

# ERA Chair in Sustainable Futures



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**1st Report of Research**

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<b>HISTORY OF CHANGES</b>			
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<b>V1.1</b>	12.03.2026	TLU	Version including contributions of the SustainERA research team members
<b>V1.2</b>	23.03.2026	TLU	Pre-final version reviewed by the SustainERA research team members
<b>V1.3</b>	30.03.2026	TLU	Final version submitted to the Funder

(\*) According to the section “Review and Submission of Deliverables” of the Project Handbook



## 1. Technical References

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<b>Project Coordinator</b>	Kai Pata

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<b>Task</b>	<p>Task 5.1. Analysis of knowledge, attitudes, and behaviour towards sustainability and non-growth</p> <p>Task 5.2. Measuring agency, trust, and personal responsibility</p> <p>Task 5.3. Analysis of sustainability and non-growth themed political communication and its relationship with individual level attitudes</p> <p>Task 5.4. Policy development study for governing sustainability transition</p> <p>Task 5.5. Investigation of the role of organisations in transition to a sustainable future</p> <p>Task 5.6. Development and implementation of population segment-specific incentives to affect sustainability-related knowledge, attitudes, and behaviour</p>
<b>Dissemination level*</b>	PU- Public



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<b>Contributor(s)</b>	<table border="1"> <thead> <tr> <th>Name</th> <th>ORCID ID</th> </tr> </thead> <tbody> <tr><td>Grete Arro</td><td>0000-0002-8825-8588</td></tr> <tr><td>Ruihan Bai</td><td>0009-0000-6023-1300</td></tr> <tr><td>Mari-Liis Jakobson</td><td>0000-0002-5524-0736</td></tr> <tr><td>Leif Kalev</td><td>0000-0002-5714-0966</td></tr> <tr><td>Halliki Kreinin</td><td>0000-0003-0095-8393</td></tr> <tr><td>Katrin Männik</td><td>0000-0001-9394-1579</td></tr> <tr><td>Dušan Pajović</td><td>0009-0004-5502-2861</td></tr> <tr><td>Kai Pata</td><td>0000-0002-8952-7698</td></tr> <tr><td>Tarmo Pikner</td><td>0000-0003-1270-3224</td></tr> <tr><td>Amy Shackelford</td><td>0009-0009-6705-3450</td></tr> <tr><td>Ayan Shamchiyeva</td><td>0009-0009-7746-8107</td></tr> <tr><td>Siret Talve</td><td>0000-0001-5059-8926</td></tr> <tr><td>Jaanus Terasmaa</td><td>0000-0002-1346-6411</td></tr> <tr><td>Kertu Vuks</td><td>0009-0001-6907-824X</td></tr> <tr><td>Terje Väljataga</td><td>0000-0001-8109-0674</td></tr> </tbody> </table>	Name	ORCID ID	Grete Arro	0000-0002-8825-8588	Ruihan Bai	0009-0000-6023-1300	Mari-Liis Jakobson	0000-0002-5524-0736	Leif Kalev	0000-0002-5714-0966	Halliki Kreinin	0000-0003-0095-8393	Katrin Männik	0000-0001-9394-1579	Dušan Pajović	0009-0004-5502-2861	Kai Pata	0000-0002-8952-7698	Tarmo Pikner	0000-0003-1270-3224	Amy Shackelford	0009-0009-6705-3450	Ayan Shamchiyeva	0009-0009-7746-8107	Siret Talve	0000-0001-5059-8926	Jaanus Terasmaa	0000-0002-1346-6411	Kertu Vuks	0009-0001-6907-824X	Terje Väljataga	0000-0001-8109-0674
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## 2. Table of Contents

<b>1. Technical References</b>	<b>3</b>
<b>2. Table of Contents</b>	<b>5</b>
<b>3. Introduction</b>	<b>6</b>
Executive Summary	7
Relation to Other Project Documents	8
Abbreviation List	8
Reference Documents	8
<b>4. General Research Aims</b>	<b>9</b>
Research Aim 1	9
Research Aim 2	9
Research Aim 3	9
<b>5. OpenLab Initiative</b>	<b>9</b>
<b>6. Research Progress</b>	<b>10</b>
<b>Research Area 1: Psychological and Behavioural Dimensions of Sustainability Transitions</b>	<b>12</b>
General Research Objectives	12
Task 5.1 Individual Characteristics and Behaviours in Sustainability Transitions	12
Research Objectives	12
OpenLab Objectives	13
Research Progress	14
Publications	14
OpenLab Outputs	14
Task 5.2 Agency, Trust, and Personal Responsibility in the Context of Sustainable Futures	14
Research Objectives	14
OpenLab Objectives	15
Research Progress	15
Publications	16
OpenLab Outputs	16
<b>Research Area 2: Political Communication and Policy Development in the Context of Sustainability Transitions</b>	<b>17</b>
General Research Objectives	17
OpenLab Objectives	17
Task 5.3 Political Communication and Attitudes	17
Research Objectives	18
Research Progress	18
Publications	18
OpenLab Outputs	18
Task 5.4 Policy Development for Governing Sustainability Transition	18
Research Objectives	18
Research Progress	18
Publications	19



OpenLab Outputs	19
<b>Research Area 3: Organisational Transitions to Sustainability</b>	<b>20</b>
General Research Objectives	20
OpenLab Objectives	20
Task 5.5a Organisational Transitions to Sustainability in Estonia: An ESG-Based Analysis	21
Research Objectives	21
Research Progress	21
Publications	22
OpenLab Outputs	22
Task 5.5b Sustainable Organisation and Ecosystems	22
Research Objectives	22
Research Progress	23
Publications	23
OpenLab Outputs	23
<b>Research Area 4: Spatial, Cultural, and Temporal Dimensions of Sustainability Transitions</b>	<b>24</b>
General Research Objectives	24
OpenLab Objectives	24
Task 5.6a The Role of Urban and Rural Contexts and Time Dimensions Related to Post-growth and Sustainability Transitions	24
Research Objectives	24
Research Progress	25
Publications	25
OpenLab Outputs	26
Task 5.6b The Role of Communities and Rural-Urban Contexts in Driving Sustainability Transitions	26
Research Objectives	26
Research Progress	26
Publications	26
OpenLab Outputs	26
Task 5.6c Advancing Sustainability Transitions in Rural Estonia through Circular Bioeconomy and ESG Integration	27
Research Objectives	27
Research Progress	27
OpenLab Outputs	28
<b>6. Research Implementation Plan</b>	<b>29</b>
Research Integrity and Ethics	29
Open Science and Open Data	29
Teamwork, Training, and Capacity Building	29
<b>7. Conclusion</b>	<b>31</b>



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### 3. Introduction

#### Executive Summary

Running from 2025 to 2029, the ERA Chair in Sustainable Futures (SustainERA) aims to combine high-level research with the development of innovative solutions to foster sustainable mindsets and practices. The project is supported by a €2.5 million grant from the European Commission's Horizon Europe ERA Chair initiative. ERA Chair grants are part of the Widening Participation and Spreading Excellence programme under Horizon Europe. They are designed to strengthen research excellence and capacity in so-called Widening Countries—regions of the EU with comparatively lower research performance. These grants enable research institutions in such regions to attract outstanding researchers and enhance their long-term competitiveness.

