



**RDI2CluB:**  
Rural RDI milieus in transition towards smart bioeconomy  
clusters and innovation ecosystems

[projects.interreg-baltic.eu](http://projects.interreg-baltic.eu)

***Joint Action Plan  
of the RDI2CluB project partnership  
for the Development of Knowledge-Driven Regional Bioeconomy  
Innovation Ecosystems***

*2020 (updated version)*

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## Explanation of Abbreviations and Terms Used in the Document

<i>Abiotic resources</i>	Resources available in nature, but not derived from living organisms, for example, soil
<i>Biorefinery</i>	Use of biomass instead of oil for producing energy and chemicals
<i>Bioresources</i>	Non-fossil biogenic resources which can be used by humans for multiple purposes: to produce food, substantial products, and/or energy carriers
<i>Biotic resources</i>	Resources related to or resulting from living organisms, for example plants, animals
<i>B2B</i>	Business-to-business
<i>BSR</i>	Baltic Sea Region
<i>EE</i>	Estonia
<i>EU</i>	European Union
<i>EUSBSR</i>	The European Union Strategy for the Baltic Sea Region <a href="https://www.balticsea-region-strategy.eu/">https://www.balticsea-region-strategy.eu/</a>
<i>Farm</i>	A farm or an agricultural holding, or holding is a single unit, both technically and economically, operating under single management and which undertakes agricultural activities within the economic territory of the European Union, either as its primary or secondary activity. Non-agricultural products and services may also be provided by the holding <a href="https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Agricultural_holding">https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Agricultural_holding</a>
<i>Farmer</i>	An individual (or group of individuals e.g. partnerships, companies, and other legal structures through which business is conducted) whose holding is situated within the territory of the European Union and who exercises an agricultural activity <a href="https://ec.europa.eu/agriculture/glossary_en#glossary-f">https://ec.europa.eu/agriculture/glossary_en#glossary-f</a>
<i>FI</i>	Finland
<i>Innovation ecosystem</i>	Innovation ecosystem is the term used to describe the large number and diverse nature of participants and resources that are necessary for innovation. These include “entrepreneurs, investors, researchers, university faculty, venture capitalists as well as business development and other technical service providers such as accountants, designers, contract manufacturers and providers of skills training and professional development <a href="http://www.know-hub.eu/knowledge-base/videos/innovation-ecosystems-as-drivers-of-regional-innovation-validating-the-ecosystem.html">http://www.know-hub.eu/knowledge-base/videos/innovation-ecosystems-as-drivers-of-regional-innovation-validating-the-ecosystem.html</a>
<i>Institutional memory</i>	The collective knowledge and learnt experience of a group. As turnover occurs among group members, these concepts must be transitioned. Knowledge management tools aim to capture and preserve these memories
<i>JAP</i>	Joint Action Plan
<i>KETs</i>	Key enabling technologies, as defined in the EU Industrial policy <a href="https://ec.europa.eu/growth/industry/policy/key-enabling-technologies/description_en">https://ec.europa.eu/growth/industry/policy/key-enabling-technologies/description_en</a>
<i>Knowledge driven</i>	Knowledge-driven refers to the generation and use of knowledge, which will come to play a major part in the creation of growth of the economy of the region, and the wealth of its society today and in the future
<i>LV</i>	Latvia
<i>Maturity</i>	The state, fact, or period of being mature
<i>NGO</i>	Non-governmental organisation
<i>NO</i>	Norway
<i>PL</i>	Poland
<i>PrA</i>	Priority area
<i>PhD</i>	Postgraduate doctoral degree
<i>R&amp;D</i>	Research and development (abbreviation used in EUSBSR)
<i>RDI</i>	Research, development and innovation
<i>RDI2CluB</i>	The project “Rural RDI milieus in transition towards smart Bioeconomy Clusters and Innovation Ecosystems”, funded by the Interreg Baltic Sea Region Programme
<i>RTD</i>	Research and technological development
<i>SMEs</i>	Small and medium enterprises according to the definition stated in European Union <a href="#">recommendation No. 2003/361</a>
<i>SWOT</i>	Strengths, weaknesses, opportunities and threats

## Introduction

**The Joint Action Plan** (further in this document referred to as – JAP) aims to support the smart, sustainable and inclusive growth of the bioeconomy in five BSR countries’ rural regions involved in the project “Rural RDI Milieus in Transition Towards Smart Bioeconomy Clusters and Innovation Ecosystems”, funded by the Interreg Baltic Sea Region Programme 2014-2020. The project is under implementation from October 2017 till September 2020. More information about the project: [www.rdi2club.eu](http://www.rdi2club.eu).

**The JAP includes transnational actions and measures**, to be implemented in a cross-regional partnership of at least two partners from two regions.

The plan is elaborated as a roadmap and is connected to the European Union, EUSBSR, national and regional policies and strategies, aiming to promote regional development, innovation and bioeconomy in the partners’ regions. This connection is described in regional action plans, provided in the attachment to the JAP. Actions planned in the JAP arise from a) regional action plans, b) joint interests and intentions identified by the partners during reciprocal meetings and benchmarking visits, c) SWOT analysis of the partners’ innovation ecosystems, d) future potential of the bioeconomy in each region, identified after analysis of the regions’ resources and described in the bioeconomy profiles (access to the profiles: <https://berst.databank.nl/dashboard>).

The partnership of the RDI2CluB project includes 12 partners, which are:

- P1 JAMK University of Applied Sciences (Finland)
- P2 Regional Council of Central Finland (Finland)
- P3 SSYP Kehitys Oy, Ltd (Finland)
- P4 Inland Norway University of Applied Sciences (Norway)
- P5 Inland County Council (Norway) (formerly – Hedmark County Council)
- P6 Tretorget AS (Norway)
- P7 Regional Science and Technology Centre (Poland)
- P8 Świętokrzyskie Voivodeship (Poland)
- P9 Foundation for Education and Social Dialogue Pro Civis (Poland)
- P10 Institute for Environmental Solutions (Latvia)
- P11 Vidzeme Planning Region (Latvia)
- P12 Stockholm Environment Institute Tallinn Centre (Estonia)

Regional and national stakeholders of involved partners’ countries, working with the aim to implement a national smart specialisation strategy, such as universities, RDI institutes, business support institutions, clusters, SMEs in bioeconomy fields, public authorities and other stakeholders, have been involved in the definition of the SWOT, objectives and actions in each region. Their potential participation in implementation of the JAP is indicated at the level of planned actions. Special attention will be paid towards engagement of the youth, as youth engagement has been set as a priority in the recently adopted EU Youth Strategy for 2019-2027 and the partners see young people as development potential and a driving force. The opinion of civil society is considered in this process.

***The JAP contains the following sections:***

1. SWOT analysis, considering strengths, weaknesses, opportunities and threats of the partners' innovation ecosystems.
2. Summary of joint objectives and actions.
3. Description of actions, results to be achieved, indicators to be used for measuring the progress and results, stakeholders to be addressed and/or involved and potential funding instruments to be used.
4. Measures foreseen for monitoring, revision and updating of the JAP.
5. Review of the JAP elaboration process and lessons learnt within the elaboration process.
6. Summary of the lessons learnt while assessment of the JAP implementation.

JAP implementation starts in 2019. Three types of actions are foreseen:

- *Short term actions – for 3 years* (immediate actions to be implemented in the time period 2019-2021, inter alia those to be implemented within the RDI2CluB project);
- *Medium term actions* – to be implemented in the nearest future, the indicative year of starting – 2022);
- *Long term actions* (foreseen to start from 2024, however, earlier initiatives will be promoted).

Continuation of actions is foreseen after the completion of the RDI2CluB project in September 2020.

A list of abbreviations and terms used is inserted behind the introduction in order to provide explanations, thus easing the reading of the document for stakeholders who are not familiar with the project.

## 1. SWOT Analysis of the RDI2CluB Partnership Innovation Ecosystem

Statements included in the SWOT analysis derive from similar analysis, carried out by partners at the regional level, and cover key issues either to be addressed as challenges or explored as opportunities.

