

GREENRESISLAND

BACKGROUND

More than 400 rural islands in Europe have a steady population of more than 100 citizens and are not connected to the mainland by any landbound transportation link. From the vast permanently frozen island of Greenland to the tiny subtropical Isles of Scilly and from the remote Atlantic island of Corvo to the archipelago of French Polynesia, these islands and its citizens are incredibly diverse. Yet, islands across the continent and well beyond often face similar issues and are renowned to find creative and innovative solutions to address and tackle those challenges.

We aim to work with your community to unleash this potential and the creative energy of islanders, to overcome the hurdle of becoming climate-neutral. We believe that the solutions to many of our problems as a continent today rest in the minds of people that have always had a deep understanding of community and the power to shape and reform it. By moderating a process that picks up the ideas and visions of island populations across Europe, we aim to make one more step on the journey of a continent that aims to become climate-neutral.

This project is not only aiming to help islands in getting greener. It is rather a project that applies a co-creative approach to innovate together with islanders to benefit European citizens that live on islands and those off their shores. We do not understand rural islands as a geographic area deserving assistance, but rather as a role model for rural areas in general that has clearly defined natural system boundaries.

Against this background, a project proposal is developed for the call "[HORIZON-CL6-2024-COMMUNITIES-02-1-two-stage: Innovating for climate-neutral rural communities by 2050](#)" under the Horizon Europe Framework Programme of the European Commission.

OBJECTIVES

- (O1) The project will develop a co-creation approach that allows rural communities with clearly defined geographic borders to draft solutions to transform their society towards climate-neutrality, by actively involving all relevant stakeholders.
- (O2) Considering that islands are particularly affected by impacts of climate change, GreenResIsland will help island communities to develop solutions towards climate-neutrality that are in line with approaches for adapting to climate related changes and thus directly increase their resilience.
- (O3) The project will draft a clear roadmap towards climate-neutrality for a selected number of islands (case studies).
- (O4) GreenResIsland will define a generic process that enables any rural community, insular or not, to use its innovative potential to draft its own roadmap towards climate-neutrality.

APPROACH

GreenResIslands will cover the four most greenhouse gas emitting sectors: Electricity, Housing, Transportation and Agriculture & Fishing. Together, these four sectors account for over 90 % of all emissions. In all four of these "action fields", the project itself will carry out three main phases: Initially, a research phase establishes a starting point for the innovation process to follow. It consists of a status quo analysis that looks at good practices of existing climate-neutral solutions in the field and a context analysis that determines the needs of the case study island communities. This includes the consideration of possible climate change impacts in each of the four sectors. Following this, co-creative and participatory workshops focusing on the four action fields will be carried out on each case study island, bringing researchers from the respective fields into the island communities to exchange with all relevant stakeholders, to jointly identify needs and jointly discuss and draft suitable approaches. Finally, a prototyping phase will develop innovations that directly and immediately can be adopted and implemented by the case study islands to make a significant step towards climate-neutrality in at least one of the action fields per case study.

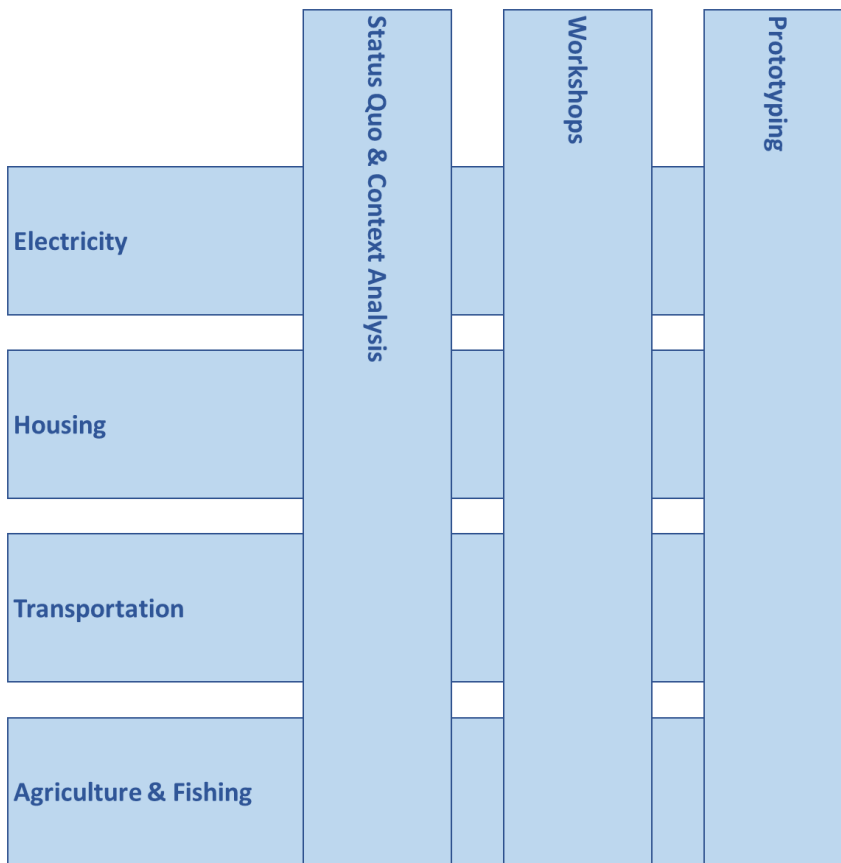


Figure 1: Visualization of Research Approach

CASE STUDY WORK-FLOW

The project team will initially select twelve case study islands that will join the project as associated partners. The selection will be based on a pre-project survey of all potentially eligible islands. The final selection will consist of a range of diverse islands that pose a variety of challenges, but likewise offer a range of opportunities to innovate from within.

