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# Evaluation of Erasmus+ Knowledge Alliance **ERDI – Empowering Regional Development and Innovations**



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# 1 Introduction

ERDI – Empowering Regional Development and Innovations is an consortium of sixteen Partners which combines higher education institutions (HEIs) from Finland, Czech, Hungary, Netherlands and Slovakia as well as the working life partners and local administrators. ERDI partnership relies on an adequate combination of expertise and competences from different European partner regions from North, East, West and South. These HEIs combine a multidisciplinary network exploring bioeconomy, education and regional development from varied perspectives and expertise: administration, agriculture, business, economy, European affairs and law, regional development, renewable energy and social issues.

The alliance has been created based on previous successful development actions bridging organisations providing expertise needed to fulfill the project implementation following some of the Europe2020 and Smart Europe policy actions. Each HEI brought in one working life partner to support the action plan. The working life partners represent versatile expertise (business, NGO, policy making and advisory services) and they are geographically diverse. Furthermore, the consortium gained great added value from the five associated Partners which supported and even implemented some of the actions with their own funding. They shared their expertise in business models and contributed into the discussion of new potential markets (e.g. Canadian Partners) as well as enhanced the dissemination activities (the North Karelia Regional Council).

The ERDI Partners come from geographically, economically and socially varied mainly rural regions. This provided an opportunity for all the Partners to learn from each other and to transfer knowledge and experiences within the network and more widely to find ways to boost the regional economies.

Bioeconomy business is one of the growing businesses in Europe and beyond. Bioeconomy is seen as a tool for sustainable and inclusive economic growth and job creation. However, it still suffers from a lack of skilled labour force and too few business initiatives. Bioeconomy in ERDI refers to a sustainable but profitable use of renewable natural resources in the field of energy and agriculture. The Project aims for better graduate employability and improved competitiveness of the regional economy to gain better income in the future.

## 2 The main assumptions of the ERDI cover the following areas:

- ✓ Remote and rural regions suffer from decreasing economy, unemployment and migration;
- ✓ The regions need empowerment of the business and sustainable innovations for strengthening their competitive position;
- ✓ Bioeconomy is a tool for sustainable and inclusive economic growth and job creation;
- ✓ People are the most important resource.

ERDI seeks solutions to these problems by boosting the expertise, entrepreneurship and co-creation of knowledge in bioeconomy.

## 3 The main goals of ERDI Project are:

- ✓ Joint co-creation of expert knowledge, entrepreneurial skills and innovations boosting bioeconomy businesses and education;
- ✓ Building bridges between the stakeholders on different levels and regions creating innovative ecosystems to boost creativity;
- ✓ Empowering graduate employability and improving competitiveness of the regional economy to gain better income in the future.

The goals are accomplished by the following objectives:

- ✓ ERDI internationalises the education by developing multidisciplinary, dynamic, working life serving, learner centred and international curriculum;
- ✓ ERDI supports accessibility of education by applying innovative and interactive digital e-learning tools and materials;
- ✓ ERDI defines the core competences of a bioeconomy expert to rise the working life relevance of education;
- ✓ ERDI boosts co-creation of knowledge with the working life establishing innovative, concrete and systemic participatory knowledge alliances on regional and international level;
- ✓ ERDI strengthens bioeconomy business, entrepreneurship and employability sharing business models and innovations in local, regional and international networks.

## 4 Compatibility of the results with the ERDI Project plan

The obtained results of actions confirm the achievement of concrete objectives. In the table below is presented how the results are consistent with the assumed objectives of the ERDI project.

