

# **D.1.2.1**

## **Development of regional stakeholder reports**

### **Slovenia**



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## 1. Abstract

Circular bioeconomy in Slovenia does not yet have integrated policy approach and it does not have recognizable identity. As a result, it is dispersed in strategic and government documents through different industries/sectors. Two important documents are "Roadmap towards the circular economy in Slovenia" which objective is to pave the ways towards circular economy and the "Integrated strategic document for decarbonisation of Slovenia through transition into circular economy" – a work in process that aims to connect sectoral policies in this field.

The rural areas addressed in this project cover up to 90 % of Slovenia with 60 % of total population. The population in rural areas is aging and the number of young population is decreasing. Aging and decreasing of population is typical for areas with poor transport connections, low economic activity, with less job opportunities for educated younger population. However, there is well-established network of institutions and stakeholders that connect the elderly with the local environment. There is also a well-developed network of non-profit organizations and civil societies that facilitate social inclusion activities for rural populations. There are moderately strong rural-urban linkages reflected in rural-urban commuting, local food supply, visiting rural-areas for part-time activities, tourism and second home culture.

Slovenia's statistical office experimentally calculated the circular economy indicators to show Slovenia's progress in the transition to a circular economy. It shows that the country has improved in recent years (for example in the field of recycling of municipal waste) but still needs to work in other field such as recycling plastic packaging.

Slovenia is one of the most densely forested countries in Europe but agriculture, together with hunting, forestry and fishing contribute only about 2 % to the total value added and 7 % to total employment, however, the share of employees in agriculture has a declining trend.

With the new CAP the shift into more sustainable food production and rural development is expected.

According to our analysis public, industry and academia are very well embedded into the network of stakeholders, whereas society is very weakly included.

## 2. Definitions

### 2.1 Circular Bioeconomy

In Slovenia, the concepts of circular economy and circular bioeconomy have not been integrated so far. Therefore, there is no integrated policy approach to circular bioeconomy. There is no common national definition of circular bioeconomy or of the two separate concepts.

The need to transition to a circular economy is mentioned in several policy papers (e.g. Development Strategy of Slovenia 2030), but the term is not explicitly defined. It is mentioned in the context of two main objectives: 1. the low-carbon economy and 2. sustainable management of natural resources, as Slovenia ranks below the EU average in the efficient use of renewable energy.

The definition of bioeconomy used by Slovenian Ministry for Agriculture, Forestry and Food<sup>1</sup> in documents related to the Strategic Plan of CAP (2020) is based on the EU definition and summarizes it as "an economy based on the sustainable production of renewable biological resources and their processing into food, feed, fibres, materials, chemicals and bioenergy, using efficient or innovative technologies". This document also mentions the circular economy, but suggests that there is a distinction from the bioeconomy.

The transition to a low-carbon circular economy is a priority development direction for the entire Slovenian economy. Strategic development and innovation has also been developed in the Slovenian Partnership "Networks for the Transition to a Circular Economy" (SRIP - Circular Economy<sup>2</sup>), whose vision is to sustainably increase the efficiency and competitiveness of the domestic economy in the transition to a circular economy.

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<sup>1</sup> MKGP (2020), Strateški načrt Skupne kmetijske politike 2021-2027: [https://www.program-podezelja.si/images/SPLETNA\\_STRAN\\_PRP\\_NOVA/2\\_SKP/8\\_SN\\_SKP\\_21-27\\_Spodbujanje\\_zaposlovanja\\_socialne\\_vklju%C4%8Denosti\\_lokalnega\\_razvoja\\_biogospodarstva.pdf](https://www.program-podezelja.si/images/SPLETNA_STRAN_PRP_NOVA/2_SKP/8_SN_SKP_21-27_Spodbujanje_zaposlovanja_socialne_vklju%C4%8Denosti_lokalnega_razvoja_biogospodarstva.pdf)

<sup>2</sup> <https://srip-circular-economy.eu/>

The assessments for Slovenia show that biomass from agriculture and forestry has a great (insufficiently used) potential for the production of renewable energy.

Presently, bio-economy does not have a sufficiently recognizable identity in Slovenia with a clear distinguishment from other related concepts (e.g. green economy or circular economy), therefore there is a definite potential for development in that field.