Following the first phase, the status quo and context analysis will provide a basis to re-evaluate the case studies and their involvement in the project. While some of the case studies might be best addressed by triggering a procurement process or drafting a policy recommendation to its parent state, others will require a more thorough investigation. Of these, three to five case studies will be selected for the second phase of the project, while the remaining islands will be invited to the project advisory board to provide further input and be updated about the project results.

In the second phase, these three to five selected islands will be closely examined by the scientific and the methodological partners of the project. In detail, the project coordinator, the co-creation partner and the scientific leads of all four action fields will visit the island for four days, conducting workshops with all relevant stakeholders on each of the four action field topics. Formats using co-creation-approaches will be developed so that the solutions derived and identified within the project are tailor-made for the islands taking part.

Following the second phase, the consortium will again re-assess the case studies and select at least two of them to enter the third and final stage of the project. For these islands, prototypes of solutions will be developed as well as guidelines for their implementation (in close collaboration of research partners and the case studies). In total, at least one prototype in each of the action fields will be developed this way.

EXPLOITATION & DISSEMINATION

GreenResIsland seeks to prototype solutions that help rural communities in Europe to make a step towards climate-neutrality, while ensuring climate resilience, in each of the four action fields: Electricity, Housing, Transportation and Agriculture & Fishing. These prototypes will be presented to all the islands participating in the project as case studies or as part of the advisory board. The project coordinator understands that one of its key tasks in the project will be the exploitation of these prototypes, on islands and in rural mainland communities alike. The project coordinator will furthermore define policy recommendations and draft a whitepaper to uptake the political and societal needs of the case study island communities to European and national authorities alike.

One main, but less tangible, outcome of the project will be the co-creation process developed together with the rural communities on the case study islands. This process is understood as a prototype itself and has the potential to help rural communities throughout the Union and beyond to use their own innovative potential to embark on their own journey towards a climate-neutral continent and, ultimately, planet.

PROJECT CONSORTIUM (TO BE EXTENDED)

Coordinator: Fraunhofer INT

The Fraunhofer-Gesellschaft is the leading organization for applied research in Europe. Its research activities are conducted by 72 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of more than 25,000, who work with an annual research budget totalling 2.3 billion euros. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development. The Fraunhofer Institute for Technological Trend Analysis (INT) creates and continually updates a comprehensive overview of

- (1) The Research and Technology (R&T) landscape in the field of civil security and defence and of the entire spectrum of technological developments, nationally and internationally, and
- (2) the operational and policy background related to R&T demand of civil security and defence actors.

INT consolidates the overview with its own specialized forecasts of technological developments as well as methodologies that support national & international research and organizational planning and innovation processes. In this context, INT's Unit for Public Technology and Innovation Planning, which will lead this project, has extensive experience in coordinating and participating in European research projects. The analysis of political, legal and organisational aspects is one core of its activities. It has further facilitated technological and organisational review processes aiming at capability gap identification and the development of roadmaps for sustainable development and increasing resilience in a broad variety of projects.

Co-Creation Partner: TH Köln

The participatory co-creative approach will be developed under the leadership of the Cologne Innovation & Transfer Lab (CITL) of the Faculty of Systems, Energy and Machine Systems at TH Köln, headed by Prof. Richert and Prof. Dr. Varney. It contributes to researching and establishing innovations in the form of creative collaboration in research and teaching to further develop them together with the public. The CITL supports, promotes and researches a culture of enabling in line with TH Köln's transfer strategy, particularly in the following areas:

- (1) Creative collaboration at the recursion levels of team, department, organization, network, etc. under digital networking and mediation via VR/AR technologies (see Cologne TrainING Center)
- (2) Creative collaboration in direct human-machine interaction: industrial and humanoid robotics in various domains such as smart homes, industrial shopfloor etc. (see Cologne Cobots Lab)

- (3) Innovation-promoting system design: agile management tools, collaboration analytics, data cockpits/visual analytics, models/methodologies of agile transformation (e.g. as part of the management of the Mittelstand Digital Zentrum Rheinland and the Digital Engineering Solution Center - Cologne). The CITL implements the practical requirements and conducts transfer and accompanying research geared to practical requirements and research projects and continuously researches new transfer models and formats with participatory approaches and a strong focus on co-creational processes and methods.

Hochschule Fulda

Hochschule Fulda is a university of applied sciences in the state of Hesse, in central Germany. Its research center "HFD@HOLM", which will be involved in this project, is based at the state-owned House of Logistics and Mobility in Frankfurt, which brings together actors from the logistics and mobility industry, universities, research institutions and political actors alike, to tackle current challenges of the sector together. The research center thus has a long history in collaborative research projects, nationally and internationally. It recently has increasingly worked on three main topics, which all are closely related to the proposed project:

- (1) Supply Chain Resilience with a focus on transport infrastructure risk management and vital supplies, e.g. pharmaceuticals.
- (2) Emission-free and climate-neutral transportation to, from and in remote rural areas and local supply chains.
- (3) Innovation ecosystems in logistics, stakeholder involvements and international cooperation.

Within the project, Hochschule Fulda will be the scientific lead on the topical field of transportation, providing their know-how on resilient, climate-neutral transportation in rural areas to the consortium.