

## **Student Sustainable Entrepreneurship in Action: Design thinking and Co-Creation on Groix, France as a part of the INTERREG FREIIA Project**

Jenny Louise Helt<sup>a</sup>, Patrick Kakis Gabrielsen<sup>a</sup>, Sofie Guldborg Gretland<sup>a</sup>, Gunnar Andersson<sup>a</sup>, Per Walter<sup>a</sup>, Bjørn Gitle Hauge<sup>a</sup>

<sup>a</sup>Department of Engineering, Østfold University College, Fredrikstad, Norway

### **Abstract**

*FREIIA, Facilitating Resilience Embracing Islands Innovation, is a INTERREG project financed by the European Union running from 1. October 2022 until 31. December 2025. The project consists of 14 partners from 6 countries, Netherlands, Denmark, Sweden, Germany, France and Norway.*

*The aim of this project is to help 6 island communities in the European Union to create competences, capabilities & structures that support the public sector in becoming successful in the green transition, through the involvement of community, young entrepreneurs and students.*

*Østfold University College is responsible for Work Package 4 (WP4), which focuses on fostering student entrepreneurship. The main objective of WP4 is to integrate entrepreneurship students into the strategic governance of island innovation, strengthening their role in green transitions. When referring to the FREIIA project in this paper, it refers to WP4 of the FREIIA project.*

*In the first phase of this project, we identified innovation gaps on the island of Koster Sweden, through semi-structured interviews with stakeholders from the public, private, and civil sectors. This paper presents the next phase of the project, which uses design thinking and the double diamond framework to co-create solutions to the identified challenges through a workshop.*



Figure 1, Students with local stakeholders participating in the workshop

## Groix

Île de 'Groix is an island off the coast of Brittany, France, in the Atlantic Ocean. It is located approximately 5 km from the mainland town of Lorient and covers an area of around 15 km<sup>2</sup>. The island is known for its unique geological formations, including the rare, red-colored sand of Plage des Sables Rouges, as well as its rich maritime history.

In 2023, Groix had a permanent population of around 2,200 residents, but this number increases significantly during the summer months due to seasonal tourism. The island's economy is primarily based on summer tourism, fishing, and small-scale agriculture. Historically, Groix was known for its tuna fishing industry, which played a crucial role in its cultural and economic development.

Tourists are drawn to Groix for its untouched natural landscapes, scenic coastal trails, and opportunities for outdoor activities such as cycling, hiking, and sailing. The island also has a protected nature reserve that supports a rich variety of wildlife and plant species, making it a popular destination for nature enthusiasts. Groix is accessible by ferry from Lorient, a journey that takes approximately 45 minutes. Cars are allowed on the island, but many visitors choose to explore it on foot or by bicycle to fully experience its natural beauty.



Figure 2, Île de 'Groix

In recent years, discussions around sustainable tourism and environmental conservation have become increasingly important for the island community. Local authorities and residents are working together to find a balance between economic growth and the preservation of Groix's unique natural and cultural heritage.

## Introduction

Groix Island, a small but historically rich community off the coast of Brittany, France, stands at a crossroads. Known for its striking coastal landscapes, rare geological formations, and deep maritime heritage, the island has long relied on tourism and fishing as economic pillars. However, like many island communities, Groix faces a set of complex challenges that threaten its long-term sustainability. These include economic dependence on seasonal visitors, a shifting demographic landscape, and the need for sustainable resource management in the face of environmental change.

As part of the FREIIA project, we have undertaken an in-depth exploration of Groix's innovation landscape, working alongside local stakeholders and students to identify gaps and opportunities for sustainable growth. By engaging with the community, we seek to understand the mechanisms that drive resilience on the island, how people, businesses, and policymakers navigate the delicate balance between economic vitality and environmental responsibility.

Unlike urban centers where economic diversification and infrastructure expansion are more straightforward, Groix's insular nature presents unique constraints. The island must develop solutions that are not only effective but also contextually viable. This requires a deep understanding of local governance, community needs, and available resources.