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>▪ Existing high activity in the bioeconomy; forestry, agriculture serve as a good base to continue further development</li> <li>▪ Reasonable volume of agricultural and forestry bioresources in all involved regions</li> <li>▪ Good quality of the biomass</li> <li>▪ New potential sectors, especially in the area of construction</li> <li>▪ Large number and wide range of actors in bioeconomy in all involved regions</li> <li>▪ Already developed and available bioeconomy knowledge and best practices with transnational value</li> <li>▪ RDI2CluB Finland and Norway partners have strong research and education sectors</li> <li>▪ Strong clusters and world-class experts in Norway</li> <li>▪ High level of awareness of society for sustainability and use of nature</li> <li>▪ Already created RDI2CluB network as a platform for further transnational initiatives</li> </ul>	<ul style="list-style-type: none"> <li>▪ Insufficient cooperation between stakeholders: companies; companies and RTDs; business and public actors</li> <li>▪ Low RDI activity in novel sectors</li> <li>▪ Lack of transnational cooperation among existing bioeconomy related clusters</li> <li>▪ Lack of knowledge, skills at the company level to innovate and implement efficient business models</li> <li>▪ Limited access to knowledge, not knowing where it can be obtained</li> <li>▪ Traditional mindset in development, lack of companies' capacity to utilise emerging bioeconomy opportunities</li> <li>▪ Existing regional innovation support tools often remain behind the scope and speed of business sector development trends, and do not respond to companies' needs</li> <li>▪ Lack of pilot infrastructure for development, piloting, testing of bioeconomy products and services, lack of information and limited access to the existing ones</li> <li>▪ Low attractiveness of involved regions to new bioeconomy initiatives</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>▪ Change of paradigm of EU and Member states towards a smart and sustainable, not intensive economy</li> <li>▪ Increasing the interest of society in sustainability, climate change, efficient use of natural resources</li> <li>▪ Increase of societal demand for products and services, produced with respect and observation of quality, safety, sustainability principles</li> <li>▪ Interest/need of existing companies to stay competitive, develop and grow faster</li> <li>▪ Knowledge and best practices of external stakeholders</li> <li>▪ Existing funding instruments for innovation, business development</li> <li>▪ Already ongoing collaboration and cooperation initiatives between RDIs and business</li> </ul>	<ul style="list-style-type: none"> <li>▪ Narrow interpretation of the bioeconomy</li> <li>▪ Globalisation and climate change are causing new challenges, for which bioeconomy stakeholders are not prepared</li> <li>▪ Slow change of policies and their implementation mechanisms targeting bioeconomy, innovation, education, business development</li> <li>▪ Insufficient availability of human resources, holding specific knowledge, at all levels and all types of stakeholders</li> <li>▪ Negative demographics is causing the lack of a skilled, knowledgeable workforce</li> <li>▪ Insufficient political commitment on a national and/or regional level endangers further development of the bioeconomy</li> </ul>



## 2. *Summary of Objectives and Actions*

Each of the five involved regions has developed the bioeconomy related innovation ecosystem development action plan, where objectives and actions are adapted to regional targets and are discussed and agreed with regional stakeholders. The regional action plans differ from region to region. The JAP includes objectives, actions and measures, where partners agreed to interact, to work in synergy, thus empowering each other with the capacities needed to improve and develop regional bioeconomy innovation ecosystems. The definitions of objectives and actions in the JAP are not the same as used in the regional action plans, however, they derive from these plans.

One of the important audiences that the RDI2CluB partnership will work on for strengthening comprehension of the bioeconomy and circular bioeconomy is the youth. Young people need to be encouraged to participate actively in the political and development processes having a direct or indirect impact on the bioeconomy, regional development, including how to fight climate change. Representatives of JAMK University of Applied Sciences (Finland) and Vidzeme Planning Region (Latvia) have already given an input for integrating the youth perspective into EUSBSR within the “Youth & Bioeconomy” leadership programme, organised by the Swedish Institute. By contributing to the development of guidelines for youth involvement in bioeconomy, RDI2CluB partners are stepping into a good network of policy makers, education and research institutes, entrepreneurs for raising these issues to a higher agenda in the BSR. During implementation of the JAP, partners will pay special attention to the involvement of youth and development of awareness and comprehension on the significance and impact of the bioeconomy on the socio-economic development of society in the present and from a longer perspective.

Partners understand and are aware that any activity involved in the use of bioresources has an impact on the availability and quality of these resources in the present and in the future. Therefore, any action that is implemented within the framework of this plan, will integrate and use approaches that contribute to the prudent use, renewal and, if necessary, protection of bioresources.

**Overview of the JAP objectives and measures planned:**

<b>Objective No. 1</b>	<b>Exchange, development of KNOWLEDGE</b>
<b>Sub-objective SO 1.1</b>	<b>Exchange, development of TECHNOLOGICAL KNOWLEDGE</b>
Action No. 1.1.1	Digitalisation for sustainability and productivity
Action No. 1.1.2	Technologies for natural resources management
Action No. 1.1.3	Technologies for bioenergy production
Action No. 1.1.4	Technologies for low emission building
<b>Sub-objective SO 1.2</b>	<b>Exchange, development of KNOWLEDGE STREAMLINING INNOVATIVE BUSINESS</b>
Action No. 1.2.1	Renewing operations of traditional bio-based SMEs with new business and cooperation models
Action No. 1.2.2	Exchange of knowledge and experience for the development of natural resource-based services in tourism, well-being and other areas

<b>Objective No. 2</b>	<b>Development and renewing of SERVICES and TOOLS used to upscale/improve regional INNOVATION ECOSYSTEMS</b>
<b>Sub-objective SO 2.1</b>	<b>Establishment of an active network of bioeconomy innovation hubs with a joint model and platform for innovation management</b>
Action No. 2.1.1	Developing and testing a joint innovation management model for the network of bioeconomy innovation hubs in the BSR
Action No. 2.1.2	Connecting the bioeconomy innovation ecosystem actors around the Baltic Sea Region via the network
<b>Sub-objective SO 2.2</b>	<b>Transnational cooperation and networking of business environment stakeholders</b>
Action No. 2.2.1	Networking of clusters
Action No. 2.2.2	Cooperation of bioeconomy SMEs
<b>Sub-objective SO 2.3</b>	<b>Access to skilled workforce for rural SMEs</b>
Action No. 2.3.1	Development of smart lifelong learning paths to support bioeconomy SMEs

<b>Objective No. 3</b>	<b>Raising awareness of bioeconomy stakeholders and society on bioeconomy, smart and sustainable exploitation of bioresources</b>
Action No. 3.1.1	Development and dissemination of a joint online knowledge base for awareness-raising
Action No. 3.1.2	Raising awareness of stakeholders and society



### 3. Detailed Description of Objectives and Actions

#### 3.1. Objective No. 1 Exchange, development of knowledge

<b>Objective No. 1</b>	<b>Exchange, development of KNOWLEDGE</b>
<b>Sub-objectives</b>	<b>SO 1.1 Exchange, development of TECHNOLOGICAL KNOWLEDGE.</b>  <b>SO 1.2 Exchange, development of KNOWLEDGE STREAMLINING INNOVATIVE BUSINESS.</b>
Sub-objectives of EUBSR Strategy policy area “Bio-economics” addressed <a href="https://www.balticsea-region-strategy.eu/action-plan">https://www.balticsea-region-strategy.eu/action-plan</a>	<ul style="list-style-type: none"> <li>▪ Improved recycling of nutrients in agriculture.</li> <li>▪ Added value through cooperation within Baltic fisheries and aquaculture.</li> <li>▪ Involvement of the business community, increase of knowledge on sustainable forest management.</li> <li>▪ Cooperation: increased coordination and synergy in the Baltic Sea Region among public sector and NGO cooperation initiatives, projects and stakeholders dealing with the bioeconomy.</li> <li>▪ Realising the bioeconomy in the Baltic Sea Region: development of a sustainable bioeconomy in the Baltic Sea Region.</li> </ul>
EUBSR sustainability principles addressed	<ul style="list-style-type: none"> <li>▪ Sustainable bio-resource management and circular bioeconomy</li> <li>▪ Healthy, nutritious locally-produced food and food security</li> <li>▪ Resilient and diverse ecosystems (climate proofing, biodiversity...)</li> <li>▪ Inclusive rural economic development</li> </ul>

