (NUTS 2) and are mainly financed from EU Cohesion Policy

[1] The European system of annual innovation indicators gives a comparative assessment of the research and innovation performance of EU member states and selected third countries and presents the relative strengths and weaknesses of their systems for research and innovation. It helps countries assess which areas they should focus their efforts on in order to achieve greater innovation performance.

funds, while experience shows that the preparation of an RIS3 at the NUTS 3 level is an overambitious project, above all because of the limited competences and, frequently, the absence of a critical mass of resources. One of the main findings from the preparation of regional innovation strategies in the past is the importance of the initial (preliminary) phase. Evaluations have shown that identifying relevant societal needs and capabilities at the outset, and mobilising resources accordingly, is of the utmost importance for the preparation of a regional innovation strategy (Kleibrink, Laredo, Philipp, 2017).

It is often the case that innovations only happen when the relevant actors are faced with a challenge and a solution is needed for a specific problem. Slovenia's future development, and that of its regions, will be strongly dependent on its ability to respond and adapt to global trends and challenges. An example of this is the covid-19 pandemic, which on the one hand accelerated trends (e.g. technological development) and, on the other, seriously weakened the financial position of the state, local communities, a large part of the economy (especially the service sector) and part of the population. Public authorities, citizens, the business sector and the public sector are already facing numerous challenges which will only intensify in the future. The covid-19 pandemic and the war in Ukraine remind us that the future is unpredictable and that the international community, individual countries, regions and municipalities must have analyses, strategic documents and structures in place to ensure adaptability and resilience to the challenges of the present and the future.

Slovenia and the LUR are witnessing numerous challenges in the areas of demographics, mobility, the environment, limited resources, globalisation, quality of life and many other spheres. The LUR consists of 25 municipalities. Borovnica, Brezovica, Dobrepolje, Dobrova-Polhov Gradec, Dol pri Ljubljani, Domžale, Grosuplje, Horjul, Ig, Ivančna Gorica, Kamnik, Komenda, Ljubljana, Logatec, Log-Dragomer, Lukovica, Medvode, Mengeš, Moravče, Škofljica, Šmartno pri Litiji, Trzin, Velike Lašče, Vodice and Vrhnika. The capacity of the region for innovation largely depends on the innovative capacities of the businesses, research institutions and university faculties located there. A dynamic start-up ecosystem has established itself in the region. We are seeing the growth of new initiatives of various kinds, some of them bottom-up initiatives deriving from entrepreneurial activities and others prompted by public policy. What all of them have in common is that they are focused on providing adequate support to enterprises. The result is a dynamic network that expands outwards beyond the LUR across Slovenia and also much further afield – across the Western Balkans and to the EU and USA.

A region cannot, however, be innovative without the innovative capacities of its municipalities, since many of the challenges identified above are also apparent at the municipal level. This is why the municipalities were actively involved in the process of preparing the Regional Innovation Strategy of the Ljubljana Urban Region (RIS LUR). The RIS LUR highlights activities that can be realised at the regional and local levels and are based above all on non-technological innovations. The RIS LUR thus complements national policy in areas such as the promotion of science, development, entrepreneurship, education, the information society, mobility, regional development, rural development, and other spheres.

The preparation and implementation of the RIS LUR is part of the model of successful (pioneering) cities and regions followed by the LUR (shown in Figure 1). In view of the limited competences of the region and its municipalities in terms of stimulating the economy and innovation, we followed the model of countries with similar administrative arrangements to Slovenia (e.g. Finland)[2] when drawing up the RIS LUR.

In view of the increasing complexity of the world and the phenomenon of "wicked problems" facing public authorities, including climate change, infectious diseases and rapid technological advances, strengthening the innovative capacity of public authorities and public sector systems has become urgent. It is not enough for public authorities to maintain the status quo or only to introduce innovations when compelled to by crises. Public authorities must engage proactively with the future, research the potential of innovative approaches and solutions and work constantly to improve the lives of all (OECD, 2022).

[2] The Helsinki Smart Region explicitly uses the expression "smart region" to describe the development concept in the Helsinki-Uusimaa region. For 2020, the region prepared a very indicative (general) strategy of smart specialisation which responds, above all, to the questions Why? What? How? The document sets out the region's goals and strategic priorities in very general terms, while measures/activities/projects will be defined during the course of implementation of the strategy. https://uudenmaanliitto.fi/en/development-and-planning/smart-specialisation-strategy-for-the-helsinki-uusimaa-region/.

Figure 1: Critical success factors for pioneering cities and regions (source: European Committee of the Regions, 2016)

Through the preparation of the RIS LUR, the region, municipalities and other key stakeholders will gain a strategic document that will highlight fundamental societal and economic challenges and offer guidelines for addressing the identified challenges in line with the competences of the region and municipalities as regards fostering innovation. People and their needs are at the centre of the preparation of the RIS LUR, the final objective of which is to improve the well-being of the inhabitants of the LUR.

The RIS LUR is harmonised with strategic documents of the state and the region and covers the period 2022–2030. By preparing a RIS, the Ljubljana Urban Region takes its place in the group of the most advanced regions of Europe that have similar strategic documents (e.g. the Helsinki-Uusimaa region). Only through implementation will the RIS LUR have adequate positive impacts, so the cooperation of the state, municipalities and the Regional Development Agency of the Ljubljana Urban Region (RRA LUR) will be necessary to ensure adequate conditions for the promotion of innovation activities in the LUR.

The preparation of the RIS LUR should be placed in the context of existing strategic documents at the EU, Slovenia and LUR levels and the preparation of new strategic documents.

The RIS LUR represents an upgrading of the Regional Development Programme of the Ljubljana Urban Region (RDP LUR) for the period 2021–2027, in that it takes into account the priorities that the region has set for the new financial perspective. It goes beyond the traditional connection of science and research with industry, in that the social component and projects from the field of process and product innovation and digital transformation, which are essential for quality of life in the LUR, will be of central importance.

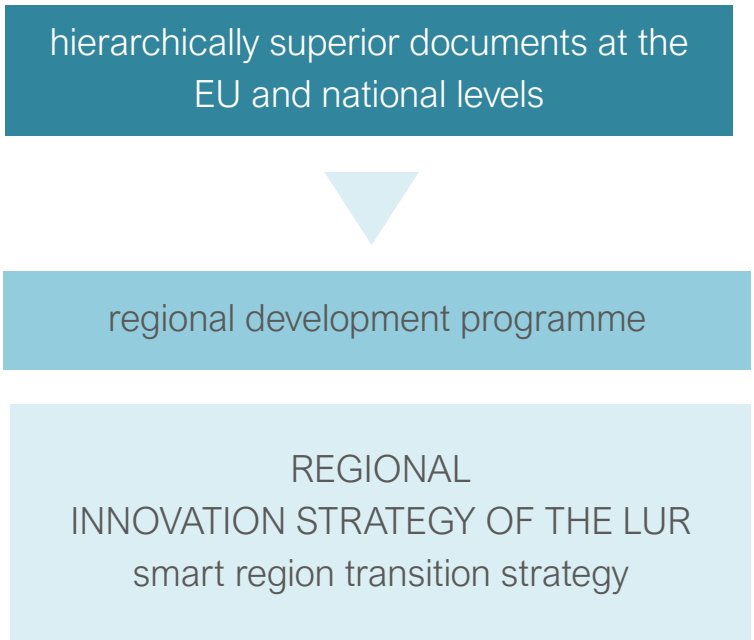



Figure 2: Role of the RIS LUR in the system of development planning

The RIS LUR derives from the RDP LUR and represents an innovative part of it. It represents the key framework for an experiment in fostering innovation at the regional and local levels.

The RIS LUR is a territorial strategy that represents an experimental approach to fostering innovation at the level of development regions. For this reason, the RIS LUR is a "living" document that indicates a direction of development and will change as conditions change (adaptability). An important role will be played by monitoring (reporting, indicators) and evaluation (effects and results of projects, process evaluation).

During the preparation of the RIS LUR, flagship projects for its implementation were also designed. These are the result of the preparation process itself.

By preparing the RIS LUR, the region overtakes the other development regions of Slovenia and, through the elaboration of the concept of the LUR as a smart region, also takes its place among innovators in the European context.


regional innovation strategy preparation methodology
regional innovation strategy preparation methodology
regional innovation strategy preparation methodology

# 2 PREPARATION METHODOLOGY

When preparing the Regional Innovation Strategy of the Ljubljana Urban Region (RIS LUR), we took as our starting point the answers to three fundamental questions: why, what and how.

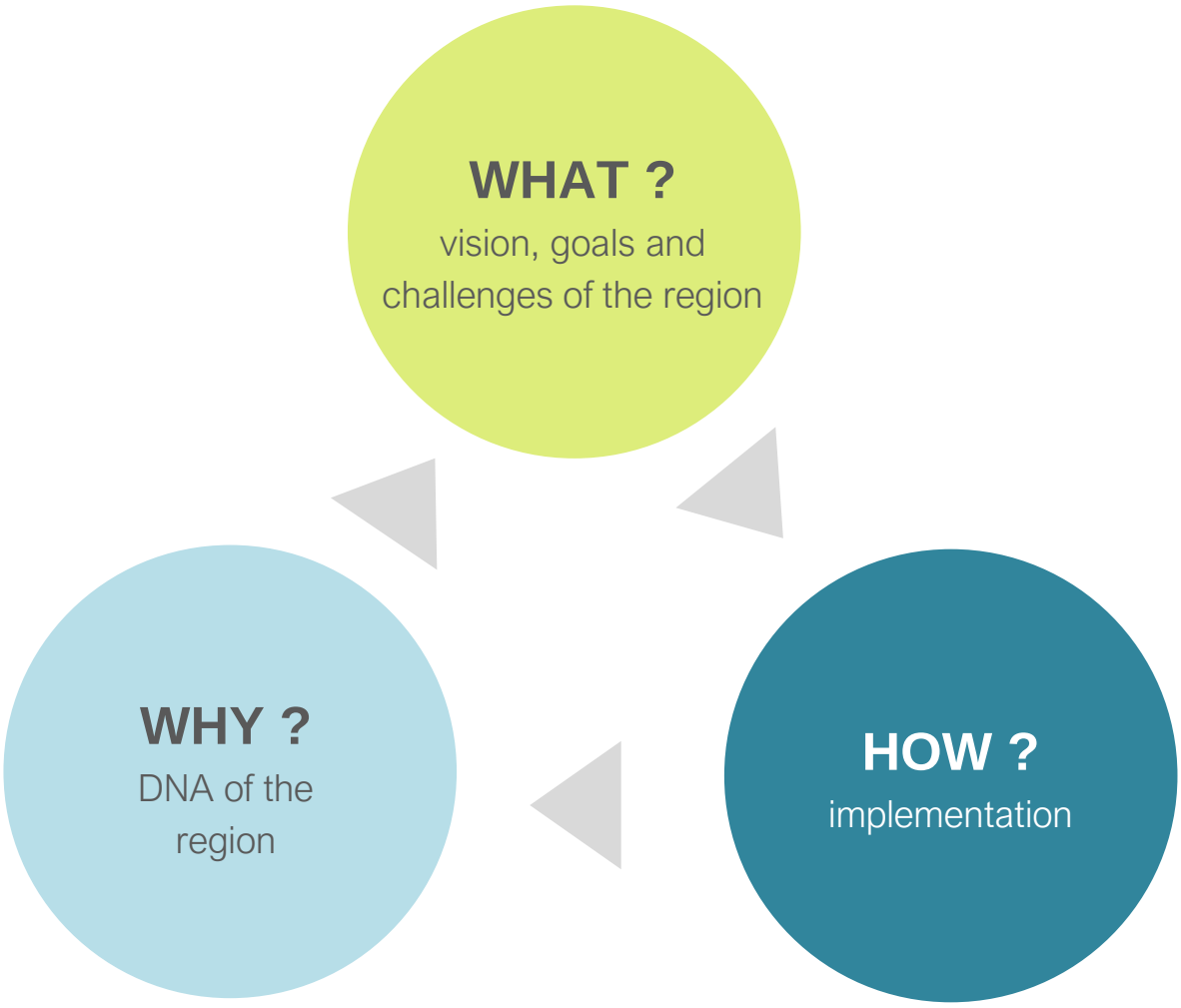



Figure 3: Fundamental questions we will answer by preparing the RIS LUR (source: European Committee of the Regions, 2016)

## WHY ?

We want to exploit the potentials of the region (competitive advantages).

We want to exploit opportunities and minimise risks (e.g. technological development, climate change, demographic movements, economic crises) and in this way strengthen the region's resilience.

We want to take into account conditions during and after the covid-19 pandemic.

We want to raise the profile of the region in Europe.

We want to exploit the innovation potentials of the municipalities of the LUR.

## WHAT ?

### Challenges

Demographic development (ageing population, Millennials and Generation Z)

Digital transformation

New technologies

Sustainable mobility

Climate change and other environmental challenges

Self-sufficiency and organic farming

Political uncertainty

### What we want to achieve

To start the process of fostering innovation using a bottom-up approach

To improve the well-being and quality of life of the citizens of the LUR, where smart policies, practices and technology are at the service of citizens

Efficient use of the region's resources: innovations, cooperation, governance

The achievement of sustainable and environmental goals in an innovative way

Economic development and strengthened innovation capacity of the region

Connections between the urban and the rural

Improved decision-making involving citizens and all stakeholders (co-creation)

Acceleration of the process of adapting the region to opportunities/risks

Improvement of the population's skill level

A higher international profile for the region

## HOW ?

### Starting points

The citizens of the region are the basis.

Regional bottom-up approach

The basis is the concept of a smart region.

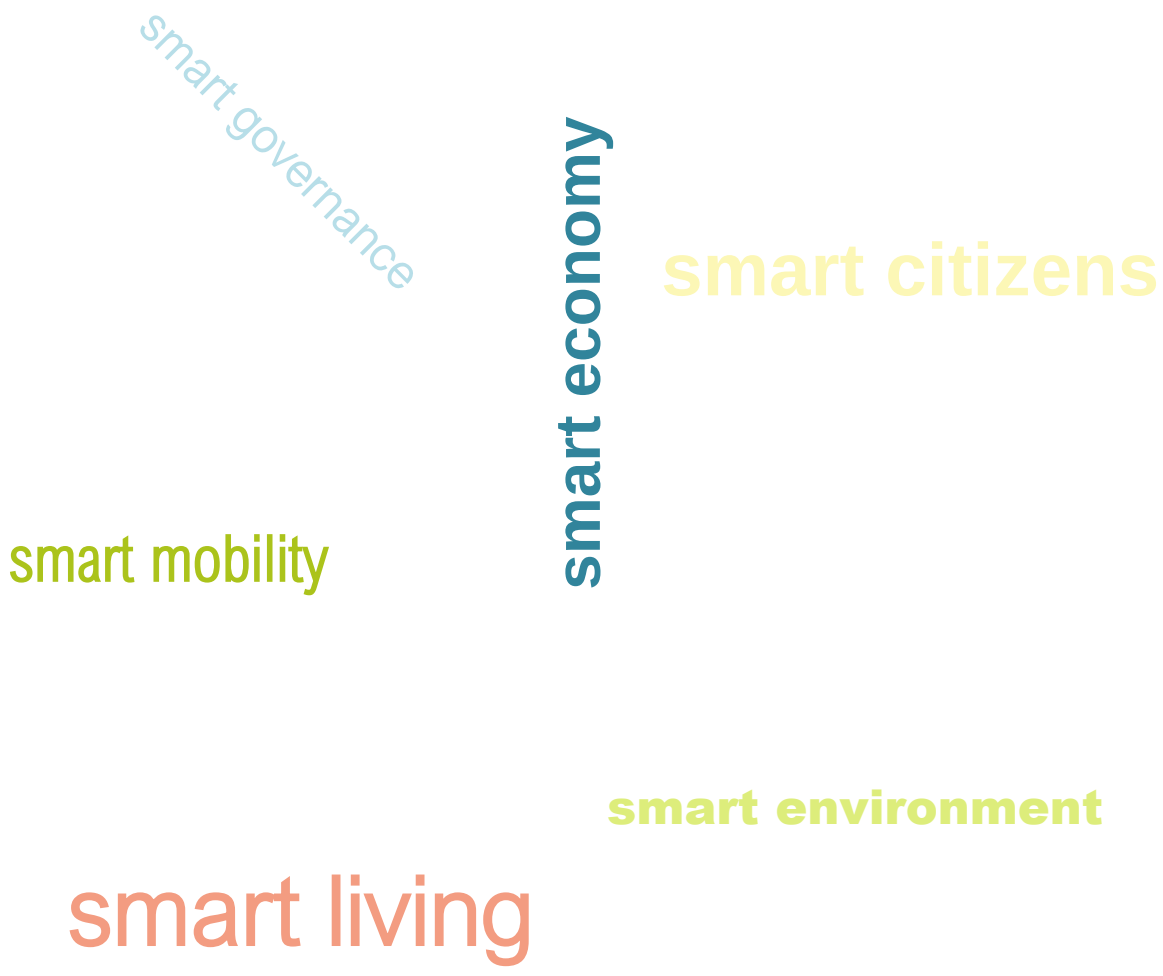
## 2.1 SMART REGION

There is no single definition of a smart region. The term derives to a large extent from experiences related to the concept of a smart city, while the concept of smart villages has gained currency in recent years.

The concept of a smart region can be summarised by the following (Norwegian) definition:

Smart cities and communities focus on people, while using new technology, innovative methods, collaboration and co-creation to become more sustainable, attractive, productive and resilient.

The smart region concept is thus not primarily about technology, since technology merely facilitates actions/projects that address economic, social and environmental challenges. In accordance with the ISO 37122 standard (2017), which defines indicators for smart cities, the topics of the smart region approach can be divided into six thematic objectives or areas:



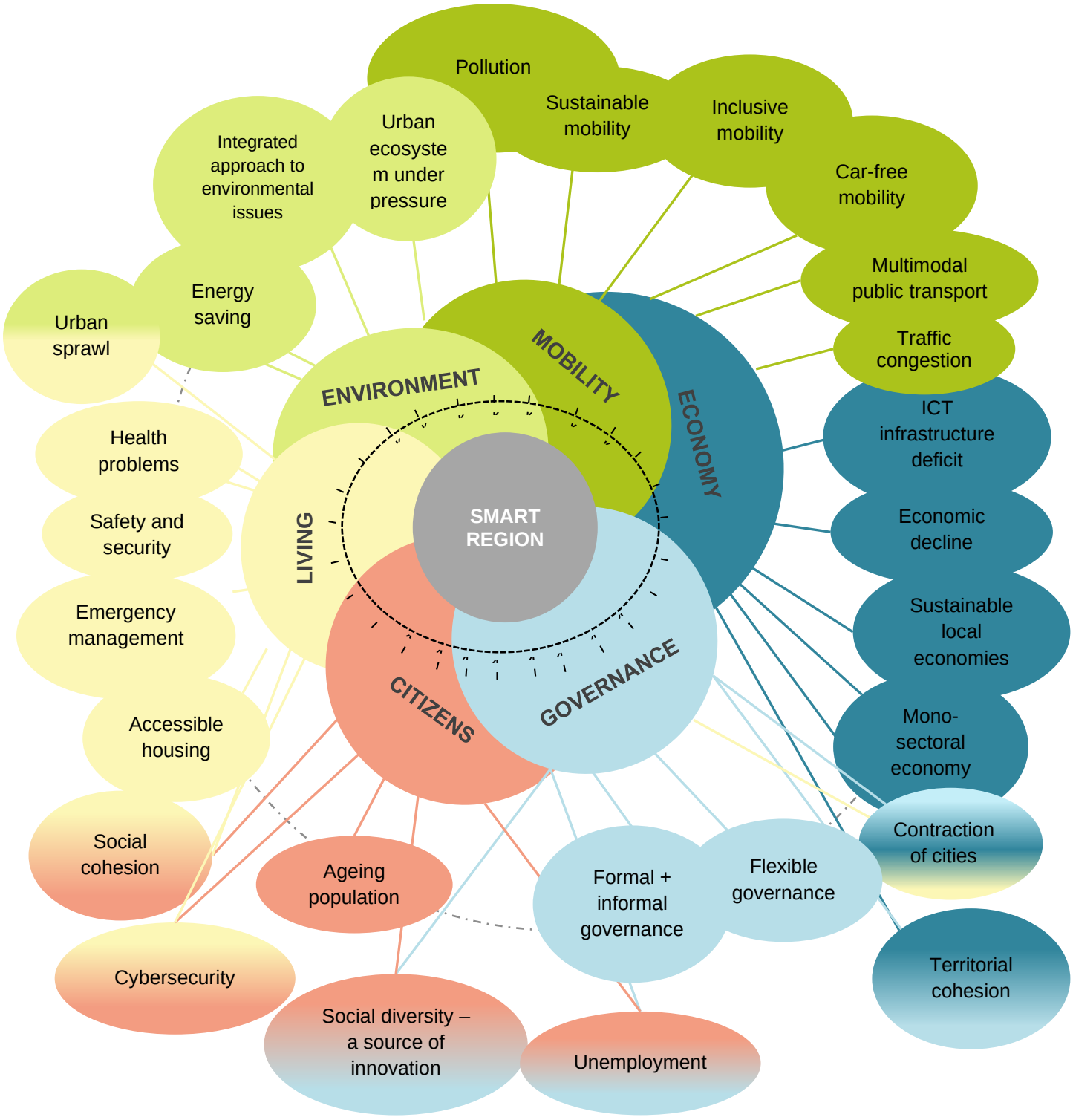



Figure 4: Smart region (source: adapted from Monzón, 2015)

## 2.2 PRINCIPLES OF PREPARATION AND IMPLEMENTATION OF THE RIS LUR

When preparing the RIS LUR, we followed the following principles[3]:

1. Human-centred approach. Analysis (co-creation) and measures (services, knowledge, living – green infrastructure, quality of living and working environment) while taking individual differences into consideration (age, gender, cultural, socioeconomic background).

