Interreg North Sea

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FREIIA

Høgskolen i Østfold

CONCEPT AND FRAMEWORK FOR THE TRAINING MODULE

TRAINING MODULE

STUDENT ENTREPRENEURSHIP

REPORT 1.

WP4 .2

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EXECUTIVE SUMMARY

Work Package 4 (WP4) of the FREIIA project works to strengthen student-driven sustainable entrepreneurship across European island communities. Through fieldwork, interviews, co-creation workshops, and AI-supported qualitative analysis, students collaborate with local stakeholders to identify challenges, explore opportunities, and co-develop solutions that contribute to sustainability transitions.

This first report in the WP4.2 Training Module series establishes the conceptual foundation for a learning framework focused on sustainable and circular entrepreneurship. It introduces the theoretical and practical principles that underpin the module, including sustainable entrepreneurship, circular economy concepts, and the use of islands as learning arenas and living labs.

The training module translates insights from WP4 into a structured Input → Process → Output model. It brings together theory, practical fieldwork, qualitative methods, AI-based insight development, and design thinking in a coherent learning process adapted to small and isolated communities.
The report also clarifies how the training module supports FREIIA's wider governance model. It acts as an idea generator for WP1, a practice-oriented testbed for WP2, a data and concept source for WP3, and the central educational mechanism within WP4.

The insights presented here form the foundation for the next report, which will focus on methodology and learning design. Together, these reports will contribute to a comprehensive training module that strengthens innovation capacity, collaboration, and sustainable development across the FREIIA islands.

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FREIIA Fostering Student Entrepreneurship WP4

Work Package 4 (WP4) of the FREIIA project focuses on strengthening student-driven sustainable entrepreneurship across European island communities. WP4 brings together students, researchers, educators, and local stakeholders in a collaborative process where real community challenges become learning arenas for innovation.

In WP4, the islands function as living laboratories, offering unique environments where students can explore sustainability transitions in real time and engage directly with community needs.
Through field visits, interviews, co-creation workshops, and qualitative analysis, WP4 enables students to explore local needs, identify opportunities, and co-develop solutions that support sustainability transitions. The work carried out in WP4 contributes directly to FREIIA's broader ambition of enhancing innovation capacity in isolated and fragile communities by integrating circular economy principles, participatory governance, and place-based learning.

WP4 demonstrates how students can play an active role in shaping resilient futures for island societies, not only by generating ideas, but by facilitating dialogue, bridging sectors, and helping communities work towards long-term sustainability.

Figure 1 - Students and Stakeholder engaging in a Co-Creation Workshop during WP4 Field Activities.

CONCEPT AND FRAMEWORK FOR THE TRAINING MODULE

This report is the first of five reports written to address **Work Package 4 – Activity 2 (Training Module: Student Entrepreneurship).**
Together, these reports aim to contribute to the development of a training module that describes how an educational and learning framework on sustainable and circular (CE) entrepreneurship is developed and integrated into the project's overall governance of innovation approach.

Definition – Training Module

A training module is a structured educational framework designed to develop specific skills, knowledge, and competencies within a defined thematic area. In the context of the FREIIA project, the training module focuses on sustainable and circular entrepreneurship, combining theoretical understanding with practical, case-based learning. It provides students and stakeholders with tools and methods to co-create innovative solutions that support green transition, regional development, and long-term sustainability.

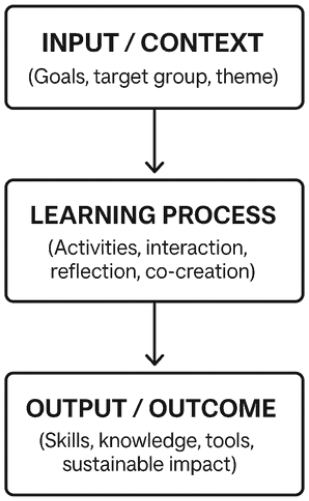


Figure 2 - Visual representation of the Training Module Structure

Introduction to the Report

The purpose of this report is to establish the conceptual foundation for a training module on sustainable and circular (CE) entrepreneurship. The report outlines the core ideas, goals, and framework elements that will guide the development of the full learning module. It connects the findings from WP4 with FREIIA's broader governance-of-innovation approach and forms the basis for the subsequent reports on methodology, case-based learning, evaluation, and implementation.

