

Report for the Transformation Lab in Kiel 2023

1.1. Introduction

Kiel University organized the second Transformation Lab workshop in Kiel (Germany) as part of the reSEArch-EU Task 4.2. in order to “Enhance transdisciplinary cooperation by pilot projects”, highlighting the cooperation between stakeholders and academia. Aim of this activity was to cover the interaction between researchers and civil society and to develop ideas to improve resilience of coastal areas. In April 2022, the first Transformation Lab workshop was organized by the University of Western Brittany in Brest (France).

Both workshops brought together scientists and stakeholders, for example, fishers, local authorities, tourism managers or non-governmental organizations from the environmental sector. They were used for brainstorming on problems typical for the specific location and for developing ideas for tackling these challenges by experiencing case studies and visiting field sites of running projects.

This Transformation Lab dialogue is based on the concept of Living Labs. Locations for these pilot activities are part of the European Network LTER (Long-Term Ecosystem Research in Europe): LTSEr [Zone Atelier Brest Iroise](#) (ZABrI, France) and LTER-D [Boknis Eck Time Series Station](#), Bight of Eckernförde (Baltic Sea, Germany). In addition, the participants of the second Transformation Lab workshop had the chance to visit the German North Sea coast and learn about the projects conducted there.

In these distinct geographic settings of the SEA-EU consortium at the land-sea interfaces that bear local, regional and national challenges, these pilot activities aspired to federate stakeholders for a sustainable future for these socio-ecosystems. Experience was shared on different initiatives at the science-society interface (action-research, social-ecological experiments, etc.). It offered a scientific look at the past trajectories of these socio-ecosystems to provide a reasoned reflection on their future.



Group picture. From right to left: Charlotte Rahmsdorf, Matthew Agius, Sandro Lanfranco, Franco Matić, Igor Jerković, Zoran Đogaš, Eckhard Quandt, Axel Koch, Christian Wagner-Ahlfs, Javier Benavente, Kadir Ayanoğlu, Laura del Río, Pascal Raux, Kai des Graaf, Daniel Laufs. (not on the foto: Magda Lazarus, Konrad Ocalewicz).

The programme

The three days of the Transformation Lab workshop in Kiel were divided into three parts, all covering different aspects of transdisciplinary research. Besides one session of intense theoretical input on the first day, two field visits and the introduction to implemented projects were included.

The first day of the workshop took place in Kiel and was used for an impression of the transdisciplinary projects of all reSEArch-EU partners. The second day was dedicated to the visits of transdisciplinary projects conducted at and related to the west coast (North Sea), whereas the field visits on the last day concentrated on projects located at the Baltic coast. During the workshop, lively discussions about the differences and similarities of conflicts in the represented countries arose. Christian Wagner-Ahlfs from Kiel Marine Science/ Center for Ocean and Society at Kiel University moderated the workshop during the three days.

For the evaluation of the workshop's outcome, two wrap up sessions took place respectively after the first and the last day. Questionnaires highlighted the procedures of transdisciplinary research of every individual university and requested for general feedback regarding new experiences and personal outcome of the past days.

1.2 Day 1 – 25 April 2023, Presentations

The first day started at the campus of Kiel University with a welcome speech by Christian Wagner-Ahlfs from Kiel Marine Science/ Centre for Ocean and Society at Kiel University, followed by Pascal Raux from the University of Western Brittany.

Prof. Dr. Eckhard Quandt (Vice President for research, transfer, scientific infrastructure and digitalization) and Axel Koch (Head of the Transfer Department) introduced Kiel University in their following speeches. Afterwards different speakers presented some examples of transdisciplinary projects located in Kiel:

“CAPTN” (Clean Autonomous Public Transport Network) by Daniel Laufs:

“CAPTN is an innovation ecosystem of diverse public and private actors that collaborate in several R&D projects in order to develop a smart public transportation system. Its vision is

an urban mobility chain characterized by autonomous solutions that is integrated, safe and attractive, significantly reduces individual traffic and intelligently connects the various modes of transport on land and water in a climate-friendly and user-friendly manner.[...] ... (including) the transdisciplinary collaboration across several research projects. An informal coordination team, an extended governing board, the network office and the CAPTN association steer the initiative while each research project itself has its formal project leads.” (More information: <https://captn.sh>)

“SpaCeParti” by Kai de Graaf:

“The small-scale coastal fishery of the Western Baltic Sea is under high tension, with unforeseeable consequences for the economic development of coastal communities. Human influences such as overfishing, overfertilization and climate change contribute significantly to this. In addition, fisheries increasingly suffer from spatial conflicts with necessary nature reserves to preserve biodiversity and wind farms to mitigate climate change. On land, growing coastal tourism is increasingly taking up space and multiple conflicts between stakeholder groups need to be resolved in a sustainable way.

Goal: Develop scientific and policy action knowledge to help the small-scale coastal fisheries of the Western Baltic Sea into a sustainable future, while protecting biodiversity, paying attention to tourism and offshore energy production.” (More information: www.spaceparti.de)



Introduction to Kiel University by Eckhard Quandt at Kiel University.