SustainERA has two main goals. First, to strengthen interdisciplinary research excellence, capacity, and capability at Tallinn University (TLU) by forming a high-level research group focused on sustainable futures and post-growth. Second, to establish an OpenLab for Sustainable Futures Research, fostering collaboration both within the TLU and with external private and public partners. The project will focus on sustainability education as a core intervention strategy, developing activities across all education levels.

SustainERA's research will focus on individuals as drivers of sustainability change, while also acknowledging the role of governments, educational institutions, political actors, companies, organisations, social networks, and the media in shaping individuals' mindsets and sustainability outcomes. The project will develop and implement strategies to enhance knowledge about sustainable futures while addressing barriers to value and behaviour change. Although SustainERA will primarily focus on Estonia, the project will integrate international and historical perspectives, ensuring that its research is placed in a broader comparative framework.

The present SustainERA First Research Report summarises the key research advances and results achieved during the first 14 months of the project. When reading the report, it is important to note that, out of the eight full-time research staff members planned for the project, three PhD students/junior research fellows joined in month (M) 9 (September 2025), one PhD student/junior research fellow and one postdoctoral research fellow in M13 (January 2026) and one postdoctoral research fellow in M14 (February 2026). The remaining two postdoctoral research fellows will join the project after the submission of the present report in M16 (April 2026) and M37 (January 2028), respectively.

Consequently, the research progress reported here reflects a period in which the project team was still being assembled, and much of the work was devoted to recruitment, setting up research frameworks and integrating new researchers into the project and their PhD studies. This context should be taken into account when evaluating the scope, pace, and outputs of the research activities during the first reporting period.

This report is due in M15 of the project (March 2026) and will be updated in M34 (October 2027) and M58 (October 2029).



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## Relation to Other Project Documents

D2.2: The ERA Chair Strategic Research Programme V1.5 (10th July 2025)

## Abbreviation List

DOA – date of appointment

ESG – environmental, social, and governance

EU – European Union

M – month

NGOs – non-governmental organisations

SME – small and medium-sized enterprises

SustainERA – ERA Chair in Sustainable Futures

TLU – Tallinn University

## Reference Documents

SustainERA (project no 101186958) grant agreement



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## 4. General Research Aims

SustainERA will combine high-level research with the development of innovative solutions to promote a sustainable mindset and practices. By integrating expertise from multiple disciplines and fostering international collaboration, the project also aims to enhance TLU's research excellence and capacity.

### Research Aim 1

To map and investigate public knowledge, attitudes, and behaviours related to the environment, sustainability, economic growth, and post-growth in Estonia and the wider Nordic-Baltic region. Key questions include: How do people understand concepts such as growth, post-growth, and sustainability? Do they prioritise economic growth over environmental concerns, and why do they favour one over the other? How concerned are they about climate change, and what are the reasons for their concern? Whom do they see as responsible? What sustainable behaviours have they already adopted or are willing to adopt? What are the perceived barriers or justifications for continuing unsustainable practices?

### Research Aim 2

To explore the individual and contextual factors that shape or influence sustainability-related knowledge, attitudes, and behaviours. While the primary focus will be on individuals, the research will also consider the roles of governments, organisations, and communities, whose actions (or inaction) may significantly affect individuals.

### Research Aim 3

To develop and implement targeted educational and behavioural interventions. These will promote sustainability knowledge and attitudes across population segments. We aim to cultivate competencies such as systems thinking, critical reflection, and agency. At the same time, we will address behavioural barriers, including habitual behaviours, lack of motivation or information, and structural constraints, through a systemic, multi-level approach.

## 5. OpenLab Initiative

One of the aims of the SustainERA project is to establish an OpenLab for Sustainable Futures Research, fostering collaboration both within TLU and with external private and public partners. The OpenLab functions as a research-driven participatory space, a platform for stakeholder engagement and capacity building, and a vehicle for dissemination and exploitation. From a research perspective, it is conceived as a methodological approach applied across all four research priority areas of the SustainERA project. The OpenLab actively engages stakeholders beyond academia – such as non-governmental organisations (NGOs), local authorities, and small and medium-sized enterprises (SMEs) – in the co-design and implementation of research and innovation activities. Research is conducted in real-world environments, including communities, schools, and urban or rural settings, rather than in traditional laboratory contexts.



## 6. Research Progress

These key research aims will be pursued through a series of distinct yet interrelated studies, as outlined in D2.2: The ERA Chair Strategic Research Programme V1.5. The research will focus on four broad areas, shaped by the interests and expertise of senior research team members working across the four schools of TLU. Table 1 presents the allocation of senior and junior research team members to the four research areas.

**Table 1: Allocation of Senior and Junior Personnel to Research Areas**

Task	School	Topic	Senior Staff	Junior Staff
<b>Research Area 1: Psychological and Behavioural Dimensions of Sustainability Transitions</b>				
5.1	Educational Sciences	Individual characteristics and behaviours in sustainability transitions	Prof Anu Realo Dr Grete Arro	Halliki Kreinin Postdoctoral Research Fellow DOA: 01.01.2026
5.2	Educational Sciences	Agency, trust, and personal responsibility in the context of sustainable futures	Prof Anu Realo Dr Grete Arro	Ruihan Bai PhD student DOA: 01.09.2025
<b>Research Area 2: Political Communication and Policy Development in the Context of Sustainability Transitions</b>				
5.3	Governance, Law and Society	Political communication and attitudes	Dr Mari-Liis Jakobson Prof Anu Realo	Postdoctoral Research Fellow  Expected DOA: 01.01.2028
5.4	Governance, Law and Society	Policy development for governing sustainability transition	Prof Leif Kalev Dr Tarmo Pikner	Kertu Vuks PhD student DOA: 01.09.2025
<b>Research Area 3: Organisational Transitions to Sustainability</b>				
5.5a	Natural Sciences and Health	Organisational transitions to sustainability in Estonia: An ESG-Based Analysis	Prof Jaanus Terasmaa Dr Grete Arro Dr Katrin Männik	Ayan Shamchiyeva PhD student DOA: 01.09.2025
5.5b	Natural Sciences and Health	Sustainable organisation and ecosystems	Prof Jaanus Terasmaa Dr Katrin Männik	Amy Shackelford Postdoctoral Research Fellow DOA: 01.02.2026
<b>Research Area 4: Spatial, Cultural, and Temporal Dimensions of Sustainability Transitions</b>				
5.6a	Humanities	The role of urban and rural contexts and time dimensions related to post-growth and sustainability transitions	Dr Tarmo Pikner Prof Kai Pata Dr Terje Väljataga	Dušan Pajovic PhD student DOA: 15.01.2026