## Methods & Process (Design thinking)

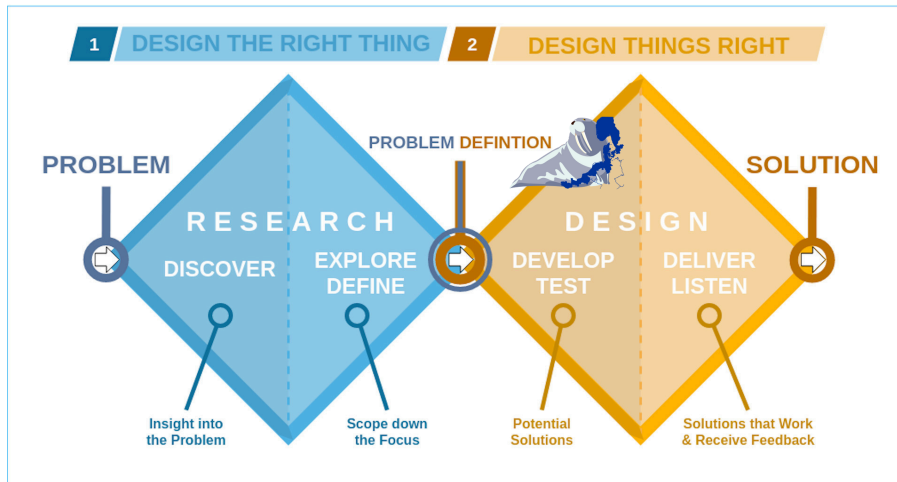


Figure 3, Double Diamond framework

The second phase of our project focused on designing and testing solutions to the challenges identified in the first phase. This was done through a design-thinking workshop on Groix Island, where participants from Norwegian academia worked alongside four local stakeholders. The goal was to develop practical and innovative solutions that could support the island's sustainability.

The workshop followed a structured process to guide participants through the different stages of Design Thinking. First, participants worked to understand the key challenges facing the island by engaging with local stakeholders and mapping out problem areas. Through these discussions, recurring themes emerged, particularly around sustainable tourism, economic resilience, and infrastructure. To refine these issues into clear problem statements, participants used the *5x Why?* technique, helping them identify the root causes behind each challenge. These insights were then formulated into *How Might We* (HMW) questions, setting the foundation for idea generation.

To generate solutions, participants used the *Crazy 8s* technique, where they quickly sketched multiple ideas. These ideas were then assessed collectively using an idea matrix, considering factors like feasibility, desirability, and impact. The most promising solutions were further developed through mapping and visualization exercises, which helped participants create simple prototypes. These prototypes were then tested in group presentations.

The workshop was built on established Design Thinking principles. The process emphasized user-centered innovation, encouraging empathy, experimentation, and iteration. The approach also highlighted the importance of generating multiple ideas before narrowing them down to feasible solutions. Rapid experimentation and learning through iterative feedback loops were key to ensuring that solutions were both creative and viable. Furthermore, the workshop evaluated proposed solutions based on their desirability, feasibility, and viability, ensuring they aligned with both local needs and sustainable development goals.

## Results & discussion

The workshop led to several concrete outcomes that addressed key challenges on Groix. One of the primary issues discussed was how to develop a tourism model that supports the local economy while minimizing environmental impact. Participants identified that tourism plays a crucial role in the island's economy, but also brings challenges related to transport costs, infrastructure strain, and sustainability. The discussion highlighted the importance of the ferry system, as high transport costs impact both businesses and residents. It was agreed that better communication and cooperation between stakeholders were essential to ensuring that tourism development benefits both locals and visitors.



Figure 4, Crazy 8 and Idea matrix

Another significant issue explored, was the need to improve infrastructure for sustainable transportation. Participants emphasized the importance of enhancing bike-friendly pathways and reducing car dependency to create a more environmentally friendly travel experience on the island. Additionally, strengthening the visibility of local products and crafts was seen as a crucial strategy for supporting small businesses and reinforcing the island's economic resilience.