2. Consider the bigger picture: an integrated approach. The strategy as part of a general strategy and provision of political and administrative support. Approach based on real challenges and proposed solutions based on new technology, innovative approaches and co-creation.

3. Prioritise climate changes and environment with the aim of a "green shift". Focus: effective energy use, sustainable mobility, new energy solutions, circular economy, local production.

4. Promote inclusion and co-creation. Physical and digital platforms facilitate the inclusion of stakeholders under the quadruple helix model, i.e. cooperation of science/education, enterprise/industry, policy designers and civil society. Measures (preventive, curative) must also take into account equal opportunities: spatial, social (gender, age, physical limitations, income), economic (jobs).

5. Focus on next-generation business. This requires a proactive role of regions/cities. Regions/cities become digital innovation ecosystems that attract talents, encourage creativity and disruptive thinking and use innovation model approaches. This includes the development of new products, services and business models, innovative public procurement, pilot projects, living labs.

6. Share and use open data. This facilitates increased efficiency and quality of services (digital transformation), innovation, economic development feeling of belonging for citizens while also giving due consideration to ethical principles and data security (problems of cybersecurity, surveillance of citizens). It is also part of an "open government" approach, where the authorities communicate with citizens, the business community, academia and the tertiary sector while observing the principles of participation, cooperation and transparency.

7. Develop competences and embrace change. This requires the development of relevant competences (training), cooperation (education and research

[3] Roadmap for smart and sustainable cities and communities in Norway (2018) and Urban future with a purpose (2021).

sectors, enterprises), promotion and implementation of the adopted strategy.

8. Act local, think global. The focus should be on the local identity, challenges and needs. Look to other regions/cities for examples of good practices. This also requires internationalisation and monitoring of global conditions, international trends, focuses and regulation. Cooperation with national authorities facilitates the preparation and implementation of the selected measures/projects.

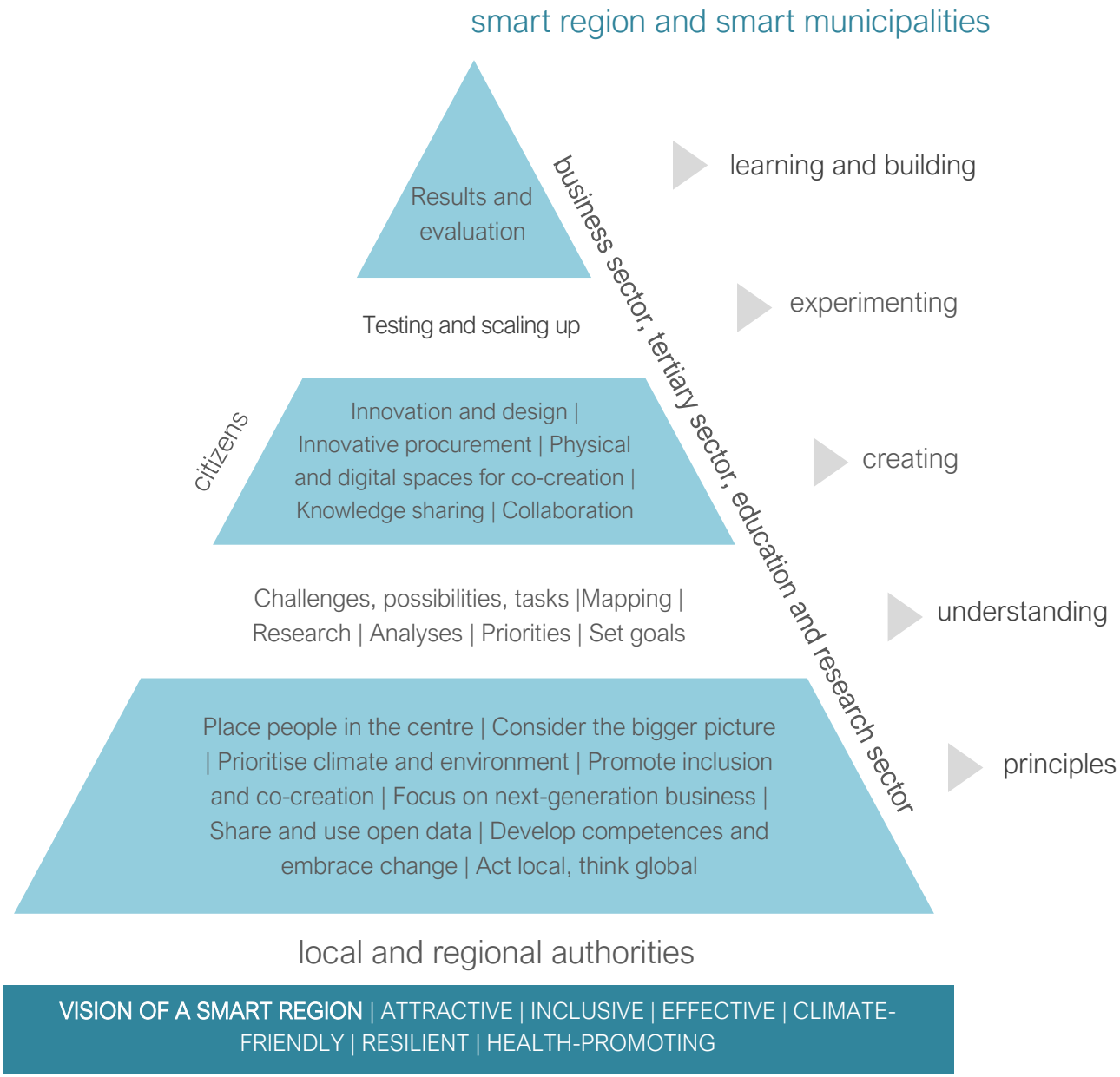


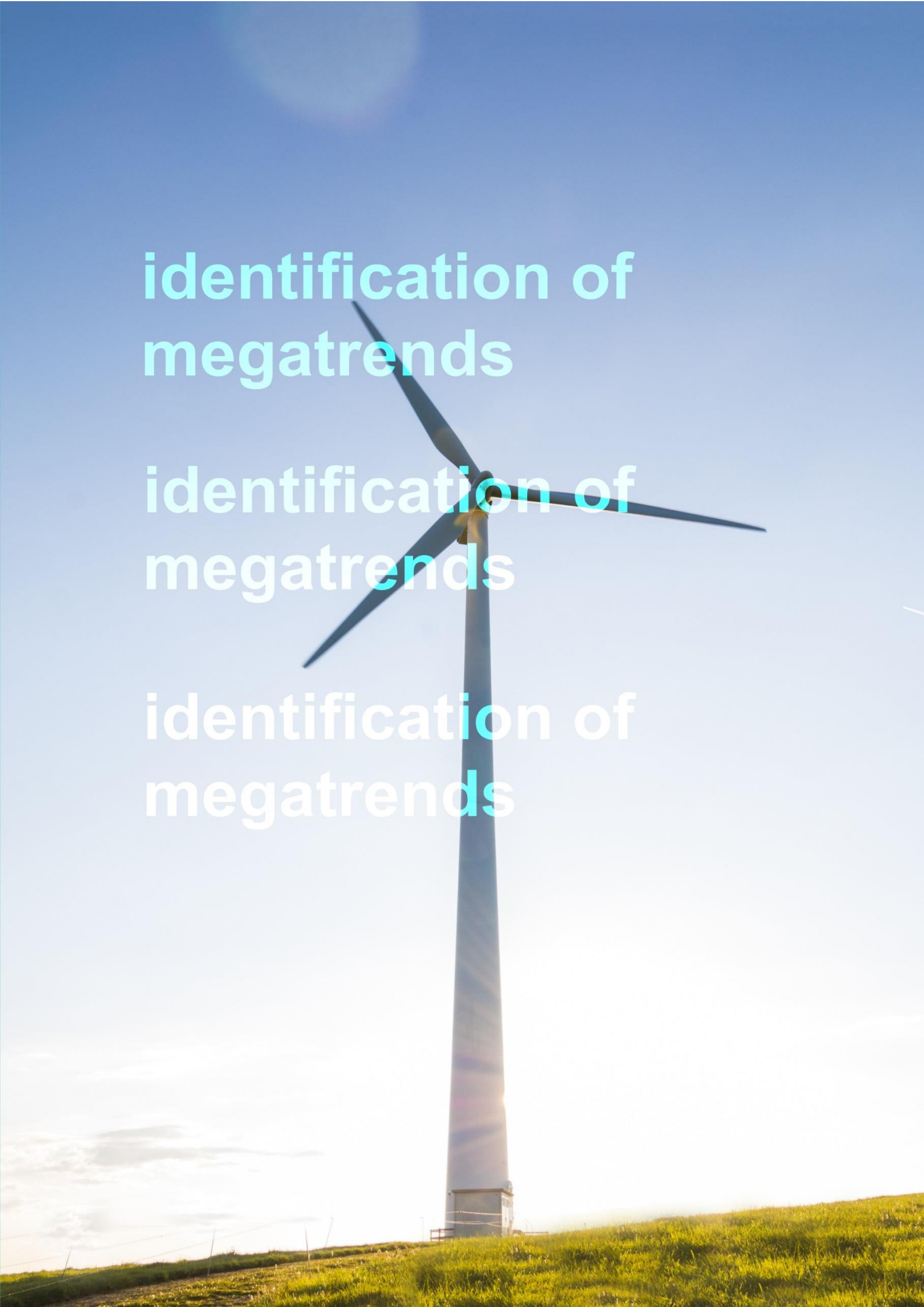

Figure 5: Approach to the preparation and implementation of the RIS LUR (source: adapted from Roadmap for smart and sustainable cities and communities in Norway, 2018)

The RIS LUR will also contribute to the realisation of the UN's sustainable development goals, including Goals 4, 8, 9, 11, 13 and 16.

Table 1: Contribution of the RIS LUR to the realisation of the UN's sustainable development goals

| goal | description | Contribution of the RIS LUR |
|---|---|---|
| 4<br>Quality education | Countries will eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations, expand the number of scholarships available to developing countries and increase the supply of qualified teachers, especially in least developed countries and small island developing states. | Lifelong learning, especially ensuring computer literacy, with an emphasis on training for the elderly and vulnerable groups |
| 8<br>Decent work and economic growth | Countries will work to sustain economic growth, achieve higher levels of economic productivity through technological upgrading, protect labour rights, eradicate forced labour and end modern slavery and human trafficking. At the global level, they will gradually improve resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation. | Promotion of a dynamic, sustainable and innovative economy, with an emphasis on youth employment and empowerment |

| goal | description | Contribution of the RIS LUR |
|---|---|---|
| 9<br>Industry, innovation and infrastructure | There is a need to build quality, reliable, sustainable and resilient infrastructure and promote sustainable industrialisation. Countries must increase the access of small-scale industrial and other enterprises to financial services, including affordable credit. Increased access to information and communications technology is also necessary. | Promotion of sustainable mobility, sustainable industry, digital transformation and sustainable innovation |
| 11<br>Sustainable cities and communities | Countries must ensure access for all to adequate, safe and affordable housing, basic services and sustainable transport. Efforts to protect and safeguard the world's cultural and natural heritage must be strengthened. | Promotion of modern sustainable living communities (sustainable mobility, improved access to information and public services), protection of cultural and natural heritage |
| 13<br>Climate action | Countries need to significantly strengthen resilience and adaptive capacity to climate-related hazards and natural disasters. Climate change measures need to be integrated into national policies, strategies and planning and the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change needs to be implemented. | Promotion of measures to mitigate climate change (e.g. efficient energy use, self-sufficiency, circular economy) |


identification of megatrends
identification of megatrends
identification of megatrends

# 3 IDENTIFICATION OF PRINCIPAL MEGATRENDS

Megatrends represent one of the starting points of the preparation of strategic documents, since they represent both an opportunity and a risk. We have seen numerous megatrends in recent decades, which are defined differently by different international organisations. Consulting firm PwC highlights the following megatrends (PwC, 2018): technological breakthroughs (automation, artificial intelligence, robotics); demographic shifts (changes in the size, distribution and age profile of the world's population); rapid urbanisation (rapid growth of cities, cities as agents of job creation); shifts in global economic power (rapid growth of some nations, increased risk of social unrest in developed countries as a result of the erosion of the middle class, wealth disparity and job losses due to automation); resource scarcity and climate change (alternative energy, restructuring of traditional energy industries, new concepts in product development, re-use). According to consulting firm Ernst & Young, the main forces of change are technology (virtual reality, augmented reality, artificial intelligence, sensors, blockchain), demographics (ageing population) and globalisation (populism, inequality). Over the next three to ten years these will give rise to numerous megatrends such as technological development, demographic change, political instability, climate change, globalisation and urbanisation, among many others. Other research and consultancy organisations highlight similar trends, while all of them stress the importance of demographic change, technological development and climate change (EY, 2018). An even more detailed elaboration of trends is offered by Deloitte in the publication Analysis of future growth conditions and potentials in Greater Copenhagen, where megatrends are divided into social, technological, economic, environmental and political trends.

In 2020 consulting firm Roland Berger has identified the following megatrends that will shape the development of the world until 2050:

### 1. People & Society

Population: a growth in world population but a decrease in the population growth rate, which is highest in less developed countries; income disparities.

Migration: an increase in the number of migrants, with a significant increase in the number of climate migrants (Africa, Asia).

Values: an improvement in the state of human rights.

Education: increase in the level of education of the global population.

### 2. Health & Care

Pandemics: the major negative impact of pandemics; health challenges such as: health problems caused by pollution; decreasing effectiveness of medicines as a result of antimicrobial resistance; the challenges of using new technologies in healthcare; the provision of global healthcare (medicines, healthcare infrastructure); an increase in healthcare spending.

Diseases: continued growth of diseases such as Alzheimer's, diabetes, heart attack/stroke, cancer; acceleration in the use of new technologies and therapies in healthcare (cell and gene therapies, personalised treatment).

Caregiving: increasing costs of long-term care (ageing, dementia, increase in the number of long-term caregivers).

### 3. Environment & Resources

Climate change and pollution: further rises in average global temperature, increase in greenhouse gas emissions, increases in air pollution, land pollution, water pollution, noise pollution and light pollution.

Resources and raw materials: need to reduce use of fossil fuels, increasing demand for water and food, increasing importance of critical raw materials and concentration of supply from China.

Ecosystems at risk: reduction of biodiversity that will require action and an increase in funds.

### 4. Economics & Business

Globalisation revisited: globalisation will be important but there will be a slowing of annual growth rates of international trade (trade barriers, sanctions, covid-19, stalled trade agreement talks), increased importance of local production, reduced importance of global supply chains.

Power shifts: a shift of power to emerging markets in Asia (China, India).

Sectoral transformation: the main drivers of transformation will be decarbonisation and new technologies (AI, big data, blockchain, batteries, etc.).

Debt challenge: increasing global debt levels, potential negative impact on the economy.

## 5. Technology & Innovation

Value of technology: technology and innovation drive economic growth (the importance of a functioning innovation system).

Artificial intelligence: a significant number of new technologies are based on AI but time will be needed for their development and mass application; the impact of AI on unemployment (more than 2,000 occupations are expected to be fully automatable).

Humans and machines: inherent human values must stay central to current and future developments: enthusiasm currently mixed with concerns (job losses, loss of autonomy, use of machines for terrorism, cybercrime, data abuse, overdependence on machines).

## 6. Politics & Governance

Future of democracy: the future of (liberal) democracy is under threat and there is a rising dissatisfaction with democracy.

Governance and geopolitics: the importance of 2024 (elections in numerous countries), democracy is in a state of flux (geopolitical alliances and disputes).

Global risks: the danger of inability to solve global problems, a shift from economic risks to environmental risks.

The 2021 Strategic Forecast Report prepared for the European commission by the Joint Research Centre (JRC) focuses on the key global megatrends that will affect the EU in the coming decades: from climate change, acceleration of technological development and digital transformation to major economic, geopolitical and demographic changes. These are (Joint Research Centre, 2021):

Climate change and other environmental challenges: Global warming will likely surpass 1.5°C in the next two decades and head towards 2°C by the middle of the century, which will further increase pressure on global food and water security. By 2050, over 200 million people could need humanitarian assistance every year partly due to climate-related disasters.

Digital hyperconnectivity and technological transformations: The number of connected devices globally might increase from 30.4 billion in 2020 to 200 billion in 2030. Increased connectivity of objects, places and people will result in new products, services, business models, life and work patterns. Europe is endeavouring to maintain its leading position as regards the twin transitions[4] and creating new forms of work, such as green jobs, both in established sectors and in developing sectors.

Pressure on democracy and values: In 2020 34% of the world's population lived in countries where democratic governance was declining, while only 4% lived in countries that were becoming more democratic. Large-scale disinformation, powered by new tools and online platforms, will pose increasing challenges to democratic systems and drive a new type of information warfare.

Shifts in the global order and demography: The world is becoming increasingly multipolar. China is expected to

[4] The term "twin transitions" is a reference to the green transition (i.e. climate neutrality) and the digital transition.

become the world's biggest economy before the end of this decade, while India will probably overtake the EU in the next 20 years. The world's population is expected to reach 8.5 billion in 2030 and 9.7 billion in 2050, while the EU's population is expected to fall by 5% to just over 420 million by 2050.

Trends are global, continental (e.g. Europe), national, regional and sectoral. All of them influence our present and future development. The future is unpredictable and the speed of changes we have seen in recent years makes predicting it difficult. People always tend to underestimate changes in terms of extent, impact and speed. A further difficulty is the fact that changes in the last 30 years have been rapid, non-linear and interconnected. This makes forecasting difficult and causes fear and unease, since people are afraid of the unknown and of change.

The covid-19 pandemic, the development of technology and demographic changes (e.g. Generation Z) will affect the speed with which new technologies are adopted in the economy and society. To this must be added the EU's green shift, which will also influence the development of technology, the economy and cities and regions in the coming years. Digital and green will be the keywords of the coming years, something that is also evident from EU policies. This will require adaptation of the economy and the public sector and the empowerment of citizens in a smart, digital and green direction.

analysis of regional context and definition of main challenges facing the region

analysis of regional context and definition of main challenges facing the region

# 4 ANALYSIS OF REGIONAL CONTEXT AND DEFINITION OF MAIN CHALLENGES FACING THE REGION

## 4.1 LJUBLJANA URBAN REGION

The Ljubljana Urban Region (LUR) is part of the Western Slovenia cohesion region. It covers an area of 2,334 km$^2$, or 11.5% of Slovenia's total land area, and has a total population of 555,948 (2021), which is more than a quarter of the entire population of the country (26.4%). The area for which the Regional Innovation Strategy of the Ljubljana Urban Region (RIS LUR) is being prepared encompasses all 25 municipalities of the LUR: Borovnica, Brezovica, Dobrepolje, Dobrova-Polhov Gradec, Dol pri Ljubljani, Domžale, Grosuplje, Horjul, Ig, Ivančna Gorica, Kamnik, Komenda, City of Ljubljana, Logatec, Log-Dragomer, Lukovica, Medvode, Mengeš, Moravče, Škofljica, Šmartno pri Litiji, Trzin, Velike Lašče, Vodice and Vrhnika).


Figure 6: Area covered by the RIS LUR 2021–2027

The LUR is the centre of research and education in Slovenia. The region thus stands out for its high concentration of further and higher education institutions, university faculties and research institutes, most of which are concentrated in the City of Ljubljana. The University of Ljubljana has the greatest R&D potential in the country and is ranked among the top 500 universities in the world. R&D expenditure in the LUR represented almost 52% of Slovenia's total R&D expenditure in 2017. With a highly educated, creative, innovative and enterprising population of over 500,000, the LUR is the region that generates the highest value added per employee in Slovenia.

The LUR is building sustainable development on the basis of knowledge, innovation, creativity and the synergy of key stakeholders and sectors. It is increasing its competitiveness by renewing its transport, environmental, ICT and social infrastructure and by developing human potentials. It devotes particular attention to the development of an economy that is compatible with the available environmental capacities of the region. It guarantees a healthy and high-quality living environment through the protection of natural features, appropriate spatial planning, renovation of the existing building stock and settlements and sustainable self-sufficiency.

The country's most important cultural institutions are located in the LUR, as are numerous cultural centres, which ensures a rich cultural offering. Home to the national capital Ljubljana, the region is also distinguished by a well-maintained and easily accessible natural environment, diverse wildlife and varied landscape. The proximity of high-quality natural areas and the interweaving of the built and natural environments make the LUR unique among European metropolitan regions.