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5.6b	Humanities	The role of communities and rural-urban contexts in driving sustainability transitions	Dr Tarmo Pikner Prof Kai Pata Dr Terje Väljataga	Paula Hild Postdoctoral Research Fellow  Expected DOA: 01.04.2026
5.6c	Educational Sciences	Advancing sustainability transitions in rural Estonia through circular bioeconomy and ESG integration	Dr Siret Talve Visiting Research Fellow DOA: 01.10.2025	Funded by the <a href="#">SekMo programme</a> , <a href="#">the Intersectoral Mobility Measure</a>



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## **Research Area 1: Psychological and Behavioural Dimensions of Sustainability Transitions**

### **General Research Objectives**

This research area will explore the psychological and behavioural dimensions of sustainability transitions in Estonia, situated within the broader Nordic-Baltic regional context. It will integrate two interrelated strands: the investigation of individual characteristics and behaviours linked to sustainability (Task 5.1), and the role of agency, responsibility, and trust in driving sustainable change (Task 5.2).

By integrating survey studies, focus groups, and experience-sampling methods, this research will generate actionable insights into the mechanisms that enable or hinder sustainability transitions at the individual level. The findings will support the development of more effective sustainability policies and interventions that align with public values and promote stronger civic engagement.

### **Task 5.1 Individual Characteristics and Behaviours in Sustainability Transitions**

**Team:** Dr Halliki Kreinin (Postdoctoral Research Fellow), period of appointment: M13 to M24 (January 2026 to December 2027) in collaboration with Prof Anu Realo and Dr Grete Arro

#### **Research Objectives**

The first objective is to examine individual-level factors—such as values, attitudes, knowledge, and competencies—that influence sustainable and post-growth-oriented behaviours. A systematic scoping review of existing research and datasets will lay the foundation for developing empirically grounded indicators and metrics. These will be used to assess progress toward sustainability goals, with particular attention to well-being, complex systems understanding, perceived social justice, and alternative development models (e.g., degrowth, postgrowth). Standardised evaluation tools will be created to monitor the effectiveness of governmental, organisational, and grassroots sustainability initiatives, focusing on how they shape public awareness and individual behavioural change.

Key integrated responsibilities include:

- Conduct a systematic scoping review of research literature and existing datasets on individual-level, sustainability-related characteristics and behaviours, including values, attitudes, knowledge, competencies, well-being, justice perceptions and systems understanding.
- Develop reliable indicators and metrics to measure change in these characteristics and behaviours, with explicit links to sustainability and post-growth goals.
- Develop standardised evaluation tools and protocols suitable for use across governmental, organisational and community-based initiatives.
- Lead the design, localisation and documentation of an Estonian Climate Puzzle as a research and evaluation instrument, aligned with the project's theoretical framework (individual determinants, agency within constraints and socio-technical contexts).



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- Coordinate the translation and cultural adaptation of the gameplay materials (instructions, descriptions of lifestyle options, response templates and facilitator guides), ensuring linguistic clarity and contextual relevance for Estonia.
- Adapt the set of lifestyle options and categories (e.g., food, housing, mobility, leisure) to the Estonian context, including the framing of options (e.g., accept/reject/already do/unable to do) to elicit motivations, barriers and enabling conditions (Vadovics et al., 2024).
- Define and document the logic for representing impact (e.g., “piece sizes” reflecting relative mitigation potential), including transparent assumptions and versioning procedures to ensure long-term usability, even when underlying estimates are updated (Vadovics et al., 2024).
- Develop participant- and researcher-facing data-capture templates (e.g., option selections, reasons for acceptance/rejection, recorded conditions for acceptance, and deliberation outputs) to support mixed-methods analysis; develop associated facilitation materials (Vadovics et al., 2024).

### OpenLab Objectives

The primary focus will be on developing a set of robust indicators and metrics that capture individual-level factors relevant to sustainable and post-growth-oriented behaviours, including values, attitudes, competencies, perceived well-being, and systems understanding. These indicators will be empirically grounded and validated through both conventional research methods and OpenLab activities. Together, they will form a core component of the OpenLab toolbox, providing researchers, educators, policymakers, and practitioners with standardized instruments for monitoring and evaluating the effectiveness of sustainability interventions and their impacts on individual awareness, attitudes, and behaviour.

Additionally, Task 5.1 will develop and coordinate an Estonian version of the DMat Climate Puzzle<sup>1</sup>, building on the board game approach used in previous research by Vadovics et al. (2024)<sup>2</sup> and adapted for the Estonian context for research and evaluation purposes. The Estonian Climate Puzzle will be an interactive tool designed to facilitate social learning and structured deliberation around lifestyle options, motivations, barriers, and the conditions under which low-carbon and post-growth transitions become acceptable.

Developed as a core OpenLab instrument of SustainERA, the Puzzle will bridge research, experimentation, and societal engagement. It will allow researchers, educators, policymakers, and practitioners to explore how individual-level characteristics—such as values, competencies, perceived fairness, and systems understanding—interact with structural constraints in shaping the acceptance of low-carbon and post-growth lifestyle options.

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<sup>1</sup> <https://d-mat.fi/en/what-we-do/climatepuzzle/>

<sup>2</sup> Vadovics, E., Luth Richter, J., Tornow, M., Ozcelik, N., Coscieme, L., Lettenmeier, M., et al. (2024). Preferences, enablers, and barriers for 1.5°C lifestyle options: Findings from Citizen Thinking Labs in five European Union countries. *Journal of Sustainable Development*, advance online publication, <https://doi.org/10.1080/15487733.2024.2375806>



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Embedded within the OpenLab framework, the Estonian Climate Puzzle will support participatory data collection, social learning, and iterative testing of sustainability interventions, while generating comparable qualitative and quantitative outputs that can inform both academic research and evidence-based policy design in Estonia and beyond.

### Research Progress

Data collection has been initiated, including the preparatory steps needed to operationalise and pilot the planned indicators and tools for assessing individual-level characteristics and behaviours relevant to sustainability transitions.

Tasks associated with producing the Estonian Climate Puzzle have also been initiated, including applying for additional funding from TLU and preparing a procurement agreement with DMat (the authors of the puzzle).