<b>Sub-objective SO 1.1</b>	<b>Exchange, development of TECHNOLOGICAL KNOWLEDGE</b>
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<b>Action No. 1.1.1</b>	<b>Digitalisation for sustainability and productivity.</b>  The action covers issues related to digitalisation for sustainability and productivity in agriculture, forestry and wildlife management - connecting the latest digitalisation innovations to farming for e.g. improved nutrient management.
<b>Measures agreed</b>	Promotion of RDI cooperation in sensor, automation, robotics and other new technologies for agriculture, forestry and wildlife management by: <ol style="list-style-type: none"> <li>1. Initiating project planning for a joint RDI project on the topic; agreed steps include mapping related expertise and references and relevant calls to focus the approach and aims of the project.</li> <li>2. Organising cross-border study visits, meetings, workshops.</li> <li>3. Exchange of knowledge and experience in the development and introduction of digital innovation solutions to sustainable farming and forestry, protection and management of the environment. P1, P10.</li> <li>4. Joint initiatives for detecting weeds &amp; agriculture from drone based data. P4, P10.</li> </ol>
<b>Partners/partnerships</b>	Responsible partner: P1 JAMK will facilitate the project planning discussion on the Biobord.eu platform. Each partner initiates measures and can address other partners and/or stakeholders to contribute with knowledge and experience.  Interested partners: P1 JAMK University of Applied Sciences (FI) P4 Inland Norway University of Applied Sciences (NO) P9 Foundation for Education and Social Dialogue Pro Civis (PL) P10 Institute for Environmental Solutions (LV)

<i>Other stakeholders to be involved</i>	RTD institutions - knowledge holders, providers and developers: - Vidzeme University of Applied Sciences (LV) - Latvia University of Life Sciences and Technologies (LV) - Forest and Wood Products Research and Development Institute MEKA (LV) - Institute of Agricultural Resources and Economics (LV)
<i>Type per implementation period</i>	Short term action
<i>Results to be achieved</i>	Increased competence level of RDI institutions. New initiatives in the development, testing and application of new technologies for agriculture, forestry and wildlife management, realised in or resulting from partnership.
<i>Indicators for measuring achievements</i>	Number and increase of specific weight of newly identified and ongoing initiatives.
<i>Mechanisms, tools to be used for measuring achievements</i>	Feedback from RDI2CluB partners and other stakeholders (to be obtained via the Biobord.eu platform). Public reports of RDI institutions.
<i>Potential funding instruments and mechanisms to be used</i>	H2020 digitalisation sub-programmes Eurostars LIFE programme (synergy with the project LIFE CRAFT)
<i>Priority bioeconomy areas relevant to the Action</i>	PrA No. 1 Agriculture, forestry and fisheries PrA No. 9 Bio-based services
<i>Cross sectoral priorities addressed</i>	Digitalisation, education, sustainable development.

<b>Action No. 1.1.2</b>	<b>Technologies for natural resource management.</b>
<i>Measures agreed</i>	<p>Bilateral or multilateral cross-border study visits, meetings, workshops for the exchange of knowledge and experience in the development and introduction of technologies applied in forest management, wild animal management and ecosystem services.</p> <p>Identification of joint interest areas for transnational development projects and further information exchange on knowledge-building on carbon farming and climate positive forestry practices. P1, P4, P6, P10.</p> <p>P10 will pilot the application of the latest drone technologies for the accurate and effective evaluation of biomass resources, forest and wild animal population count. Concept of a new bioeconomy service and a step-by-step instruction of how it was created (output from environmental resource assessments using the latest drone technology) will be elaborated and shared with interested partners. P4 and P10 have agreed to collaborate in the field of biodiversity management: chips in fish &amp; animals; bio-smart management: understand species to perform management, biodiversity assessment.</p> <p>The results will be openly accessible on the Biobord.eu platform.</p>
<i>Partners/partnerships</i>	<p>Responsible partner: Each partner initiates measures and can address other partners and/or stakeholders to contribute with knowledge/experience.</p> <p>Interested partners: P1 JAMK University of Applied Sciences (FI) P4 Inland Norway University of Applied Sciences (NO) P6 Tretorget AS (NO) P10 Institute for Environmental Solutions (LV)</p>

<i>Other stakeholders to be involved</i>	- RTD institutions – knowledge holders, providers and developers - Latvia University of Life Sciences and Technologies (LV)
<i>Type per implementation period</i>	Medium term action.
<i>Results to be achieved</i>	Increased competence level of RDI institutions. New initiatives in the development, testing and application of new technologies.
<i>Indicators for measuring achievements</i>	Number and increase of specific weight of newly identified and ongoing initiatives. Number of new technologies developed/implemented in or resulting from partnership.
<i>Mechanisms, tools to be used for measuring achievements</i>	Feedback from involved RDI2CluB partners.
<i>Potential funding instruments and mechanisms to be used</i>	H2020 – Innovation in SMEs H2020 – Societal challenges LIFE programme
<i>Priority bioeconomy areas relevant to the Action</i>	PrA No. 1 Agriculture, forestry and fisheries PrA No. 9 Bio-based services
<i>Cross sectoral priorities addressed</i>	Digitalisation, education, sustainable development.

<b>Action No. 1.1.3</b>	<b>Technologies for bioenergy production.</b>
<i>Measures agreed</i>	Cooperation will be promoted by the exchange of knowledge and experience in the development and introduction of technologies necessary for bioenergy production.  Events foreseen: Finnish partners' visit to Norway in February 2019.
<i>Partners/partnerships</i>	Responsible partner: P6 Tretorget AS (NO)  Interested partners: P1 JAMK University of Applied Sciences (FI) P4 Inland Norway University of Applied Sciences (NO)
<i>Other stakeholders to be involved</i>	RTD institutions – knowledge holders, providers and developers. SMEs – technologies users. Forest and Wood Products Research and Development Institute MEKA (LV) Latvia University of Life Sciences and Technologies (LV)
<i>Type per implementation period</i>	Short term action
<i>Results to be achieved</i>	Increased competence level of RDI institutions. New initiatives in bioenergy production technologies.
<i>Indicators for measuring achievements</i>	Number of events organised. Number of stakeholders participating in events. Number of new initiatives, implemented in or resulting from partnership.
<i>Mechanisms, tools to be used for measuring achievements</i>	Feedback from involved RDI2CluB partners.
<i>Potential funding instruments and mechanisms to be used</i>	H2020 – Innovation in SMEs Intelligent Energy Europe
<i>Priority bioeconomy areas relevant to the Action</i>	PrA No. 1 Agriculture, forestry and fisheries PrA No. 7 Bio-based energy, incl. transport
<i>Cross sectoral priorities addressed</i>	Sustainable development.

<b>Action No. 1.1.4</b>	<b>Technologies for low-emission building.</b>
<i>Measures agreed</i>	<p>Cooperation will be promoted by the exchange of knowledge and experience in the development and introduction of technologies necessary for low-emission buildings.</p> <ol style="list-style-type: none"> <li>1. Transfer of Norwegian technology to Świętokrzyskie Voivodeship for the construction of low-emission wooden buildings.</li> <li>2. Cooperation of the wood construction sector stakeholders among regions. The first webinar is foreseen in April 2019.</li> <li>3. P8, P9 will assess innovative technologies that reduce emissions and will elaborate a new model based on the quintuple helix for managing innovative solutions. New concepts of applying mobile devices (drones) for measuring near ground emissions from rural residential houses heated by fossil fuel will be shared with the RDI2CluB project partners.</li> </ol> <p>The results will be openly accessible on the Biobord.eu platform.</p>
<i>Partners/partnerships</i>	<p>Responsible partner: Each partner initiates measures and can address other partners and/or stakeholders to contribute with knowledge/experience.</p> <p>Interested partners:  P1 JAMK University of Applied Sciences (FI)  P2 Regional Council of Central Finland (FI)  P3 SSYP Kehitys Oy, Ltd (FI)  P4 Inland Norway University of Applied Sciences (NO)  P5 Inland County Council (NO)  P6 Tretorget AS (NO)  P8 Świętokrzyskie Voivodeship (PL)  P9 Foundation for Education and Social Dialogue Pro Civis (PL)  P11 Vidzeme Planning Region (LV)</p>
<i>Other stakeholders to be involved</i>	<p>Forest and Wood Products Research and Development Institute MEKA (LV)  Latvia University of Life Sciences and Technologies (LV)</p>
<i>Type per implementation period</i>	Medium term action
<i>Results to be achieved</i>	<p>Increased knowledge and competence level of public sector institutions.  New initiatives in low emission technologies.</p>
<i>Indicators for measuring achievements</i>	<p>Number of events organised, stakeholders addressed.  Number of initiatives realised.  Results of realised initiatives – scope, impact, follow up.</p>
<i>Mechanisms, tools to be used for measuring achievements</i>	Feedback from involved partners.
<i>Potential funding instruments and mechanisms to be used</i>	<p>Norway grants - Norwegian financial instrument  Intelligent Energy Europe</p>
<i>Priority bioeconomy areas relevant to the Action</i>	<p>PrA No. 3 Bio-based construction and building materials  PrA No. 7 Bio-based energy, incl. transport</p>
<i>Cross sectoral priorities addressed</i>	Sustainable development.