Theoretical & Conceptual Foundations

What characterizes Sustainable Entrepreneurship? Sustainable entrepreneurship is about creating and developing new ventures, products, or services that both solve an environmental or social problem and remain economically viable in the long term. It is entrepreneurship that simultaneously considers planet, people, and profit (the triple bottom line).
Key characteristics include a focus on environmental considerations, social value, economic sustainability, innovation, and a long-term perspective.
In the FREIIA project, students have developed solutions intended to be economically feasible, strengthen local communities, and reduce climate impact. These are classic examples of sustainable innovation in practice.

What is Circular Entrepreneurship? Circular entrepreneurship, on the other hand, involves starting and running businesses based on the principles of the circular economy. This means that entrepreneurs create value through solutions that minimize waste, maximize resource efficiency, and keep products and materials in circulation for as long as possible.

Circular entrepreneurship typically builds on four core ideas: extending product lifespans (repair, maintenance, upgrades, redesign, and design for durability), reuse and sharing (rental, sharing solutions, or second-hand sales), material recovery and recycling (using by-products, waste, or recycled materials in new products/services), and service-based business models (product-as-a-service).

It is entrepreneurship because new products, services, or entire business models are created that break away from the linear "take – make – waste" system.

For the islands in the FREIIA project, this is highly relevant. Due to resource scarcity, transportation costs, and seasonal industries, circular solutions become especially important. They strengthen local value creation, sustainability, and resilience.

Why islands are suited as learning arenas/living labs? Using islands as learning arenas or living labs is particularly effective because islands function as natural, manageable, and complex "mini-societies." They are small enough for practical testing, yet large enough for the results to be real and meaningful.

An island has natural physical boundaries, making it easier to understand the entire system (economy, transport, energy, waste, and tourism) while also enabling the testing of interventions without external factors disrupting the process. This allows for close observation of innovation effects—ideal for research, student projects, and pilot initiatives.

Islands often face resource constraints, seasonal variations such as tourism, transportation challenges, and vulnerability to climate change, which makes problems and opportunities highly visible, and solutions can be designed in a targeted way.

Island communities often have a strong local identity, cohesive networks, close collaboration between actors, and a high degree of participation and ownership. This makes it easier to co-create, test ideas, and receive immediate feedback.

Islands offer a unique opportunity to test circular solutions, local energy production, green mobility, social innovation, and tourism innovations. Because the ecosystem is small and contained, it becomes possible to quickly see whether an idea actually works in practice.

Even though islands are small, they mirror many global challenges such as limited resources, climate pressures, tourism strain, and the need for local value creation. Therefore, insights from island living labs can be scaled to larger regions and cities.

Living labs are about testing in real-life conditions, and on islands, one can test prototypes, simulate system changes, involve citizens and businesses directly, and fail—safely and visibly. This is unique compared to bigger cities, where experimentation is harder to isolate.
In FREIIA, island-based living labs have allowed students to encounter real challenges, work with real stakeholders, see the consequences of their proposals, and learn project management, innovation, and collaboration in practice. The islands have thus become living classrooms.

Innovation Governance; The three questions above (What characterizes sustainable entrepreneurship? What does circular entrepreneurship entail? Why are islands suited as learning arenas/living labs?) are closely interconnected and can be understood as three levels within innovation governance.
Sustainable entrepreneurship sets the overall direction of the innovation process by emphasizing economic viability combined with environmental and social sustainability. Circular entrepreneurship functions as a methodological framework that operationalizes this direction through circular business models, resource optimization, and systems-oriented thinking.
Islands as learning arenas or living labs represent the practice field where such methods can be tested, further developed, and co-created within a bounded, complex, and real innovation ecosystem.
Together, these three perspectives demonstrate how innovation governance is about linking goals, methods, and arenas in order to develop and validate sustainable solutions in a real-world context.

Figure 3 - The three core perspectives shaping FREIIA's innovation governance: sustainable entrepreneurship, circular entrepreneurship, and island living labs.

Purpose of the Training Module

The purpose of the training module is to develop a structured and practice-oriented learning framework that prepares students, educators, and island stakeholders to work systematically with sustainable and circular entrepreneurship in small and isolated local communities. The module is designed to translate the insights from WP4 into a practical and transferable learning framework that enables future student groups or others to contribute to local development in a relevant and value-creating way.