An example of circular bioeconomy that contributes to rural development and rural-urban cooperation in Slovenia is **farmer's market** that can be found across Slovenian cities and towns and offers fresh vegetables and fruit, but also other homemade products and home-grown produce from rural areas. Second example is based on the **culture of allotment gardens** where nearly every Slovenian has at least a vegetable or herb garden whether they live in the countryside or in a town or city. Slovenians like to know where the food was produced and top chefs are part of a garden-to-table-movement.

## 2.2 Contemporary processes

### Demographic change

Slovenia population in the most active labor group (20-64 age) is declining, while the number of the elderly (aged above 65) is increasing. Demographic change is thus reducing labor supply. The projections show the intensity of these changes will even intensify in the coming years. In order to address these challenges, Slovenia has adopted "A Strategy for a Long Living Society" (2017)<sup>3</sup>. The Strategy is based on a lifelong approach and on the concept of active aging, which emphasizes activity and creativity in all life expectancy, health care, intergenerational cooperation and solidarity<sup>4</sup>.

According to Slovenian Ministry of Agriculture, Forestry and Food (2020)<sup>5</sup> the rural areas cover up to 90 % of Slovenia with 60 % of population living in rural areas. Demographic improvements have been noticed in suburban areas near major centers and with good traffic connections to national or regional centers. The population in rural areas is aging, while the number of young population is decreasing in those areas. Aging and decreasing of population is typical for areas with poor transport connections, low economic activity, with less job opportunities for educated younger population. Although, the number of inhabitants in rural areas is slightly increasing in recent years, mainly due to immigrations. However, the age dependency ratio, which shows dependency of children (up to 14 years) and elderly population (over 65 years) on 100 labor active persons, is increasing.

Migration data also shows the unfavorable natural growth of population and rural exodus. Studies show that the main reasons for emigration are the reduced economic role of agriculture (deagrarization), social and cultural changes, population concentration and economic development in municipal centers and cities, which also trigger the concentration of social activities (such as schools, kindergardens, etc.), thus losing basic life functions in many villages. The traffic isolation of settlements and the negative natural increase of the population are also problematic. Improvement of the transport links between villages and central settlements, recreational areas and commercial infrastructure improves the quality of life, but the researches have shown that (daily) labor migration is often followed by the subsequent relocation of the population to nearby or larger settlements.

### Rural development

The following characteristics apply to rural areas in Slovenia: lower population density, predominant agricultural and forestry land use, linkage of non-agricultural activities with agricultural production, slower population growth, lower social stratification, closer ties between residents, and smaller settlements with less centrality. People from rural areas are also more involved in voluntary activities or associations<sup>6</sup>.

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<sup>3</sup> Strategy of long living society (2017):

[https://unece.org/fileadmin/DAM/pau/age/WG10/Presentations/5\\_b\\_Slovenia.pdf](https://unece.org/fileadmin/DAM/pau/age/WG10/Presentations/5_b_Slovenia.pdf)

<sup>4</sup> UMAR (2020). Poročilo o razvoju 2020:

[https://www.umar.gov.si/fileadmin/user\\_upload/razvoj\\_slovenije/2020/slovenski/POR2020.pdf](https://www.umar.gov.si/fileadmin/user_upload/razvoj_slovenije/2020/slovenski/POR2020.pdf)

<sup>5</sup> MKGP (2020), Strateški načrt Skupne kmetijske politike 2021-2027: [https://www.program-podezelja.si/images/SPLETNA\\_STRAN\\_PRP\\_NOVA/2\\_SKP/8\\_SN\\_SKP\\_21-27\\_Spodbujanje\\_zaposlovanja\\_socialne\\_vklju%C4%8Denosti\\_lokalnega\\_razvoja\\_biogospodarstva.pdf](https://www.program-podezelja.si/images/SPLETNA_STRAN_PRP_NOVA/2_SKP/8_SN_SKP_21-27_Spodbujanje_zaposlovanja_socialne_vklju%C4%8Denosti_lokalnega_razvoja_biogospodarstva.pdf)

<sup>6</sup> The Geography of Slovenia (2020): <https://link.springer.com/book/10.1007/978-3-030-14066-3>

Quality of life and social inclusion indicators<sup>7</sup> show general improvements over the years, and the financial situation of households is also improving. A preserved healthy natural environment is one of the most important factors contributing to a high standard of living. The population in rural areas is still less educated compared to the Slovenian average, but the share of the population with higher education is increasing. According to Slovenian Ministry for Agriculture, Forestry and Food (2020), there is a well-established network of institutions (especially institutional elderly care and other long-term care<sup>8 9</sup>), activities and stakeholders that connect the elderly with the local environment. There is also a well-developed network of non-profit organizations and civil societies that facilitate social inclusion activities for rural populations. However, the COVID -19 epidemic has changed the lives of some populations, as it is already having impact on subjective well-being and quality of life. This is particularly evident among certain vulnerable groups such as children and young people, women, the elderly, the unemployed and the precariously employed. Furthermore, the COVID -19 epidemic has shown that the Slovenian care home system is not so well organized after all and needs improvements to better cope with unforeseen circumstances such as an epidemic.