<b>Sub-objective SO 1.2</b>	<b>Exchange, development of KNOWLEDGE STREAMLINING INNOVATIVE BUSINESS</b>
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<b>Action No. 1.2.1</b>	<b>Renewing operations of traditional bio-based SMEs with new business and cooperation models.</b>
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	The action aims to share experience and knowledge on the business and cooperation models, necessary for bio-based SMEs' successful, sustainable performance.
<i>Measures agreed</i>	<ol style="list-style-type: none"> <li>1. Transnational benchmarking, collection and sharing of new business and cooperation models for agriculture and other traditional bioeconomy businesses. P4, P6, P11.</li> <li>2. Sharing knowledge and experience of business models applied at knowledge transfer organisations (KTOs) and technology transfer organisations (TTOs). P1, P2, P3, P4, P6.</li> <li>3. Development and implementation of a model for promoting and receiving ideas and projects between RTD and businesses. P6, P11.</li> <li>4. Sharing knowledge, experience and best practices on methods used for the development and sustaining of networks and clusters, especially those established for the promotion of rural development. P1, P2, P3, P9, P12.</li> <li>5. P6 will test and evaluate responsible, sustainable business models that maintain and improve the ecological, social and cultural resources at the same time as the business increases its market value. The models will maintain cooperation between a network of value chains in the forest environment such as timber production, tourism and hunting activity, and the production of forest-based food. The results and lessons learnt will be shared with the RDI2Club partners on the Biobord.eu platform.</li> </ol> <p>The results will be openly accessible on the Biobord.eu platform.</p>
<i>Partners/partnerships</i>	<p>Responsible partner: Each partner initiates measures and can address other partners and/or stakeholders to contribute with knowledge/experience.</p> <p>Interested partners:  P1 JAMK University of Applied Sciences (FI)  P2 Regional Council of Central Finland (FI)  P3 SSYP Kehitys Oy, Ltd (FI)  P4 Inland Norway University of Applied Sciences (NO)  P6 Tretorget AS (NO)  P11 Vidzeme Planning Region (LV)  P12 Stockholm Environment Institute Tallinn Centre (EE)</p>
<i>Other stakeholders to be involved</i>	RTD institutions – interested in taking part in shaping and testing of the models: <ul style="list-style-type: none"> <li>- Vidzeme University of Applied Sciences (LV)</li> <li>- Latvia University of Life Sciences and Technologies (LV)</li> </ul>
<i>Type per implementation period</i>	Short term action
<i>Results to be achieved</i>	Increased knowledge of partners to develop and introduce effective business and cooperation models.
<i>Indicators for measuring achievements</i>	Number of events organised. Number and scope of new/updated business and cooperation models introduced by partners and stakeholders.
<i>Mechanisms, tools to be used for measuring achievements</i>	Reports of partners.
<i>Potential funding instruments and mechanisms to be used</i>	RDI2CluB project funding
<i>Priority bioeconomy areas relevant to the Action</i>	PrA No. 1 Agriculture, forestry and fisheries PrA No. 2 Food and feed production PrA No. 3 Bio-based construction and building materials PrA No. 5 Pulp and paper PrA No. 7 Bio-based energy, incl. transport

	PrA No. 8 R&D services in biomass PrA No. 9 Bio-based services
<i>Cross sectoral priorities addressed</i>	Education, sustainable development.
<b>Action No. 1.2.2</b>	<b><i>Exchange of knowledge and experience for the development of natural resource-based services in tourism, well-being and other areas.</i></b>
	The action aims to promote the development and exchange of knowledge encouraging and supporting the development of services, which are developed or provided through the use of biotic and abiotic natural resources. These services mostly refer to tourism, well-being, but other services can possibly appear.
<i>Measures agreed</i>	Identification of joint interest areas for transnational development projects and further information exchange on the design and provision of nature, especially forest-based, services promoting wellbeing and balance (e.g. stress-relief and recovery) P1, P4, P6, P10.
<i>Partners/partnerships</i>	Responsible partner: Each partner initiates measures and can address other partners and/or stakeholders to contribute with knowledge/experience.  Interested partners: P1 JAMK University of Applied Sciences (FI) P4 Inland Norway University of Applied Sciences (NO) P6 Tretorget (NO) P10 Institute for Environmental Solutions (LV)
<i>Other stakeholders to be involved</i>	- SMEs – knowledge holders, providers and developers - RTD institutions – knowledge holders, providers and developers
<i>Type per implementation period</i>	Medium term action
<i>Results to be achieved</i>	Increased competence level of partners and other stakeholders.
<i>Indicators for measuring achievements</i>	Number and increase of specific weight of new identified and ongoing initiatives, implemented in or resulting from partnership.
<i>Mechanisms, tools to be used for measuring achievements</i>	Feedback from RDI2CluB partners and other stakeholders (to be obtained via the Biobord.eu platform) Reports of regional/national innovation support bodies
<i>Stakeholders to be involved</i>	- SMEs – knowledge holders, providers and developers - RTD institutions – knowledge holders, providers and developers
<i>Potential funding instruments and mechanisms to be used</i>	RDI2CluB project funding H2020 – Societal challenges; H2020 – Innovation in SMEs Eurostars
<i>Priority bioeconomy areas relevant to the Action</i>	PrA No. 1 Agriculture, forestry and fisheries PrA No. 9 Bio-based services
<i>Cross sectoral priorities addressed</i>	Digitalisation, education, sustainable development.



### 3.2. Objective No. 2 Development and renewing of services and tools used to upscale/improve regional innovation ecosystems

<b>Objective No. 2</b>	<b>Development and renewing of SERVICES and TOOLS used to upscale/improve regional INNOVATION ECOSYSTEMS</b>
<b>Sub-objectives</b>	<p><b>SO 2.1 Establishment of an active network of bioeconomy innovation hubs with a joint model and platform for innovation management.</b></p> <p><b>SO 2.2 Transnational cooperation and networking of business environment stakeholders.</b></p> <p><b>SO 2.3 Access to skilled workforce for rural SMEs.</b></p>
Sub-objectives of EUBSR Strategy policy area "Bio-economics" addressed <a href="https://www.balticsea-region-strategy.eu/action-plan">https://www.balticsea-region-strategy.eu/action-plan</a>	<ul style="list-style-type: none"> <li>▪ Cooperation: increased coordination and synergy in the Baltic Sea Region among the public sector and NGO cooperation initiatives, projects and stakeholders dealing with bioeconomy.</li> <li>▪ Realising the bioeconomy in the Baltic Sea Region: development of a sustainable bioeconomy in the Baltic Sea Region.</li> <li>▪ Contributions to the development of the European Bioeconomy: Baltic Sea Region participation in wider EU efforts and projects to realise the bioeconomy.</li> </ul>
EUBSR sustainability principles addressed:	<ul style="list-style-type: none"> <li>▪ Sustainable bio-resource management and circular bioeconomy</li> <li>▪ Healthy, nutritious locally-produced food and food security</li> <li>▪ Resilient and diverse ecosystems (climate proofing, biodiversity...)</li> <li>▪ Inclusive rural economic development</li> <li>▪ Sustainable consumption</li> </ul>