The module responds to a clear need that recurs across all the FREIIA islands: the need for young, informed, and engaged actors who can facilitate collaboration, identify innovation gaps, and co-create solutions. By basing the module on real cases from the islands, it enables experience-based learning where theory, practice, and local collaboration can be connected.

Target Groups

The module is aimed at:

- Students within innovation, entrepreneurship, sustainability, and related fields
- Educators and academic staff who lead or facilitate development processes with students
- Local actors, including municipalities, businesses, organisations, and civil society who collaborate with the students

Additionally, the module is designed to be transferable and can be adapted for use in other island contexts, small communities, and educational environments beyond the FREIIA project.

Why the Module is Needed

The work in WP4 has revealed several recurring structural challenges across all six islands, including housing, demography, seasonal economies, limited collaboration, and tensions between preservation and development. These are complex, so-called “wicked problems” that require new competencies, collaboration arenas, and new forms of innovation governance.

The module addresses these needs by giving students the ability to identify innovation gaps through structured qualitative methods, skills to engage and collaborate with stakeholders in co-creation processes, competence in sustainable and circular entrepreneurship, a practical understanding of innovation governance in small communities, and experience using digital tools and AI-supported analysis.

Intended Outcomes

After completing the module, students will be able to:

- Understand and apply principles of sustainable and circular entrepreneurship in real situations
- Conduct fieldwork and qualitative analyses using the UNIC method
- Use AI tools for pattern recognition, insight development, and problem formulation
- Facilitate or actively participate in co-creation workshops based on the Double Diamond and design thinking
- Develop proposals, concepts, or student-driven initiatives that are adapted to local needs
- Contribute to local governance and innovation processes through knowledge-based input

Learning Objectives

Knowledge: Understand the theoretical foundations of sustainable and circular entrepreneurship and have insight into how islands can function as learning arenas and living labs within innovation governance.

Skills: Identify and analyse innovation gaps in local communities, apply qualitative methods, AI analysis, and co-creation tools, as well as develop solution proposals based on sustainability principles and local context.

General Competence: Collaborate across sectors, cultures, and academic fields. Contribute to co-creation and dialogue in local development processes, and reflect critically on the role young entrepreneurs play in sustainable transitions.

Framework Structure

The training module is built on a simple and transferable model that mirrors the structure of FREIIA WP4 and the pedagogical logic behind student-driven entrepreneurship. The framework follows an Input → Process → Outputstructure, ensuring that learning builds on real context, active engagement, and measurable outcomes.

Input/Context

This component defines the foundation for the module and ensures that students enter the process with a clear understanding of goals, expectations, and local needs.

Includes:

Module Goals: Students learn to apply sustainable and circular entrepreneurship principles, conduct fieldwork, use AI in qualitative research, and create context-sensitive solutions.

Target Group: Students across disciplines working with innovation, sustainability, entrepreneurship, governance, and local development.

Local Context & Needs: Each island (or case community) provides real challenges related to housing, seasonal economy, collaboration gaps, youth retention, and environmental regulation.
Tools & Methods Provided: UNIC method, semi-structured interviews, design thinking, Double Diamond, AI-assisted analysis, stakeholder mapping, co-creation tools.

This prepares students to enter fieldwork with a shared understanding of both theory and the local realities they will be working with.

Learning Process

The learning process is action-oriented, iterative, and rooted in experiential learning. It integrates fieldwork, stakeholder dialogue, AI-supported analysis, and collaborative workshops.

Core Elements:

Fieldwork & Data Collection (Discover)

Students conduct semi-structured interviews with stakeholders.
They observe local dynamics, identify innovation gaps, and document challenges.
Uses UNIC-methodology for structured insight gathering.

AI-Supported Analysis (Define)

Students upload interview transcripts to an AI tool (e.g., Custom GPT).
The tool identifies themes, patterns, and challenges based on grounded theory logic.
Students validate findings through a Problem Framing Session to ensure ownership and nuance.

Co-Creation Workshops (Develop)

Students work with local actors to ideate solutions.
They use design thinking techniques (ideation, clustering, sketching).
Stakeholders bring lived experience; students bring creative methods.

Prototyping & Pitching (Deliver)

Students develop prototypes or concept drafts.
They pitch solutions back to stakeholders for feedback.
The goal is not final implementation but strengthened local development capacity.