In parallel, Dr Halliki Kreinin is serving as the coordinator of a new EU TWINNING project application, GREEN-HEI, focused on sustainable career advice in higher education and developed in partnership with BOKU Vienna and the University of Eastern Finland. This is her first application as a project coordinator and is being undertaken within SustainERA's capacity-building framework for early-career researchers, with mentoring and institutional support from the SustainERA team, including Prof Kai Pata and Prof Anu Realo. The proposal-writing process also explicitly supports researcher development, involving the training of younger researchers in funding acquisition, including PhD student Dušan Pajović, who is receiving hands-on training in research proposal writing and related skills as part of this project.

### Publications

Kreinin, H. & Laksevics, K. (2026). *Structural conditions for working time reduction as an eco-social policy: Stakeholder assessments across European welfare regimes*. Sustainability: Science, Practice, Policy, manuscript under review.

### OpenLab Outputs

- Initiated the development of the Estonian Climate Puzzle as an OpenLab tool, including conceptual design, partnership building, and funding preparation.
- Established an initial framework of indicators and metrics to assess individual-level sustainability-related characteristics within the OpenLab.

## **Task 5.2 Agency, Trust, and Personal Responsibility in the Context of Sustainable Futures**

**Team:** Ruihan Bai (PhD student/Junior Research Fellow), period of appointment: M9 to M56 (September 2025 to August 2029) in collaboration with Prof Anu Realo and Dr Grete Arro

### Research Objectives

Task 5.2 seeks to address the overarching question of how individuals understand who should be responsible for sustainability challenges, and how these understandings relate to their perceived agency, trust, and willingness to engage in sustainable and post-growth-oriented behaviours.



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To address this question, Task 5.2 pursues three main objectives. First, it aims to clarify and operationalise the key concepts of personal responsibility, agency, and trust within a coherent analytical framework for sustainability and post-growth transitions. Second, it examines how individuals attribute responsibility for sustainability outcomes across different social actors—including themselves, communities, governments, and other relevant stakeholders—with particular attention to the Estonian context and the wider European Union. Third, through empirical investigation, Task 5.2 seeks to analyse the associations among individuals' responsibility attribution, trust, perceived agency, and engagement in sustainable behaviours.

To achieve these objectives, Task 5.2 will adopt a mixed-methods research design. Specifically, the study will combine quantitative approaches (survey-based studies and ecological momentary assessment), qualitative methods (focus group interviews), and, if needed, an optional psychological experiment to test specific mechanisms under controlled conditions.

### **OpenLab Objectives**

In Task 5.2, the OpenLab aims to translate emerging research findings into accessible, research-informed tools and formats that support individual and collective reflection on sustainability-related behaviour. Potential outputs may include, for example, self-assessment instruments that help individuals examine how they attribute responsibility for sustainability issues, and interactive workshop formats designed to surface less visible psychological barriers, such as limited perceived agency or externally driven motivation. Furthermore, research insights from Task 5.2 will be shared through established academic and public engagement channels, such as the three-minute lectures at TLU, contributing to research-based knowledge exchange and broader public reflection on sustainability transitions.

### **Research Progress**

During the first reporting period, research activities under Task 5.2 focused on establishing the conceptual and analytical foundations for subsequent empirical work. As a core outcome of this phase, an initial conceptual framework of personal responsibility was developed by Ruihan Bai, in close collaboration with Prof Anu Realo and Dr Grete Arro, outlining distinct levels and components through which individuals experience responsibility in sustainability-related contexts. In parallel, a preliminary process model was drafted to conceptualise the relationships among awareness, responsibility attribution, agency, and engagement in sustainable behaviour (Bai, Arro, & Realo, 2026). Ruihan Bai presented this work at the international conference “Universities as Change Agents in Sustainable Development,” organised by the Baltic University Programme (BUP) in Tallinn in March 2026.

Alongside this conceptual development, key constructs relevant to Task 5.2 were identified and clarified through an initial review of the literature, resulting in a set of working definitions intended to guide subsequent operationalisation and measurement. In addition, a mapping of relevant secondary datasets (European Values Study, World Values Survey, European Social Survey, Eurobarometer, Estonian Environmental Awareness Survey, SHARE, ISSP) was conducted by Ruihan Bai to assess their suitability for examining the key constructs and



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hypothesised relationships in the proposed model. This work will be presented as a poster at the “Wisdom Days: Science for Sustainability Transformations” conference at the University of Jyväskylä in May 2026, introducing both the conceptual framework and preliminary findings from the secondary data analysis.

Building on this groundwork, an initial implementation plan has been developed for the next phase of the project, including budget planning for survey design and qualitative data collection, as well as further refinement of the overall research design. Additional funding for a qualitative phase of the study involving focus groups has been secured from TLU.

### **Publications**

Bai, R., Arro, G., & Realo, A. (2026). *From awareness to action: A process model of personal responsibility in sustainability transformation*. Manuscript in preparation for a book based on presentations from the international conference “Universities as Change Agents in Sustainable Development.”

### **OpenLab Outputs**

Advancing as planned, outputs forthcoming.



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## **Research Area 2: Political Communication and Policy Development in the Context of Sustainability Transitions**

### **General Research Objectives**

This research area will explore the relationship between political communication, public attitudes, and policy development in the context of sustainability and post-growth transitions, with a particular focus on Estonia and the European Union. By integrating two interrelated strands—policy development (Task 5.4) and political communication (Task 5.3)—the project aims to provide a holistic understanding of how sustainability transitions are governed, communicated, and perceived across multiple levels of governance and society.

By connecting top-down processes of policy development with bottom-up processes of public meaning-making and political messaging, this project will reveal the feedback loops between political discourse, governance practices, and public perception. It will contribute valuable insights into what constitutes effective, democratic, and publicly supported sustainability governance, offering guidance for policymakers and communicators alike in designing and advocating for legitimate and impactful sustainability strategies.

### **OpenLab Objectives**

In the context of this research area, the OpenLab approach will serve as both a methodological and operational framework to bridge the gap between policymakers, political communicators, and the public.

In Tasks 5.3 and 5.4, the OpenLab will engage a wide array of stakeholders including national and local government officials, political parties, media professionals, and NGOs in the co-design of research activities. This participatory design will enable researchers to examine how political communication strategies and policy narratives are constructed, disseminated, and interpreted across societal groups. It will also foster collaborative reflection on the legitimacy, clarity, and resonance of policy messages related to sustainability and post-growth transitions. Public whitepapers will be developed during policy co-design events and shared on the OpenLab webpage.

Through continuous engagement with public/private sector stakeholders, the OpenLab will facilitate a two-way transfer of knowledge: researchers will inform policy and communication practices with empirical findings, while practitioners will shape the research agenda with their lived experiences and strategic needs. This reciprocal dynamic will help ensure that policy interventions are not only technically sound but also politically feasible and socially legitimate.