The LUR is the most developed of Slovenia's twelve statistical regions and in 2019 generated almost 37.2% of Slovenia's gross domestic product, with a per capita GDP of EUR 32,620. It was followed by the Podravska and Savinjska regions, which generated 12.7% and 11.2% of GDP respectively. The LUR is also the region with the largest number of fast-growing enterprises (36.4%). As the region encompassing Slovenia's capital city, the LUR is an attractive location for the majority of economic activities, particularly those in the service sector. Its share in the value added of service activities was almost 45%. Jugovzhodna Slovenija (South-Eastern Slovenia) (13.4%) and Savinjska (12.8%) stood out for their higher shares of added value in agriculture and forestry, while the leading regions in terms of value added generated in the industrial sector were the LUR (24.7%) and Savinjska (14.8%).[5] Slovenia's nominal GDP fell by 3.1% in 2020, with only the Posavska statistical region showing an increase (of 0.3%). GDP fell in the other eleven statistical regions, with the sharpest falls recorded in Gorenjska (8.0%) and the Obalno-Kraška (Coastal-Karst) region (8.9%). In the LUR, which contributed the greatest share to overall GDP, it was down by 0.8%. The LUR generated more than 38% of gross value added (GVA). There were also considerable differences in regional contribution to gross value added (GVA) in 2020, where the size of individual region is, of course, an important factor. The LUR accounted for 38.1% of the total GVA generated in Slovenia. It was followed by Podravska with 12.7% and Savinjska with 10.9%. The LUR generated the largest share

[5] https://www.stat.si/StatWeb/News/Index/9270

of GVA in the service sector (45.5%), while the biggest shares of GVA in agriculture and forestry were generated by Podravska (13.4 %), Savinjska (13.2 %) and Jugovzhodna Slovenija (12.8 %). In industry the biggest shares were generated by the LUR (25.7%) and Savinjska (14.3%).

## 4.2 ECONOMY

In 2019 and 2020 LUR-based companies accounted for 43.0% of all companies, generated 46.8% of all revenues and created 42.1% of total net value added. They employed 38.0% of all employees in 2019 and 38.5% of all employees in 2020. The positive results seen in 2019 did not continue in 2020 and falls were recorded in revenues, net value added and net profit, although the number of employees increased.[6] The following year, 2021, saw a strengthening of economic activity and an improvement in operations, reflected in improved operating results. In comparison with results at the national level in 2021, LUR-based companies represented 42.9% of all companies, accounted for 38.4% of all employees, generated 46.9% of all revenues and 41.8% of net value added. These positive trends continued in 2021, with annual reports showing an increase in revenues, net value added and net profit, as well as an increase in the number of employees, in comparison to 2020.[7]

Table 1: Key performance indicators (source: AJPES, 2021, 2020)

| Income statement | Amount in EUR thousand | | | | | |
|---|---|---|---|---|---|---|
| | 2021 Annual Report | | 2020 Annual Report | | 2019 Annual Report | |
| | 2021 | 2020* | 2020** | 2019*** | 2019**** | 2018 |
| Number of enterprises | 29,614 | 29,614 | 29,272 | 29,272 | 28,889 | 28,889 |
| of which: established before the reporting year | 28,045 | 28,045 | 27,848 | 27,848 | 27,206 | 27,206 |

[6] Banks, insurance companies, management companies and certain other financial and investment companies that do not operate according to a corporate chart of accounts do not submit data from their annual reports for the purpose of national statistics, since the prescribed content of data from annual reports on standard forms is not suitable for them.

[7] https://www.ajpes.si/Doc/LP/Informacije/PoStatRegijah/01_Osrednjeslovenska_regija_Informacija_2021_GD_SP_ZAD.pdf.

| Income statement | Amount in EUR thousand | | | | | |
|---|---|---|---|---|---|---|
| | 2021 Annual Report | | 2020 Annual Report | | 2019 Annual Report | |
| | 2021 | 2020* | 2020** | 2019*** | 2019**** | 2018 |
| of which: established in the reporting year | 1,569 | 1,569 | 1,424 | 1,424 | 1,683 | 1,683 |
| Number of employees | 200,859 | 194,120 | 196,461 | 195,689 | 197,331 | 188,035 |
| Revenue | 56,458,409 | 45,127,395 | 45,474,888 | 48,563,666 | 48,602,213 | 46,178,570 |
| Expenditure | 53,246,390 | 43,396,140 | 43,745,549 | 45,917,906 | 45,850,310 | 43,729,885 |
| Net total profit | 3,212,019 | 1,731,255 | 1,729,339 | 2,645,760 | 2,751,903 | 2,448,685 |
| Net income | 3,103,170 | 2,156,176 | 2,184,193 | 2,598,310 | 2,697,008 | 2,394,673 |
| Net loss | 408,510 | 809,252 | 843,928 | 347,411 | 355,152 | 304,812 |
| Net profit | 2,694,660 | 1,346,923 | 1,340,265 | 2,250,898 | 2,341,856 | 2,089.861 |

Notes:
* Figures for 2020 from annual reports for 2021.
** Figures for 2020 from annual reports for 2020.
*** Figures for 2019 from annual reports for 2020.
**** Figures for 2019 from annual reports for 2019.

Banks, insurance companies, management companies and certain other financial and investment companies that do not operate according to a corporate chart of accounts do not submit data from their annual reports for the purpose of national statistics, since the prescribed content of data from annual reports on standard forms is not suitable for them. In the majority of cases these companies have their head offices in Ljubljana, which means that the economic strength of the LUR is actually much greater than shown by figures from the Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJPES).

The fastest growing enterprises in terms of productivity (5% of the fastest growing companies in Slovenia)[8] come from all the statistical regions: almost half of them are

[8] In order to be classified among the top 5% of fastest-growing companies in Slovenia, in accordance with the defined methodology, a company's productivity had to increase in absolute terms by at least EUR 22,760 or on average EUR 7,600 a year, or show a relative increase of at least 61% over the observed period.

from the LUR, although the highest percentage of fast-growing enterprises as a share of all enterprises in a region is found in the Primorsko-Notranjska region. The largest number of fast-growing enterprises (48%) are in the LUR, followed by Podravska, Gorenjska and Savinjska (with respectively 11%, 9% and 8% of the total). In comparison to their share of enterprises from the top 5% of the country's most successful enterprises, the Savinjska and Posavska regions are over-represented in the group consisting of the top 25% of the country's most successful large enterprises,[9] while there are no large dynamic enterprises in the Koroška, Primorsko-Notranjska, Zasavska and Obalno-Kraška regions. From the point of view of regional coverage (see Table 3), the LUR has a 47% share of the most dynamic large enterprises, which is comparable to its share of enterprises in the group made up of the top 5% of the most dynamic enterprises in the country.

Table 2: Structure of the top 5% of the country's most successful enterprises and the top 25% of the most dynamic large enterprises by statistical regions (source: UMAR)

| Region | 5% of all | | | 25% of large | | |
|---|---|---|---|---|---|---|
| | No. | % of all enterprises | % of enterprises in the region | No. | % of all enterprises | % of enterprises in the region |
| Pomurska | 7 | 2% | 3% | 1 | 3% | 14% |
| Podravska | 41 | 11% | 4% | 3 | 10% | 21% |
| Koroška | 6 | 2% | 3% | | | |
| Savinjska | 29 | 8% | 4% | 4 | 13% | 21% |
| Zasavska | 3 | 1% | 3% | | | |
| Posavska | 2 | 1% | 1% | 2 | 7% | 50% |
| JV Slovenija | 26 | 7% | 6% | 2 | 7% | 22% |
| LUR | 172 | 48% | 7% | 14 | 47% | 24% |
| Gorenjska | 31 | 9% | 4% | 3 | 10% | 16% |
| Primorsko-notranjska | 12 | 3% | 8% | | | |
| Goriška | 10 | 3% | 3% | 1 | 3% | 11% |
| Obalno-kraška | 21 | 6% | 5% | | | |
| Total | 360 | 100% | 5% | 30 | 100% | 20% |

[9] The criteria are met by a total of 30 enterprises, which, in order to be included in the list, had to increase productivity in the period 2017–2019 by at least EUR 6,841 in absolute terms or by at least 18% in relative terms, where the average increase in productivity in this group was EUR 13,302 under the absolute criterion and 30% under the relative criterion.

In the breakdown of foreign direct investment by statistical regions, the highest concentration in total inward FDI in value terms over the entire observation period has been in the LUR, which accounted for 58.1% of all investment at the end of 2020. It was followed by Podravska (11.8%), Gorenjska (5.6%), Savinjska (5.3%) and Obalno-Kraška (4.7%). The remaining eight regions together accounted for 14.5% of total inward FDI.

There has been no significant change in the regional breakdown of FDI since monitoring of the statistics began. In absolute terms, the LUR was the recipient of the largest increase in FDI in 2020, in the amount of EUR 309.4 million or 3.3%, taking its total to EUR 9.6 billion; it was followed by the Podravska region (an increase of EUR 239.3 million or 13.9%).

Table 3: Foreign direct investment by statistical regions (source: Bank of Slovenia)

| Region | 2011 | 2013 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|
| Gorenjska | 416.7 | 362.2 | 694.5 | 778.1 | 812.0 | 916.6 | 913.8 | 923.2 |
| Goriška | 124.3 | 161.2 | 270.1 | 279.9 | 319.6 | 429.7 | 503.9 | 517.0 |
| Jugovzhodna Slovenija | 247.4 | 354.2 | 299.2 | 305.2 | 378.5 | 447.0 | 311.8 | 235.7 |
| Koroška | 51.3 | 45.1 | 53.9 | 60.6 | 76.6 | 98.8 | 97.5 | 77.5 |
| Obalno-kraška | 559.7 | 576.3 | 694.2 | 789.6 | 838.1 | 831.3 | 927.1 | 778.2 |
| LUR | 5,830.0 | 5,597.9 | 7,521.8 | 7,848.3 | 8,356.3 | 8,820.6 | 9,312.7 | 9,622.1 |
| Podravska | 472.9 | 526.5 | 650.8 | 1,363.3 | 1,382.7 | 1,443.6 | 1,718.9 | 1,958.2 |
| Pomurska | 146.8 | 142.2 | 268.5 | 289.6 | 286.1 | 332.4 | 351.5 | 353.3 |
| Posavska | 328.3 | 345.9 | 338.1 | 357.1 | 349.9 | 354.9 | 347.5 | 384.0 |
| Primorsko-notranjska | 45.3 | 59.4 | 71.6 | 66.4 | 66.6 | 74.4 | 93.7 | 96.3 |
| Savinjska | 331.4 | 394.9 | 430.8 | 463.1 | 539.7 | 880.2 | 897.5 | 882.4 |
| Zasavska | 79.8 | 104.1 | 80.8 | 105.5 | 106.8 | 115.1 | 116.4 | 120.3 |
| Uncategorised | 246.2 | 226.9 | 237.8 | 263.7 | 443.9 | 509.6 | 586.4 | 618.6 |
| Total | 8,880.1 | 8,896.5 | 11,612.0 | 12,970.5 | 13,956.9 | 15,254.2 | 16,178.7 | 16,566.9 |

The LUR is also well placed in terms of the number of fast-growing enterprises. Not only do these make an important contribution to employment, they are an important factor in economic development as a whole.[10] In 2020 fast-growing enterprises generated 28.0% or 26.6 billion euros of net sales revenue and contributed 53.9% or 1.7 billion euros to net profit in Slovenia's business enterprise sector. The largest number of fast-growing enterprises are based in the LUR. As in previous years, the regions with the largest shares of fast-growing enterprises as a proportion of all operating enterprises were Koroška (with 7.6%) and Jugovzhodna Slovenija (with 7.3%), while the region with the lowest share was the Obalno-Kraška region (4.2%). SMEs operating in the motor vehicle trade and repair sector and manufacturing activities represent the main driving force.

Table 4: Fast-growing enterprises (FGEs) by statistical regions (Source: AJPES, 2021)

| Region | number of enterprises | FGEs | | FGEs / No. of enterprises in % |
|---|---|---|---|---|
| | | number | % share | |
| Pomurska | 4,240 | 247 | 3.6 | 5.8 |
| Podravska | 16,320 | 1.003 | 14.5 | 6.2 |
| Koroška | 3,047 | 230 | 3.3 | 7.6 |
| Savinjska | 13,604 | 809 | 11.7 | 6.0 |
| Zasavska | 2,300 | 121 | 1.8 | 5.3 |
| Posavska | 3,423 | 184 | 2.7 | 5.4 |
| Jugovzhodna Slovenija | 6,073 | 444 | 6.4 | 7.3 |
| LUR | 42,100 | 2,467 | 35.6 | 5.9 |
| Gorenjska | 11,114 | 595 | 8.6 | 5.4 |
| Primorsko-notranjska | 2,558 | 138 | 2.0 | 5.4 |
| Goriška | 6,385 | 341 | 4..9 | 5.3 |
| Obalno-kraška | 8,289 | 351 | 5.1 | 4.2 |
| Total | 119,453 | 6,930 | 100.0 | 5.8 |

[10] Under the criteria laid down by the Ministry of Economic Development and Technology, enterprises that had been operating successfully for at least four years and increased their number of employees during this period and achieved twice the average revenue growth in Slovenia's business enterprise sector in the period 2016–2020 were classified as fast-growing. Additionally, they had to generate more than EUR 100,000 of net revenues and at least EUR 21,000 of value added per employee in 2020.

## 4.3 SUSTAINABLE MOBILITY

With its position at the junction of two European transport corridors (Balkan–Adriatic and Mediterranean), the Ljubljana Urban Region is an important bridge between a number of EU cohesion areas. The rail freight and passenger hub in Ljubljana and the proximity of the sea freight terminals in Koper and Ljubljana Jože Pučnik Airport mean that the LUR plays an important role in linking central Europe to south-eastern Europe and the Alps to the Adriatic. The impact of the LUR at the global, European, inter-regional and national levels is also reflected in the importance of road freight transport. This grew by 20% between 2014 and 2018, a figure that was considerably above the Slovenian average of 6% growth in goods loaded over the same period.

The completion of the motorway network and the introduction of a vignette-based road tolling system have had the biggest impact on transport and economic development in the LUR in the last ten years. The enlargement of the LUR's hinterland of impact has changed the population's settlement and daily commuting patterns. Although the majority (53%) of LUR's population is concentrated in Ljubljana, the population outside Ljubljana is mainly concentrated along the main traffic routes that lead towards Vrhnika, Medvode, Domžale, Kamnik, Grosuplje and Ivančna Gorica.

Being home to large numbers of jobs and educational institutions and to Ljubljana, the capital city, the LUR is the most important destination for commuter flows within the country. As an attractive and well organised region offering many opportunities to its almost 550,000 inhabitants, just under 28,000 students from other regions and numerous other visitors, the LUR is also facing major challenges in the area of mobility, which is one of the main factors of development. SURS figures from 2019 show that almost a quarter of all jobs in the country are in Ljubljana, which means that more than 120,000 people commute to Ljubljana for work on a daily basis (25% of these people commute to Ljubljana from other LUR municipalities). Traffic jams at rush hours are the consequence of an excessive share of car use for daily commutes. The centralisation process shows no signs of stopping. The labour migration index grew by 1.6 between 2014 and 2019, which shows that LUR is becoming an ever more attractive destination for work and education.

The greatest potential for the development of sustainable mobility in the LUR lies in public transport, i.e. buses and trains. Accessibility analyses in the LUR and Ljubljana have shown that the LUR is relatively well served by public transport, although the number of users is stagnating. The integration of public transport services and private cars is aided by 11 operational park-and-ride (P+R) systems in the LUR; these are designed to halt car traffic as close as possible to its departure point and redirect users to public transport.

## 4.4 ENVIRONMENT

The capacities of our environment are limited and changes in the environment are strongly influenced by the way we live and work and the ways we use and manage the environment and its resources. Growing impacts on the environment, which are unsustainable in the long term, mean that a transition to an innovative circular economy is urgently needed. This means sustainable resource management, the re-use of waste in production processes, the protection of biodiversity, and an awareness of the value of ecosystems and the contribution they make to economic progress and general prosperity.

An important aspect of the environment is air quality, which affects the population's health and quality of life. Traffic and economic activities associated with road traffic are the main sources of air pollution in the LUR, along with small combustion sources (wood-fired, coal-fired). In addition to negative effects on human health, air pollution also causes damage to natural ecosystems and materials. The main environmental and health problem is caused by pollution of the air with fine particulates. Ljubljana has adopted an ordinance on the Air Quality Plan for Ljubljana that sets out measures for reducing air pollution. These measures address traffic, energy supply and the energy renovation of buildings. Increased use of public transport and cleaner vehicle and energy fuels will make an important contribution to improving air quality, and changes in people's habits will also be crucial.

Soil quality is another aspect of the environment. Ground and soil are finite natural resources. Soil is vitally important for producing food and raw materials, preserving biodiversity, storing carbon emissions, filtering pollutants and purifying water; it is also an indispensable part of human existence, development and infrastructure. Soil that is in a good state and used efficiently provides the basis for key ecosystem functions. Today the main sources of the input of dangerous substances into the soil are emissions from transport and industry, intensive farming (animal and mineral fertilisers, plant protection agents), the illegal dumping of waste, sludge from treatment plants, emissions from combustion plants, and ecological disasters (leakage of petroleum derivatives and hazardous chemicals). Contamination of the soil by potentially dangerous substances is below the limit values for such contamination as measured at sampling locations within the region. The earth also has spatial functions, as it offers people physical space in which to live, carry out economic functions, develop and relax. With development projects, the fertility of the surface layer of the earth is entirely or partly irrevocably destroyed; for this reason, new spatial developments must be planned in a coherent and rational way. The European Commission's guidelines on best practice to limit, mitigate or compensate soil sealing (SWD(2012) 101 final/2), issued in 2012, emphasise the importance of an integrated approach to spatial planning. Separate regional approaches and the use of unexploited resources at local level have also been shown to be effective. Construction can be limited by smart spatial planning and by preventing urban areas from spreading, while development opportunities can be exploited in urban areas by renovating

abandoned industrial and other degraded areas. Mitigating measures include the use of permeable materials instead of cement or asphalt, and support for green infrastructure.

Climate change is a key challenge facing humanity in the 21st century. Atmospheric warming is not the only consequence of climate change. Changes in air currents, weather patterns and rainfall distribution and quantities can also be observed, while dangerous weather events have increased in frequency and strength. Losses caused by extreme weather and climate events are rising steeply, partly because of increasingly expensive infrastructure and construction in natural disaster impact areas. Climate change scenarios for the period up to 2050 show that air temperatures in Slovenia will continue to rise, and that they are projected to rise by an average of 2°C in the LUR alone. As far as rainfall is concerned, the scenarios show considerably greater uncertainty. We can expect more heatwaves and more storms, as well as heavy downpours, accompanied by floods and landslides. Global warming and other types of climate change are (also) the consequence of human activities. In Slovenia the use of fossil fuels in energy production, households, industry and transport accounts for more than three quarters of all greenhouse gas emissions. Reducing emissions and increasing energy efficiency are exceptionally important aspects of climate change mitigation. Major changes will have to be made in the areas of transport, energy and people's everyday habits. In 2016 Slovenia adopted the National Strategic Framework for Climate Change Adaptation, which defines regional spatial planning and the harmonisation of different public interests as important instruments for adapting to climate change (shifting of the development of settlements away from areas at risk of natural disasters, development of activities adapted to the impact of climate change, etc.). In its assessment of the strategic framework, the European Commission stated that regional development plans should be drafted at NUTS 3 level and include an assessment of sensitivity to the impact of climate change.

## 4.5 LIVING

The LUR has an extremely favourable geostrategic position within Slovenia. It has a polycentric settlement system, with a high concentration of well-developed central and service activities. Geomorphological features and traffic corridors are the two biggest factors affecting settlement in the LUR. Settlement is expanding outwards in five development directions in a star-like fashion from the dense urban centre within the Ljubljana motorway ring road: towards the north-west (Medvode–Škofja Loka–Kranj), the north (Trzin–Domžale–Kamnik), the east (Dol-Litija), the south-east (Škofljica–Šmarje-Sap–Grosuplje) and the south-west (Brezovica–Borovnica–Vrhnika). These areas represent centres of employment and their hinterland areas, which mainly stretch along the motorway system, while the areas between them are dominated by scattered construction outside public transport corridors, in a continuation of the spatially and environmentally negative trend of intensive construction. The LUR is

characterised by its attractiveness, which is the result of its recognisable identity as a region in which the urban is intertwined with the rural, its good conditions for employment and education, and the opportunities it offers for high-quality use of leisure and recreation time. According to data from Slovenia's national statistics office about migration movements of the population, the region recorded positive net migration in 2018, 2019 and 2020. It is enhancing its attractiveness through spatial development while at the same time preserving its characteristic combination of natural, landscape and urban structures.

There are nine urban settlements with town status in the region. These represent centres of service and other activities, while other settlements are inadequately equipped with central functions. The situation is further exacerbated by the negative trend of the centralisation of local service and supply functions (medical facilities, post offices, banks, etc.), which is reducing quality of life and generating additional traffic congestion in the larger urban centres. Settlements are also inadequately prepared to cope with an ageing population, which is set to become an acute problem in the near future.

There is an acute housing problem across the whole region, particularly in Ljubljana and its surrounding area, with a lack of affordable homes. This is a consequence of the centralisation of the country and the boom in alternative forms of tourist rental. The region also scored below the national average for the number of dwellings per 1,000 inhabitants in 2021 (397 compared to a national average of 410).

Cultural heritage, both tangible and intangible, plays an important role in the region. It bears witness to the history and customs of the nation while at the same time acting as one of the main draw factors for foreign and domestic tourists. Today culture and cultural heritage represent an important potential for economic and social development, which raises the quality of life in the region.

## 4.6 POPULATION

The LUR is the Slovenian region with the most knowledge and creative potential, since this is where the key national, scientific, research, educational and cultural institutions are clustered. The above-average level of education and qualifications of the workforce is an important developmental advantage of the region. While the education profile in the LUR has not changed significantly in recent years, the share of the population with further education or higher education qualifications is rising and the share of the population with primary or secondary qualifications is falling, in line with national trends. The high level of educational activity in the region is also reflected in the educational profile of LUR residents aged between 25 and 64, which is higher than the national average. With more than a third of the regional population holding a further or higher education qualification (32.6% or 113,812 people, 2018 figures), the LUR leads the other regions of Slovenia.