Slovenia promotes the concept of Smart Villages as a solution to rural challenges. There are forms and opportunities related to digital services, social and technological content and other rural innovations that have been supported by Rural Development Plan 2014-2020 with measures such as LEADER, rural investment, enabling short supply chains, linking rural and urban areas (e.g. local supply), social innovation, various forms of cooperation, recreation and tourism, village renewal and development, protection of natural and cultural heritage.

As peripheral rural areas (on the national borders or in the mountains) in particular have experienced economic decline, regional policy has focused on these regions in recent decades. Regional policy has gone through three phases since 1971: a period of support for the development of less developed areas until 1990, a period of support for the development of demographically threatened areas until 1999, and a period of endogenous regional policy after 1999.

### **Rural-urban cooperation**

The most visible rural-urban linkages in Slovenia are: **1. rural-urban commuting** (they are ideal for those who want to take advantage of all the benefits of living in rural areas and working in the city because of the relatively short road distances; commuting can also be seen as a strategy to fight underemployment in rural areas), **2. local food supply** (the growing interest of urban dwellers, as well as government support<sup>10</sup> for the purchase of food produced in Slovenian rural areas; during the Covid 19 pandemics, this support has become even more evident and significant, with particular emphasis on the importance of local self-sufficiency and short supply chains; the Ministry of Agriculture, Forestry and Food, together with interested sectors, has launched a joint program called 'Our Superfood', which aims to promote locally grown and processed food, thereby establishing a national quality scheme called 'Selected Quality'.), **3. visiting rural-areas for part-time activities** (due to diverse landscape rural areas are popular among urban dwellers for after-work recreation or weekend-trips to enjoy nature or cultural heritage), **4. tourism** (contributes to the preservation and development of Slovenia's rural areas and is an important accelerator of agricultural production, quality and genuine cuisine and viticulture, authentic or original accommodation offer and many experiences in contact with nature, culture and people, which have become interesting especially for the population living in urban areas. Therefore, rural areas, especially farms, have been strongly promoted and supported by tourism initiatives) and **5. second homes** (usually used by urban dwellers) as holiday and weekend getaways and have even become permanent residences during government regulations that prohibit movements and support working from home.

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<sup>7</sup> Indicators: Rate at-risk-of-poverty rate, the risk of social exclusion rate, the share of households with Internet access, the consumer confidence indicator, self-assessment of general life satisfaction

<sup>8</sup> Long-term care: <https://www.gov.si/en/policies/health/long-term-care/>

<sup>9</sup> Pomoč na domu: <https://www.gov.si teme/pomoc-na-domu/>

<sup>10</sup> Rural Development Programme 2014-2020. Strengthening of self-sufficiency and short supply chains through the LEADER/CLLD approach. <https://www.program-podezelja.si/en/35-en/1290-25-11-2020-importance-and-strengthening-of-self-sufficiency-and-short-supply-chains-in-rural-areas-through-the-leader-clld-approach>

An example of effective territorial multi-level governance is **the role played by municipalities** in regional governance, as they represent the local level and have a direct influence on urban-rural cooperation through programs and implemented activities. Another example is **Local Action Groups**, which promote better cooperation between urban and rural areas through public tenders.

Examples of rural-urban partnerships that contribute to competitiveness and governance in the region include a **platform to promote and trade locally produced food**<sup>11</sup> and **activities to promote and accelerate the importance of locally produced wood products**<sup>12</sup>.