### **Task 5.3 Political Communication and Attitudes**

**Team:** Postdoctoral Research Fellow to be appointed for the period of M37 to M60 (January 2028 to December 2029) in collaboration with Dr Mari-Liis Jakobson and Prof Anu Realo



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## Research Objectives

The project will critically analyse how sustainability and post-growth are framed in political discourse by examining how key political actors position themselves across different policy domains through quantitative and qualitative analyses of media content, party and electoral manifestos, social media posts, and other relevant texts. It will investigate political actors' issue positions and ownership, including how these have evolved over time, and explore their discursive strategies through interviews with relevant stakeholders. Experimental approaches—such as survey-based studies—will further assess the impact of identified communication strategies on public attitudes, perceptions, and behavioural intentions, providing a comprehensive understanding of how political communication shapes engagement with sustainability and post-growth issues.

## Research Progress

This strand of research will commence in M37 (January 2028).

## Publications

N/A

## OpenLab Outputs

N/A

## Task 5.4 Policy Development for Governing Sustainability Transition

**Team:** Kertu Vuks (PhD student/Junior Research Fellow), period of appointment: M9 to M56 (September 2025 to August 2029) in collaboration with Prof Leif Kalev (main supervisor) and Dr Tarmo Pikner

## Research Objectives

On the policy side, the research will examine how EU sustainability regulations are shaped, interpreted, adapted, and implemented across different levels of governance in Estonia, with a particular focus on national and local policymakers. It will explore how European directives are translated into local contexts, how implementation processes and practices are understood and managed, and how tensions between EU-level goals and local needs are addressed. The study will analyse how policymakers' approaches align or conflict with the views of local governments, governance partners, communities, and citizens, while identifying effective and ineffective political and governance practices. Special emphasis will be placed on feasibility, legitimacy, and societal acceptance of sustainability policies, as well as on the role, agency, and democratic involvement of citizens and communities in co-governance and sustainability transitions within Estonia and the broader EU context.

## Research Progress

Kertu Vuks has been working on the first article of her doctoral thesis, "Development and implementation of European Union sustainability policies at different levels of governance: The Estonian example," and on collecting the necessary materials for it. The article examines how sustainability policy goals and discourses are shaped at the level of European institutions, such as the European Commission and the European Parliament, and the role played by Estonian representatives in these processes.



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The article is based on expert interviews. Accordingly, interview plans have been prepared on the basis of the research questions, and the first pilot interviews have been conducted to test the logic and suitability of the interview design.

All materials required for the ethics review have been prepared. The application to the TLU Ethics Committee was submitted in November 2025 and supplemented in February 2026. The theoretical section of the article is currently being written.

The abstract of the article was evaluated by the ECPR General Conference and has been accepted for inclusion in the programme. The conference will take place in September 2026 at Jagiellonian University in Poland.

### **Publications**

Progress underway, no publications to report yet.

### **OpenLab Outputs**

Advancing as planned, outputs forthcoming.



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## Research Area 3: Organisational Transitions to Sustainability

### General Research Objectives

This research area examines how organisations in Estonia transition toward sustainability through Environmental, Social, and Governance (ESG) frameworks, focusing on individual competencies, organisational structures and capacity-building, and the wider institutional ecosystem. By integrating insights from both private and public sectors—including higher education institutions—this research aims to identify drivers and barriers to effective ESG adoption, resource reduction, and sustainable production and consumption. It also seeks to develop practical, research-based tools to accelerate sustainability transitions across sectors.

With its dual focus on individual competencies and organisational ecosystems, the project will generate evidence-based insights to guide future ESG implementation strategies, enhance sustainability training in organisations, and support the broader goals of SustainERA by fostering meaningful behavioural change.

### OpenLab Objectives

In the context of Tasks 5.5a and 5.5b, the OpenLab methodology will serve both as a research framework and a collaborative platform for examining how organisations in Estonia transition toward sustainability. This approach enables real-world experimentation, participatory research design, and continuous feedback between academic and public/private sector stakeholders.

Unlike traditional research settings, the OpenLab embeds investigations directly into the day-to-day operations of organisations, including universities, SMEs, and NGOs. This in-situ research approach allows the team to observe, document, and analyse organisational change as it unfolds, identifying both visible and latent factors influencing ESG adoption, as well as capacity-building needs.

The OpenLab will also facilitate the co-design of ESG assessment tools, lifelong learning models, and competency-based training frameworks in collaboration with key organisational actors. These tools will be developed iteratively through workshops, prototyping sessions, and pilot implementations in selected sectors. They will form core components of the OpenLab Toolbox and serve as replicable models for broader dissemination and application.

Potential outputs may include short reflection briefs summarising recurring ESG reporting challenges and emerging practices under evolving EU requirements, as well as a simple benchmark-style checklist that organisations, such as companies and universities, can use for self-assessment and internal discussion. The work may also identify common capacity and skills needs associated with ESG implementation. Where feasible, these insights could be further discussed and refined through workshops with participating organisations.



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## **Task 5.5a Organisational Transitions to Sustainability in Estonia: An ESG-Based Analysis**

**Team:** Ayan Shamchiyeva (PhD student/Junior Research Fellow), period of appointment: M9 to M56 (September 2025 to August 2029), in collaboration with Prof Jaanus Terasmaa (main supervisor), Dr Grete Arro and Dr Katrin Männik

### **Research Objectives**

As ESG frameworks and sustainability reporting become the primary means by which organisations define and communicate “sustainability,” they are increasingly criticised for being ineffective and for encouraging greenwashing and box-ticking practices. In a polycrisis context, ESG frameworks often continue to assume economic growth and treat sustainability primarily as a performance or risk management issue, rather than as a biophysical limit.

Against this background, the main aim of this research is to examine how organisations in Estonia—and more broadly within the EU—deal with sustainability transitions through ESG frameworks and reporting under EU regulations such as CSRD/ESRS and related implementation guidance. The focus is primarily on large organisations across various sectors that publish sustainability or ESG reports, either publicly or internally, directly or at a group level.

The research has two interconnected layers. First, based on a literature review, it analyses major ESG frameworks and reporting standards to examine how they embed, reproduce, or challenge growth-oriented assumptions, and where they align with or contradict post-growth principles. From this synthesis, a benchmark of post-growth-aligned reporting elements is developed, which then informs the structure of the interview questions in the second stage.

Second, using semi-structured interviews and case studies, the research explores how companies in Estonia interpret and implement ESG requirements under ecological and social pressures. It investigates which organisational factors—such as incentives, governance, skills and capacity, regulation, and stakeholder pressures—enable or constrain organisations in navigating growth–sustainability tensions, and whether these drivers are primarily internal (intrinsic) or external (extrinsic). Simultaneously, the study assesses whether ESG reporting leads to real operational changes, creating a link with the OpenLab methodology.