Tabl. 1. ERDI Outcomes, Activities and Results – an Overview

	Outcomes	Activities/Results
1	<u>Internationalization of education</u> – developing of multidisciplinary, practice-oriented, learner centred and international curriculum together with their working life partners.	Elaboration of international, modular and flexible ERDI course to build the skills and competences: <ol style="list-style-type: none"> <li>1) Bioeconomy HUB (Innovation Ecosystem, Environmental Managementx, Connect the Dots Training) – ERDI Modules 2017 and 2018, Karelia UAS, Finland</li> <li>2) The sustainable bioeconomy and business semester at Karelia UAS, spring 2019 (Karelia UAS, Finland)</li> <li>3) Sustainable innovations for strengthening regions and their agrifood businesses – 2019 (HAS, the Netherlands).</li> </ol>
2	<u>Innovative digital e-learning tools</u> to support accessibility of education in bioeconomy	Applying of innovative and interactive Timeline tools and materials for teachers – available on <a href="https://blogi.savonia.fi/erdi/">https://blogi.savonia.fi/erdi/</a> : <ol style="list-style-type: none"> <li>1) Social Media Tutorials and Tips for ERDI course</li> <li>2) Keynote lecture inspired students</li> <li>3) Video lecture – requirements / How to make video lecture?</li> </ol>
3	<u>Defining the core competences of a bioeconomy expert</u> to rise the working life relevance of education	The Report “PERSPECTIVES ON BIOECONOMY – Cases from the ERDI Partner Regions” includes useful content about the competences of the future of bioeconomy experts (e.g. in the North Savo and North Brabant regions). Dissemination of elaborated materials to share the learning results ( <a href="https://www.theseus.fi/handle/10024/136189">https://www.theseus.fi/handle/10024/136189</a> )
4	<u>Boosting co-creation of knowledge with the working life</u>	Establishing innovative, concrete and systemic participatory knowledge alliances on regional and international level – more in the Report “PERSPECTIVES ON BIOECONOMY – Cases from the ERDI Partner Regions”, Chapter 10. How to reach the goals – steps for the future. The case studies provide a versatile picture of the ERDI entity including the regional scope to bioeconomy, strengths and opportunities of development in each of regions, regional key players and the identified educational needs.
5	<u>Strengthening of bioeconomy business, entrepreneurship and employability</u>	Developing of knowledge alliance models, bioeconomy business networks and entrepreneurship practices.  Formulating a base especially for creating and expanding the ERDI business networks and knowledge alliances to boost employability.  Presenting an overview about the regional networking, cooperation between the regional stakeholders and the regional attitude to the bioeconomy.

		<p>Sharing expertise in business models and innovations in local, regional and international networks to empower the regional economies.</p> <p>Contribution into the discussion of new potential markets as well as the dissemination activities.</p>
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The objectives formulated in the Project are being implemented, among others, in such a way that ERDI:

- ✓ develops expert knowledge of students and other beneficiaries in bioeconomy,
- ✓ builds flexible models for the co-creation of knowledge to ensure the meaningful collaboration,
- ✓ supports generic, multicultural and transversal competences for the future,
- ✓ internationalises education by practice-oriented, learner centred and international curricula,
- ✓ boosts the business and educate labour fitting for the future oriented needs,
- ✓ supports innovations and builds bridges between the stakeholders on local, regional and international levels,
- ✓ builds regional and international business networks sharing best business models and seeking for new, innovative business possibilities,
- ✓ fosters prosperity of the region on different levels,
- ✓ improves the openness and availability of higher education through innovative digital educational materials.

## 5 Results evaluation

The results of the ERDI Project activities can be found at: <http://erdiproject.eu/> They are presented in a transparent and friendly manner and can be divided into two categories: substantive results and results related to project management.

The substantive results	The results related to project management
WP 1. Current State Analysis WP 2. ERDI Management WP 3. Curriculum Development WP 4. Digital Learning Tools WP 5. Knowledge Alliance Models and Tools WP 6. Business Networks	WP7. Quality Assurance WP 8. Evaluation of the ERDI Project and Process WP 9. Dissemination and Exploitation of Results

Solid work has been performed by Partner teams in order to prepare all outputs. The variety and number of proposed solutions indicate a very creative approach and prove that subjects even as challenging as bioeconomy, can be taught in an appealing and accessible manner. Lectures from all countries can find all materials developed within WP1-WP6 very helpful, and the results of WP7-WP9 not only confirm that the Project has been executed correctly, but also can provide a very useful information on project management (tabl. 2). Those materials can be used by project teams which want to improve their project management processes, as well as those teams which aspire to launch their first international project.