Thanks to rising employment in recent years, unemployment in the LUR is gradually falling. SURS figures show that it was equal to the national average in 2021 (4.7%), but it has fallen by 1.5 percentage points since 2017. The rate of serious material deprivation and the risk of social exclusion rate were lower in 2021 than they were in 2014. Along with Gorenjska (10.2%) and Jugovzhodna Slovenija (9.6%), the LUR (10.3%) was among the regions with the lowest risk of social exclusion rate (EU 2030 Strategy) in 2021. The Slovenian average was 13.2%. With a serious material and social deprivation rate of 0.9%, the LUR was also among the regions with the lowest rate for this indicator (EU 2030 Strategy) in 2021. The Slovenian average in 2021 was 1.8%. Only Koroška (0.6%) had a lower rate, while both Gorenjska and Posavska had the same rate as the LUR (0.9%). The LUR does, however, stand out in terms of average gross monthly pay, since in 2021 it was the only region apart from Jugovzhodna Slovenija to exceed the Slovenian average for this indicator (index 110.3).

Particular attention has been paid in the recent period to certain new social groups, such as those suffering from in-work poverty (chiefly young and middle-aged people). The proportion of such people is on the rise because of the increase in precarious and uncertain forms of employment and in the provision of work by temporary employment agencies. On the other hand, a fall in the percentage of unemployed young people (aged 15 to 29) has been noted in recent years. In the LUR, the share of unemployed 15-to-29-year-olds among all members of this age group fell by more than 33% between 2015 and 2021. The most recent available figures show, however, that the number of long-term unemployed and the number of recipients of social security payments and extraordinary social security payments are increasing. With the increase in the number of the elderly (the share of the population aged 65 and over has grown from 17.7% in 2017 to 19.2% in 2022, while the average age of the population has increased in the same period from 41.6 years to 42.2 years), the costs of home care and care costs in retirement homes are also growing. The LUR has 279 owner-occupied sheltered accommodation units (68.4% of such units in Slovenia) and 216 rented sheltered accommodation units (28.2% of the total number in the country). An important part of the provision of a system that is sustainable in the long term and adapted to emerging needs is represented by the advanced technological solutions of an integrated service for the elderly that could take the place of some everyday forms of assistance. The development and introduction of innovative technological solutions and healthcare methods, with an emphasis on the challenges brought by an ageing population, represent a great potential of the region in the field of healthcare in general.

## 4.7 REGIONAL INNOVATION SYSTEM

Over the last thirty years an integrated approach has been taken to the analysis of innovation in individual countries, regions and sectors. A concept that systematically covers innovation at various levels is called an innovation system. Despite globalisation and regionalisation, the state is still the fundamental framework for stimulating the economy, so analysis of national innovation systems predominates. There are major differences between national innovation systems both in terms of structure and the different roles played by organisations of the same kind (universities in different countries, for example, play different roles when it comes to influencing the innovation of a country or region), and as regards results/impacts. Interdependence and non-linearity are both important. It is not enough merely to cover the elements of an innovation system, it is also necessary to set out their mutual connections, which, however, are not linear. In recent years analysis of regional innovation systems has gained in importance, since geographical proximity is a factor that has played a decisive role in the development and commercialisation of modern generic technologies (individual successful examples in Europe such as TechnologieRegion Karlsruhe and the Øresund phenomenon, or Silicon Valley in the USA). In this sense, articulated mechanisms and measures that take into account specific, including regional/sectoral aspects of innovation processes have proved to be suitable instruments for the management of innovation policy. The emphasis is no longer on the presence of individual elements of the regional innovation system, but on the scale and depth of their cooperation ("networks"), where an important role is also played by institutions.

The concept of a regional innovation system represents a highly effective analytical tool that serves the purposes of analysis, understanding processes and the preparation of development policies/programs/measures, including regional innovation strategies. The innovation capacity of a region depends both on the region's competences and on strategic decisions taken in the region to make the promotion of innovation a strategic priority. The elements of a regional innovation system (triple helix) are the following:

Enterprises: leading regional enterprises, entrepreneurs and their associations. Enterprises have specialised knowledge about the market potential of a new idea and the technology used.

Designers and implementers of public policies: ministries, regional and municipal administrations, implementing and intermediary organisations.

Leading regional institutions in the research and education sectors, the cultural and creative sector and the support environment.

Civil society can be defined as a fourth stakeholder (quadruple helix) in the regional innovation system.

The regional innovation system of the LUR is inherently determined by and, at the same time, determines Slovenia's innovation ecosystem: it is not possible to define one without the other. The vast majority of research and development in Slovenia takes place in the LUR, as can be seen from Table 5. The Regional Innovation System in the LUR is presented in Annex 1.

## 4.8 GOVERNANCE

The basis units of local government are municipalities and city municipalities. Municipalities link together in order to make the best possible use of their financial, human and organisational resources. They establish associations, joint bodies and bodies of joint municipal administration, funds, public institutes, public corporations and foundations and pool resources. Municipalities are equal partners to the state and are governed by three independent bodies: a mayor, a municipal council and a supervisory committee. The mayor and the members of the municipal council are elected by citizens at local elections every four years, while the supervisory committee is appointed by municipal councillors. Municipalities are funded from a variety of sources: income tax, ground rents, rates, concession fees, revenue from fines and other sources.

One particular problem for municipalities is represented by the framework of their funding, since lump sum is insufficient for the sustainable funding of all public services and social transfers that municipalities are obliged to provide, which are also increasing year upon year. For this reason, social innovations are becoming more important than ever before – as a component of economic strategies in the fields of health and the environment and as an opportunity to deliver greater added value in public services. Alternative forms of enterprise can, in fact, complement the range of public services on offer by promoting research and innovation focused on the formation of partnerships between the academic and business spheres and subjects of the social economy.

One of the aspects of inclusive governance is participatory budgeting, which represents a mechanism to include citizens in decisions on the use of budget funds, where the inhabitants of a municipality, city district or local community can themselves identify problems or possibilities for improvement, propose their own solutions and then choose from among a range of proposals by means of a binding vote.

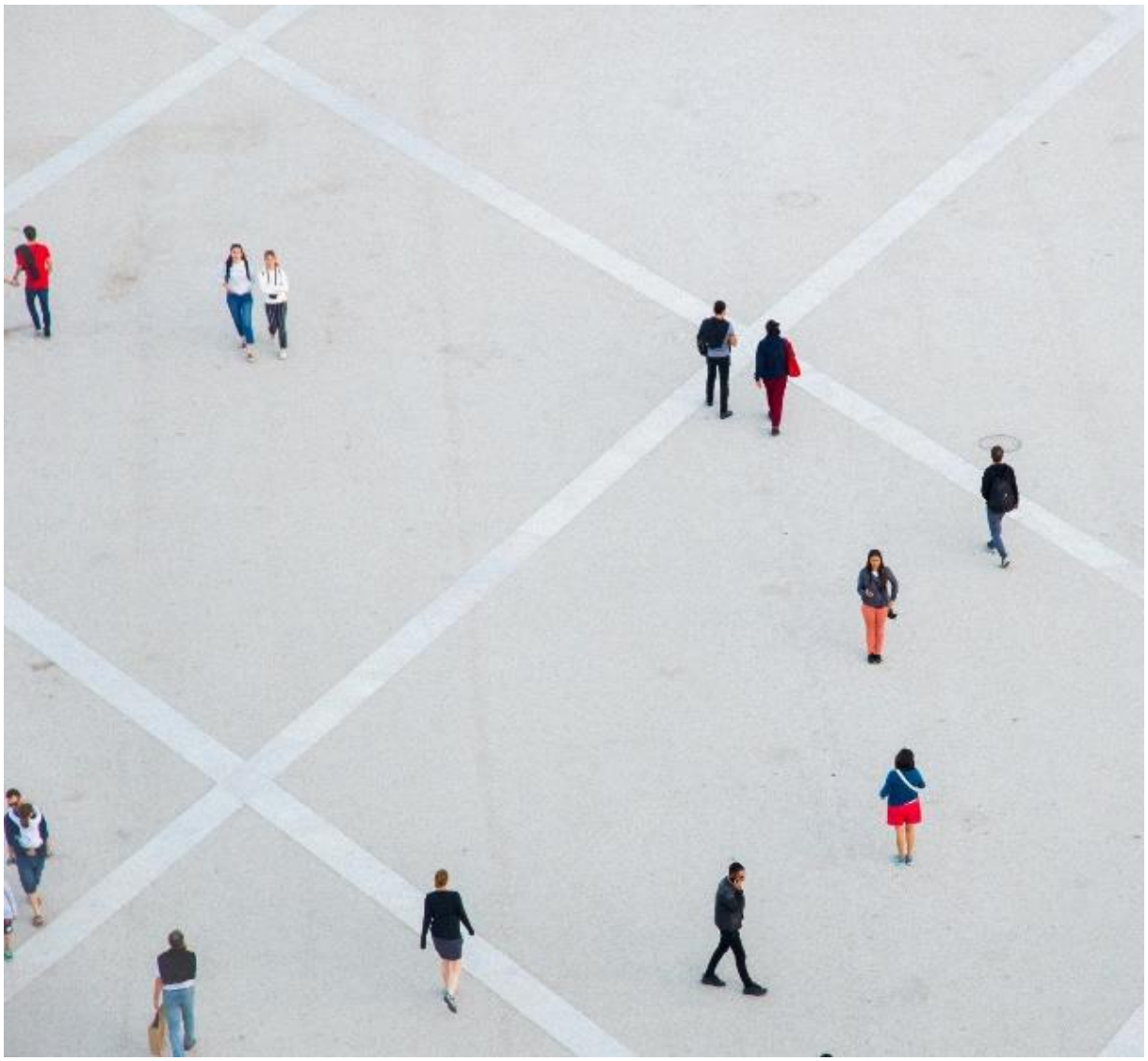
Development regions are not provinces and have no directly elected representatives, but regional policy institutions are established in each of the country's twelve development regions and carry out their mission and tasks in accordance with the Promotion of Balanced Regional Development Act.

The decision-making body is the regional development council, consisting of representatives of municipalities, business associations and non-governmental organisations. The most important documents, regional development programmes and regional development agreements are approved by the regional council, which comprises the mayors of all the municipalities in the region. General development tasks in the region are carried out by regional development agencies, which are specialised institutions responsible for preparing, coordinating, monitoring and evaluating the regional development programme, the regional development agreement and regional projects. They provide expertise and technical support to the regional development council and regional council, form the regional

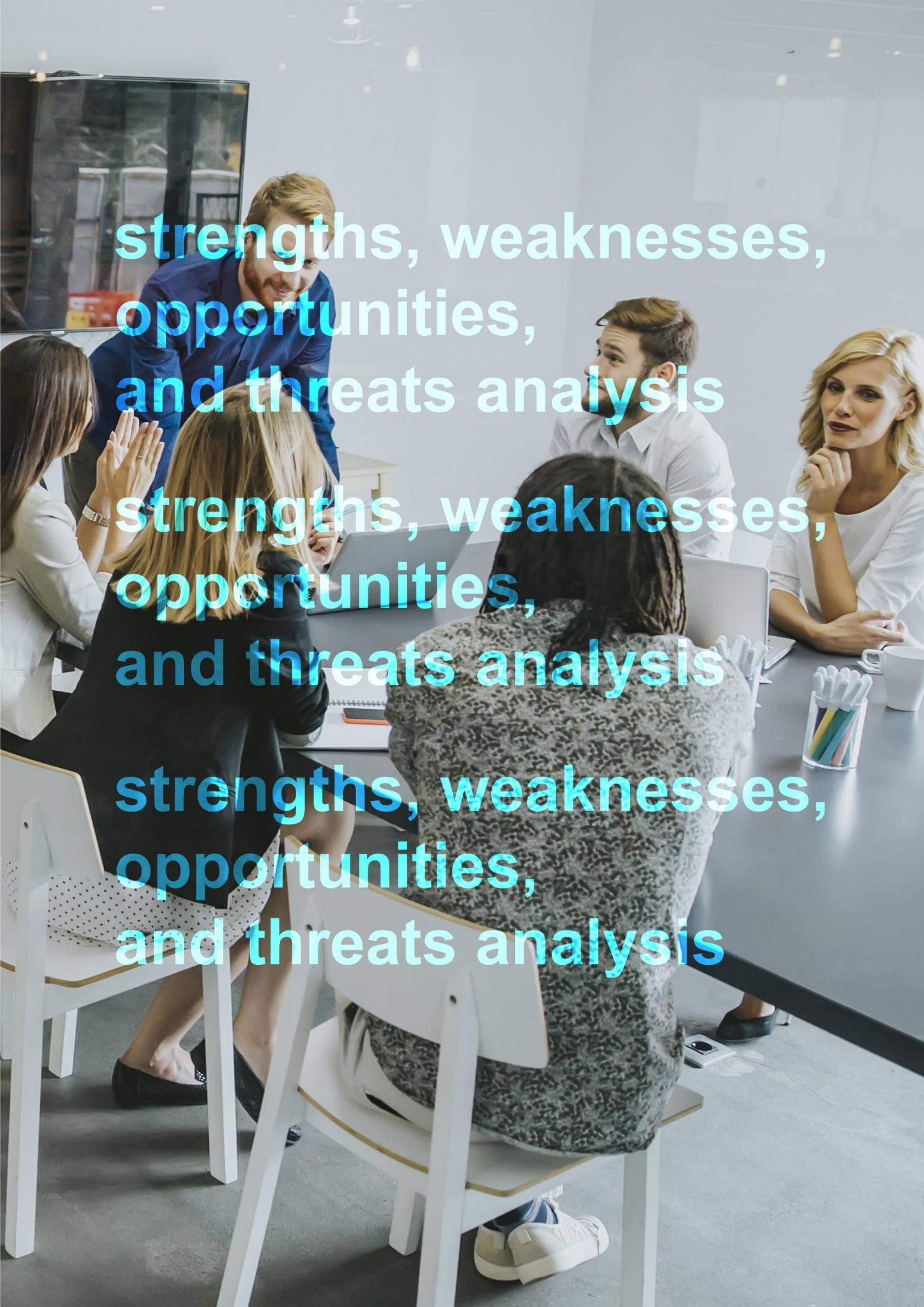
development network and frequently also implement regional projects.[11]

From the point of view of the democratic principles of governance, non-governmental and voluntary organisations, as one of the key pillars of civil society, play an important role and make a significant contribution to the exercise of democracy in society. The latest figures show that, as at 31 March 2019, 25% of all clubs/societies/associations in Slovenia (6,045 of 24,130) were in the LUR. This number grew from 5,516 in 2012 to 6,045 in 2019. Figures also show that, as at 12 February 2016, there were 1,040 private institutes and 141 foundations in the LUR.

The share of NGO employees relative to the active population is an important indicator of the level of development of the non-governmental sector. In 2017 the share of NGO employees in Slovenia was 0.82% (7,811 of a total active population of 947,270), having risen in each of the last few years up to 2017, when it remained unchanged from the previous year for the first time. This share is still extremely low compared to other countries, which means that the non-governmental and voluntary sectors need to be strengthened, given their significant impact on social cohesion, solidarity and further development in the region.



[11] https://www.gov.si/teme/razvojne-regije/


strengths, weaknesses,
opportunities,
and threats analysis
strengths, weaknesses,
opportunities,
and threats analysis
strengths, weaknesses,
opportunities,
and threats analysis

# 5 STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS ANALYSIS

Preliminary analysis is the basis for the preparation of a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis. SWOT analysis is one of the principal instruments used to connect analysis of the business environment with the development of strategies and is a standard tool used by the European Commission, Member States and their regions in the preparation of strategic documents. SWOT analysis is used to determine where the main competitive strengths and weaknesses of the analysed region lie, and what opportunities and potential threats are affecting the region and will do so in the future.

Strengths and weaknesses are internal in nature and relate to the region itself. The optimal situation is for regions to build on their strengths and actively eliminate their weaknesses.

Opportunities and threats, on the other hand, relate to the environment in which an individual region is located. The essential thing about opportunities and threats is that region has no direct influence over them and instead are entirely dependent on external factors and the development of the business environment. Thus, opportunities relate to anticipated positive changes in the environment, while threats relate to anticipated negative changes in the business environment. SWOT analysis enables the development of suitable strategies and policies.

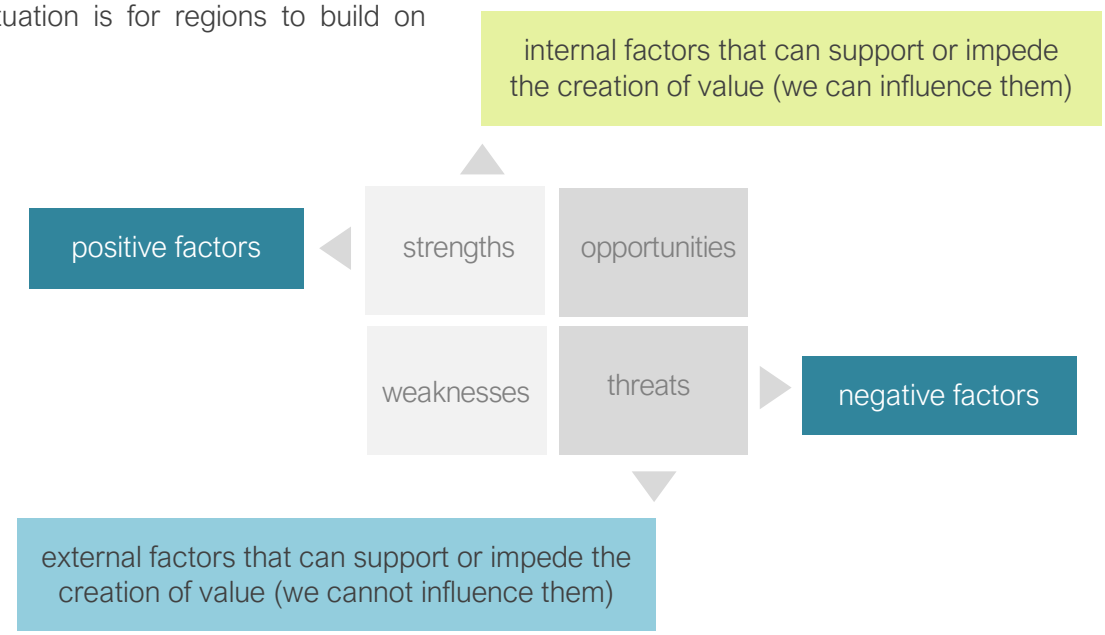



Figure 7: SWOT analysis

Figure 8: Strengths, weaknesses, opportunities and threats in the RIS LUR 2021–2027

## strengths

Competitive economy

Concentration of R&D activities

Fields of excellence in academic and industrial research

University centre

Well-educated workforce

Good geostrategic position

National capital

Functioning support environment to promote development

Concentration of the cultural and creative sector

Well-developed transport infrastructure in the region

Good natural conditions and rich natural and cultural landscapes (Ljubljana – European Green Capital 2016)

High quality of life in the region

## weaknesses

Fragmentation, lack of critical mass and relative absence of powerful economic systems

Weak ties between different actors in the national innovation system

Education system not adapted to the market

Potential of cultural and creative industries too little exploited

Lack of housing and high prices of housing

Poor accessibility of Slovenia (air and rail transport)

Traffic congestion

High energy dependence of the region

Untapped potential of tourism and culture in the Ljubljana area

Centralisation of services of general social importance

Neglect of the social economy and social innovations

Limited profile of Slovenia abroad

## opportunities

Localisation of production

Environmental challenges

Social challenges

New technologies

EU policies (Green Deal, digital single market, etc.)

## threats

Negative demographic trends (ageing population)

Economic crisis

Brain drain

Weak and unstable institutional capacity on the side of the state (changes of government, limited intersectoral cooperation), excessively bureaucratic procedures and a tax environment that is non-stimulating for entrepreneurship.

Scarcity of public resources as a consequence of the economic (covid-19) crisis.

Rapidly changing technologies

Pandemics

Dominance of neighbouring economic centres and centres of knowledge (Graz, Zagreb, Belgrade, Trieste).

Unstable political environment around the world (e.g. wars, disputes between countries) and in Slovenia (frequently changing public policies)


vision and strategic goals
vision and strategic goals
vision and strategic goals

# 6 VISION AND STRATEGIC GOALS

## 6.1 FUNDAMENTAL STRATEGIC DOCUMENTS

Strategic documents represent the starting points for the preparation of the Regional Innovation Strategy of the Ljubljana Urban Region (RIS LUR).

### National level

#### Slovenian Development Strategy 2030

On 7 December 2017, the Government of the Republic of Slovenia adopted the Slovenian Development strategy 2030, the overarching development framework of the country, which places quality of life for all in the foreground. With five strategic focuses and twelve interconnected development goals, it lays the new long-term development foundations of Slovenia and, through the incorporation of the United Nations sustainable development goals, places Slovenia among those countries that have recognised the importance of global responsibility towards the environment and society.

The primary objective of the Slovenian Development Strategy 2030 is to provide a high quality of life for all. This can be achieved through balanced economic, social and environmental development which takes account of the planet's limitations and creates conditions and opportunities for present and future generations. At the level of the individual, a high quality of life is manifested in good opportunities for employment, education and creativity, in a dignified, safe and active life, a healthy and clean environment and inclusion in democratic decision-making and participation in social management. The country's strategic focuses for the achievement of a high quality of life are:

- an inclusive, healthy, safe and responsible society;
- learning for life and lifelong learning,
- a highly productive economy that creates added value for all,
- the preservation of a healthy natural environment,
- a high level of cooperation, competence and efficiency in governance.