### 3. Key determinants of the regional/country governance system

#### a) Political conditions (strategic level)

<b>Name of policy or strategy:</b> <b>Rural Development Programme of the Republic of Slovenia for the period 2014-2020</b> <sup>13</sup>	
<b>Relation to demographic change</b>	Direct relation through the goal: Green jobs and coherent and sustainable development of rural areas based on the development of endogenous potentials of the local environment.
<b>Relation to rural development</b>	Direct relation to rural development; the main development programme related to the area of rural development in Slovenia
<b>Relation to circular bioeconomy</b>	Direct relation within several measures: e.g., Transfer of knowledge and information activities; Quality schemes for agricultural products and foodstuffs; Investment in the development of forest areas and the improvement of forest viability; Setting up producer groups and organisations; Organic farming
<b>Implementation</b>	The RDP 2014-2020 reflects national priority tasks defined by the RS on the basis of situation analyses in agriculture, food technology and forestry, and the interaction of these economic sectors with other operational fields in the entire territory of the RS.
<b>Territorial level</b>	National - The RDP 2014-2020 covers the entire territory of Slovenia.
<b>Interactions between levels</b>	In this programme period, the RS is divided into two cohesion regions: Eastern and Western Slovenia. Eastern Slovenia is composed of eight statistical regions and covers 60.2% of the area of the RS and 53% of all Slovenia's population live in this area. Western Slovenia is composed of four statistical regions and covers 39.8% of the area of the RS and 47% of all Slovenia's population live in this area. The EAFRD contribution rate for all measures is the same in both cohesion regions. At least 60% of EAFRD funds should be allocated to Eastern Slovenia.
<b>Relation to S3</b>	<ul style="list-style-type: none"> <li>– Sustainable Food production</li> <li>– Networks for the Transition to Circular Economy</li> <li>– Smart Cities and Communities</li> <li>– Health / Medicine</li> </ul>

<b>Name of policy or strategy:</b> <b>Resolution on the National Programme on Strategic Directions for the Development of Slovenian</b>
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<sup>11</sup> Lokalna! Zdrava! Hrana! <https://www.inno-rural.si/UrbanSoil4Foodweb/>

<sup>12</sup> <https://www.podjetniski-portal.si/programi/les>

<sup>13</sup> <https://www.program-podezelja.si/sl/knjiznica/163-rural-development-programme-of-the-republic-of-slovenia-for-the-period-2014-2020-basic-information-on-measures-areasfirst-update-with-regard-to-the-second-amendment-to-the-rdp/file>

<b>Agriculture and Food "Our Food, Rural and Natural Resources from 2021" (ReNPURSK)<sup>14</sup></b>	
<b>Relation to demographic change</b>	Direct relation through the goal: Raising the quality of life and economic activity in rural areas
<b>Relation to rural development</b>	Direct relation (a strategic framework for the development of Slovene farming, food production and rural areas)
<b>Relation to circular bioeconomy</b>	Direct relation through all of the goals: Sustainable and competitive food production and processing; Sustainable management of natural resources and provision of public goods; Raising the quality of life and economic activity in rural areas; Horizontal objective: to strengthen the design and transfer of knowledge
<b>Implementation</b>	Agriculture is an industry with pronounced multiplier effects. In its multifunctional role, it is at a crossroads that already partially meets societal expectations tied to food, natural resources and the countryside. In order to strengthen this social role and at the same time make agriculture resilient, competitive, economically interesting, environmentally sustainable and rural attractive for the life of a wide circle of people in coexistence, it is necessary to renew the development concept of Slovenian agriculture, food supply chains and Slovenian countryside.
<b>Territorial level</b>	National
<b>Interactions between levels</b>	-
<b>Relation to S3</b>	<ul style="list-style-type: none"> <li>- Sustainable Food Production</li> <li>- Networks for the Transition to Circular Economy</li> <li>- Health / Medicine</li> </ul>

<b>Name of policy or strategy: Resolution on the Strategic Guidelines for the Development of Slovenian Agriculture and Food Industry until 2020 – "Ensuring Food for Tomorrow"<sup>15</sup></b>	
<b>Relation to demographic change</b>	Direct relation through recognition of the elderly population among farmers and particularly vulnerable, recognition of insufficient education among farmers, through addressing the problem of a large number of farmers not being included in the pension & disability insurance scheme, by emphasising the importance of women in rural areas; by encouraging policy makers to focus on income inequalities
<b>Relation to rural development</b>	Direct relation – it sets out the key objectives and orientations of Slovenian agricultural policy.
<b>Relation to circular bioeconomy</b>	Direct relation through the focus on producing safe and quality food with the aim of ensuring food security and increasing the competitiveness of agriculture and the food industry. In this context, the principle of sustainable use of production potential is to be respected and rural development ensured in a coherent and socially sustainable way.
<b>Implementation</b>	Through the Action Plan – the Strategic plan on implementing the resolution on strategic guidelines for agricultural and food industry by 2020
<b>Territorial level</b>	National
<b>Interactions between levels</b>	-