Finally, by combining insights from the literature review (benchmark) and interviews/case studies, the research develops a conceptual framework that explains why business-as-usual ESG reporting persists, identifies factors that enable change, and outlines practical pathways for aligning ESG reporting more closely with post-growth principles.

### **Research Progress**

With a slight adjustment in the research direction of Ayan Shamchiyeva, the work to date has focused on exploring how post-growth and ESG frameworks can be integrated, as well as identifying their connections and gaps within the broader research landscape. An extensive literature review was conducted, and based on its findings, the research objectives have been refined. A clear set of research questions has now been drafted and is ready to guide



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the next stage of the project. In parallel, because these concepts are still relatively new and fragmented, the first paper will be a literature review, written jointly with the supervisors.

Ayan Shamchiyeva was accepted to two conferences to present her preliminary research this year. In June, she will present at the “12th International CSR, Sustainability, Ethics & Governance Conference” at Kemmy Business School, Ireland. In July, she will attend the conference “Looking for (the) Just Judges – Promoting Sustainable and Inclusive Well-Being in Turbulent Times,” organized by ESEE and the University of Ghent, Belgium.

### **Publications**

Progress underway, no publications to report yet.

### **OpenLab Outputs**

Advancing as planned, outputs forthcoming.

## **Task 5.5b Sustainable Organisation and Ecosystems**

**Team:** Dr Amy Shackelford (Postdoctoral Research Fellow), period of appointment: M14 to M37 (February 2026 to January 2028) in collaboration with Prof Jaanus Terasmaa and Dr Katrin Männik

### **Research Objectives**

This project examines how organisations—primarily universities in Estonia, with selected European comparator cases—transition toward sustainability through ESG frameworks. The study aims to identify key drivers and barriers to sustainability-oriented change within organisations using a multinational, comparative case study approach. Universities serve as the main empirical focus, with a limited number of private-sector cases included for transferability and benchmarking purposes.

Grounded in European sustainability and learning competence frameworks (e.g., GreenComp<sup>3</sup> and LifeComp<sup>4</sup>) and ecosocial indicators, the project explores how institutional-level ESG adoption translates into individual and interpersonal practices, values, strategies, and knowledge gaps across organisational roles and units. Case study analysis combines surveys, semi-structured interviews, document analysis, and key national and international data indexes, including the QS Sustainability Index and Times Higher Education rankings.

By investigating the potential tensions and opportunities between individual-level enablers and institutional-level practices, the project will develop and test flexible, lifelong learning models that support ESG-driven change at different stages of organisational development. These models will be co-designed and iteratively refined through OpenLab workshops with continuous stakeholder feedback, exploring how micro- and mezzo-level dynamics influence the broader institutional ecosystem, including partnerships. Models will initially be tailored to the university context, with modular adaptations for corporate environments and community

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[https://joint-research-centre.ec.europa.eu/greencomp-european-sustainability-competence-framework\\_en](https://joint-research-centre.ec.europa.eu/greencomp-european-sustainability-competence-framework_en)

<sup>4</sup> [https://joint-research-centre.ec.europa.eu/lifecomp\\_en](https://joint-research-centre.ec.europa.eu/lifecomp_en)



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stakeholders, providing actionable pathways for upskilling individuals and embedding sustainability more deeply into both personal and organisational praxis.

TLU will serve as a core case study, demonstrating how a large public institution can implement ESG principles and providing a basis for comparison with private- and third-sector cases where relevant. Insights from the study will contribute to the OpenLab toolbox. International networks, including EUCEN<sup>5</sup> and the BUP<sup>6</sup>, along with existing contacts, will support comparisons with other universities, facilitate further collaborations, and aid in disseminating the developed models across institutional ecosystems.

### Research Progress

Dr Katrin Männik in collaboration with Prof Kai Pata examined capacity-building practices in which universities act as partners to communities. This work was based on the development of the Circular Bioeconomy micro-qualification course with TLU students and focused both on capacity-building processes and on the development of students' green competences. One article (Männik & Pata, 2025) and a manuscript under review (Männik & Pata, 2026) have already resulted from this research.

### Publications

Männik, K., Pata, K. (2025). Advancing students' sustainability competences with capacity building course development. *European Journal of University Lifelong Learning*, 9, 13-24. © eucen, 2025. <https://doi.org/10.53807/0901BSI1>

Männik, K., & Pata, K. (2026). *The capacity building approach for sustainable development goals in higher education course development*. *Journal of Teacher Education for Sustainability*, manuscript under review.

### OpenLab Outputs

- In collaboration with the Environmental Awareness Cluster of TLU (KEKO2)<sup>7</sup>, Rohetiiger AS<sup>8</sup>, and the BioBackMan project<sup>9</sup>, a workshop on biobased and biodegradable packaging using the future wheel method was organised by Dr Katrin Männik, Prof Kai Pata and colleagues in March 2026. A key challenge identified is that legislation focuses heavily on plastic recycling, with little attention to biobased and biodegradable plastics. Resource and technology gaps for bioplastics remain, and raising awareness is both a significant challenge and a potential opportunity.
- Development of e-learning materials for micro-credential and other lifelong learning programmes within the Green Skills Programme, led by the Estonian Education and Youth Board and the Estonian Ministry of Education and Research, carried out by Dr Katrin Männik, Prof Kai Pata, Dr Terje Väljataga, and Dr Siret Talve.

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<sup>5</sup> <https://eucen.eu/>

<sup>6</sup> <https://www.uu.se/en/collaboration-innovation/the-baltic-university-programme>

<sup>7</sup> <https://www.exu.tlu.ee/keko-cluster>

<sup>8</sup> <https://rohetiiger.ee/?lang=en>

<sup>9</sup> <https://biopackman.eu/>



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## **Research Area 4: Spatial, Cultural, and Temporal Dimensions of Sustainability Transitions**

### **General Research Objectives**

This research project investigates how spatial, cultural, and temporal contexts—particularly those shaped by rural-urban dynamics and community-based actions—contribute to sustainability and post-growth transitions. By integrating the complementary strands of Task 5.6a and Task 5.6b, the project offers a comprehensive, interdisciplinary inquiry into how human relationships with nature, community, and time are being reimaged in the face of ecological and planetary challenges.

By integrating spatial, temporal, and emotional-cultural perspectives, the research aims to advance a deeper understanding of sustainability transitions and move beyond technological fixes or policy solutions. It will contribute to both academic discourse and practical transformation strategies by identifying scalable community models, analysing their impacts, and exploring how care- and commons-based approaches can support more just, resilient, and post-growth futures.