#### Recovery and resilience plan

On 21 July 2020, EU leaders agreed to a comprehensive package of EUR 1,824.3 billion which combines the multiannual financial framework (MFF) (EUR 1,074.3 billion) and an extraordinary recovery effort under the Next Generation EU instrument (EUR 750 billion). The MFF, reinforced by Next Generation EU, will also be the main

instrument for implementing the recovery package to tackle the socio-economic consequences of the covid-19 pandemic. It will also contribute to the transformation of the EU via its main policies, above all via the European Green Deal, the digital revolution and resilience.

The leaders also agreed that 30% of the total expenditure from the MFF and Next Generation EU will target climate-related projects. Together with the EUR 540 billion already available as safety nets (for workers, businesses and Member States), the EU has allocated EUR 2,364.3 billion to support the recovery. The amounts available under Next Generation EU will be allocated to seven individual programmes in the form of loans (EUR 360 billion) and grants (EUR 390 billion):

- Recovery and Resilience Facility: EUR 672.5 billion.
- ReactEU: EUR 47.5 billion.
- Horizon Europe: EUR 5 billion.
- InvestEU: EUR 5.6 billion.
- Rural Development: EUR 7.5 billion.
- Just Transition Fund (JTF): EUR 10 billion.
- RescEU: EUR 1.9 billion.

The relevant legal obligations will be assumed by 31 December 2023 and the associated payments will be made by 31 December 2026. Member States have until August 2023 to decide to increase the amount of repayable funds, if necessary. The Recovery and Resilience Facility and ReactEU are entirely funded by Next Generation EU. The other amounts are top-ups to programmes funded under the multiannual financial framework (MFF).

In accordance with European Commission guidelines, the Slovenian government drafted a Recovery and Resilience Plan (RRP) as a basis for the use of funds from the Recovery and Resilience Facility (RRF). In the RRP, it earmarked EUR 1.8 billion of grants and EUR 705 million of RRF loans for measures to aid recovery from the covid-19 pandemic and strengthen resilience. The government submitted the plan to the European Commission at the end of April 2021 and it was approved by the Council of the European Union via an implementing decision in July 2021. With the aim of increasing the effects of the planned investments, Slovenia will follow the principle of complementarity in the planning of all European funds. RRP measures will thus complement investments from EU Cohesion Policy and other programmes.

On the basis of the EC's updated calculations regarding non-repayable financial support to which Member States are entitled (published 30 June 2022),[12] the amount of the grants allocated to Slovenia was reduced by around 300 million euros.

Slovenia will use European funds for recovery and resilience for the green transition, digital transformation, support for the economy, research and development, education, healthcare, social security and housing policy. Slovenia's RRP envisages the implementation of 34 reforms and 52 investments in four pillars:

- green transition
- digital transformation,
- smart, sustainable and inclusive growth,
- health and social security.

[12]https://ec.europa.eu/info/sites/default/files/2022_06_30_update_maximum_financial_contribution_rrf_grants.pdf

## Partnership Agreement

A Partnership Agreement between Slovenia and the European Commission on EU funds for the period 2021–2027 was adopted on 12 September 2022.[13] In this period Slovenia will receive 3.26 billion euros of European funds for implementation of the EU Cohesion Policy programme 2021–2027. Partnership Agreements focus on EU priorities, setting out the strategy and investment priorities identified by each Member State. They present a list of national and regional programmes that are adapted to the needs of the individual Member States for the implementation of the investments on the ground, including the indicative annual financial allocation for each programme. In Slovenia's case, the programmes for the period 2021–2027 are the following:

- Programme for the implementation of the EU Cohesion Policy 2021–2027: EUR 3,212.6 million.
- Programme addressing material deprivation: EUR 29.4 million.
- Maritime, fisheries and aquaculture programme: EUR 23.9 million.

Slovenia will invest a total of EUR 806 million under the Cohesion Fund and the European Regional Development Fund in green transition. The funds will contribute to decarbonisation and the development of renewable energy sources. Investments will be made in solar and wind energy capacities, and to improve the energy efficiency of buildings. EU funding will also mitigate climate change risks, foster a circular economy in businesses, ensure efficient management of water resources and protect ecosystems and biodiversity.

A total of EUR 248 million under the Just Transition Fund will be earmarked for supporting the energy transition of the Savinjsko-Šaleška region by 2033 and for restructuring of the Zasavska region. Investments will focus on strengthening training and employment opportunities, supporting diversification and resilience of the local economy, and reviving degraded areas.

The areas of mobility and ICT connectivity under the policy objective A more connected Europe will receive a total of EUR 511 million. EUR 727 million will be invested in innovative and smart economic transformation under the policy objective A smarter Europe. Slovenia will earmark EUR 769 million for social inclusion, employment and training. The policy objective A Europe closer to citizens will benefit from EUR 94 million.

The Partnership Agreement also defines the frameworks for implementation of the Integrated Territorial Investments (ITI) mechanism, to which 8% of ERDF funds will be dedicated (excluding technical support) and which will cover three areas: green infrastructure projects in the urban environment, sustainable mobility and efficient use of space in cities. All 12 of Slovenia's city municipalities will be included in ITI. The key documents for the implementation of the mechanism will be the sustainable Urban strategies of these city municipalities.[14]

[13] http://www.eu-skladi.si/sl/aktualno/novice/sporazum-o-partnerstvu-med-slovenijo-in-evropsko-komisijo-je-sprejet

[14] https://www.zmos.si/sprejet-je-sporazum-o-partnerstvu-za-obdobje-2021-2027/

## EU Cohesion Policy programme 2021–2027

The Programme for the Implementation of the EU Cohesion Policy 2021–2027 and the Partnership Agreement between Slovenia and the European Commission are the two fundamental documents that enable Slovenia to use approximately EUR 3.2 billion of European funds in the programming period in question, where the EU Cohesion Policy programme operationalises a significant part of the Partnership Agreement. The programme was approved by the Slovenian government on 28 September 2022.

EU Cohesion Policy funds are planned at the national level in the context of the above programme. Four funds are included in it:

- Cohesion Fund (CF; whole of Slovenia): EUR 718.19 million.
- European Regional Development Fund (ERDF; separately for the Eastern Slovenia and Western Slovenia cohesion regions): EUR 1,599.79 million.
- European Social Fund Plus (ESF+; separately for the Eastern Slovenia and Western Slovenia cohesion regions): EUR 635.97 million.
- Just Transition Fund (JTF; for two coal-mining regions: Zasavska and Savinjsko-Šaleška): EUR 258.72 million. This is a new fund that will provide additional support for people, businesses and the environment in areas facing serious socio-economic challenges arising from the transition to the EU's 2030 climate and energy targets and a climate-neutral EU economy by 2050.

## Smart Specialisation Strategy

Smart specialisation represents a platform for the concentration of development investment in areas where Slovenia has a critical mass of expertise, capacities and competences and in those where it has innovation potential for positioning on global markets. The Slovenian Smart Specialisation Strategy 2014–2020 (S4) is a strategy to increase competitiveness based on strengthening the innovation capacity of the economy, diversification of existing industry and service activities and the growth of new and fast-growing industries or enterprises. S4 remains the basis for implementation of EU Cohesion Policy in the 2021–2027 programming period. European regulations envisage its renewal and treat it as an enabling condition for Policy Objective 1: A smarter Europe (innovative & smart economic transformation).

Renewal of S4 is partly based on revision of the action plans of the nine Strategic Development and Innovation Partnerships (SDIPs), which will represent the basis for directing the country's support, development and legislative measures in 2021–2027. The new version of Smart Specialisation Strategy for the period up to 2030 (S5), was sent to the European Commission on 4 March 2022.

## Regional level

### Regional Development Programme of the Ljubljana Urban Region 2021-2027 (RDP LUR 2021–2027)

RDP LUR 2021–2027 was approved by the Development Council of the Ljubljana Urban Region and the Council of the Ljubljana Urban Region on 21 June 2022.

The key challenges facing the region are: high daily commuting levels, which are the result of the marked centralisation of services within its centre, the negative impacts of traffic (e.g. pollution, noise, accidents, traffic congestion), a large share of young jobseekers and the departure of the educated workforce from the region. It has been estimated that investment is needed in the construction of water supply infrastructure in almost half the 25 municipalities that make up the LUR; there is also a considerable need for investment in wastewater drainage and treatment in agglomerations generating a load of less than 2,000 p.e. The region is also home to a large number of flood-risk areas, which places something of a restriction on development. In national terms, Ljubljana is among those areas at highest risk of flooding, with 15 of the 25 municipalities within the LUR having high flood-risk levels.

The LUR will become an internationally recognised region of business opportunities and green investment, a green region that promotes innovation, creativity and the development of new technologies. Its development will be based on connecting those systems and stakeholders that are vital to sustainable development. At the same time it will enhance quality of life through economic and social efficiency to improve living standards, boost employment to meet the challenges of the labour market of the future, and improve health and education. A further emphasis is on ensuring that local initiatives are implemented.

Table 6: RDP LUR 2021–2027 – Development priorities and programmes (source: RDP LUR 2021-2027)

| development priority | programmes |
|---|---|
| A creative region of opportunity | 1.1. Development of a sustainable, innovative and knowledge-based economy<br>1.2. Innovative regeneration of the region (promoting technological and non-technological innovations)<br>1.3. Cultural and creative industries<br>1.4. Promotion of foreign direct investment, development restructuring and internationalisation<br>1.5. Promotion of investment in R&D<br>1.6. Transition of the region to a circular economy<br>1.7. Development of a support environment for the creation of new global products |
| A smart region tailored to people | 2.1. Resilience to the challenges of the labour market of the future<br>2.2. Education, careers guidance and lifelong learning<br>2.3. Investments in social infrastructure (nurseries, schools, healthcare, culture, sport)<br>2.4. Health protection<br>2.5. Investments in quality of life (access to housing, intergenerational cooperation, social inclusion)<br>2.6. Social investments, social innovations and social experimentation |
| A green region of sustainable solutions | 3.1. Sustainable mobility<br>3.2. Sustainable spatial planning<br>3.3. Development of sustainable resource- and energy-saving agriculture<br>3.4. Development and management of green infrastructure<br>3.5. Energy management<br>3.6. Adaptation to climate change<br>3.7. Drinking water supply, wastewater drainage and waste management |

The total indicative value of the RDP LUR 2021–2027 on the basis of the recorded needs of the region is 1.8 billion euros.

## 6.2 VISION OF THE RIS LUR

The Ljubljana urban region will be the greenest and safest metropolitan region, an international innovation hub with a resilient economy and satisfied citizens.

## 6.3 GOALS OF THE RIS LUR

By implementing the RIS LUR, we will contribute to the realisation of the development goals of the RDP LUR 2021–2027, which are the following:

- A green region that promotes innovation, creativity and the development of new technologies: The region is focused on developing an innovative, knowledge-based economy of international calibre that fosters competitiveness and creates a high quality of life. Aware of the consequences of a climate change, the finite nature of natural resources and the limitations of the current linear model of consumption and production, it is actively engaged in implementing the transition to a circular economy. Through applied research, the fostering of creativity and the use of new technologies, it is creating favourable conditions for the development of products and services with high added value.

- An internationally recognised region for business opportunities and green investment: The region is boosting activities that promote international links and consolidating its competitive advantages as a metropolitan region. It is endeavouring to increase the business activity, export focus and technological capacities of businesses and encouraging them to undergo development restructuring and internationalise their operations. By promoting green investment and investment in R&D, the region is encouraging the development of new global products.

- A better connected region: The region is basing its development on bringing together those systems and stakeholders that are vital to sustainable development. It is integrating existing mobility systems, improving the competitiveness of public transport and aligning mobility planning with spatial and development planning. It is prioritising the improvement and development of the rail network. In the area of digital transformation, emphasis will be placed on covering the white spots of the broadband network and the smart integration of the electricity grid.

- A region that is improving quality of life: The region is constantly working to improve the quality of life of its inhabitants through the creation of favourable conditions for economic and social growth, which are reflected in a rise in

living standards. It is supporting education and employment with a view to the challenges of the labour market of the future, endeavouring to increase the quality of social services and ensuring a more responsible approach to addressing the issue of housing.

- A region that ensures that local initiatives are implemented: The local environment has great potential. The region recognises this and is constantly encouraging its activation. It dedicates particular attention to preserving natural features, maintaining the vitality of urban and rural areas and integrating tourism and cultural heritage. Also high on its list of priorities is strengthening the labour force participation of local populations with the help of social innovations.

The strategic goals of the RIS LUR are as follows:

1. To enable the active inclusion of citizens in governance and decision-making
2. To improve the level of innovation of the regional economy
3. To enable sustainable mobility for all citizens and visitors to the region
4. To improve the context for adaptation to climate change, more rational energy use and self-sufficiency
5. To strengthen the capacity of LUR citizens to meet the challenges of the future
6. To improve the attractiveness of the region as a place to live, do business and study

## 6.4 IMPLEMENTATION OF THE RIS LUR

Implementation of the strategy will take the following approach:

- Primary focus on areas within the competence of the local and regional levels
- Regional approach (integration, unified technology, competences)
- Linking existing fragmented projects and ideas (synergy)
- Use of technological and non-technological solutions taking into account expected technological development and the individual solution
- Implementation with the help of pilot projects
- Supplementing various financial resources (international (especially EU), national, local, private)
- Adaptability (adaptation of the RIS LUR to changed conditions, monitoring and evaluation)
- Strengthening of the regional innovation system (reinforced coordination)
- International cooperation (projects, platforms, networks)
- Cooperation with the other regions of Slovenia
- Raising the international profile of the LUR


key development priorities
key development priorities
key development priorities

# 7 KEY DEVELOPMENT PRIORITIES

## 7.1 SMART GOVERNANCE

Strategic objective: to enable the active inclusion of citizens in governance and decision-making

Within this development priority we aim to achieve:

- participation and inclusion of citizens in the promotion of development (e.g. physical and digital platforms, participatory budgeting, inclusion of citizens and other stakeholders in the preparation of projects (co-creation),
- informedness of citizens about the key challenges facing the region (e.g. via networking events, communication platforms),
- empowerment of citizens to use modern digital technologies (e.g. via community centres),
- bringing online and mobile services together in one place (digital platform),
- marketing the region/municipality at home and abroad (e.g. participation at events at home and abroad (e.g. fairs, exhibitions), single website, contact point for municipalities to apply for EU projects, contact point for investors, cooperation with the university, research organisations, chambers to attract foreign students, researchers and other talents, etc.),
- more efficient operations of municipalities – innovative municipal administration (digital transformation, organisation, processes, cooperation of municipalities, exchange of good practices).

Table 7: Activities for the achievement of the specific objectives of the Smart Governance development priority

| specific objectives | activities for the achievement of objectives |
|---|---|
| Specific objective 1.1:<br>establish an effective platform for cooperation and inclusion | Design and implementation of an innovative platform for cooperation and inclusion |
| Specific objective 1.2:<br>achieve awareness and understanding of trends in the region | Informing citizens about key challenges facing the region as a whole |
| Specific objective 1.3:<br>empower citizens to use modern digital technologies | Establishment of a regional community centre<br>Establishment of open-source and other advanced technological solutions (e.g. blockchain) |
| Specific objective 1.4:<br>preparation and implementation of public policies on a sound analytical basis | Ongoing preparation of background documentation |
| Specific objective 1.5:<br>ensure the comprehensive promotion of the region | Comprehensive promotion of the region |
| Specific objective 1.6:<br>more efficient operations of municipalities | Innovative municipal administration |

## 7.2 SMART ECONOMY

### Strategic objective: to improve the level of innovation of the regional economy

Within this development priority we aim to achieve:

- promotion of enterprise growth (e.g. a regional call for innovative project submissions, a financial scheme for the establishment and operation of new innovative start-ups, a guarantee scheme),
- a diverse support environment that offers suitable conditions for innovative enterprises (e.g. business accelerator, technology park, incubators),
- linking and networking of enterprises (e.g. local clusters project, joint appearances by enterprises at events at home and abroad),
- readiness of enterprises and the support environment for the transition to a circular economy (e.g. circular solutions for greening the economy),
- strengthening of »smart« tourism (e.g. via solutions that facilitate access to tourism and hospitality products, services, spaces and experience with ICT-based tools),
- adequate spatial conditions for the development of the economy (e.g. business zones, incubators, co-working spaces),
- support for the cultural and creative sector (e.g. creative incubator, training, promotion of the cultural and creative sector, pilot projects for public sector service design, innovative public procurement).

Table 8: Activities for the achievement of the specific objectives of the Smart Economy development priority

| specific objectives | activities for the achievement of objectives |
|---|---|
| Specific objective 2.1:<br>encourage the emergence of innovative start-ups | Creation of a flexible environment that promotes a rapid response to the changing challenges of the future |
| Specific objective 2.2:<br>create an innovative ecosystem capable of maintaining a strong start-up culture in competition with other locations | Offer enterprises, start-ups, spin-offs and innovative individuals the best possible framework to operate in |
| Specific objective 2.3:<br>strengthening connections between enterprises | Networking and connecting enterprises at the regional level |
| Specific objective 2.3:<br>exploit the advantages of design-led approaches | Support in identifying the advantages of design-led approaches, in their implementation in operations and in forming connections with creative enterprises |
| Specific objective 2.4:<br>promote the development of innovative services | Establishment or refinement of support infrastructure in order to foster the innovation capacity of service enterprises, digital transformation |
| Specific objective 2.5:<br>promote the development of circular solutions and the use of green technologies | Increase the competence of the support environment for the transition to a circular economy and establish a regional knowledge and networking hub |
| Specific objective 2.6:<br>develop smart resource management: industrial–urban symbiosis in practice | Support for the development of ecosystems for smart resource management |

## 7.3 SMART MOBILITY

Strategic objective: to enable sustainable mobility for all citizens and visitors to the region

Within this development priority we aim to achieve:

- connected transport infrastructure and its efficient management (e.g. single mobility centre),
- connected and expanded public transport offering (e.g. via coordination of timetables and services),
- establishment of conditions for the implementation of mobility as a service (e.g. via a single digital platform).

Table 9: Activities for the achievement of the specific objectives of the Smart Mobility development priority

| specific objectives | activities for the achievement of objectives |
|---|---|
| Specific objective 3.1:<br>design connected infrastructure and smart governance | Introduction of a single system of governance |
| Specific objective 3.2:<br>design a connected and expanded public transport offering | Efficient connections of all forms of public transport and integration with other means of transport |
| Specific objective 3.3:<br>put technology and infrastructure in place for self-driving vehicles | Support the design of a single ecosystem for the development of solutions for self-driving vehicles |
| Specific objective 3.4:<br>implement the concept of mobility as a service (MaaS) | Support the establishment of a single digital platform for the purpose of promoting the implementation of MaaS |

## 7.4 SMART ENVIRONMENT

Strategic objective: to improve the context for adaptation to climate change, more rational energy use and self-sufficiency

Within this development priority we aim to achieve:

- energy efficiency and positive impacts on the environment (e.g. establishment of self-sufficient energy communities, carbon-free energy use in public buildings, energy advice service),
- food self-sufficiency and sustainable/innovative forms of agriculture and sales (e.g. e-markets, green food chains system),
- maintenance of biodiversity (e.g. land use, management of protected areas of nature, raising public awareness).

Table 10: Activities for the achievement of the specific objectives of the Smart Environment development priority

| specific objectives | activities for the achievement of objectives |
|---|---|
| Specific objective 4.1:<br>become an energy efficient and climate neutral region | Establish systems that have a positive impact on energy efficiency and reduce environmental impacts |
| Specific objective 4.2:<br>increase food self-sufficiency while promoting sustainable and innovative forms of agriculture | Promotion of organic, sustainable and extensive forms of farming with maintenance of indigenous species and the characteristic landscape<br>Establishment of short food chains by promoting channels for the direct sale of products and a public procurement system in local institutions |
| Specific objective 4.3:<br>implement strategic planning and integrated management of green infrastructure | Regional planning and management of green infrastructure for environmental, social and economic benefits<br>Support to improve the state of urban and suburban areas and the environment and increase resilience to climate change |

| specific objectives | activities for the achievement of objectives |
| --- | --- |
| Specific objective 4.4:<br>to maintain biodiversity with the help of innovative approaches | Maintain and improve the state of conservation of species and habitat types in protected natural areas and other natural areas by promoting the development of innovative measures, raising public awareness of the importance of a well-preserved (natural) environment and the transfer of knowledge and new technologies (VR, AR, etc.) |

## 7.5 SMART CITIZENS

Strategic objective: to strengthen the capacity of LUR citizens to meet the challenges of the future

Within this development priority we aim to achieve:

- competence of citizens to use digital technological solutions (e.g. education and strengthening human resources for digital transformation),
- strengthening of citizens' innovation competences and innovation culture (e.g. via systematic strengthening of innovation competences in all phases of education and lifelong learning),
- strengthening the role of social innovations in addressing social problems such as youth employment, poverty, social exclusion, etc. (e.g. a single platform for the identification of needs of social innovations, competition for best innovation with social effects),
- a support environment to strengthen the competence of citizens (e.g. training providers, premises for projects, computer equipment, mobile unit for IT training),
- intergenerational cooperation (e.g. intergenerational centres, intergenerational cooperation projects such as lifelong learning),
- spaces for young people (e.g. youth centres).