<sup>14</sup> <https://e-uprava.gov.si/.download/edemokracija/datotekaVsebina/382689?disposition=inline>

<sup>15</sup> <http://www.pisrs.si/Pis.web/pregledPredpisa?id=RESO80>

<b>Relation to S3</b>	<ul style="list-style-type: none"> <li>– Sustainable Food Production</li> <li>– Networks for the transition to Circular Economy</li> </ul>
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<b>Name of policy or strategy:</b> <b>Slovenia's Smart Specialisation Strategy (RIS 3 - S4)<sup>16</sup></b>	
<b>Relation to demographic change</b>	Indirect relation through the implementation of individual priorities that are oriented into improvement of the national economic conditions, consequently also into improvement of demographic situation.
<b>Relation to rural development</b>	Indirect relation through several priorities: Networks for the Transition to Circular Economy, Sustainable Food Production
<b>Relation to circular bioeconomy</b>	Even though there are no bio-economy goals set out, it should be noted that the Strategy S4 promotes networks for the transition to circular economy, connecting stakeholders into value chains according to the principle "economy of closed material cycles" to development new business models for the transition to circular economy.
<b>Implementation</b>	Strategic partnerships (SRIPs) are the main institutional form established at the level of the areas of application. SRIPs facilitate promoting system-wide and long-term cooperation of stakeholders within an individual area, namely cooperation between stakeholders, cooperation of stakeholders with other entities, and cooperation with the state.
<b>Territorial level</b>	National
<b>Interactions between levels</b>	Through the implementation of the Strategic partnerships (SRIPs) as the main institutional forms established at the level of the areas of application.
<b>Relation to S3</b>	Direct – the document itself

#### **b) Legal conditions (operational level)**

In Slovenia the bioeconomy is not uniformly identified and recognized as an independent field. As a result, it is also dispersed in strategic and government documents through different industries/sectors. At the policy level in Slovenia, the bioeconomy is defined by the Roadmap Towards the Circular Economy<sup>17</sup>, which sets the path for Slovenia to become a circular economy front runner in the region.

The following Acts serve as legal frameworks for implementation of circular bioeconomy-related policies:

- **Environmental protection Law:** Environmental protection law regulates the protection of the environment against pollution as a basic condition for sustainable development and in this context sets out the basic principles of environmental protection, environmental protection measures, environmental monitoring and environmental information, economic and financial instruments of environmental protection, public environmental protection services and others environmental issues.
- **Forest management Law:** Forest management Law determines the method of management of forest owned by the Republic of Slovenia for achieving economic and development goals and goals of public interest in state forest management and creating conditions for the development of forest-timber chains as carriers of sustainable development and designers of green jobs. It regulates the principles and objectives of state forest management, procedures, manner and restrictions on the disposal of state forests, the method of obtaining forests, the method of state forest management and annual compensation, business transparency, budget forest fund, data collection and use, the right of

<sup>16</sup> [https://www.alpine-space.eu/projects/s3-4alpclusters/project-results/downloads/pp5-pp14\\_slovenia\\_en.pdf](https://www.alpine-space.eu/projects/s3-4alpclusters/project-results/downloads/pp5-pp14_slovenia_en.pdf)

<sup>17</sup>Roadmap towards the Circular Economy in Slovenia.

<https://circulareconomy.europa.eu/platform/en/strategies/roadmap-towards-circular-economy-slovenia>

municipalities to part of the annual compensation and other issues related to state forest management.

- **Regulation on the management of packaging and packaging waste:** The provisions of this Regulation apply to all packaging placed on the market and to all packaging waste generated in industry, crafts, trade, services and other activities, households or elsewhere, regardless of the packaging material used, if for a particular type of packaging whether packaging waste or individual handling of packaging waste is not stipulated otherwise by a special regulation. The regulation defines environmental objectives for the management of individual types of packaging. The Ministry reports to the EC on the implementation of Directive 94/62 / EC on an annual basis.

### c) Socio-economic conditions

**Unemployment:** The ILO unemployment rate in the last quarter of 2019 was 4 % and it increased over 2020 up to 5,1 % in the last quarter of 2020 due to strict covid-19 related measures. The last data for 2021 show that the unemployment rate is still increasing. The increase of unemployment by roughly 1% means 10,000 persons. Employment decreased the most in administrative and support services, manufacturing, and accommodation and food service activities.