This process ensures that learning is practical, collaborative, iterative, and deeply rooted in real challenges.

Output/Outcomes

The module results in both *tangible outputs* and *student learning outcomes*, aligned with the module's academic and practical aims.

Tangible Outputs

- Innovation Gap Map; A synthesized overview of key challenges in the community.
- Problem Statements; Clear formulations ready for co-creation and solution development.
- Workshop Solutions; Concepts that can be further developed and implemented.
- Student Venture Proposal; Structured proposals.

Student Outcomes

- Ability to apply sustainable and circular entrepreneurship frameworks.
- Skills in qualitative fieldwork, interview techniques, and AI-supported analysis.
- Competencies in facilitation, co-creation, prototyping, and cross-sector collaboration.
- Development of critical reflection regarding governance, youth participation, innovation barriers, and local capacity building.

This structure ensures that student work contributes to both their professional development and the local community's long-term resilience.

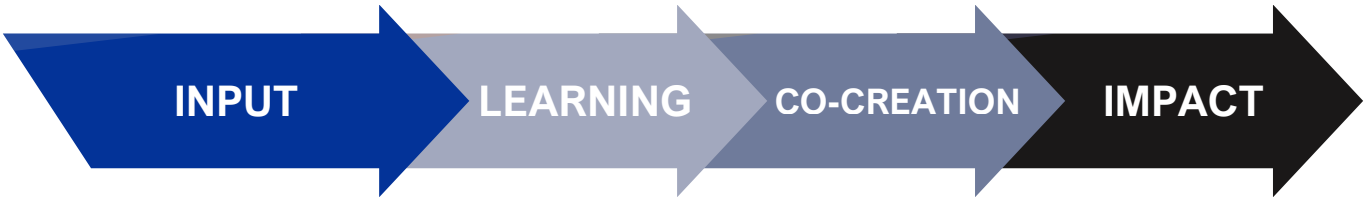


Figure 4 - The training module's process flow from input to learning, co-creation, and impact.

Connection to the FREIIA Governance Model

This chapter explains how the training module is integrated into FREIIA's overall governance model, and how the student learning process supports and strengthens the five work packages in the project. The module is not an isolated educational activity; it is a central operational tool for developing and implementing the FREIIA governance framework.

WP1 → Tipping Mechanism; Idea-triggering tool

Work Package Objective (project level)

WP1 develops and tests a mechanism for the formulation of creative innovation ideas for local and regional governments, guiding and fostering sustainable innovations from a mission-based perspective.

How the training module contributes

Within this module, students:

Learn to identify innovation gaps and potentials in island communities that can be translated into mission-oriented innovation ideas.

Work with local and regional actors (municipalities, DMO, NGOs) to formulate concrete suggestions for sustainable and circular solutions.

Use qualitative fieldwork and AI-supported analysis to uncover patterns, needs, and "tipping points" that can feed into WP1's mechanism.

Produce concise recommendations and concept ideas that local governments can integrate into their innovation and transition policies.

In this way, the module functions as an "idea generator" and testing arena for the Tipping Mechanism in real island settings.

WP2 → Rudder Method; Strategy and governance tool

Work Package Objective (project level)

In WP2, an expert-based method for advanced governance of sustainable innovations, interventions, and learning is developed, resulting in strategic innovation action plans.

How the training module contributes

Through the module, students:

Are introduced to core principles of transition governance and the Rudder Method as a steering and coordination tool.

Map relevant stakeholders (public authorities, tourism actors, civil society, residents, tourists) and analyse their roles in governance processes.

Co-create ideas and actions that can be integrated into local strategic innovation plans on the islands.

Experiment with how digital tools, living labs and cross-border student teams can support advanced governance of sustainable innovations.

The module provides practice-based input to the Rudder Method and gives local governments concrete examples of how the approach can be applied in tourism-driven island contexts.

WP3 → Engaging Tourists in Islands Innovation

Work Package Objective (project level)

WP3 focuses on the proactive engagement of the wider tourism community in the governance of innovation processes, using online connectivity concepts and island nature-based innovations as sources of inspiration.

How the training module contributes

In this module, students:

Explore how tourists and visitors can be involved as active contributors to sustainable transition, not only as consumers.

Design and test concepts where tourism, nature-based experiences, and local communities are connected through digital platforms, events, and learning activities.