Table 11: Activities for the achievement of the specific objectives of the Smart Citizens development priority

| specific objectives | activities for the achievement of objectives |
|---|---|
| Specific objective 5.1:<br>improve transfer of learning culture with common goals and individual strengths | Introduction of various forms of networking, partnerships and platforms for the transfer of knowledge, competences and good practices |
| Specific objective 5.2:<br>strengthen capabilities for social innovations | A focus on the development, testing and strengthening of innovative models for addressing social problems (youth employment, poverty, social exclusion) |
| Specific objective 5.3:<br>improve the capacities of the regional innovation ecosystem | Preparation of a platform that allows innovation ecosystem experts, trainees, students, innovators, etc., to regularly exchange information on the situation and future challenges in the LUR and develop new solutions and practices in the international environment |
| Specific objective 5.4:<br>use artificial intelligence solutions in the LUR | Identification of areas and challenges where artificial intelligence solutions could be used |
| Specific objective 5.5:<br>strengthen the digital competences of the LUR | Preparation of measures in the sphere of the digital transformation of the LUR such as education and strengthening human resources for digital transformation |
| Specific objective 5.6:<br>identification of impact of innovations on the labour market | Introduction of a system of monitoring impact of innovations on the labour market |
| Specific objective 5.6:<br>design innovative recruitment initiatives | An interdisciplinary committee of experts designs projects on solutions for the labour market of the future with social and sustainable economic models |

| specific objectives | activities for the achievement of objectives |
|---|---|
| Specific objective 5.7:<br>strengthen the innovation competences of LUR citizens | Systematic strengthening of innovation competences in all phases of education and lifelong learning |
| Specific objective 5.8:<br>promote innovations in the field of social exclusion | Creation of a framework of socially innovative solutions (searching for solutions that function in practice) |
| Specific objective 5.9:<br>take advantage of intergenerational differences as an opportunity for innovation | Connections of the knowledge and experience of older citizens with the knowledge and technologies of young people in various spheres (in the workplace, in mobility, in skills learning – e.g. ICT) |
| Specific objective 5.10:<br>promote innovations in the field of care for the elderly | Improvement of innovation culture in care for the elderly in the LUR |

## 7.6 SMART LIVING

Strategic objective: improve the attractiveness of the region as a place to live, do business and study

Within this development priority we aim to achieve:

- innovative addressing of housing issues (e.g. housing cooperatives),
- sustainable construction of public buildings, planning and construction in accordance with BIM, use of smart technologies (smart buildings),
- digital transformation and promotion of the natural and cultural heritage.

Table 12: Activities for the achievement of the specific objectives of the Smart Living development priority

| specific objectives | activities for the achievement of objectives |
|---|---|
| Specific objective 6.1:<br>promote innovative concepts for addressing housing issues | Support for the establishment of housing cooperatives |
| Specific objective 6.2:<br>promote smart materials and construction | Promote the use of smart materials and construction methods |
| Specific objective 6.3:<br>promote rural development according to the smart villages concept | Development of social innovations in the area of knowledge transfer and cooperation among different age groups in rural areas |
| Specific objective 6.4:<br>encourage digital transformation and promotion of the natural and cultural heritage | Digital transformation and promotion of the natural and cultural heritage |


key development projects
key development projects
key development projects

# 8 KEY DEVELOPMENT PROJECTS

## 8.1 SMART GOVERNANCE

### Proposed projects

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Laboratory for the innovation initiatives of citizens of the region | The laboratory will be an advisory body for the LUR's innovation policy. It will promote exchanges between science, business, politics and society (workshops, analyses, meetings, annual event). | RRA LUR, SIO | Short-term |
| Regional innovation communication platform | Bringing online and mobile services together in one place | RRA LUR | Medium-term |
| Community centre | The centre will represent an upgrading of networking (business) incubators and will include a re-use centre, production premises, a co-working space, loan of equipment, training. | RRA LUR, municipalities, public institutes | Medium-term |

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Identification of areas for the introduction of open-code solutions | The principal characteristic of open-code solutions is free access to source code. This enables the introduction or development of additional functionalities alongside existing ones, resulting in better harmonised work processes. In the majority of cases, such software is available free of charge. It is also more agile than commercial solutions but requires considerable know-how, since the management and integration of such solutions is far more complex. As part of the project, we would identify areas where the development/introduction of open-code solutions makes rational sense. This would be the basis for subsequent development projects. | RRA LUR, SIO, public research institutes, UNI LJ | Medium-term |
| Identification of areas of use of blockchain technology | In recent years blockchain technology has been tested/used in a wide variety of sectors for very diverse applications. This technology is not, however, useful everywhere, since in some areas we have established technologies that are cheap and still suitable for use. Blockchain technology is particularly useful for specific cases where existing alternatives prove to be unsuccessful. As part of the project, we would conduct analysis to identify those areas that are most suitable for the use of this technology (technological, legal, sociological, economic aspects), which would be the basis for subsequent development projects. | RRA LUR, SIO, public research institutes, UNI LJ | Short-term |
| RIS LUR regional website | A website is essential for communication with citizens, enterprises, tourists, investors, international organisations, and so on. It represents one of the basic branding tools available to the LUR, allowing its users to find all information about the region on a single website (web content, links to other websites). | RRA LUR, municipalities, public institutes | Short-term |

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Regional foresight LUR 2050 | Predicting trends is one of the regional planning approaches that increases a region's ability to cope with changes around the world. Content is focused on a continuous system for monitoring trends, transfer of practices and the responses of other countries to trends/challenges and directing regions towards action plans for managing uncertainties. | RRA LUR | Short-term |

Note: short-term =1–2 years; medium-term = 3–5 years; long-term = 6+ years.

## 8.2 SMART ECONOMY

### Proposed projects

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Regional funding scheme for innovations | Regional scheme for funding innovation projects. The idea is based on the establishment of regional innovation subsidies which, as part of a package including national measures, would form new funding programmes (financing fund, investment network, funding for business starters with innovative ideas). | RRA LUR, SPS, TPLJ | Medium-term |
| Development of innovation hubs | Creation of places of innovation (contact points) and a cross-innovation hub with the creative industries. Thanks to their networking skills, experimental approach and flexibility, which generates resilience, the creative industries are treated as innovation drivers for other sectors. | RRA LUR, municipalities, SPIRIT | Medium-term |
| Innovation factory | State-of-the-art equipped experimental rooms, workshops and offices for young technology enterprises | RRA LUR, municipalities, SIO | Medium-term |
| Regional cultural incubator | The incubator will support the development of cultural projects (training, mentoring, financial support from the public and private sectors). | RRA LUR, municipalities | Short-term |
| Creative mission | Connecting creative enterprises with advanced industries or effectively managing design to create added value in enterprises | RRA LUR, GZS | Short-term |

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Smart tourism | Regional tourism card, connection of local tourism providers and marketing of products, digital transformation, access to tourism and hospitality products, services, spaces and experience with ICT-based tools | RRA LUR, Ljubljana Tourism, municipalities | Medium-term |
| Establishment of business chains in services | Joint planning and implementation of innovative services | RRA LUR, GZS, OZS | Medium-term |
| Innovative circular solutions for greening the economy in the LUR | The purpose of the project is to raise the substantive competence of the support environment for the transition to the circular economy and to establish a regional system for the development of innovations that will follow the 17 Sustainable Development Goals and establish an environment for connecting knowledge for the future in order to increase development opportunities at the local and regional levels. | RRA LUR, enterprises, municipalities | Medium-term |
| Platform for the creation of sustainable ecosystems for the exchange of resources | Pilot project for introducing the concept of industrial symbiosis in practice. A strategic challenge for successful enterprises and economies is the economical management of resources. For this reason, the project will create an environment for the development of innovative tools that will enable the use of the principle of industrial symbiosis in practice. | RRA LUR, enterprises | Medium-term |

Note: short-term =1–2 years; medium-term = 3–5 years; long-term = 6+ years.

## 8.3 SMART MOBILITY

### Proposed projects

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Coordination of timetables and services | The coordination of timetables and routes of various forms of public passenger transport operated by the state and municipalities in such a way that they complement each other and form a unified offer | Regional mobility centres in cooperation with the integrated public passenger transport (IJPP) operator, Ministry of Infrastructure (MzI) and local communities | Short-term, ongoing |
| Introduction of through-ticketing for public transport at the regional level | Expansion of the range of IJPP tickets for all types of journeys and all passengers | IJPP operator | Short-term |
| Expansion of public transport with smaller vehicles in rural areas | Introduction of public transport using smaller vehicles in rural areas, taking into account experiences and good practices in Slovenia (e.g. the Kočevje region) and other countries | Public transport providers, Regional mobility centres, local communities, IJPP operator, MzI | Medium-term |
| E-bike sharing scheme | Development of a model of an e-bike sharing scheme on the basis of experiences in other countries and in Slovenia | Regional mobility centres, local communities, e-bike sharing providers | Short-term |

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Regional Mobility Centre LUR | Establishment of Regional Mobility Centres according to the model that will be established by the ReMobil project. Centres established in every region of Slovenia will look after the development and coordinated functioning of mobility in the regions and connect all stakeholders in this field. | RRA LUR, municipalities, MzI | Short-term |
| Volunteer drivers (Prostofer) | Expansion of the volunteer driver model to assist the mobility of elderly citizens in all LUR municipalities and integration of the service across the region | Municipalities, RRA LUR, Regional mobility centres, MzI | Short-term |

Note: short-term =1–2 years; medium-term = 3–5 years; long-term = 6+ years.

## 8.4 SMART ENVIRONMENT

### Proposed projects

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Regional energy plan LUR | The local energy plans of the LUR municipalities should be interlinked and coordinated at regional level. The LUR energy plan provides an overview of the situation and of the deficiencies and potentials, and contains guidelines for and a vision of the sustainable energy development of the region. | RRA LUR | Medium-term |
| Carbon-free energy use in public buildings | This vision up to 2050 is for almost carbon-neutral energy use in buildings, which can only be achieved by making considerable improvements in energy performance and increasing the use of renewables in buildings. A targeted energy consumption monitoring system must be introduced (it can also be a remote monitoring system) so as to enable efficient energy management on the basis of a comparison between actual and target energy consumption. | RRA LUR, municipalities | Medium-term |
| Establishment of self-sufficient energy communities | Sufficient use of renewable energy sources is a precondition for the decarbonisation of Slovenian energy and society. The engagement of residents and their transformation from consumers to “prosumers” is of key importance. Local energy communities provide residents with the option of becoming actively involved and are key to the further decentralisation and democratisation of energy production, and therefore to the achievement of the energy and climate targets that have been set for the country as a whole. | Municipalities, RRA LUR | Long-term |

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Regional e-market | Creation of an online market for local food producers in the region aimed at advertising and selling products from farms, cooperatives and businesses | Municipalities | Short-term |
| System of green food chains in the LUR | From an economic point of view, there is great potential to be exploited in sustainable food production, food security, expansion and interconnection of production for the market and the organisation of food supply chains, including the processing and marketing of agricultural and traditional products at local and regional levels. Organically grown food is certainly one of the main market niches: consumer demand in Slovenia is rising constantly and outstrips the supply of domestically grown organic food. | Municipalities, RRA LUR | Medium-term |
| Sustainable management of protected areas | Preparation of sustainable management guidelines for protected areas in the LUR | RRA LUR, municipalities, administrators of protected areas | Medium-term |
| Regional spatial plan | Elaboration of a regional spatial plan (RSP) in accordance with legislation. The RSP sets out the goals and priority tasks of spatial development and lays down guidelines for the spatial development of the region, in particular as regards the development of settlement, utilities infrastructure and management of the landscape that maintains landscape identity. | Municipalities, RRA LUR | Short-term |
| Fight against climate change | Innovative approaches to the introduction of green infrastructure in urban environments (green façades, green gardens, use of water to cool urban areas, etc.) | Municipalities, RRA LUR | Medium-term |

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Renewal of degraded areas using innovative green infrastructure instruments and new technologies | Understanding of the technical aspects of the establishment of green infrastructure has improved considerably in recent years.<br>Pilot projects for the renewal of degraded areas in the LUR could also make use of new technologies and innovative green infrastructure instruments. | Municipalities | Long-term |
| Digital communication on nature conservation and the importance of biodiversity | The project covers the improvement of information, strengthening of knowledge and promotion of innovation by providing high-quality data on biodiversity in the region | Municipalities, ministries | Medium-term |
| Transfer of knowledge about beekeeping technologies | Organisation of regular international exchanges and international symposiums, best-practice visits | Municipalities, associations | Short-term |
| Innovative methods for the removal of invasive exotic species and their processing (upgrading of existing projects in the capital) | In the last few decades, invasive exotic plants have been recognised as one of the most important causes of the decline in biodiversity. They can also cause economic and environmental damage, while some are harmful to humans, since they can cause allergies, skin reactions and inflammations. The aim of the project is to process them into new, useful products. | Municipalities, enterprises | Short-term |
| Innovative approaches to remediation of environmental pollution | Establishment of regional environmental management by leading experts in the business and education sectors | Ministry, municipalities | Long-term |
| Regional strategy for the development of protected areas | Preparation of a regional strategy for the development of protected areas | Municipalities, RRA LUR, administrators of protected areas | Medium-term |

Note: short-term =1–2 years; medium-term = 3–5 years; long-term = 6+ years.

## 8.5 SMART CITIZENS

### Proposed projects

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Laboratory for innovations with a social effect for a green and digital future | Featuring interdisciplinary integration and a cross-cutting approach, the programme will provide a suitable support environment for the development of social innovations that contribute to a better quality of life. | RRA LUR, municipalities | Medium-term |
| Empowering citizens for a Smart, Digital and Green Community | The transition to a new sustainable development paradigm based on digital transformation, smart communities and new, innovative green solutions will only be possible if the region's population adapts to the changes. The project is designed to raise the population's ability to use, develop and promote new technologies and sustainable solutions. | RRA LUR, municipalities | Medium-term |
| Mobile units for IT training at the regional level | Establishment of permanent mobile infrastructure to train and assist elderly citizens in activities related to the digital transformation in LUR municipalities | RRA LUR, municipalities, SPIRIT | Medium-term |
| Intergenerational innovation challenge | A network of intergenerational centres to support the innovative search for solutions, processes and services, including in the sphere of health | RRA LUR, municipalities, SIO, SIS EGIZ | Medium-term |
| Platform for identification of needs for social innovations in the LUR | A single website to collect needs in the region that require solutions via social innovations | RRA LUR, municipalities | Medium-term |

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Formation of a LUR strategic council for digital transformation | A body for adopting the strategic focuses of the region in the area of the digital transformation. An advisory body dedicated to monitoring needs for innovative processes and investment – provision of funds for innovation | RRA LUR, GZS | Short-term |
| Educational path to innovation – learning to innovate | Highly trained talents are the key to the development of innovative solutions. The innovations and skills of young talents need to be encouraged through a process of lifelong learning. Innovation competences, in particular, need to be encouraged via a broad-based initiative or programme running from nurseries to schools, via universities to continuing education. The aim is to create a permanent atmosphere of innovation in all areas of society. | RRA LUR, Ljubljana Tourism, municipalities | Medium-term |
| Regional competition for best innovation with a social impact | An annual event designed to find the best solution to highlighted social problems/challenges in LUR municipalities. A panel of experts selects the three most successful proposed solutions and awards them a regional prize. | RRA LUR, GZS, OZS | Medium-term |
| Network of Integrated long-term care in the local community | The project offers a solution in the form of the establishment of an »integrated long-term care network in the local community« that will »enable elderly people to continue to live as normally as possible« by enabling provision of the necessary services, both institutional and community-based, in every local community. The network involves a connection with the local environment, the establishment of social interaction and the involvement of local residents in joint care for the well-being of the elderly. | Consortium of municipalities | Medium-term |

Note: short-term =1–2 years; medium-term = 3–5 years; long-term = 6+ years.

## 8.6 SMART LIVING

### Proposed projects

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Housing cooperative | On the basis of good practices from abroad (e.g. Vienna), analysis of difficulties in providing accessible housing in the LUR, and analysis of obstacles to the establishment of housing cooperatives, we will a model for the establishment of a housing co-operative. | Consortium of partners | Medium-term |
| Use of smart materials and smart construction methods in public buildings | Expansion of excellence and creation of new clusters regarding the use of new materials, pilot projects for new construction and renovation of existing buildings from the point of view of smart technologies at the regional level | PPP | Medium-term |
| Smart villages | The development of a new concept or new pilot programmes designed to enable rural inhabitants to remain in rural areas and make the countryside a place where people want to live. | Municipalities | Short-term |
| Digital displays of natural and cultural heritage at the regional level | Digital technologies offer new opportunities for the valorisation of cultural and natural heritage | Municipalities, Ministry of Culture | Medium-term |

| project | project description | responsible person/body | timeframe |
|---|---|---|---|
| Active and healthy ageing | The project aims to establish an efficient and innovative intersectoral network for the implementation of active ageing programmes for the elderly that will contribute to raising the quality of life, greater physical and mental agility, greater independence and a wider social network, and in this way prevent isolation and exclusion, improve certain health conditions, enable elderly people to remain at home for longer, improve the self-image of elderly people and, by promoting an active lifestyle, have a positive impact on long-term care. | Municipalities, RRA LUR, SIS EGIZ | Medium-term |
| Smart medical devices and equipment to improve quality and safety of life for the elderly | The purpose of the project is to introduce both technological and non-technological innovations supported by ICT systems that will improve quality of life and increase safety and comfort for elderly citizens in the management of the most common health problems (e.g. dementia, chronic wounds, incontinence and diabetes). It involves the development of a system of innovative treatment methods and approaches and the establishment of a »home hospital room« (new smart medical devices, system for monitoring functioning/malfunctioning). | Consortium of municipalities, RRA LUR, SIS EGIZ | Medium-term |

Note: short-term =1–2 years; medium-term = 3–5 years; long-term = 6+ years.


monitoring, evaluation and implementation
monitoring, evaluation and implementation
monitoring, evaluation and implementation

# 9 MONITORING, EVALUATION AND IMPLEMENTATION

The organisation responsible for the implementation, monitoring and evaluation of the Regional Innovation Strategy of the Ljubljana Urban region (RIS LUR) is the Regional Development Agency of Ljubljana Urban Region (RRA LUR).

Within the programming cycle, monitoring and evaluation of individual programmes are the main tools for directing activities and ensuring quality implementation, since they offer oversight of their progress and enable adaptation to changing conditions. Experience gained through the implementation of projects and the insights obtained through detailed study of implementation provides us with a large stock of knowledge that enables the even better implementation of planned activities in new projects. Information obtained through monitoring, combined with the results of evaluation, are therefore an essential precondition for the successful programming of new programmes/measures/projects.
The main purpose of monitoring is to establish whether the effects are consistent with the plans and what the results of activities are, in other words if the achievements match the pre-set objectives. The monitoring system consists of (Nared, Kavaš, 2009):

- A system of indicators that enable us to measure how successfully activities or measures are implemented. Indicators are the means by which we measure the success of implementation of an activity, which means that statistical data can also serve as indicators. An indicator represents a set of measurements of a specific variable over time and/or by location. An indicator is information that is important for the implementation of a programme and can take the form of statistical data or other information. An indicator can be defined as a criterion for an achieved goal, resources used or a desired effect, for achieved quality or as a variable from context. An indicator must have a definition, a value and a unit of measure. Following the model set out in "Smart specialisation in the Helsinki-Uusimaa Region", we will monitor the RIS LUR by monitoring the indicators for individual projects, as can be seen from Figure 11.

- The establishment and activity of suitable supervisory bodies. In the case of the LUR RIS, the role of supervisory body will be played by the Regional Council. This body adopts the RIS LUR and receives annual reports on its implementation.

- Various forms of reporting. The RRA LUR will prepare a report on the progress of the activities implemented for each year of implementation and will forward it to the Regional Council.

Without an adequate system of monitoring, it is difficult to carry out adequate evaluations. In the programming/project cycle, evaluation represents a continuation of monitoring, although there is no linear connection between the two phases; rather, they are interdependent. Evaluation is the systematic assessment of an ongoing or completed project, programme or policy that is as objective as possible and covers content, implementation and results. The purpose of evaluation is to assess suitability, effectiveness, performance, impact and sustainability. Evaluation must produce information that is useful and credible and enable the use of its findings and recommendations in the decision-making process of both recipients and funding bodies (Kavaš, Pečar, 2004). The RRA LUR will carry out an evaluation of the RIS LUR at the end of 2025. On the basis of this evaluation, it will prepare a revision of the RIS LUR in the first half of 2026.

In the implementation of the RIS LUR, the RRA LUR works closely with the bodies of the development region (Regional Council), with municipalities, and with ministries and other funding bodies at the national and international levels. Enhanced cooperation with all elements of the regional innovation system (e.g. preparation of integrated projects, promotion of the region, exchange of information) is an important part of this process.