**GDP:** In 2020, Slovene GDP decreased by 5,5 %. This is mostly due to decrease in domestic expenditure.<sup>18</sup>

**Economy of rural areas:** In addition to current challenges such as negative demographic trends, lack of jobs, emptying of less developed and more remote settlements, insufficient infrastructural development and lack of basic services, the Slovenian rural areas (consequently) face lower entrepreneurial activity.

Circular economy indicators\*<sup>19</sup>

	2016	2017	2018	2019
<b>Indicators of waste management</b>				
Recycling rate of municipal waste (%)	55,5	57,8	58,8	59,2
Recycling rate of all waste excluding major mineral wastes (%)	79,8	83,9	87,5	84,5
Recycling rate of overall packaging (%)	69,0	69,9	69,7	...
Recycling rate of plastic packaging (%)	63,0	63,3	50,5	...
Recycling rate of wooden packaging (%)	23,5	30,1	27,0	...
Recycling rate of e-waste (%)	35,1	34,7	34,8	...
Recycling of biowaste (kg per capita)	69,5	73,0	79,6	84,2
Recovery rate of construction and demolition waste (%)	98	98	98	98
<b>Indicators of secondary raw materials</b>				
Circular material use rate (%)	9,1	10,3	10,8	10,9
Imports from non-EU countries (tons)	111.585	123.088	131.915	89.540
Exports to non-EU countries (tons)	85.184	87.564	73.146	82.837
Imports from EU countries (tons)	938.001	937.628	933.590	953.520
<b>Indicators of competitiveness and innovation</b>				
Gross investment in tangible goods (% of GDP at current prices)	0,10	0,12	0,10	0,16
Persons employed (% of total employment)	2,09	2,06	2,02	1,96
Value added at factor cost (% of GDP at current prices)	2,14	2,12	2,04	1,26

\*experimental statistics

<sup>18</sup> <https://www.stat.si/StatWeb/en/News/Index/9411>

<sup>19</sup> <http://www.stat.si/StatWeb/News/Index/9406>

#### **d) Technological conditions**

Business R&D intensity in Slovenia is relatively high and is mainly concentrated in pharmaceuticals, machinery, computer technology and technologies related to electrical energy<sup>20</sup>. The Faculty of Agriculture and Life Sciences (the University of Maribor) offers different study programmes, related to the field of bioeconomy, e.g., Biosystems Engineering, Agri-business and Rural Development, Agricultural Economics. The same goes for The Biotechnical Faculty (the University of Ljubljana): Forestry and renewable forest sources, Biotechnology, Agriculture – Agronomy, Natural resources Economics, Forestry and management of forest ecosystems.

The Faculty of Agriculture and Life Sciences conducts developmental, applicable and fundamental research independently and in collaboration with study groups from other institutions. The work is carried out through research groups and numerous independent research projects, which are conducted as international, fundamental, applicable and goal-oriented research, as well as research intended for direct users. All our experts publish their work in international scientific journals, at scientific congresses and symposiums around the world and in their home country. All this has strengthened FALS's international collaborations with a host of eminent institutions from Europe and around the globe. The collaborations also include staff and student exchanges through the Erasmus+ programme.

The research activity of the Biotechnical Faculty covers a wide range of biotechnical sciences (life sciences). Researchers at the faculty are engaged in both basic and developmental research and they cooperate intensively with practice. In addition to the basic biological sciences, their work is largely characterized by the agri-food and forest-timber value chain and the management of natural resources. The research work of the Biotechnical Faculty thus includes the fields of applied botany, genetics, microbiology and biotechnology. The field of economics and public policies in the management of natural resources, especially agriculture and forestry, is also becoming increasingly important. Researchers in the field of forestry study many social, nature conservation and economic functions of the forest.

In the field of bioeconomy research and industry is networking through clusters and associations. A number of clusters gathering R&D institutions and corporate sector were emerging in the country since late 1990s, with a strong Government support. Technology clusters in Slovenia (some of them developing potentials in bioeconomy sectors) are not operating within strict regional boundaries<sup>21</sup>.

Nevertheless, there is still room for increased bioeconomisation of cooperation between academia and industry.