<b>Sub-objective SO 2.1</b>	<p><b>Establishment of an active network of bioeconomy innovation hubs with a joint model and platform for innovation management.</b></p> <p>The sub-objective aims to support sustainable bioeconomy business development across the rural regions of the Baltic Sea Region.</p>
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<b>Action No. 2.1.1</b>	<b>Developing and testing a joint innovation management model for the network of bioeconomy innovation hubs in the BSR.</b>
<i>Measures agreed</i>	Establishment of an active network of national/regional bioeconomy innovation hubs with a joint model and platform for innovation management will be developed and tested during the time of the project.
<i>Partners/partnerships</i>	Responsible partner: P6 Tretorget AS (NO)  Interested partners: All partners in the RDI2CluB partnership
<i>Other stakeholders to be involved</i>	Regional, national and international networks Partners of the other bioeconomy projects, initiatives active in the BSR SMEs: test users RTD performers: universities, research institutes, technology and/or innovation bodies: test users Regional and local public authorities: test users Supporting and promotion bodies (agencies, BICs, clusters, etc.): test users
<i>Type per implementation period</i>	Short and medium term actions
<i>Results to be achieved</i>	<ul style="list-style-type: none"> <li>▪ A joint forum for planning international projects and for interregional online co-working for project coordination and implementation. The forum enables the sharing of information on open calls, project ideas for the calls and matchmaking of potential partners.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ A key performance index dashboard feature to Open Virtual Biobusiness Hub (Biobord.eu platform) to showcase sectoral bioeconomy figures from open data sources as a basis for assessing bioeconomy business potential.</li> <li>▪ An operational model for idea generation, sharing and assessment via the Biobord.eu platform, as well as for accessing innovation services and support.</li> </ul>
<i>Indicators for measuring achievements</i>	<p>Number of new RDI projects started + number of international projects</p> <p>Number of ideas generated, shared and assessed</p> <p>Number of SMEs utilising the innovation model</p> <p>User feedback collected and analysed on the Forum</p>
<i>Mechanisms, tools to be used for measuring achievements</i>	<p>Forum administration and records</p> <p>User feedback collection and analysis</p>
<i>Potential funding instruments and mechanisms to be used</i>	<p>RDI2CluB project</p> <p>Network agreement sustains the result for the post-project period</p>
<i>Priority bioeconomy areas relevant to the Action</i>	<p>PrA No. 1 Agriculture, forestry and fisheries</p> <p>PrA No. 2 Food and feed production</p> <p>PrA No. 3 Bio-based construction and building materials</p> <p>PrA No. 4 Bio-based textile and clothing</p> <p>PrA No. 5 Pulp and paper</p> <p>PrA No. 6 Bio-based chemical industry</p> <p>PrA No. 7 Bio-based energy, incl. transport</p> <p>PrA No. 8 R&amp;D services in biomass</p> <p>PrA No. 9 Bio-based services</p>
<i>Cross sectoral priorities addressed</i>	<p>Digitalisation, communication, education.</p>

<b>Action No. 2.1.2</b>	<p><b><i>Connecting the bioeconomy innovation ecosystem actors around the Baltic Sea Region via the network.</i></b></p> <p>Connections will be built with the aim to boost innovation capacity for SMEs and start-up development in the bioeconomy.</p>
<i>Measures agreed</i>	<ul style="list-style-type: none"> <li>▪ To develop and test an easy-to-use search feature, matchmaking service and a connection tool for individuals, SMEs and RDI experts to find relevant RDI expertise, infrastructures and services as well as knowledge resources around the BSR as part of the development of the Biobord.eu platform.</li> <li>▪ To connect, involve and engage relevant networks and target groups of the bioeconomy innovation hubs to the Open Virtual Biobusiness Hub as registered users. The registered users will benefit from the network connection, new information to increase competitiveness as well as opportunities for content creation and sharing in the forum and knowledge base for RDI support, promotion and team building. Network building will be conducted with a joint marketing strategy with the possibility of identifying specific regional focus groups for the pilot phase.</li> <li>▪ To connect the innovation infrastructures and services of the hubs to the map-based search tool of the Biobord.eu platform.</li> <li>▪ Create regional hub forums under the Biobord.eu platform for strengthening regional co-operation and co-working between the actors of the Bioeconomy Innovation Ecosystem. The regional hubs are run in local languages, but the hub administrators meet regularly to exchange information and learn from each other's approaches in the local hubs.</li> <li>▪ To develop models for connecting bioeconomy students and student groups in higher education with SMEs and the innovation processes of the Biobord.eu platform with the aim to help with idea generation, sharing and assessment.</li> </ul>

	Students will gain contacts to companies and experts as well as practical experience.
<i>Partners/partnerships</i>	Responsible partner: P6 Tretorget AS (NO)  Interested partners: All partners in the RDI2CluB partnership Regional, national and international networks Other bioeconomy projects, initiatives active in the BSR
<i>Other stakeholders to be involved</i>	SMEs: Users RTD performers: universities, research institutes, technology and/or innovation bodies: Users Regional and local public authorities: Users Supporting and promotion bodies (agencies, BICs, clusters, etc): Users Students: Users
<i>Type per implementation period</i>	Short and medium term actions
<i>Results to be achieved</i>	<ul style="list-style-type: none"> <li>▪ Easy-to-use search feature, matchmaking service and a connection tool</li> <li>▪ Relevant networks and target groups of the bioeconomy innovation hubs connected to, involved and engaged in the Open Virtual Biobusiness Hub as registered users.</li> <li>▪ The map of test-beds.</li> <li>▪ Regional hub forums created and functioning.</li> <li>▪ Models for connecting bioeconomy students and student groups in higher education with SMEs and the innovation processes.</li> </ul>
<i>Indicators for measuring achievements</i>	Number of registered users Number of connected hubs and RDI infrastructures User feedback on connection and matchmaking services of the Biobord.eu platform
<i>Mechanisms, tools to be used for measuring achievements</i>	Biobord.eu platform user data analysis User feedback collection and analysis
<i>Potential funding instruments and mechanisms to be used</i>	RDI2CluB project; network agreement sustains the result for the post-project period.
<i>Priority bioeconomy areas relevant to the Action</i>	PrA No. 1 Agriculture, forestry and fisheries PrA No. 2 Food and feed production PrA No. 3 Bio-based construction and building materials PrA No. 4 Bio-based textile and clothing PrA No. 5 Pulp and paper PrA No. 6 Bio-based chemical industry PrA No. 7 Bio-based energy, incl. transport PrA No. 8 R&D services in biomass PrA No. 9 Bio-based services
<i>Cross sectoral priorities addressed</i>	Digitalisation, communication, education.

<b>Sub-objective SO 2.2</b>	<b>Transnational cooperation and networking of business environment stakeholders.</b>  The sub-objective aims to develop purposeful transnational collaboration among SMEs, their formal organisations, informal networks, and clusters.
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<b>Action No. 2.2.1</b>	<b>Networking of clusters.</b>
<i>Measures agreed</i>	1. Establishment and development of partnership among Latvia High Added Value and Healthy Food Cluster (LV) and Heidner cluster (NO) with the aim to acquire,

	<p>share and exchange competencies in food innovation, especially zero impact in the food processing industry. <a href="http://heidner.no/">http://heidner.no/</a> P4, P5, P6, P10, P11.</p> <p>2. Establishment and development of partnership of Latvia's and Poland's stakeholders with Norwegian stakeholders: Swedish - Norwegian Living lab project, Wooden houses cluster dealing with zero emission and zero impact buildings. P4, P5, P6, P7, P8, P9, P11.</p>
<i>Partners/partnerships</i>	<p>Responsible partner: P11 Vidzeme Planning Region (LV)</p> <p>Interested partners: All RDI2CluB project partners.</p>
<i>Stakeholders to be involved</i>	Networks of bioeconomy sector stakeholders.
<i>Type per implementation period</i>	Medium term action.
<i>Results to be achieved</i>	Transnational networking among clusters developed and ongoing.
<i>Indicators for measuring achievements</i>	<p>Agreements on partnership.</p> <p>Transnational activities provided within networking.</p>
<i>Mechanisms, tools to be used for measuring achievements</i>	<p>Agreements on partnership.</p> <p>Transnational activities provided within partnerships.</p> <p>Baltic Sea Region's bioeconomy platform visible and recognised on a larger scale.</p>
<i>Potential funding instruments and mechanisms to be used</i>	<p>COSME – European Cluster Excellence Programme</p> <p>Interreg: Central Baltic, Baltic Sea Region.</p>
<i>Priority bioeconomy areas relevant to the Action</i>	<p>PrA No. 1 Agriculture, forestry and fisheries</p> <p>PrA No. 2 Food and feed production</p> <p>PrA No. 3 Bio-based construction and building materials</p> <p>PrA No. 5 Pulp and paper</p> <p>PrA No. 7 Bio-based energy, incl. transport</p> <p>PrA No. 8 R&amp;D services in biomass</p> <p>PrA No. 9 Bio-based services</p>
<i>Cross sectoral priorities addressed</i>	Communication, sustainable development.