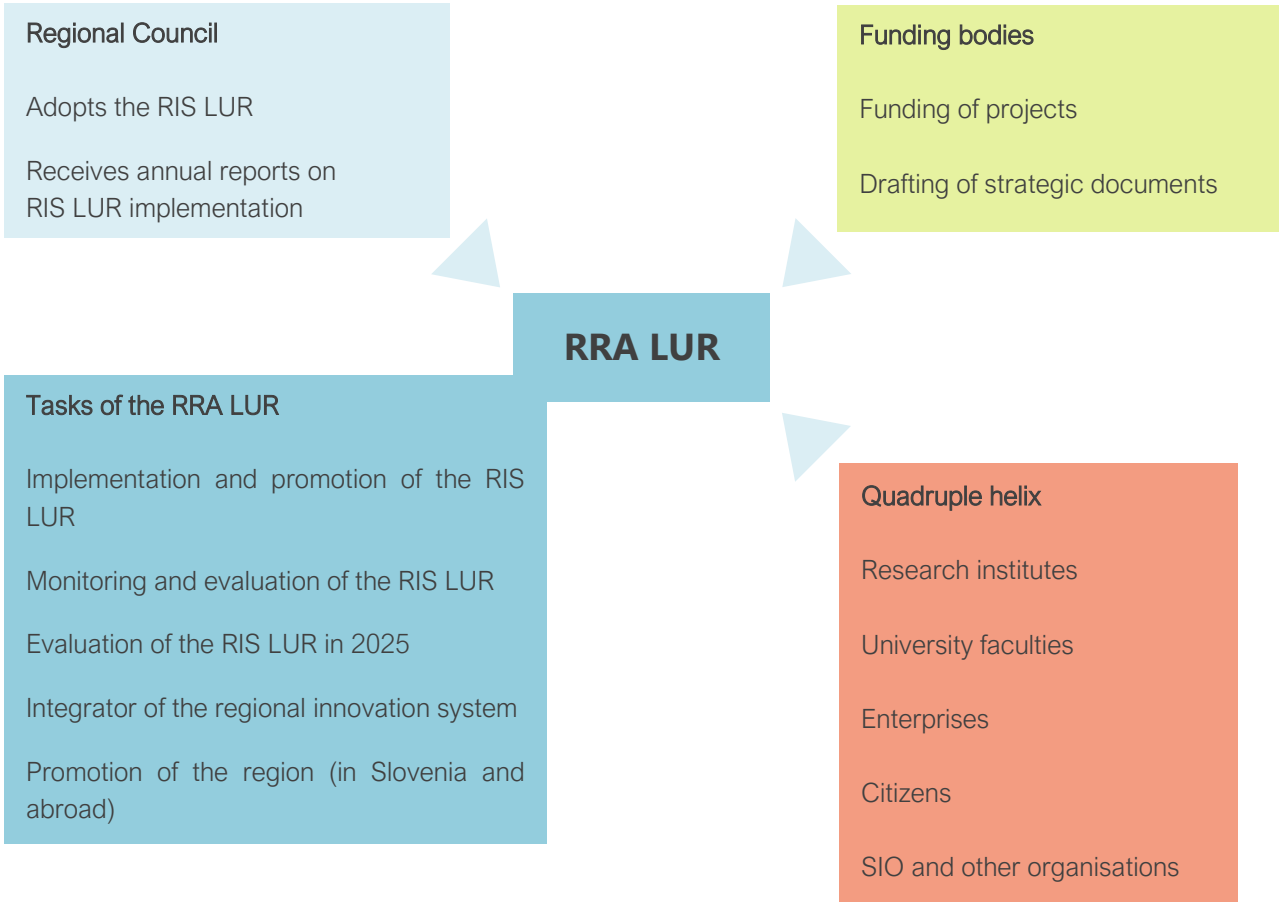



Figure 9: Implementation of the RIS LUR

Figure 10: Theory of changes – intervention logic of the RIS LUR

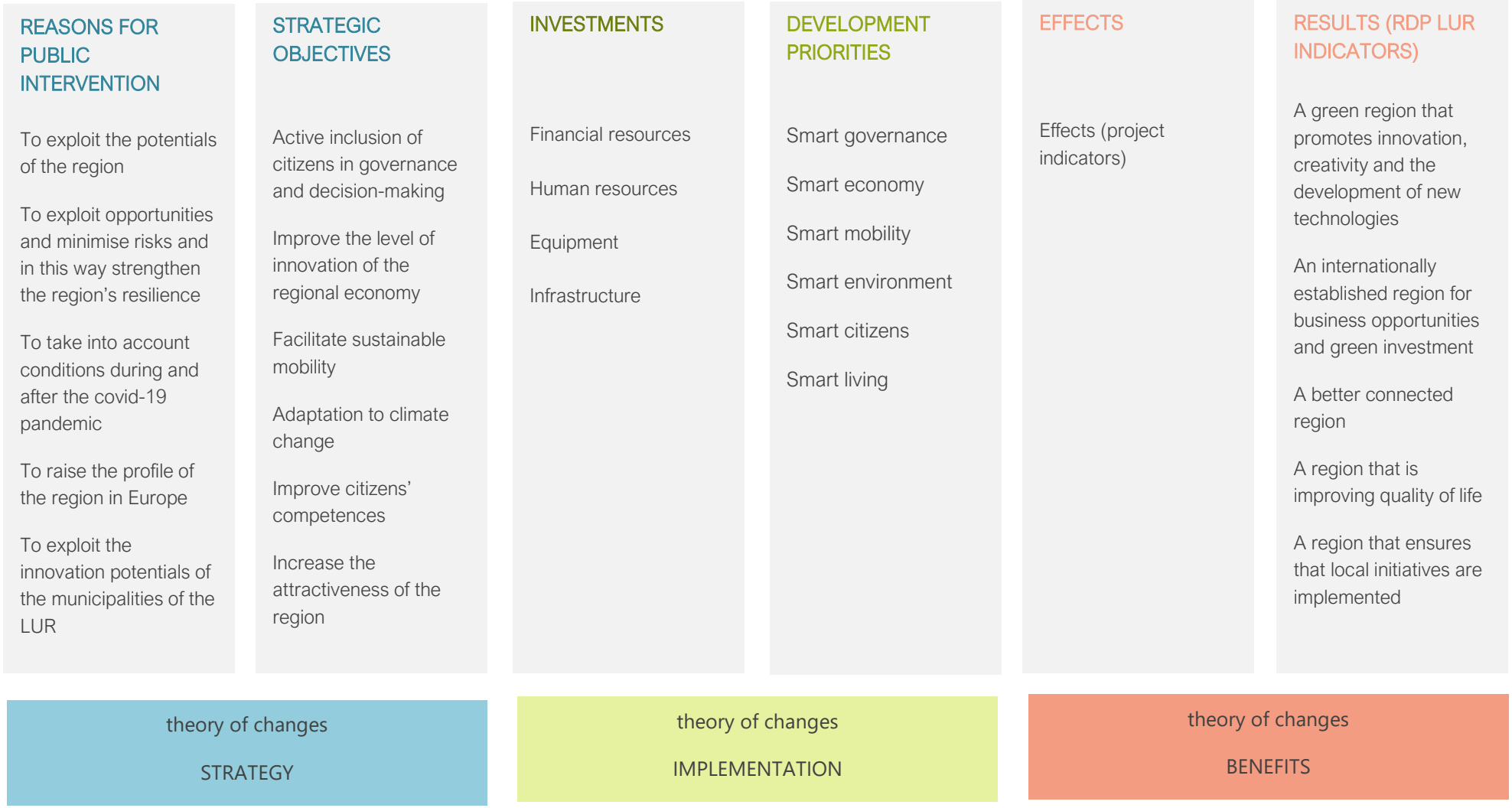
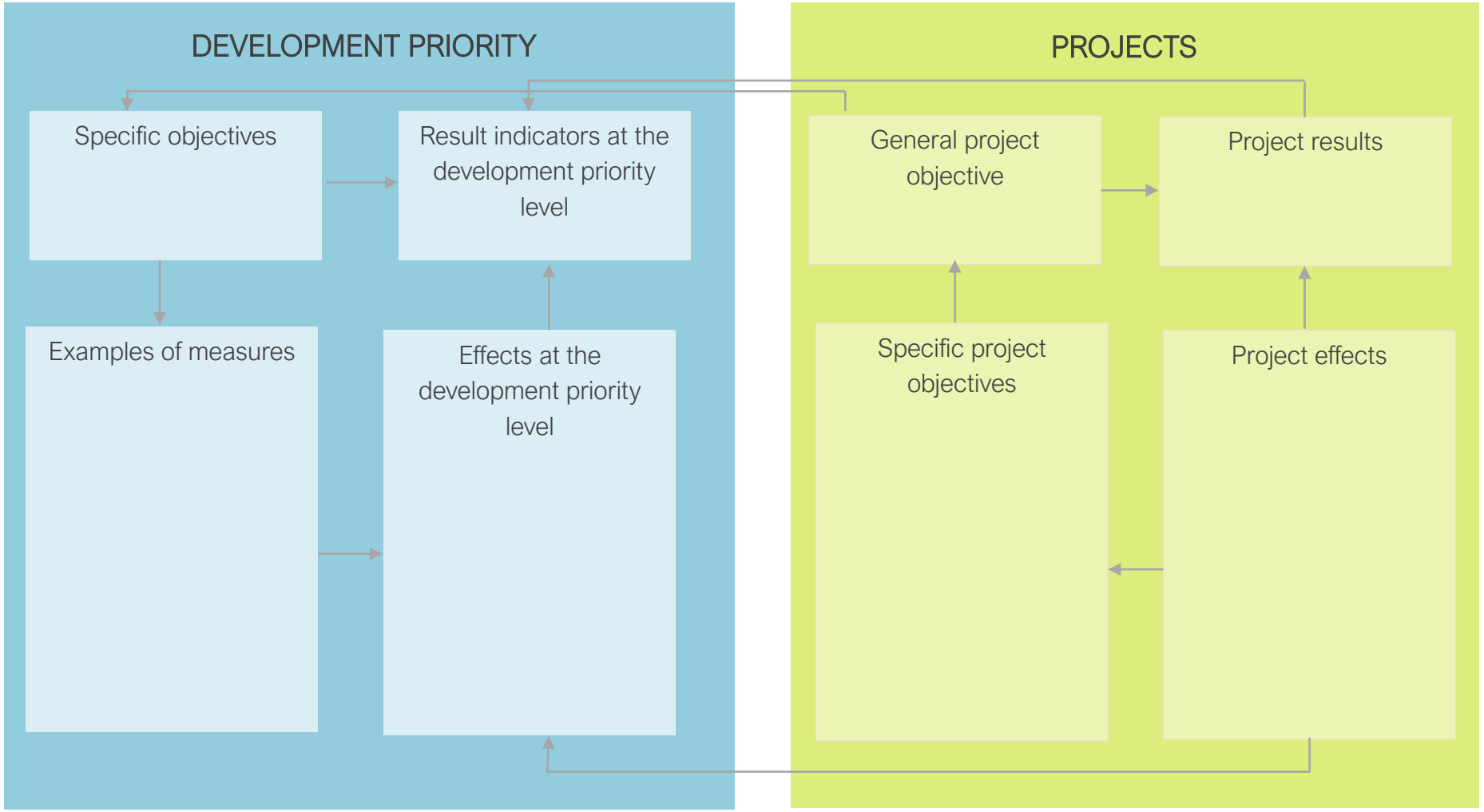


Figure 11: Connections of RIS LUR objectives and individual project objectives



# 10 REFERENCES AND SOURCES

## References


1. Deloitte, 2018. Analysis of future growth conditions and potentials in Greater Copenhagen.
2. Deloitte, 2021. Urban future with a purpose.
3. European Commission, 2020. European system of innovation indicators 2020: summary.
4. European Commission, 2021a. European system of innovation indicators 2021: summary.
5. European Commission, 2021b. 2021 Strategic Foresight Report: 'The EU's capacity and freedom to act'.
6. European Commission, 2022. European Innovation Scoreboard 2022.
7. European Committee of the Regions, 2016. Regional innovation ecosystems: CoR guide: learning from the EU's cities and regions.
8. European Parliamentary Research Service, 2018. New technologies and regional policy Towards the next cohesion policy framework.
9. EY, 2018. What's after what's next? The upside of disruption: Megatrends shaping 2018 and beyond.
10. Joint Research Centre, 2021. 2021 Strategic Forecast Report.
11. Kavaš, D., Pečar, J., 2004. Reforma reforme slovenske regionalne strukturne politike. Ljubljana: Inštitut za ekonomska raziskovanja.
12. Kleibrink, A., Laredo, P., Philipp, S., 2017. Promoting innovation in transition countries: A trajectory for smart specialisation. JRC Research Report 106260. Seville: Joint Research Centre.
13. Monzon, A., 2015. Smart cities concept and challenges: Bases for the assessment of smart city projects. Madrid: IEEE.
14. Nared, J., Kavaš, D., 2009. Spremljanje in vrednotenje regionalne politike v Sloveniji. Ljubljana: Založba ZRC.
15. OECD, 2022. Innovative Capacity of Governments: A Systemic Framework. Paris: OECD.
16. PwC, 2018. Workforce of the future: The competing forces shaping 2030.
17. Roadmap for smart and sustainable cities and communities in Norway, 2018. Design and Architecture Norway (DOGA), the Norwegian Smart City Network, Nordic Edge.
18. Roland Berger, 2020. Trend Compendium 2050: Six megatrends that will shape the world.

## Sources


1. AJPES, 2021. Fast-growing enterprises by statistical regions.
2. AJPES, 2021. Information on the performance of companies, sole traders and cooperatives in the Central Slovenia region in 2020.
3. AJPES, 2022. Information on the performance of companies, sole traders and cooperatives in the Central Slovenia region in 2021.
4. Bank of Slovenia, 2021. Direct investments 2020.
5. http://www.eu-skladi.si/sl/aktualno/novice/sporazum-o-partnerstvu-med-slovenijo-in-evropsko-komisijo-je-sprejet
6. https://ec.europa.eu/info/sites/default/files/2022_06_30_update_maximum_financial_contribution_rrf_grants.pdf
7. https://www.gov.si/teme/razvojne-regije/
8. https://www.stat.si/StatWeb/news/Index/10007
9. https://www.stat.si/StatWeb/News/Index/9270
10. https://www.zmos.si/sprejet-je-sporazum-o-partnerstvu-za-obdobje-2021-2027/
11. Recovery and resilience plan, 2021. Government of the Republic of Slovenia.
12. Partnership Agreement between Slovenia and the European Commission 2021–2027, 2022. Government Office for Development and European Cohesion Policy.
13. Regional Development Programme of the Ljubljana Urban Region 2021–2027, 2022. RRA LUR.
14. Slovenian Development Strategy 2030, 2017. Government of the Republic of Slovenia.
15. UMAR, 2021. Productivity Report 2021.

# regional innovation system in the LUR

# key projects

## ANNEX 1: REGIONAL INNOVATION SYSTEM IN THE LUR

### A Enterprises

A large number of highly successful service and industrial enterprises of various sizes and legal forms are based in the region and are investing intensively in the development of new products, services and business models. Businesses headquartered in the Ljubljana urban region (LUR) dominate the classification of the country's biggest and best enterprises.[15]

### B Designers and implementers of public policies

Designers and implementers of public policies include, above all, national policy designers and municipalities. Given the absence of formal regions or provinces (regional level) and the large number of financially weak municipalities (local level), national policy designers play a decisive role in Slovenia. Particular emphasis should be placed here on the executive branch (ministries), although the legislative branch also plays an important role in shaping the business environment. When defining policy designers, it is necessary to distinguish between ministries, bodies within ministries and implementing institutions.

Of the ministries, those that have had the biggest impact in recent years on the formulation of public policies relating to the smart region concept are the following:[16]

- Ministry of Economic Development and Technology
- Ministry of Infrastructure
- Ministry of the Environment and Spatial Planning
- Ministry of Infrastructure
- Ministry of Education, Science and Sport
- Ministry of Labour, Family, Social Affairs and Equal Opportunities
- Government Office for Development and European Cohesion Policy
- Ministry of Health
- Ministry of Agriculture, Forestry and Food
- Ministry of Culture
- Government Office for Digital Transformation

Among implementing organisations, the following play an important role in the implementation of public policies relating to the smart region concept: SPIRIT Slovenia (a public agency responsible for fostering entrepreneurship, internationalisation, foreign investment and technology), Slovene Enterprise Fund, Slovenian Tourist Board. Other implementing organisations include those that provide specialist support to individual activities, such as: ARRS, ARSO, etc. Notable bodies within ministries include the Intellectual Property Office (UIL), which is indirectly involved in supporting the CCS (copyright issues, etc.).

Municipalities, particularly the City of Ljubljana, also play an important role in promoting the smart region concept. Support is also provided by the Regional development agency of Ljubljana urban region and other

[15] https://manager.finance.si/9001296/%28TOP101%29-Velikani-slovenskega-gospodarstva-V-kaksni-kondiciji-vstopajo-v-ero-visjih-obrestnih-mer-in-drazjih-energentov

[16] When defining policy designers it is necessary to consider the area of activity and competences of an individual ministry, since the composition and actions of the government and the number, competences and organisation of ministries change with changes of government.

support organisations at the regional and local levels, although frequently only in the form of projects that are financed from Cohesion Policy funds or by the European Regional Development Fund and other EU funds (e.g. Interreg programmes).

## C Leading regional institutions in the research and education sectors, the cultural and creative sector and the support environment

### University of Ljubljana

The University of Ljubljana, founded in 1919, is the oldest and largest higher education and scientific research institution in Slovenia. Today it has around 40,000 students and employs more than 6,000 educators, researchers, assistants, and professional and administrative associates at 23 faculties and three art academies. The University of Ljubljana is Slovenia's biggest and most important educational institution and, at the same time, the country's leading research institution, with 30% of all registered researchers (figures from the SICRIS database).

### Public research institutes

The following public research institutes are based in the LUR:

- Geological Survey of Slovenia (GeoZS)
- Slovenian Forestry Institute (GIS)
- Jožef Stefan Institute (IJS)
- Institute for Economic Research (IER)
- Institute for Hydraulic Research (Hidroinštitut)
- Institute of Metals and Technologies (IMT)
- Institute for Ethnic Studies (INV)
- Institute of Contemporary History (INZ)
- National Institute of Chemistry (KI)
- Agricultural Institute of Slovenia (KIS)
- National Institute of Biology (NIB)
- Educational Research Institute (PI)
- Urban Planning Institute of the Republic of Slovenia (UI)
- National Building and Civil Engineering Institute (ZAG Ljubljana)
- Research Centre of the Slovenian Academy of Sciences and Arts (ZRC SAZU)

Some public research institutes (e.g. IJS, KI) are important players at the European level in specific research fields.

### Ljubljana Technology Park

Ljubljana Technology Park (TP LJ) was established in 1996 as an organisation that provides a supportive and stimulative business environment for the development of technology entrepreneurship at the highest level. Today it represents an international technology hub where cutting-edge technologies and development companies come together and new technology stories are born. More than 1,500 people currently work at TP LJ, which brings together more than 300 development enterprises, innovative teams and individuals in an area of 75,000 $m^2$.

### Digital Innovation Hub Slovenia

Digital Innovation Hub Slovenia (DIH Slovenia) was established in 2018 to raise awareness and provide services for the growth of digital competences, the exchange of digital experiences and examples of good practice at the local, regional and international levels. It supports the digital

transformation of micro, small and medium-sized enterprises, makes proposals to the government and facilitates access to information to boost entrepreneurship.

### Digital Innovation Hub »Jožef Stefan« Institute

The Digital Innovation Hub of the Jožef Stefan Institute (DIH IJS) helps researchers and enterprises with innovations, the transfer of scientific results into practice and the digital transformation of industry. On the basis of European integration within the European Commission's Digital Innovation Network, it participates in applications for European Commission projects for digital innovation hubs, in applications for projects where a digital innovation hub component is required, and in the submission of letters of intent on various initiatives for digital innovation hubs.

### Regional Creative Economy Centre

The Regional Creative Economy Centre (RCKE) was established in 2012 by the Regional Development Agency of the Ljubljana Urban Region. The RCKE introduces creativity to various segments of society with the aim of achieving social and economic innovations. It transfers the knowledge and skills necessary for interdisciplinary connections and the creative addressing of social and business challenges to entrepreneurs, policy designers, research and educational institutions and non-governmental organisations. By establishing complex value chains, the RCKE participates in the development of products and services with high added value, which provide end users with a better quality of life.

### Centre for Creativity

The Centre for Creativity (CzK) was set up in 2017 to act as a national promoter of development and entrepreneurship in the creative sector. Operating under the aegis of the Museum of Architecture and Design (MAO), it provides a support environment for the development of the creative sector, in combination with open calls published by the Ministry of Culture. It actively links the creative sector to industry and other sectors, strengthens its social and economic value and represents an important element of the support environment for innovation.

### Ljubljana University Incubator

The Ljubljana University Incubator (LUI) was founded in 2004 by the University of Ljubljana as a support environment to facilitate the putting into practice of good ideas that emerge during the study process. It provides young people with business premises, entrepreneurship education, business consultancy services and mentoring and helps them secure funding. Among the fundamental missions of the LUI is the establishment of the effective and rapid transfer of knowledge and technologies from centres of knowledge to industry. To this end it runs enterprise workshops for researchers and, through its activities, endeavours to encourage the creation of research-based start-ups.

### Slovenian Innovation Hub

The Slovenian Innovation Hub (SIS) was founded in 2015. It functions as a connector and promoter of R&D teams in the academic and business spheres with the aim of strengthening Slovenia's innovation capacity and international competitiveness. It plays an active part in shaping the country's

development focuses in the innovation sphere, while connecting innovation actors in Slovenia with partners around the world and organising or supporting meetings, project sessions and exchanges of views with other groupings and state bodies.

### ABC Accelerator

ABC Accelerator is a start-up accelerator founded in 2015 by BTC and partners. Its principal mission is the creation of an advanced business environment that establishes a network of connections between enterprises and multinationals, between the academic and business environments, and between various accelerators and other innovation hubs. It facilitates access to international investors and faster penetration into the global market for innovative entrepreneurs.

### KIKštarter

KIKštarter is a start-up ecosystem established in Kamnik in 2015. It offers users a creative and collaborative working environment that facilitates learning and the development of business ideas. As well as providing a co-working space, it organises various workshops, events and presentations of successful entrepreneurship stories, provides consultancy services and other services characteristic of a business support environment. It also acts as a business accelerator, where successful local entrepreneurs in Kamnik provide funding to support promising young start-ups while also offering the benefit of their know-how, experience and networks.