### **OpenLab Objectives**

The OpenLab methodology provides an adaptive research framework uniquely suited to exploring sustainability transitions within rural-urban contexts and community ecosystems. For Tasks 5.6a and 5.6b, the OpenLab will function both as a methodological platform and as a social infrastructure for engaging diverse communities, enabling in-depth, context-specific inquiry and the co-design of evidence-informed sustainability interventions.

Given the emphasis on post-growth imaginaries, anticipated futures, and alternative forms of living, the OpenLab will also function as a site for prototyping future scenarios. These may include small-scale experiments in communal food and energy systems, care economies, and commons-based resource management. The OpenLab will provide both the conceptual and practical infrastructure for designing, implementing, and evaluating these interventions in situ.

### **Task 5.6a The Role of Urban and Rural Contexts and Time Dimensions Related to Post-growth and Sustainability Transitions**

**Team:** Dušan Pajović (PhD student/Junior Research Fellow), period of appointment: M13 to M60 (January 2026 to December 2029) in collaboration with Dr Tarmo Pikner (main supervisor), Prof Kai Pata, and Dr Terje Väljataga

### **Research Objectives**

Focusing on both theoretical and empirical dimensions, the project will examine how different cultural and geographical settings shape discourses, practices, and imaginaries surrounding sustainable futures. Central to this inquiry are concepts of care, autonomy, commons, and anticipated futures, that is, frameworks that challenge linear, growth-oriented development models and foreground relational approaches to sustainability. Through multi-sited qualitative research (including ethnographic fieldwork, thematic case studies, and



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intervention-based assessments) the project will investigate how communities engage in climate change adaptation, environmental conservation, food and energy transitions, and alternative ways of living that reconceptualise human agency in the Anthropocene. It will also consider the temporal dimensions of transformation, exploring how historical experiences, cultural memory, temporal acceleration, and future anticipations influence community responses to sustainability challenges. This temporal lens provides insights into how past and future imaginaries shape present action, enabling a more nuanced understanding of deep transitions and their potential for long-term, culturally embedded change.

### Research Progress

As part of the research in 2025, Prof Kai Pata and Dr Tarmo Pikner, together with colleagues, analysed a previously collected interview dataset from three counties in South Estonia. This dataset focused on community resilience as influenced by cultural services. In 2024, interviews were conducted with village associations, public libraries, and cultural houses, which act as providers of cultural services within the resilience ecosystem. In 2025, a thematic analysis of this dataset was carried out as part of the present project, resulting in an article on the persistent resilience practices of rural libraries (Kasemets et al., 2026). Rural libraries, as key informal learning providers, are identified as potential actors in community transitions toward sustainability. Additionally, the dataset was analysed to explore values associated with community resilience and the interdependencies affecting the resilience of each community. This analysis is still in development but it will inform the planning of interviews and learning interventions aimed at sustainable futures under Task 5.6a, in collaboration with Dušan Pajović.

Secondly, Prof Kai Pata analysed data from two years of piloting (2023-2024) integrated formal-informal learning practices across universities and communities on sustainability education. The results will inform the design of learning interventions in communities, aiming to jointly enhance sustainability competencies among different stakeholders, empower agency, and build community resilience. This study emphasises the development of sustainability competencies as a form of individual agency among higher education students and women in the communities and identifies factors that facilitate joint capacity-building between universities and communities for sustainable development.

Finally, Dr Tarmo Pikner analysed interview data from coastal communities collected in 2024 to understand place-based values and public concerns regarding renewable energy transitions in the West-Estonian islands (Pikner, 2026a). Temporal aspects of sustainability transitions in coastal communities were also examined in the submitted book chapter to be published by Routledge (Pikner, 2026b). These publications provide a foundation for further PhD research and collaborative community-level engagement.

### Publications

Kasemets, K., Pikner, T., Pata, K., & Karu, K. (2026). Persistent resilience of rural branch libraries while adapting to structural reforms and community networks in Estonia. *Social & Cultural Geography*, 1–23. <https://doi.org/10.1080/14649365.2026.2626070>

Pikner, T. (2026a). Maritime bordering, wind energy, and anticipated futures. *Journal of Borderlands Studies*, 1-21. <https://doi.org/10.1080/08865655.2026.2613672>



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Pikner, T. (2026b). Timescapes, territorialisation of maritime, and (de)growth in turbulent crises: perspectives from an island. In: Moritz, A. and Palermo, G. (eds) *Blueish Entanglements and transformations: unfolding the geographies of wet spaces and their role for societal change*. Routledge.

### **OpenLab Outputs**

In partnership with KEK02, Prof Kai Pata and colleagues developed instruments for elaborating social value indicators. Previous datasets from research on community social and cultural resilience have also been analysed to identify values contributing to community resilience; these findings will inform the development of an interview tool for investigating sustainable transitions. Ethnographic fieldwork, qualitative interviews, and other immersive, participatory methods will form essential components of the OpenLab research repertoire for Task 5.6.

### **Task 5.6b The Role of Communities and Rural-Urban Contexts in Driving Sustainability Transitions**

**Team:** Dr Paula Hild (Postdoctoral Research Fellow), period of appointment: M16 to M39 (April 2026 to March 2028) in collaboration with Dr Tarmo Pikner, Prof Kai Pata, and Dr Terje Väljataga

### **Research Objectives**

This research will conduct empirical intervention studies to investigate transformative processes in communities, with a particular focus on rural areas and hybrid innovation ecosystems (e.g., technoparks). The interventions will be analysed across multiple dimensions, including interactions with nature, community well-being, evolving social structures, and cultural narratives. Special attention will be given to holistic sustainability approaches that integrate emotional, artistic, and cultural dimensions alongside economic and ecological factors. The study will also examine communities of practice and shared spaces that focus on the circular use of materials, as well as heritage and repair practices in both urban and rural contexts.

### **Research Progress**

This strand of research will commence in M16 (April 2026). The incoming Postdoctoral Research Fellow Dr Paula Hild, Prof Kai Pata, and Dr Tarmo Pikner organised an online meeting in January 2026 to discuss concrete case studies and potential interventions for the post-doctoral fellowship. The outcomes of this meeting will provide a strong foundation for post-doctoral research starting in April 2026.

### **Publications**

N/A

### **OpenLab Outputs**

N/A



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## **Task 5.6c Advancing Sustainability Transitions in Rural Estonia through Circular Bioeconomy and ESG Integration**

**Team:** Dr Siret Talve (Visiting Research Fellow), period of appointment: M10 to M33 (October 2025 to September 2027) in collaboration with Prof Kai Pata and Dr Katrin Männik

### **Research Objectives**

This research examines how to accelerate sustainability transitions in rural Estonia by advancing circular bioeconomy practices and integrating ESG factors and industrial symbiosis approaches. It focuses on identifying drivers and barriers across the public and private sectors, reducing resource use, and promoting sustainable production and consumption.