Tabl. 2. A synthetic evaluation of particular ERDI results within the Workpackages 1-9

Symbol	Result	Evaluation
WP1	Current State Analysis	Within this task, a report: <i>PERSPECTIVES ON BIOECONOMY. Cases from the ERDI Partner Regions</i> has been prepared. The decision to develop the report was accurate, as at the beginning of every project cooperation it is important to develop the language of communication and to diagnose the situation while starting the implementation process. The Partners in details presented the essence of the subject. The project products' recipients can find the report useful because it indicates the complexity of bioeconomy and its different characteristics.
WP2	ERDI Management	Supportive work package, tools for project management.
WP3	Curriculum Development	The main material developed within this result: SUSTAINABLE BIOECONOMY AND BUSINESS SPRING SEMESTER, is a very understandable and approachable program of the course which enables all candidates who might have not comprehended the bioeconomy matter yet to understand it better and also to be more convinced to study bioeconomy.  In addition, the following main materials have been prepared: - COMPETENCES FOR FUTURE BIOECONOMY EXPERTS - ERDI PEDAGOGICAL APPROACHES promoting ownership, transversal skills and internationalisation in learning. They enabled to indicate the main competences which are crucial for bioeconomy's development, and they present various

		methods of developing those competences. The first report puts everything in order. It was very worthwhile to set the works' methodology at the beginning of the development. The second report includes good didactic practices which can be used in bioeconomy educational program.
WP4	Digital Learning Tools	It was fully justified to plan in ERDI activities aimed at developing digital tools for distance learning. In the era of digitization, students expect new solutions and diversity in the field of virtual tools to support learning. The Work Package 4 is not limited to the use of traditional e-learning methods. The review and modern solutions in this area were proposed. An additional value is to show that in educational processes, only expensive and hard-to-reach tools do not have to be used. The members of the project team indicated practical use of the elaborated tools, as evidenced by didactic films available on the Project website.
WP5	Knowledge Alliance Models and Tools	It is extremely important to objectively assess the level of competences acquired by students in the education process. The competence assessment sheet developed within this WP can therefore be useful for teachers. As part of the results of WP5, other materials useful in the process of creating alliances were developed, the value of which was described elsewhere in this report.
WP6	Business Networks	The Monograph <i>Business Networks</i> and the developed materials <i>Assisting ERDI Improving ERDI publicity, alumni connections and competence implementation</i> can be a valuable source of knowledge about creating Business Networks.
WP7	Quality Assurance	As a result of WP7, a very important document was developed: <i>Final Report for the Quality Assurance and Evaluation of the ERDI-project</i> . It presents synthetically the philosophy of the ERDI project, its scope, aims, and the variety of approaches to achieve the assumed results. The elaborated publications are very helpful in understanding the essence of the ERDI Project.
WP8	Evaluation of the ERDI Project and Process	The main result of WP8 is <i>REPORT ON EVALUATION OF THE SELF-ASSESSMENTS</i> . In this report, the Project Partners underlined the great importance attached to high quality results. A self-assessment method was developed. The criteria used in this method have been precisely defined. This was very important because the risk of over-estimation is entered in the use of the self-assessment method. The outputs were assessed on a regular basis and very carefully. The review of assessments made in the subsequent stages of evaluation works confirms how the quality of the results obtained has increased over time.
WP9	Dissemination and Exploitation of Results	In the implementation of Erasmus + projects, a wide dissemination of results is very important. The ERDI Project Partners have described in a transparent and accurate way how these activities will look like, and then showed that the plans for the dissemination and use of outputs have been implemented (e.g. Final Seminar at Savonia University of Applied Sciences, Iisalmi 2018, Finland).



## 6 The level of usability and shareability of the ERDI outcomes

Sharing of results takes place within knowledge alliances on regional and international levels. It is a global innovative trend of concentration of knowledge resources with the target segmentation principles. In this way, Project Partners have solved the problem of redundancy of sources and dispersed knowledge and information.

The consortium includes 6 European higher educational institutions, 5 working life partners and 5 associated partners all working for the shared goal. The hubs will grow and involve in future more businesses and other actors enabling the innovative ecosystems to develop in time.

Dissemination of the Project outcomes, including the website, allows easy access to materials. The essence of the project and activities of the Partners are presented also in the national languages at <http://erdiproject.eu/> -> archives

## 7 The benefits of the outcomes

The main beneficiaries in ERDI are the students and staff of HEIs, the local bioeconomy business, the staff of working life partners, the associated partners and, in a long term, the people living in the regions. ERDI also brings added value for all the partners strengthening the organisations' capacity.