Waste management also emerged as a key concern, particularly during peak tourist months when the number of visitors places extra pressure on local resources. Proposed solutions included increasing community engagement, setting clearer regulations, and launching awareness campaigns to encourage responsible waste disposal.



Figure 5, Picture from the Design Thinking Workshop

To transform these discussions into actionable initiatives, participants proposed organizing monthly community meetings where residents, business owners, and stakeholders could discuss ongoing challenges and solutions. Social media was identified as an effective tool for promoting local businesses, providing information about island activities, and encouraging off-season tourism. Another proposed measure was to improve the availability of information on ferry services, helping to align expectations between tourists and local businesses while promoting sustainable visitor behavior.

The iterative nature of the workshop allowed participants to refine and improve their ideas based on feedback, ensuring that proposed solutions were both practical and aligned with the needs of the local community. By combining academic knowledge with local insights, the workshop facilitated a collaborative process that resulted in innovative and context-sensitive solutions. The outcomes of this phase provide a strong foundation for implementing sustainable initiatives on Groix and offer valuable insights for other island communities facing similar challenges.

## Conclusions

The workshop on Groix showed how structured and inclusive methods can help address the complex challenges that small island communities face. Through the use of Design Thinking and the Double Diamond model, participants worked step by step to explore local issues and shape ideas into actionable solutions.

A key takeaway from the workshop was the need for better collaboration between residents, businesses, and local authorities. Tourism management emerged as a central concern, especially how to reduce the pressure from seasonal crowds and find ways to share the benefits of tourism more evenly throughout the year. Waste management was another important issue, particularly in the summer months when visitor numbers are at their highest.

As a result of the workshop, the participants proposed a variety of solutions:

**For tourism:** Extend the tourist season, offer guided experiences rooted in local culture and nature, and create better information tools for visitors.

**For waste management:** Add more recycling stations, engage the community through awareness campaigns and seasonal contests, and improve coordination with local services.

**For transport:** Develop better bike infrastructure, promote eco-friendly transport, and make ferry access more efficient.

**For the local economy:** Boost visibility of local products through marketing and better integration with tourism.

**For community involvement:** Hold regular meetings between residents and stakeholders, and use social media to keep people informed and involved.

These solutions showed how user-focused thinking can lead to creative and realistic ideas. By using digital tools, building stronger local networks, and staying open to feedback, Groix can better prepare for the ups and downs that come with being a seasonal island destination.

The workshop also emphasized the importance of testing ideas and adjusting them along the way. This kind of flexible and collaborative approach gives Groix a solid base to build from and could inspire similar efforts in other island communities.

## **Acknowledgements**

We extend our heartfelt gratitude to everyone who has supported and contributed to the development of this document. This white paper is the result of a collaborative effort, and we sincerely appreciate the dedication and commitment of all those involved.

First and foremost, we would like to express our appreciation to Bjørn Gitle Hauge, our project owner, for his leadership and support throughout this process. We are also grateful to Per Valter and Frode Ramstad Johansen from Østfold University College for their valuable guidance and involvement.

A special thanks goes to the students from IPL23 and IPL24, whose enthusiasm and perspectives have added creativity and depth to this project. We are equally appreciative of Maxime Turck for his invaluable collaboration and support.

We are also thankful for the warm hospitality of Mairie de Groix - Site de Port Lay, where we enjoyed a comfortable stay during our time on Groix. Additionally, we extend our gratitude to Café De La Jetée for providing us with memorable dining experiences that enriched our time on the island, and to Erwan Tonnerre for his generous support with all aspects of our stay.

Finally, we would like to acknowledge the stakeholders from Groix, who generously shared their insights and experiences during the workshop. Their contributions have been fundamental in shaping the outcomes of the workshop and this report.

To everyone who has supported this work in any way, we sincerely thank you for making this journey both meaningful and successful.

## **References**

The Double Diamond Model: In Pursuit of Simplicity and Flexibility | Request PDF. (2024). | ResearchGate. [https://doi.org/10.1007/978-3-030-79879-6\\_2](https://doi.org/10.1007/978-3-030-79879-6_2)