Estonia is relatively well endowed with bioresources and is expected to retain favourable production conditions despite climate change, yet much of its output remains low-value and minimally processed. National strategies emphasise the need to improve rural quality of life, diversify employment, and increase the added value of local bioresources. A key challenge is the limited use of bio-waste and by-products, making the development of a circular bioeconomy a priority.

Researchers led by Dr Tarmo Pikner and Prof Kai Pata at TLU developed a methodological framework in 2023 to support the emergence of regional circular bioeconomy networks. Within the current project, this framework will be expanded by explicitly integrating ESG principles and rural industrial symbiosis. ESG considerations—such as ethical sourcing, reduced environmental impact, and transparent supply chains—are essential for the long-term viability of biomass-based industries. Industrial symbiosis, where by-products from one actor serve as inputs for another, can significantly reduce material use and strengthen collaboration in rural areas, as illustrated by successful international examples such as Kalundborg in Denmark.

To facilitate the formation of such networks, nudging tools and a self-assessment questionnaire have been developed to help enterprises identify opportunities where industrial symbiosis could add value. The questionnaire will also serve as a tool for analysing case studies of both failures and successes in Estonia's circular bioeconomy.

### **Research Progress**

As part of this work, a microqualification course on Circular Bioeconomy Roadmapping under the Communities theme has been developed, planned for piloting with community members in Fall 2026. This course provides a potential data collection opportunity for community research, targeting stakeholders interested in circular bioeconomy transformations in their regions. Preparations have included advancing a toolbox of canvases for mapping three key value paths in the circular bioeconomy: economic value, social value, and ecosystem value. The existing collaboration canvases on circular bioeconomy value generation in the SustainERA toolbox have been further developed into three distinct canvases addressing ecosystem limits, social value mapping, and product lifecycle.



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### OpenLab Outputs

- In collaboration with KEKO2, Dr Katrin Männik, Prof Kai Pata and Dr Siret Talve organised a Circular Bioeconomy Development Seminar “From Challenges to Action” in October 2025. The seminar was conducted in cooperation with the Ministry of Regional Development and Agriculture, the Estonian University of Life Sciences, and the Pärnu County Development Centre. As part of the programme, a workshop was facilitated on mapping the social, economic and environmental dimensions of a company using the World Café method. The workshop applied this approach to the case of Mahlametsa OÜ.
- Dr Siret Talve with colleagues compiled and tested a self-assessment questionnaire for enterprises to help identify development opportunities from a sustainable circular bioeconomy perspective.
- Set of teaching materials for micro-credential curriculum on circular bioeconomy, developed by Dr Katrin Männik, Prof Kai Pata, Dr Terje Väljataga, and Dr Siret Talve.



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## 6. Research Implementation Plan

### Research Integrity and Ethics

As set out in the D2.2 ERA Chair Strategic Research Programme V1.5 (10 July 2025), the SustainERA project adheres to the highest standards of research integrity, following the principles of honesty, reliability, objectivity, impartiality, transparency, and accountability.

To support these principles, an introductory seminar on research ethics and the process of applying for ethics permission at Tallinn University was conducted by Prof Kai Pata on 6 October 2025.

### Open Science and Open Data

SustainERA is committed to contributing actively to Open Science by ensuring timely, transparent, and unrestricted access to research outputs and data, including the pre-registration of studies.

To strengthen this commitment, Prof Anu Realo delivered a talk to the research group on the fundamental principles of Open Science and its broader significance on 22 September 2025.

### Teamwork, Training, and Capacity Building

Since March 2025, the SustainERA research team has held monthly internal research seminars. These seminars function as a platform for training and capacity building for PhD students, postdoctoral fellows, and senior researchers, fostering collaboration across different schools and disciplines. Owing to the interdisciplinary nature of the team, the seminars have also created opportunities for members to deepen their understanding of each other's research fields. The seminars are planned to continue until the end of the project.

**Table 2:** Record of SustainERA Monthly Internal Research Seminars Held During the Reporting Period

Date	Title	Speaker
14 March 2025	<i>Some Thoughts on the Role of Personal Responsibility in Moving Towards a Sustainable Future</i>	Anu Realo
14 April 2025	<i>A Realm of Opportunities for Developing a Human-centered Green Policy</i>	Leif Kalev
6 May 2025	<i>Goal Contents Theory</i>	Grete Arro
22 September 2025	<i>Open Science: Principles, Practices, and Their Implementation in SustainERA</i>	Anu Realo
20 October 2025	<i>Planetary and Contested Landscapes in Green Transitions</i>	Tarmo Pikner
17 November 2025	<i>Practices and Values for Building Resilience in Communities</i>	Kai Pata



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15 December 2025	<i>Capacity Building in Sustainability Competences: Individual and Organisational Approaches</i>	Katrin Männik
26 January 2026	<i>Community Involvement in Water Monitoring: Citizen Science for a Sustainable Future</i>	Jaanus Terasmaa
2 March 2026	<i>The Challenges of Transitioning to a Degrowth Economy: Work and Consumption</i>	Halliki Kreinin
23 March 2026	<i>Circular Bioeconomy and Other Challenges for Sustainable Living</i>	Siret Talve



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## 7. Conclusion

Across all four research areas, the SustainERA Work Package 5 teams have made strong progress in developing conceptual foundations, preparing methodological tools, and initiating early empirical activities that will guide the next phases of the project.

Psychological and behavioural research has advanced key theoretical models and laid the groundwork for new instruments such as the Estonian Climate Puzzle. Policy- and communication-focused research strands have established necessary analytical frameworks and prepared the first empirical studies examining how sustainability is shaped and contested within political and governance systems in Estonia and the wider European Union context. Organisational research on ESG adoption has clarified research directions, completed extensive literature work, and begun the development of practical assessment and training tools. Community-based research has generated several early publications, strengthened methodological foundations for future intervention studies, and expanded the OpenLab toolbox with new instruments for analysing resilience, values, and social sustainability practices. The integration of circular bioeconomy and ESG principles has progressed through methodological development, seminar activities, and collaborative workshops with various internal (e.g., KEKO2) and external (e.g., Rohetiiger AS and the BioPackMan consortium) partners.

Collectively, these efforts demonstrate a strong and steadily advancing research programme. The conceptual, methodological, and collaborative foundations established during the first reporting period provide a strong basis for well-grounded empirical work in the coming years, ensuring that SustainERA continues to contribute high-quality, interdisciplinary, and societally relevant research on sustainability and post-growth transitions.