Collect data from tourists, local businesses, and residents to understand motivations, barriers, and opportunities for engagement.

Contribute to concepts that can be used in the winterschool and other outreach activities targeting tourists and communities.

The training module therefore operationalises WP3 by letting students prototype and analyse concrete ways of engaging tourists in island innovation processes.

WP4 → Fostering Student Entrepreneurship; Core Function

The training module is anchored in WP4, which is responsible for developing methods, arenas, and processes where students act as young entrepreneurs and innovation agents in the island communities.

Work Package Objective (project level)

WP4 aims to foster the contribution of entrepreneurship students to strategic island governance of innovation plans, strengthening their role in the FREIIA circular economy transition approach. Communication is boosted through young student groups from different universities working with the five islands, bringing new initiatives and a large network.

How the training module contributes

The module is the core educational instrument of WP4 by:

Enabling students to work as young entrepreneurs and change agents in real island communities

Building competence in sustainable and circular entrepreneurship, qualitative methods, AI-supported analysis, and co-creation tools

Structuring the fieldwork, workshops, and innovation processes that involve student groups across partner universities

Producing student ventures, concepts, and recommendations that feed into island governance, circular tourism strategies, and local development processes

In practice, the module transforms the general intention of "fostering student entrepreneurship" into a concrete, replicable teaching and learning design.

Summary – Holistic Integration

The training module functions as:
- An idea and insight generator for WP1
- A practical testbed for WP2
- A data source and concept lab for WP3
- The central engine of WP4

Figure 5 - Key roles of the training module in the FREIIA work packages.

Together, this ensures that student-driven entrepreneurship is fully integrated into the FREIIA project and strengthens a coherent, practice-based innovation system across the islands.

Implications and Recommendations

This report has mainly focused on insights from WP4 activities and on developing an overall framework for the training module *Student Entrepreneurship*. The findings have clear implications for how the module should be designed pedagogically and methodologically, which will be further elaborated in Report 2. This chapter summarises the key implications and outlines recommendations that directly feed into the development of the module's methodology and learning design.

Implications for Further Work

The analysis shows that:
- The challenges and opportunities identified across the islands require a structured learning process where students work with real cases, engage in co-creation, and reflect systematically on their role in sustainable transitions.
- There is a need for a coherent workshop methodology that combines fieldwork, qualitative analysis, design thinking and elements of systems innovation, rather than isolated activities.
- The learning outcomes observed in WP4 point to the importance of practical, experience-based learning, supported by reflection, group processes, and guided facilitation.
- The roles of students, supervisors, local actors and project partners must be more clearly defined to ensure ownership, continuity and mutual expectations in future iterations of the module.
- Digital tools, including AI-supported analysis, have strong potential to enhance learning and insight development, but must be embedded in a clear pedagogical structure and supported by guidance on ethical and critical use.

These implications highlight the need for a dedicated report that focuses specifically on methodology and learning design for the training module.

Recommendations for Next Steps

Based on these implications, the following recommendations are made for the next phase:

1. Develop a coherent workshop methodology

Design a step-by-step workshop structure that integrates:
- preparatory work (context, goals, roles)
- fieldwork and data collection in local communities
- collaborative analysis (including AI-supported tools where relevant)
- concept development using design thinking and system innovation perspectives
- evaluation and reflection sessions.

2. Strengthen practice-based and reflective learning

The module should emphasise:
- learning-by-doing in real-life contexts
- structured individual and group reflection (before, during and after field activities)
- explicit links between experience, theory and action.

3. Clarify and formalise roles in the learning process

Define clear role descriptions for:
- students as active co-creators and entrepreneurs-in-training
- supervisors/teachers as facilitators, coaches and boundary-spanners
- local actors and project partners as case owners, knowledge providers and co-designers.

4. Integrate digital and AI tools into the learning design

Specify how digital platforms and AI-supported qualitative analysis should:
- be introduced to students
- support data handling, pattern recognition and problem framing
- be critically assessed and validated as part of the learning activities.

5. *Use concrete WP4 examples as core learning cases*

Select and further develop a set of cases from WP4 (e.g. Koster, Hvaler, Groix, Ouessant, Schiermonnikoog, Bornholm) to:
- illustrate the different steps in the methodology
- show how students worked with local challenges
- demonstrate collaboration between students, local stakeholders and partners.