<b>Action No. 2.2.2</b>	<b>Cooperation of bioeconomy SMEs.</b>
<i>Measures agreed</i>	<p>The measures are aimed at promoting targeted collaboration among relevant industries' SMEs, already being in the bioeconomy sector or intending to become its participants/stakeholders. Cooperation measures foreseen: B2B events, mutual consultations and technological support, as well as larger events: workshops, hackathons, etc. involving a greater number of companies and ensuring the sharing, exchange and acquisition of knowledge and skills. Cooperation is envisaged addressing companies directly or by and with the support of organisations, representing their interests: associations, clusters, networks, etc.</p> <p>Events foreseen:</p> <ol style="list-style-type: none"> <li>1. Selection of bioeconomy sectors, being in the joint interest of Estonia and Latvia, planning and organisation of cross-border events for relevant bioeconomy sub-sector companies with the aim to share and create high added value knowledge. P10, P11, P12. (2021-2022)</li> <li>2. Artisan food competition is arranged in Jyväskylä, Finland in September 2019. Plans have been made to organise visits to food sector companies etc. prior to or after the competition for international guests. More specific plans will be elaborated during spring 2019. P1, P2, P3, P11.</li> </ol>
<i>Partners/partnerships</i>	Responsible partner: Each partner initiates measures and can address other partners and/or stakeholders to contribute with knowledge/experience.

	<p>Interested partners:</p> <p>P1 JAMK University of Applied Sciences (FI)</p> <p>P2 Regional Council of Central Finland (FI)</p> <p>P3 SSYP Kehitys Oy, Ltd (FI)</p> <p>P10 Institute for Environmental Solutions (LV)</p> <p>P11 Vidzeme Planning Region (LV)</p> <p>P12 Stockholm Environment Institute Tallinn Centre (EE)</p>
<i>Other stakeholders to be involved</i>	<ul style="list-style-type: none"> <li>- SMEs in bioeconomy sectors.</li> <li>- Associations, clusters and other relevant organisations, representing the interests of targeted bioeconomy SMEs.</li> <li>- Organisations providing support to SMEs for innovation.</li> </ul>
<i>Type per implementation period</i>	Short and medium term action.
<i>Results to be achieved</i>	<p>Increased long-term transnational cooperation among bioeconomy SMEs.</p> <p>New product and service development initiatives started and ongoing.</p>
<i>Indicators for measuring achievements</i>	<p>Number of transnational initiatives of bioeconomy SMEs.</p> <p>Number of SMEs and their representatives participating in transnational initiatives.</p> <p>Number and scope of innovation measures, resulting from joint initiatives.</p>
<i>Mechanisms, tools to be used for measuring achievements</i>	<p>Feedback from SMEs.</p> <p>Reports of partners.</p> <p>Reports of organisations, providing support to SMEs.</p>
<i>Potential funding instruments and mechanisms to be used</i>	<p>Interreg programme: Estonia Latvia Programme</p> <p>COSME</p> <p>H2020 Innovation in SMEs</p>
<i>Priority bioeconomy areas relevant to the Action</i>	<p>PrA No. 1 Agriculture, forestry and fisheries</p> <p>PrA No. 2 Food and feed production</p> <p>PrA No. 3 Bio-based construction and building materials</p> <p>PrA No. 5 Pulp and paper</p> <p>PrA No. 7 Bio-based energy, incl. transport</p> <p>PrA No. 8 R&amp;D services in biomass</p> <p>PrA No. 9 Bio-based services</p>
<i>Cross sectoral priorities addressed</i>	Digitalisation, communication, education, sustainable development.

<b>Sub-objective SO 2.3</b>	<b>Access to skilled workforce for rural SMEs</b>
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<b>Action No. 2.3.1</b>	<p><b>Development of smart lifelong learning paths to support bioeconomy SMEs.</b></p> <p>There is a need for flexible and continuous learning systems, ensuring knowledge and skills for the SMEs to persist and grow. The action aims to encourage and to promote the improvement of the lifelong learning pathways by the tailoring of pathways aligned to the involved regions' smart specialisation and by the design of lifelong learning mechanisms and methods, which ensure teaching and learning methods and content relevant to the needs and trends of the bioeconomy.</p>
<i>Measures agreed</i>	<ol style="list-style-type: none"> <li>1. Tailoring of upskilling pathways with alignment to smart specialisation and with a future orientation. P1, P4, P5, P6, P9, P11.</li> <li>2. Design of learning, teaching methods and concepts for effective, continuous and work-life orientated lifelong learning. P4, P11.</li> </ol>
<i>Partners/partnerships</i>	Responsible partner: P11 Vidzeme Planning Region (LV)

	<p>Interested partners:</p> <p>P1 JAMK University of Applied Sciences (FI)</p> <p>P3 SSYP Kehitys Oy, Ltd (FI)</p> <p>P4 Inland Norway University of Applied Sciences (NO)</p> <p>P5 Inland County Council (NO)</p> <p>P6 Tretorget AS (NO)</p> <p>P9 Foundation for Education and Social Dialogue Pro Civis (PL)</p>
<i>Stakeholders to be involved</i>	<p>Lifelong learning policy makers.</p> <p>Public and private lifelong learning education providers.</p>
<i>Type per implementation period</i>	<p>Medium term action</p>
<i>Results to be achieved</i>	<p>Involved partners regional/national upskilling pathways are better aligned to smart specialisation (at the present and flexible for future changes)</p> <p>Lifelong learning mechanisms and methods respond to the needs and trends of the bioeconomy</p>
<i>Indicators for measuring achievements</i>	<p>Compatibility/relevance of upskilling pathways with smart specialisation strategies</p> <p>Quality and relevance of lifelong learning mechanisms and methods to the needs and trends of the bioeconomy</p>
<i>Mechanisms, tools to be used for measuring achievements</i>	<p>Analysis of changes of regional/national upskilling pathways implemented</p> <p>Feedback from the bioeconomy industries on the relevance and quality of lifelong learning systems</p>
<i>Potential funding instruments and mechanisms to be used</i>	<p>Erasmus+ Strategic partnerships; Erasmus+ Knowledge Alliances</p> <p>Interreg programme (ERDF)</p>
<i>Priority bioeconomy areas relevant to the Action</i>	<p>PrA No. 1 Agriculture, forestry and fisheries</p> <p>PrA No. 2 Food and feed production</p> <p>PrA No. 3 Bio-based construction and building materials</p> <p>PrA No. 4 Bio-based textile and clothing</p> <p>PrA No. 5 Pulp and paper</p> <p>PrA No. 6 Bio-based chemical industry</p> <p>PrA No. 7 Bio-based energy, incl. transport</p> <p>PrA No. 8 R&amp;D services in biomass</p> <p>PrA No. 9 Bio-based services</p>
<i>Cross sectoral priorities addressed</i>	<p>Education.</p>



### 3.3. Objective No. 3 Raising the awareness of bioeconomy stakeholders and society on the bioeconomy, smart and sustainable exploitation of bioresources