### International Research Centre on Artificial Intelligence

The International Research Centre on Artificial Intelligence (IRCAI) was founded by the Slovenian government in 2020. Based at the Jožef Stefan Institute, it is the first global artificial intelligence research centre under the auspices of the United Nations Educational, Scientific and Cultural Organisation (UNESCO). It addresses global challenges, supports UNESCO in studies and participates in major international projects on artificial intelligence. It also advises governments, international organisations and the general public on systemic and strategic solutions in connection with the implementation of AI.

### Katapult

Katapult is a business accelerator founded by the Trbovlje-based company Dewesoft in 2016. Since 2021 it has also been operating in Ljubljana under the name Katapult Underground. The accelerator helps businesses obtain grants, provides assistance with purchasing, administration, accounting and setting up production, and offers consultancy services, business premises rental and access to the logistics networks of existing businesses. In this way, it helps entrepreneurs throughout the process from prototype to final product.

### Chamber of Commerce and Industry of Slovenia, Ljubljana Chamber of Commerce and Industry

The Chamber of Commerce and Industry of Slovenia (GZS) traces its origins back to 1851, when the first cross-sectoral chamber in Slovenia was established in Ljubljana. Today – 170 years later – the GZS is organised as a network and provides support

to 6,000 members. The GZS is the representative body of Slovenia's business enterprise sector, a social partner, a lobbying centre campaigning for a more business-friendly economic system and economic policy and a hub for networking and exchanging opinions and good practices. The Ljubljana Chamber of Commerce and Industry (ZOR) is an autonomous integral part of the GZS that represents the combined interests of GZS members in the Ljubljana Urban Region and six municipalities of the Jugovzhodna Slovenija (South-Eastern Slovenia) statistical region. One of the key roles of the ZOR is to represent the interests of its members at the municipal, regional and national levels and to participate in all important decisions relating to regional development and the general economic situation both within the GZS system and more widely.

## ANNEX 2: KEY PROJECTS OF THE RIS LUR

### Key proposed project of the Smart Governance development priority

| | | |
|---|---|---|
| 1. | Title of project | Regional foresight LUR 2050 |
| 2. | Project summary | Regional Foresight (RF) involves constructively bringing awareness of long-term challenges and opportunities in the LUR into more immediate decision-making. It is a systematic, participatory, future intelligence gathering and medium- to long-term vision building process aimed at present-day decisions and mobilising joint actions. It provides valuable inputs to the process of planning the new development strategy in the region and municipalities and organises and lays the groundwork for collective strategic actions by stakeholders. At the same time it represents an input for political decision-makers from the point of view of better information and greater proactiveness, steering funding priorities and establishing new business models and partnership networks. |
| 3. | Development priority to which the project belongs | Development priority 1: Smart Governance |
| 4. | Target group at which the project is aimed | LUR citizens, LUR decision-makers, Business sector, NGOs |
| 5. | Description of the purpose, goals and activities of the project | The purpose of the project is to boost understanding in the region of the need for a RF LUR 2050 study and the process that this requires (How can RF be used and why? What different approaches are there to the preparation of RF? When and where is the use of RF appropriate? How should the regional/local situation be taken into account when planning the preparation of RF?). RF is more than a study, it is the process of involving regional actors, building consensus, and informing and shaping decision-making for the future. It is a regional experiment that involves testing the creative and critical potential of the region and its citizens. A new approach with the aim of instilling citizens with a culture of planning and a sense of the responsibility of every individual for the future of their region. |

| | | |
|---|---|---|
| | | Expected results:<br>1. listening to the actual needs of citizens (voice of the people) and civil society – involvement of the population of the LUR in the process<br>2. placing the future of the LUR within European and global trends and changes<br>3. understanding what is happening today and what can happen in the future<br>4. concern for the future of the LUR and its problems/challenges in the long term<br>5. renewing/refreshing the current vision and strategy of the LUR<br><br>Activities:<br>1. Formation of partnerships<br>• of connected institutions for RF (university, organisations, business sector, NGOs, politicians, etc.)<br>• of LUR citizens<br>• of young people (primary and secondary schools)<br>2. Designing the process of preparation of RF<br>• definition of needs/challenges of the future<br>• definition of desired future<br>• setting of a strategic timetable<br>• collective recommendations, dialogue with decision-makers<br>• LUR Vision 2050<br>3. Closing regional conference of the project |
| 6. | Presentation of the project promoter or group of partners | Promoter: RRA LUR<br>Partners: municipalities of the LUR |
| 7. | Indicative project timeline | 2022–2027 |
| 8. | Spatial definition of suitable locations for the implementation of activities | Municipalities of the LUR |
| 9. | Expected sources of funding | EU, national funds |

Key proposed project of the **Smart Economy** development priority

| | | |
|---|---|---|
| 1. | Title of project | Innovative circular solutions for greening the economy in the LUR |
| 2. | Project summary | The purpose of the project is to raise the substantive competence of the support environment for the transition to the circular economy (CE) and to establish a regional system for the development of innovations that will follow the 17 Sustainable Development Goals and establish an environment for connecting knowledge for the future in order to increase development opportunities at the local and regional levels. The economical management of resources is a strategic challenge for successful enterprises and economies. For this reason, the project will create an environment for the development of innovative tools that will enable the use of the principle of industrial symbiosis in practice. |
| 3. | Development priority to which the project belongs | Development priority 2: Smart Economy |
| 4. | Target group at which the project is aimed | Municipalities of the LUR, SMEs, public institutions |
| 5. | Description of the goals of the project and its consistency with the development specialisation of the region | Goals:<br>1. establishment of a regional ecosystem for the circular economy (formation of an expert team, identification of development priorities and boosting capacities for implementation of innovative CE projects)<br>2. development of knowledge and capacities in areas of the circular economy (with an emphasis on industrial symbiosis, the use of new technologies and circular design)<br>3. implementation of activities to establish an integrated innovation environment<br>4. establishment of an interdisciplinary hub programme for the development of circular business models and solutions for the transition to a circular economy (emphasis on the solutions for the exchange of resources, development of new materials, green technologies, etc)<br>5. support/mentoring for enterprises in innovative circular economy and industrial symbiosis projects<br>6. establishment of business chains to encourage enterprises and other organisations to make the transition to a circular economy |

| | | |
|---|---|---|
| | | A special section of the Slovenian Sustainable Smart Specialisation Strategy entitled “Networks for the development of the circular economy” highlights the circular economy as a “distinctly horizontal process that, with the trend of investment growth in the domain fields of the transition to a circular economy, should, in principle, cover all sectors.” The most promising focus areas identified in the entrepreneurial discovery process are the following: Sustainable energy, Biomass and alternative raw materials, Sustainable function materials, Secondary raw materials, Green technologies and processes, Circular business models. |
| 6. | Presentation of the project promoter or group of partners | Promoter: RRA LUR<br>Partners: municipalities of the LUR, enterprises (chiefly SMEs, start-ups and high-tech enterprises), research and educational institutions |
| 7. | Indicative project timeline | 2022– 2027 |
| 8. | Spatial definition of suitable locations for the implementation of activities | Municipalities of the LUR |
| 9. | Expected sources of funding | EU, national funds |

Key proposed project of the **Smart Mobility** development priority

| | | |
|---|---|---|
| 1. | Title of project | Regional Mobility Centre LUR |
| 2. | Project summary | The operation of the Regional Mobility Centre, a planning and implementation centre for mobility in the LUR, will establish a systematic approach to the optimisation of mobility in the region, ensure continuous dialogue and coordination among stakeholders in the mobility sector, provide for the preparation and promotion of mobility measures, and guarantee the ongoing planning and connectivity of individual systems in the region. The balanced development and integration of various transport systems, measures to ensure good transport safety, optimisation of the efficiency of the transport system, which brings with it a reduction of air pollution and noise pollution and an increase in the region's attractiveness – all these measures will result in a better quality of life in the region and help ensure its competitiveness. |
| 3. | Development priority to which the project belongs | Development priority 3: Smart Mobility |
| 4. | Target group at which the project is aimed | Municipalities of the LUR, LUR citizens, transport operators, public institutions |
| 5. | Description of the purpose and goals of the project | The aim of the project is to secure coordinated strategic cooperation between entities in order to increase the sustainability of mobility in the region. The introduction of balanced mobility measures that lead in the long term to an improvement in physical space and quality of life in the region.<br><br>Goals:<br>1. better quality of life<br>2. improved road safety<br>3. harmonisation of needs and coordinated implementation of regional projects<br>4. ensuring comprehensive transport planning coordinated across different sectoral fields<br>5. improved funding conditions and more rational use of resources |

| | | |
|---|---|---|
| 6. | Presentation of the project promoter or group of partners | Promoter: RRA LUR<br>Partners: municipalities of the LUR, ministry responsible for transport, providers of passenger transport services, other organisations from the mobility development field |
| 7. | Indicative project timeline | The Regional Mobility Centre will be established with the help of funding from the Norway Grants financial mechanism as part of the ReMobil project in 2023 and a long-term sustainable funding model is envisaged to ensure its long-term operation. |
| 8. | Spatial definition of suitable locations for the implementation of activities | Municipalities of the LUR |
| 9. | Expected sources of funding | Norway Grants funds: EUR 198,500<br>Municipal funds: EUR 20,000/year<br>State funds: EUR 20,000/year<br>Project implementation funds |

Key proposed projects of the **Smart Environment** development priority

| | | |
|---|---|---|
| 1. | Title of project | Regional energy plan LUR |
| 2. | Project summary | Achievement of the set objectives in relation to the use of renewables and efficient energy use is only possible with the general acceptance and cooperation of all entities involved. The local energy plans of the LUR municipalities should therefore be interlinked and coordinated at regional level. The LUR energy plan provides an overview of the situation and of the deficiencies and potentials, and contains guidelines for and a vision of the sustainable energy development of the region. |
| 3. | Development priority to which the project belongs | Development priority 4: Smart Environment |
| 4. | Target group at which the project is aimed | Municipalities of the LUR, LUR citizens, public institutions, economic operators |
| 5. | Description of the purpose and goals of the project and its consistency with the development specialisation of the region | The aims of the project are to promote the highest possible level of use of renewables and of energy self-sufficiency, thereby reducing dependence on energy imports in the Ljubljana Urban Region, promote efficient energy use measures in the public sector, and promote and provide information on the importance of renewables and efficient energy use for households and industry.<br><br>Goals:<br>1. integration of municipalities in the energy and climate fields<br>2. identification of EEU and RES potentials in the LUR<br>3. promotion of RES and EEU projects through awareness-raising and links with stakeholders<br>4. increase in self-sufficiency and the share of RES in the LUR<br>5. reduction of $CO_2$ emissions in the LUR<br><br>The biggest challenges in the field of efficient energy use are the heating/cooling of public and private buildings, mobility based on private car use and certain energy-intensive industries. Particularly in the field of mobility, little progress has been observed in the recent period and energy use for mobility needs is even increasing. A regional approach to addressing energy challenges allows the integration of the needs and opportunities offered by the urban |

| | | |
|---|---|---|
| | | environment with those offered by the rural hinterland, making it possible to achieve synergies that are not afforded by local approaches.<br><br>Energy prices and the negative impacts of the use of fossil fuels create a need to increase the efficiency of energy use and incorporate the largest possible share of energy from renewable sources. By reducing energy costs and reducing energy imports, it will be possible to achieve better budget sustainability, provide additional funds for other investments and projects, and reduce the negative costs of climate change mitigation. Reducing the energy dependence of enterprises will increase the competitiveness of the regional economy. Data from the regional energy plan will lower the costs of producing local energy plans and preparing a SECAP at the local and regional levels.<br><br>The project is consistent with the development specialisation of the region in the field of energy self-sufficiency and efficient energy use. |
| 6. | Presentation of the project promoter or group of partners | Promoter: RRA LUR<br>Partners: municipalities of the LUR, ministry responsible for energy and the environment, energy and electricity distribution companies, scientific and research institutions |
| 7. | Indicative project timeline | 2023–2027 (the project is also linked to the preparation of the regional spatial plan) |
| 8. | Spatial definition of suitable locations for the implementation of activities | Municipalities of the LUR |
| 9. | Expected sources of funding | EU funds: EUR 60,000<br>Municipal funds: EUR 30,000 |

| | | |
|---|---|---|
| 1. | Title of project | System of green food chains in the LUR |
| 2. | Project summary | Locally produced and processed food is playing an ever greater and more important role both in maintaining local agriculture and in improving the health of consumers, since such food is of better quality thanks to short supply chains. The establishment of an adequate system of "local self-sufficiency" requires an integrated approach that, on the one hand, takes into account the available supply and, on the other, the needs of target groups. Alongside the urgent need to train local suppliers of agri-food products, maximum effort needs to be invested in encouraging them to join forces, since farmers who are united will have easier access to systems for supplying high-quality locally produced food to public institutions in the project area (public procurement) and other systems deriving from the development concept of local self-sufficiency. |
| 3. | Development priority to which the project belongs | Development priority 4: Smart Environment |
| 4. | Target group at which the project is aimed | Producers/farmers, agricultural cooperatives, municipalities, public institutions |
| 5. | Description of the purpose and goals of the project | Public institutions already include local food in their menus, but in most cases the quantities involved are far smaller than they could be. There are a great many opportunities still to exploit, both in the core agricultural sector and in supplementary activities and small local processing plants. This partnership will make it easier to secure the necessary quantities, variety and continuity of local supply for larger food consumers such as public institutions. By encouraging communication between public institutions and local producers and processors, we will be able to promote partnership cooperation and the establishment of short supply chains.<br><br>Goals:<br>1. job preservation/creation in rural areas<br>2. preservation and promotion of agriculture and related preservation of the cultural landscape<br>3. ensuring food safety, especially for the local population<br>4. building/upgrading of website<br>5. increase consumption of locally produced food (short chains/zero km) in schools, nurseries, student boarding houses, old people's homes and hospitals<br>6. increase production and processing of locally produced food in the local environment |

| | | |
|---|---|---|
| 6. | Presentation of the project promoter or group of partners | Promoter: RRA LUR<br>Partners: municipalities of the LUR, youth NGOs, associations and clubs, various organisations, societies, associations for the elderly, enterprises (chiefly SMEs, start-ups and high-tech enterprises) |
| 7. | Indicative project timeline | 2022–2027 |
| 8. | Spatial definition of suitable locations for the implementation of activities | Municipalities of the LUR |
| 9. | Expected sources of funding | EU, national funds |

Key proposed projects of the **Smart Citizens** development priority

| | | |
|---|---|---|
| 1. | Title of project | Laboratory for innovations with a social effect for a green and digital future |
| 2. | Project summary | Social innovations are new social practices whose aim is to satisfy the societal needs deriving from the development of the community, healthcare, concern for the environment, etc. Ideas are born with the intention of expanding and strengthening civil society while at the same time crossing into many other areas that bring the numerous opportunities to raise new questions and seek original solutions. The project will encourage the development of innovations with a social effect that contribute to a better quality of life, linking knowledge and expertise from the fields of creativity and culture, and incorporating new technologies and Industry 5.0 principles that bring a new form of cooperation among people. |
| 3. | Development priority to which the project belongs | Development priority 5: Smart Citizens |
| 4. | Target group at which the project is aimed | Young people active in the fields of social activities, culture and creativity, young people with business ideas, older people (silver economy), Knowledge institutions and other stakeholders in the R&D and innovation fields, LUR citizens, non-governmental organisations, environmental organisations, societies and associations, SMEs and enterprises using new technologies, public institutions |
| 5. | Description of the purpose and goals of the project and its consistency with the development specialisation of the region | Creating a stimulating environment for all generations begins with understanding and caring for every inhabitant of the region. The first step in building exchanges of knowledge among the different social groups and generations is recognition of the precious insights, experiences and views of every generation, which represent opportunities for mentoring, learning, experimenting and the development of new solutions in the digital age.<br><br>Featuring interdisciplinary integration and a cross-cutting approach, the programme will provide a suitable support environment for the development of social innovations. At the same time it will enable the testing of new training approaches adapted to specific knowledge needs for the future. |

| | | |
|---|---|---|
| | | Goals:<br>1. implementation of a programme for the development of new ideas with a social effect (involving young people and the elderly)<br>2. moderated approaches for the inclusion of the widest range of social groups in innovation processes<br>3. development of innovative support services and instruments to establish interdisciplinary cooperation<br>4. establishment of programmes to develop and integrate knowledge and skills for the future<br>5. creation of a brand and awards for raising awareness about the importance of social innovations in modern society<br><br>measures to improve the innovation activity of enterprises and, consequently, raise the level of innovation and competitiveness of SMEs, S5 highlights the social innovations (products, services and/or new models that promote social development while taking into account economic and environmental limitations and opportunities to create new social value and a better (sustainable) social effect). |
| 6. | Presentation of the project promoter or group of partners | Promoter: RRA LUR<br>Partners: municipalities of the LUR, youth NGOs, associations and clubs, various organisations, societies, associations for the elderly, enterprises (chiefly SMEs, start-ups and high-tech enterprises) |
| 7. | Indicative project timeline | 2022–2027 |
| 8. | Spatial definition of suitable locations for the implementation of activities | Municipalities of the LUR |
| 9. | Expected sources of funding | EU, national funds |

| | | |
|---|---|---|
| 1. | Title of project | Empowering citizens for a Smart, Digital and Green Community |
| 2. | Project summary | The transition to a new sustainable development paradigm based on digital transformation, smart communities and new, innovative green solutions will only be possible if the region's population adapts to the changes. The project is designed to raise the population's ability to use, develop and promote new technologies and sustainable solutions. |
| 3. | Development priority to which the project belongs | Development priority 5: Smart Citizens |
| 4. | Target group at which the project is aimed | LUR citizens as users of new technologies and business models, regional stakeholders responsible for carrying out the processes involved in making the transition to a smart, digital and green society |
| 5. | Description of the purpose, goals and activities of the project and its consistency with the development specialisation of the region | As the region's residents are prepared for the challenges of digital transformation to differing degrees, there remains a danger that society will become divided and that the differences between different groups of individuals and the level of development of different communities will be further exacerbated.<br><br>The project aims to set up a system of education and information-provision for the region's population regarding the advantages and dangers of new technologies, and to prepare them for the challenges of today's digital society. The project will identify the needs of the different population groups and, with the help of local communities, establish an education system and series of contact points that address the needs that have been identified. A system of sustainable financing of measures to continue the activities after the project has come to an end will also be proposed.<br><br>Goals:<br>1. to empower the region's population and the drivers of digital transformation<br>2. to establish an education system and series of contact points in local communities<br>3. to identify a model of sustainable financing of the system established<br>4. to formulate guidelines for the legal framework and digital transformation strategies |

| | | |
|---|---|---|
| | | Activities:<br>1. identification of inhabitants' needs and the needs of the drivers of digital transformation<br>2. design of technical and spatial solutions for project implementation<br>3. establishment and implementation of education for inhabitants of the region and drivers of change<br>4. establishment of fixed and mobile contact points in municipalities<br>5. proposed sustainable financing of system operation<br>6. project coordination and promotion and design of the proposed literature<br><br>The project directly addresses the development specialisation of the region, which is aiming to become an innovative, knowledge-based region that actively responds to the challenges of the present time in relation to digital transformation and the introduction of new technologies. |
| 6. | Presentation of the project promoter or group of partners | Promoter: RRA LUR<br>Partners: municipalities of the LUR, other stakeholders and entities responsible for specific activities in response to the challenges identified and the tasks required |
| 7. | Indicative project timeline | 2023–2028 |
| 8. | Spatial definition of suitable locations for the implementation of activities | Municipalities of the LUR |
| 9. | Expected sources of funding | EU, national funds, together in the amount of EUR 2,400,000 EUR |

Key proposed project of the **Smart Living** development priority

| | | |
|---|---|---|
| 1. | Title of project | Smart villages |
| 2. | Project summary | A new concept aimed at maintaining the vitality and quality of life in villages is emerging: smart solutions in rural areas that will be developed through the collective action and active cooperation of partners. The development of a new concept or new pilot programmes enables rural inhabitants to remain in rural areas and make the countryside a place where people want to live. This can be achieved through innovative approaches relating to the development of »smart silver villages« as a form of household in a village, the activation of farm tourism establishments, the introduction of transport services for the elderly to connect towns and villages; through digital literacy and the introduction of suitable digital technology; and through the arrangement of spaces for socialisation and the development of leisure activities. |
| 3. | Development priority to which the project belongs | Development priority 6: Smart Living |
| 4. | Target group at which the project is aimed | Producers/farmers, agricultural cooperatives, municipalities of the LUR, public institutions |
| 5. | Description of the purpose and goals of the project | Through this project we will carry out an overall analysis of existing possibilities for the establishment of the concept and a demographic projection of rural ageing. We will design pilot models of smart solutions across the entire territory of the municipalities involved. All the partners will develop different models or programmes, including a model of sustainable rural mobility, a silver village and village households model, a rural digital technology model, a model for linking rural providers and a model of socialisation in villages. These will be implemented in pilot form and evaluated. |
| 6. | Presentation of the project promoter or group of partners | Promoter: RRA LUR<br>Partners: municipalities of the LUR, youth NGOs, associations and clubs, various organisations, societies, associations for the elderly, enterprises (chiefly SMEs, start-ups and high-tech enterprises) |
| 7. | Indicative project timeline | 2022–2027 |

| | | |
|---|---|---|
| 8. | Spatial definition of suitable locations for the implementation of activities | Municipalities of the LUR |
| 9. | Expected sources of funding | EU, national funds |