#### **e) Environmental conditions**

Slovenia is one of the most densely forested countries in Europe, as forests cover 60 % of the land. Due to the highly dispersed structure of forest ownership, the use of timber for domestic needs by households or farms is widespread. Privately-owned forests predominate and are mainly the property of local inhabitants. In 2019<sup>22</sup>, agriculture, together with hunting, forestry and fishing, contributed 2,3 % to the total value added and 6,9 % to total employment, however, the share of employees in agriculture has a declining trend. In Slovenia, according to the EU comparison, the share of permanent grassland is significantly higher, the share of arable land is significantly lower, and the share of plantations is comparable. Among all EU members, Slovenia has one of the highest shares of agricultural land in use in areas with limited possibilities for agricultural activity (80%).

EU is currently working on CAP reform. The delay in preparing the reform results in extension of programming period 2014-2020 and old rules and the attribution of the money for 2 years. Based on two key strategies (Farm to Fork Strategy and Biodiversity Strategy) the shift into more sustainable food production is expected.

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<sup>20</sup> Country report Slovenia (2020). Commission Staff Working Document. Brussels: European Commission (2020), SWD(2020) 523 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1584543810241&uri=CELEX%3A52020SC0523>

<sup>21</sup> [http://www.interreg-danube.eu/uploads/media/approved\\_project\\_public/0001/13/2d1fa84c9d735e7709802a03ed1391b649c7062f.pdf](http://www.interreg-danube.eu/uploads/media/approved_project_public/0001/13/2d1fa84c9d735e7709802a03ed1391b649c7062f.pdf)

<sup>22</sup> [https://www.program-podezelja.si/images/SPLETNA\\_STRAN\\_PRP\\_NOVA/2\\_SKP/8\\_SN\\_SKP\\_21-27\\_Spodbujanje\\_zaposlovanja\\_socialne\\_vklju%C4%8Denosti\\_lokalnega\\_razvoja\\_biogospodarstva.pdf](https://www.program-podezelja.si/images/SPLETNA_STRAN_PRP_NOVA/2_SKP/8_SN_SKP_21-27_Spodbujanje_zaposlovanja_socialne_vklju%C4%8Denosti_lokalnega_razvoja_biogospodarstva.pdf)

The biggest changes that are expected are reduction of the use of pesticides for 50 %, reduction in the use of fertilizers for 20 % and reduction in the use of antimicrobial agents.<sup>23</sup>

#### 4. Stakeholder inventory

Stakeholder group	<b>Public</b>
Stakeholder subgroup	Local government
Position in the network	Local governments are represented by 211 municipalities. Since officially there is no regional level (12 statistical regions perform only some duties) they have quite a lot of jurisdiction (primary school, spatial planning, construction, etc.). As stakeholders, they participate as partners in EU funded projects and their role is crucial for partnership because they are able to provide cofinancing to consortium of usually small NGOs from less populated area. Based on mindmap, their embeddedness is very weak. Apart from project cooperation, there is no direct link with industry, academy or society.
Importance for GoDanuBio	Larger municipalities prepare strategies. Because of their jurisdiction, they are important stakeholder on local level.

Stakeholder group	<b>Industry</b>
Stakeholder subgroup	Private firms
Position in the network	They perform globally and depend on national legislation, therefore their local influence is normally weak. In some cases, they cooperate via projects with academy. Their cooperation with public and society is very weak. However, we are seeing a trend of increase of firms in the circular bioeconomy sector in the last few years.
Importance for GoDanuBio	In some cases, they present good practices in creating circular bioeconomy products.

Stakeholder group	<b>Academy</b>
Stakeholder subgroup	Research institutions
Position in the network	Among all stakeholder groups they are the most embedded in the network. They cooperate intensively with industry as well as with Public but their connection with society is very weak. Their engagement can best be measured through projects but their implications are not well assessed. The results does normally end with paper reports. <sup>24</sup>
Importance for GoDanuBio	They are the best knowledge resource.

Stakeholder group	<b>Society</b>
Stakeholder subgroup	NGOs
Position in the network	NGOs are very weakly embedded in the network. They cooperate mainly on policy level with public through EU funded projects. There is almost no connection with the industry.
Importance for GoDanuBio	They represent the buffer between public and the industry and usually advocate for sustainable development.

<sup>23</sup> <https://4d.rtvsllo.si/arhiv/za-nase-kmetovalce/174752079>

<sup>24</sup> <https://etri.si/clanek/krozni-hub-povezovanje-deleznikov-za-prehod-v-krozno-gospodarstvo-na-ravni-drzave/>