<p><b>Objective No. 3</b></p>	<p><b>Raising the awareness of bioeconomy stakeholders and society on the bioeconomy, smart and sustainable exploitation of bioresources.</b></p> <p>Achievement of the objective will mainly be promoted via the organisation of measures integrated as a <i>horizontal principle</i> in other foreseen actions. Communication to society on events, results and achievements will be combined with messages on what the bioeconomy is, why stakeholders and society should think, talk and act responsibly towards the achievement of the EU's and each country's bioeconomy targets.</p>
<p><b>Sub-objectives</b></p>	<p><b>There are no sub-objectives.</b></p>
<p>Sub-objectives of EUBSR Strategy policy area "Bio-economics" addressed</p> <p><a href="https://www.balticsea-region-strategy.eu/action-plan">https://www.balticsea-region-strategy.eu/action-plan</a></p>	<ul style="list-style-type: none"> <li>▪ Cooperation: increased coordination and synergy in the Baltic Sea Region among the public sector and NGO cooperation initiatives, projects and stakeholders dealing with the bioeconomy.</li> <li>▪ Realising the bioeconomy in the Baltic Sea Region: development of a sustainable bioeconomy in the Baltic Sea Region.</li> <li>▪ Contributions to the development of the European Bioeconomy: Baltic Sea Region participation in wider EU efforts and projects to realise the bioeconomy.</li> </ul>
<p>EUBSR sustainability principles addressed</p>	<ul style="list-style-type: none"> <li>▪ Sustainable bioresource management and circular bioeconomy</li> <li>▪ Healthy, nutritious locally-produced food and food security</li> <li>▪ Resilient and diverse ecosystems (climate proofing, biodiversity...)</li> <li>▪ Inclusive rural economic development</li> <li>▪ Sustainable consumption</li> </ul>

<p><b>Action No. 3.1.1</b></p>	<p><b>Development and dissemination of a joint online knowledge base for awareness-raising.</b></p>
<p><i>Measures agreed</i></p>	<p>The measure aims to raise the awareness of various stakeholders: bioeconomy SMEs, who need inspiration and encouragement, owners and managers, who often have limited knowledge and understanding of how to use values they own, potential investors, who would help SMEs to realise valuable ideas, RTDs, who hold or have the capacity to develop knowledge needed for businesses. The measure includes:</p> <ol style="list-style-type: none"> <li>1. Selection and gathering of up to 25 bioeconomy success stories from RDI2CluB partner regions (up to 5 per involved region). Dissemination will be enhanced with a social media campaign.</li> <li>2. Application of a sustainability measurement tool, impact report, for creating interactive stories on the sustainability impact of new technologies and business models in the bioeconomy. Impact reports are published at Biobord.eu.</li> <li>3. Development of a catalogue of bioeconomy products and services, demonstrating and explaining knowledge-driven value chain benefits and raising awareness of the value of resources and possibilities for their exploitation on the Bioboard.eu platform.</li> <li>4. Promotion of the catalogue of bioeconomy products and services among bioresource owners and managers, and potential investors.</li> </ol>
<p><i>Partners/partnerships</i></p>	<p>Responsible partner: Each partner initiates measures and can address other partners and/or stakeholders to contribute with knowledge/experience.</p> <p>Interested partners:  P1 JAMK University of Applied Sciences (FI)  P2 Regional Council of Central Finland (FI)  P3 SSYP Kehity Oy, Ltd (FI)</p>

	<p>P4 Inland Norway University of Applied Sciences (NO)  P5 Inland County Council (NO)  P6 Tretorget AS (NO)  P8 Świętokrzyskie Voivodeship (PL)  P9 Foundation for Education and Social Dialogue Pro Civis (PL)  P10 Institute for Environmental Solutions (LV)  P11 Vidzeme Planning Region (LV)  P12 Stockholm Environment Institute Tallinn Centre (EE)</p>
<i>Other stakeholders to be involved</i>	<ul style="list-style-type: none"> <li>▪ Stakeholders, whose actions and achievements will be included in the catalogue</li> <li>▪ SMEs, RTD performers: universities, research institutes, technology and/or innovation bodies as users</li> <li>▪ Other – potential investors; individuals as owners or managers of existing bioresources</li> <li>▪ Regional and local public authorities as users</li> <li>▪ Supporting and promotion bodies (agencies, BICs, clusters, etc.) as users</li> </ul>
<i>Type per implementation period</i>	Short and medium term actions.
<i>Results to be achieved</i>	<p>Joint knowledge base will feature a crowdsourced catalogue of forerunner cases, practical examples and best practices for enhancing smart specialisation in the bioeconomy and capacity for innovation targeted at all triple helix actors. The knowledge base brings together and builds on the results of the Joint Action Plans of RDI2CluB.</p> <p>Awareness of bioresource owners and managers, RTDs and potential investors raised.</p>
<i>Indicators for measuring achievements</i>	<p>User feedback on usability and usefulness of the knowledge base.  Catalogue developed, number of stakeholders to whom the catalogue is distributed.  Feedback of stakeholders.</p>
<i>Mechanisms, tools to be used for measuring achievements</i>	<p>User feedback collection and analysis  Catalogue itself. Feedback from catalogue readers.</p>
<i>Potential funding instruments and mechanisms to be used</i>	<p>RDI2CluB project funding. Network agreement sustains the result for the post-project period  The Nordic Council of Ministers funding programmes</p>
<i>Priority bioeconomy areas relevant to the Action</i>	<p>PrA No. 1 Agriculture, forestry and fisheries  PrA No. 2 Food and feed production  PrA No. 3 Bio-based construction and building materials  PrA No. 4 Bio-based textile and clothing  PrA No. 5 Pulp and paper  PrA No. 6 Bio-based chemical industry  PrA No. 7 Bio-based energy, incl. transport  PrA No. 8 R&amp;D services in biomass  PrA No. 9 Bio-based services</p>
<i>Cross sectoral priorities addressed</i>	Digitalisation, communication, education, sustainable development.

<b>Action No. 3.1.2</b>	<b>Raising awareness of stakeholders and society.</b>
<i>Measures agreed</i>	<p>Awareness will be raised regarding the bioeconomy itself, the bioresources' value, potential, benefits of effective and sustainable exploitation and other issues supporting the partners to encourage, motivate, involve any of the target groups either to become bioeconomy actors or to support its development:</p> <ul style="list-style-type: none"> <li>- SMEs, including farms, especially in rural areas – how business can develop, benefit from the bioeconomy, integration of sustainability principles in their agendas, etc.</li> </ul>

	<ul style="list-style-type: none"> <li>- RTDs – what present needs and future trends would bring for research and innovation stakeholders, what they can bring to and how they can benefit from the bioeconomy, etc.</li> <li>- Investors – why bioeconomy development is significant, what the benefits would be from the perspective of investments, etc.</li> <li>- Society, especially the youth – what the role of individuals, households in the development of socio-economics is, where respect for nature and the environment, sustainability, and care for future generations are observed, etc.</li> </ul> <p>Data provided in the regional bioeconomy profiles, elaborated within the RDI2CluB project for each involved region, will be used in the awareness raising measures where possible. Profiles available: <a href="https://berst.databank.nl/dashboard">https://berst.databank.nl/dashboard</a>.</p> <p>Measures planned:</p> <ol style="list-style-type: none"> <li>1. Development of joint awareness raising messages and presentations for each of the defined target groups: SMEs, bioresource owners and managers, RTDs, potential investors, and society.</li> <li>2. Translation of these messages and presentations into national languages and use at regional/national events, as well dissemination via regional/national networks and communication tools and types of media: websites, social networks, TV and radio, newspapers, etc.</li> <li>3. Integration of awareness raising messages in all the RDI2CluB partnership's materials and tools addressing any of the defined target groups.</li> </ol> <p>In February 2019, P12 organised the transnational conference "Bioeconomy – creativity and sustainability for all" in Estonia. The conference brought together industry, politicians, researchers and consumers for an important discussion on bioeconomy development and its sustainability.</p>
<i>Partners/partnerships</i>	<p>Responsible partner: Each partner initiates measures and can address other partners and/or stakeholders to contribute with knowledge/experience.</p> <p>Interested partners:</p> <p>P1 JAMK University of Applied Sciences (FI)  P2 Regional Council of Central Finland (FI)  P3 SSYP Kehitys Oy, Ltd (FI)  P4 Inland Norway University of Applied Sciences (NO)  P5 Inland County Council (NO)  P6 Tretorget AS (NO)  P7 Regional Science and Technology Centre (PL)  P8 Świętokrzyskie Voivodeship (PL)  P9 Foundation for Education and Social Dialogue Pro Civis (PL)  P10 Institute for Environmental Solutions (LV)  P11 Vidzeme Planning Region (LV)  P12 Stockholm Environment Institute Tallinn Centre (EE)</p>
<i>Other stakeholders to be involved</i>	<ul style="list-style-type: none"> <li>▪ SMEs, RTDs – target audience of measures</li> <li>▪ Potential investors</li> <li>▪ Individuals as owners or managers of existing bioresources</li> <li>▪ Society in general</li> </ul>
<i>Type per implementation period</i>	Short term action.
<i>Results to be achieved</i>	Awareness of the bioeconomy of all addressed target groups increased.
<i>Indicators for measuring achievements</i>	Increased interest in the bioeconomy among stakeholders of addressed target groups.