Foundation for Report 2: Methodology and Learning Design

Report 2 will build directly on the implications and recommendations outlined above. It will focus specifically on:

How the module content is constructed, including:
- workshop methodology
- use of design thinking and elements of system innovation
- integration of fieldwork, analysis and concept development.

The pedagogical design of the module, including:
- practical, experience-based learning activities
- reflection structures (individual and group)
- group processes and collaboration formats
- use of digital tools and platforms.

Roles and responsibilities, detailing:
- the role of students
- the role of supervisors and academic staff
- the role of local actors and project partners in the learning process.

Examples from WP4 activities, which will:
- illustrate how the methodology has been tested in practice
- show concrete learning situations and workshop formats
- provide templates and examples that can be reused in future courses and projects.

In this way, Report 2 will translate the insights and framework from the present report into a *concrete methodology and learning design* for the Training Module: Student Entrepreneurship, making it ready for implementation and further adaptation within the FREIIA project.

Conclusion

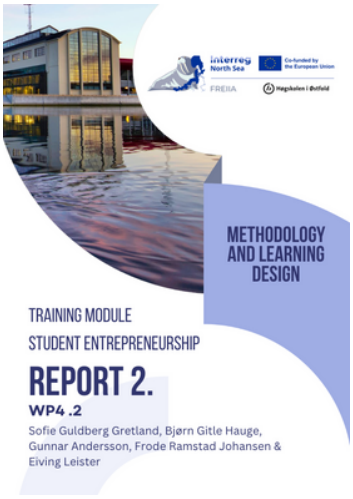
This concept presents a holistic and practice-oriented training module for student-driven entrepreneurship within the FREIIA project. The module is designed to give students an active role in innovation governance while contributing to real value creation in small island communities. It combines fieldwork, qualitative methods, AI-supported analysis, design thinking, and co-creation, in a format that is scalable, transferable, and firmly rooted in sustainable development.

The concept is important because it addresses a clear need in FREIIA: integrating students not merely as participants, but as co-creators in development processes that influence governance, collaboration, and local capacity for action. Through this module, both local anchoring and innovation capacity are strengthened, enabling the development of solutions that consider social, economic, and environmental sustainability. It builds a bridge between academia, public actors, and local communities, a prerequisite for successful societal innovation in isolated island contexts.

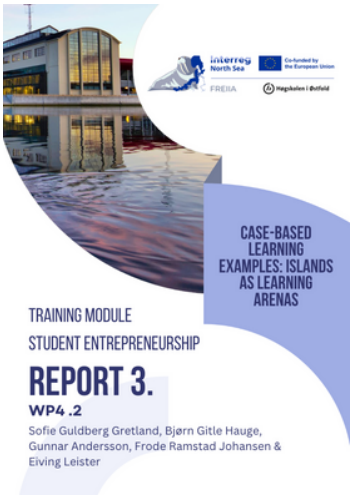
The module also provides a solid foundation for the upcoming WP4 reports. In particular, the insights here directly inform Report 2, which will elaborate on methodology and learning design. While this first report clarifies why a structured training approach is needed, what processes work, which student roles are effective, and what framework conditions must be in place, Report 2 will expand on these elements by detailing workshop methodology, system innovation tools, pedagogical strategies, and the interaction between students, mentors, and local stakeholders.

Together, these reports form a robust framework for how student-driven entrepreneurship can be integrated into innovation governance, both within FREIIA and in future projects.

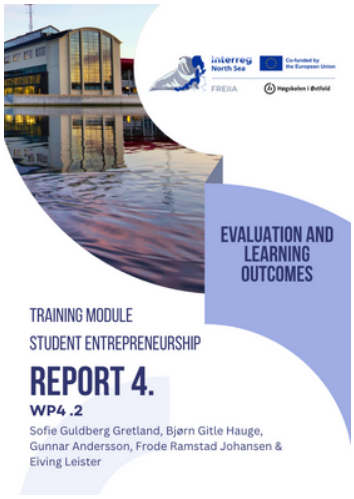
Structure of the Remaining Reports



METHODOLOGY AND LEARNING DESIGN



CASE-BASED LEARNING EXAMPLES: ISLANDS AS LEARNING ARENAS



EVALUATION AND LEARNING OUTCOMES

INTEGRATION AND FUTURE IMPLEMENTATION