In the field of innovative learning and teaching approaches ERDI consortium has created and developed the ERDI course offering three 15 ECTS modules (Innovation Ecosystem, Environmental Management and Connect the dots training). It needs to be highlighted that ERDI working life partners had an important and visible role in the process, as they were involved in creating and implementing the programme (as teaching experts and business excursion organisers) and even learning from the programme as learners in some of the ERDI classes. Furthermore, the working life partners offer training placements for the students in the Connect the dots module. Moreover, the guidance practises were developed and shared between the working life partners and HEI colleagues to create a holistic chain to support students' learning.

The potential of the ERDI Project outcomes and the Partners' efforts have been highly evaluated. The benefits of jointly implemented activities by the Partners are consistent with the objectives of the Project.

The following benefits should be particularly emphasized:

- ✓ Specification of the scope of bioeconomy;
- ✓ Increasing social awareness at the local, regional and international level regarding the multidisciplinary of bioeconomy;
- ✓ Increasing awareness of the necessity of inter-branch cooperation in bioeconomy;

- ✓ Creating the basis for accelerating the development of bioeconomy competences and other activities affecting the rate of solutions in bioeconomy (e.g. education, marketing, legislation);
- ✓ Elaboration of innovative learning and teaching methods and ERDI course in Bioeconomy HUB;
- ✓ Increasing the quality of education processes in bioeconomy and dissemination of good practices;
- ✓ Equal opportunities in the quality of life of residents of rural areas.

## 8 Summary

ERDI strengthens regional development fostering the beneficiaries: students', teachers' and working life partners' multidisciplinary and international knowledge, networks and skills.

Undoubtedly, ERDI internationalises the education, fosters innovations and builds pathways between the stakeholders on different levels and regions. It should be highly appreciated that the ERDI idea is based on sharing the best practices, learning from each other, networking, finding innovative solutions and generating business models and further elaborating the shared expertise in a best possible way. The added value comes from the very systematic, cross-sectorial and transparent way of doing this.

The achieved concrete and measurable results raise the level of higher education and its labour market relevance leading to better graduate employability. ERDI provided new and easily applicable tools and deeper understanding with an international dimension to the bioeconomy business and regional development. Moreover, ERDI raises the possibilities to exploit the higher education's role in the development of societies and its contribution to the European prosperity.

As the ERDI consortium consists from varied regions with different social, political and industrial history there was a need to accept a large variety of approaches to achieving the goal. Despite the different regional situation, there are many similarities among the ERDI regions that could help the Partners to learn from each other and to improve their development through the mutual inspiration. On the other hand, the Partners could benefit from the diversity and create new innovative approaches and tools to promote practice-oriented and learner centred university-business co-operation. Undoubtedly, ERDI knowledge alliance approach increases the students, staff members' and business partners engagement into entrepreneurial activities. Furthermore, ERDI developed practises and tools to involve and invite more team members and actors in the co-creation processes both on regional and international levels and still spread the good practises wider.

The ERDI project is a valuable source of knowledge about the methods of educating students in bioeconomy. It provides specific curricula in this area. The proposed teaching methods can also facilitate the acquisition of transversal competences by students. In this context, the Project activities correspond with other Erasmus+ projects:

- ✓ ATC Erasmus+: The acceleration method of transversal competences in the students' practical training process – <http://www.atcerasmus.eu/>,
- ✓ ECMT+: Entrepreneurship and Communication in Multicultural Teams – <http://www.ecmt-plus.eu/>.

In terms of developing competences of the future, the cooperation between Partners of different projects could be beneficial, for example for the creation of a broad scientific network within Horizon 2020.

*The evaluation was carried out based on:*

- ✓ *experience and information from the ERDI - Final Seminar, 30<sup>th</sup> October 2018, Savonia University of Applied Sciences, Iisalmi, Finland,*
- ✓ *on-line consultations,*
- ✓ *the results posted on the Project website <http://erdiproject.eu> by the 7<sup>th</sup> of February 2019.*

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