<i>Mechanisms, tools to be used for measuring achievements</i>	Feedback from target groups. Opinion surveys.
<i>Potential funding instruments and mechanisms to be used</i>	RDI2CluB project funding Interreg Programmes (ERDF) The Nordic Council of Ministers funding programmes Intelligent Energy Europe
<i>Priority bioeconomy areas relevant to the Action</i>	PrA No. 1 Agriculture, forestry and fisheries PrA No. 2 Food and feed production PrA No. 3 Bio-based construction and building materials PrA No. 5 Pulp and paper PrA No. 7 Bio-based energy, incl. transport PrA No. 8 R&D services in biomass PrA No. 9 Bio-based services (for example, green-care, eco-tourism etc)
<i>Cross sectoral priorities addressed</i>	Communication, education, sustainable development.

#### **4. Assessment and Updating of Joint Action Plan Implementation**

JAP implementation will be assessed using the following approach:

- 1) During the implementation of the RDI2CluB project (till September 2020) each partner will develop and submit, together with a 6 month period report, a short summary on: a) activities/measures started and/or implemented by the specific partner (with reference to relevant actions/measures in the JAP), b) quantitative and qualitative results achieved.
- 2) Two months prior to the final meeting of the RDI2CluB project, each partner will assess the implementation of the JAP and will propose new actions and measures to be integrated in the JAP for the follow up period.
- 3) Updated edition of the JAP will be approved at the final project meeting.

During the final RDI2CluB project meeting partners will agree on further assessment and updating procedures.

#### **5. JAP elaboration process and lessons learnt**

The JAP elaboration process:

- 1) Starting from January 2018 till June 2018, RDI2CluB project partners organised regional workshops and discussed preconditions and challenges of the bioeconomy and its innovation ecosystem development with their regional and national stakeholders, and jointly identified preliminary actions and measures, necessary for progress at the regional level.
- 2) In April 2018, within the consortium, partners discussed and agreed the structure and format of the JAP.
- 3) Benchmarking visit to the Biobased Delta cluster (Noord-Brabant region in the Netherlands) was organised in April 2018. During the visit partners were introduced to the experiences and practices of how the biobased economy is realised in the region, what helped to define the actions for the JAP.
- 4) In the same year partners started the elaboration of regional action plans. The expert group at each involved region and the RDI2CluB project working group were established. Consultations with regional

and national stakeholders were organised in order to discuss the most promising and challenging aspects and factors, other stakeholders to be involved, mechanisms and tools available for JAP implementation and to get recommendations for development of the bioeconomy innovation ecosystem. Data of bioeconomy profiles was used in the process.

- 5) In October 2018 a joint plan – overview of regional aims, actions and measures was drafted and circulated among the partners. The draft plan included an overview of regional objectives and actions and helped partners to gain an idea of what other regions are intending to do for development of the bioeconomy innovation ecosystem, and which economy and RDI fields they are interested in. This created the preconditions for the identification of areas where the interests of regions are intersecting or are similar.
- 6) Identified joint interests were discussed in several bilateral and multilateral workshops during the partners' meeting in November 2018. Partners shared regional interests, needs and plans, had in-depth conversations on joint aims, actions and measures. After the workshops the joint plan was amended according to the results of the negotiations.
- 7) Starting from December 2018 till February 2019, P11 Vidzeme Planning Region elaborated the expanded JAP, shared it with other partners, discussed aims, actions and measures and other issues having an impact on the content and implementation of the JAP. Consultations with regional stakeholders on their involvement in the specific actions were provided. At the same time partners finalised the elaboration of the regional action plans.
- 8) The JAP was presented to the Advisory Board in March 2019. Their recommendations are integrated in the JAP.
- 9) Elaboration of the JAP was completed in April 2019.

The JAP elaboration process gave partners the possibility to learn some lessons. The overview on the lessons learnt, elaborated from partners' feedback, is provided further.

The transnational approach in JAP elaboration, working in a cross-regional team, helped to gain greater, and in some cases in-depth insight in the bioeconomy development approaches of other partners, as well in their own region. Introduction to the activities successfully carried out in other regions and good practices, allowed one to recognise and perceive the bioeconomy potential in their own region.

Some partners have highlighted that joint work on the JAP helped to comprehend the broadness of the bioeconomy, to look at it not only from the perspective of a few smart specialisation areas, to discern innovative perspectives, many types of activities to be included in the topic, and resources. Acquaintance with partners' experience and best practices raised their own awareness of the bioeconomy potential within their own region and helped to identify regional business stakeholders already dealing with the bioeconomy activities. The role of networks, where SMEs, universities and research organisations cooperate and work together, is viewed as development potential. Networks are looked at as initiators and promoters of the bioeconomy clusters, relevant networks were identified by some partners, and negotiations on collaboration are already ongoing.

The joint planning process was recognised as a good knowledge source about the bioeconomy sector in general, as well about its specific areas, such as digitalisation in agriculture and forestry, wood construction

and others. The partners' knowledge and best practices have demonstrated and encouraged other partners to include one or another sector in a region's bioeconomy agenda, have inspired the introduction and application of novel technologies, as well promoted awareness of soft measures, such as the evaluation of sustainable business models applied for maintenance and improvement of the condition of natural resources.

Joint work has raised partners' convictions regarding the importance of awareness raising measures in the development of the bioeconomy, its response to societal challenges and shaping of pathways towards a fossil-free economy. The significance and necessity of integrating sustainability aspects into the various measures of the JAP was highlighted. Awareness of the society, especially the youth, is emphasised as a precondition for new incentives and significant achievements in the bioeconomy regionally, nationally and in the BSR. All partners, also those more advanced in the field, see the need to boost interest in and awareness of the bioeconomy.

As several partners highlighted, joint planning is a continuing learning process, where the sharing and exchange of knowledge, best experience and practices, as well as information help to broaden views and understanding, and to become better prepared for the implementation of regional bioeconomy innovation ecosystem development plans.

## **6. Assessment of the JAP implementation and progress**

Assessment on implementation of the JAP and progress achieved was done in April 2020. Main findings were discussed during the joint workshop on April 23, 2020. Decisions regarding actualisation of the plan were made and the JAP was updated accordingly.

Lessons learnt and shared by partners while assessment of the JAP implementation and progress:

- Constant exploration of funding opportunities (calls for proposals) have to go in-line with development of ideas
- Cross-country visits for SMEs require well focused preparation (companies do not want to waste time on general issues, superficial presentation). It is significant to start preparation timely, investigate interests and verify that thematic/technological/research etc. interests of those benchmarking and to be benchmarked are satisfied
- SMEs, researchers, and public authorities have different interests and perspective regarding thematic and scope of topics to be addressed. Careful selection of topics and split of participants in subgroups help to concentrate on issues more significant for each group and therefore increase their satisfaction with the information and knowledge obtained
- While selecting foreign partners/experts, it is necessary to get evidence, that they are fully aware in the topic and on tasks they should fulfil
- When there are activities with nature management issues, it is very important to go out into the nature and do field works. This, in its turn, require physical (face-to-face) meetings and partners' visits
- Use of online communication tools is of great help only when partners have managed to meet each other physically and spend some time together socialising and learning about each other.



## **7. Attachments**

There are five regional action plans attached to the Joint Action Plan. They are:

1. Central Finland Bioeconomy Action Plan of the RDI2CluB project.
2. The Action Plan for the Development of a Knowledge-Driven Bioeconomy Innovation Ecosystem in Vidzeme Region in Latvia.
3. Inland County Regional Action Plan for knowledge and innovation driven bioeconomy development.
4. Estonia's Action Plan for Developing a Regional Bioeconomy Innovation Ecosystem.
5. Świętokrzyskie Voivodeship Action Plan.