The afternoon sessions took place at the **“Kiel Science Factory”** - the student’s lab of Kiel University and the IPN (Leibniz Institute for Science and Mathematics Education). Here the project team presented the transdisciplinary project of the **“Plastic Pirates – Go Europe!”**:

“[...] (the project) involves schoolchildren to investigate litter pollution of rivers in Europe, providing didactically elaborated educational material. It aims to give a comprehensive overview of plastic pollution in and along European rivers, raising the awareness of plastic pollution among children and youth, and offering policy recommendations based on the data generated in the project.” (More information: www.plastic-pirates.eu/en; www.forschungs-werkstatt.de/english/)

In the surrounding of the Botanical Garden of Kiel University the reSEArch-EU partners introduced themselves by presenting their own project impulses:

- University of Western Brittany by Pascal Raux:

Zone Atelier Brest-Iroise (ZABrI) & University of Bretagne Occidentale Stakeholders engagement

- University of Cádiz by Laura del Río and Javier Benavente: Stakeholder engagement at the University of Cádiz
- University of Gdańsk by Magda Lazarus and Konrad Ocalewicz: The situation of stakeholder engagement
- University of Malta by Matthew Agius and Sandro Lanfranco: Recent Projects with Stakeholder Interaction and Integration
- University of Split by Igor Jerković, Zoran Đogaš, Frano Matić: Stakeholder engagement at the University of Split



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Project presentation by all reSEArch-EU partners at the Kiel Sciences Factory.
Here presentation by Magda Lazarus.

Christian Wagner-Ahlfs wrapped up the first day including questionnaires via the tool Mentimeter about the different experiences of the participants. To ensure the anonymity of individual responses to the questionnaire, a series of word clouds were constructed from the questionnaire items.

1.3 Day 2 – 26 April 2023, Field Visits

The second day was used for a field trip to the west coast of Schleswig-Holstein where all participants got familiar with the **FTZ (Research and Technology Centre)** as a central facility of Kiel University located in **Büsum**. Katja Heubel spoke about the research of the FTZ:

“It (the FTZ) pursues interdisciplinary coastal research mainly in shallow water areas and estuaries. The results are translated into concepts and strategies for sustainable coastal management.”

Members of the National Park Administration (NVP) who are responsible for nature protection in the Wadden Sea, introduced the transdisciplinary project “iSeal”:

“[...] stands for ‘trans- and interdisciplinary social-ecological network analysis based on long-term monitoring, experimental data and stakeholders’ assessment’, will assess the impacts of human-induced stressors on biodiversity, composition and interactions of organisms and food web structure and functioning in coastal zones of the Wadden Sea.[...] Our focus is on the analysis of potential impacts of invasive species, fisheries and

climate change on the structure and functioning of food webs and selected key species.[...] We will use these insights to refine concepts for an assessment of the good ecological status of the Wadden Sea.” (More information: www.iseal-project.org)

The theoretical input was underlined with a walk through the Wadden Sea where all participants experienced the feeling of sand, wind and water and got familiar with the most prominent species of the North Sea.



Büsum. Visit at Research- and Technology Centrum: Walk to the Wadden Sea with Katja Heubel.

After a change of location to **St. Peter-Ording** in the afternoon, the participants visited the project “Sand Coast”, led by Sabine Gettner (**Schutzstation Wattenmeer**), Annkatrin Weber (**WWF**) and Clayton Soares (**Kiel University**):

“[...] (the national park) includes beaches, sandbanks, white dunes and salt marshes within the Wadden Sea National Park, but also grey dunes and a dune forest behind the dike. However, these coastal habitats are partly threatened by climate change, the loss of natural dynamics and invasive species. In order to preserve these natural values, the project ‘Sandküste St. Peter-Ording’ implements extensive restoration measures and creates important prerequisites for adaptation to the consequences of climate change.[...] The project team develops joint solutions for applied questions by the trusting cooperation of various project partners (public entities, NGOs, universities, municipality). [...] It enables the project members to experience new fields of work and working methods and thus facilitates the development of new win-win solutions.” (More information: <https://sandkueste-spo.de>)



St. Peter-Ording. Visit of project “Sandy Coast” with Annkatrin Weber (WWF), Sabine Gettner (Schutzstation Wattenmeer) and Clayton Soares (Kiel University).

1.4 Day 3 – 27 April 2023, Field Visits

The third day was dedicated to a field trip to the east coast of Schleswig-Holstein at the Baltic Sea. It started at the “soft-rock cliffs” at **Stohl** where Tanita Averages from Kiel University talked about the project “Morphological Protection Baltic Sea 2100”:

“Soft-rock cliffs are a typical morphological feature of the Baltic Sea coast of Schleswig-Holstein. These elevated coasts are remnants of glacial deposits that are eroded by the impact of rain, waves, and high water levels. Erosion results in coastal retreat and delivers sediment to the foreshore system, where it is transported and sorted by waves and currents until finally deposited. [...] Projected climate change will intensify coastal erosion with effects on different stakeholders. To develop adapted strategies for coastal management, projections of the future development of the coastline are crucial.” The project “the combination of field measurements and numerical model simulations shall improve the process understanding of sediment dynamics, from source to sink, in the pilot areas of Stohl and Heiligenhafen and, in the long run, along the whole Baltic Sea coastline of Schleswig-Holstein.”



Kiel Stohl. Visit of project “Soft-rock cliff” with Tanita Averages (Kiel University).

The third day of the workshop ended in Eckernförde where all participants visited the **“Baltic Sea Information Center”** (“Ostsee Info-Center” - **OIC**). They learned about the work of the OIC and the “Voluntary agreement for the protection of harbour porpoises and diving ducks between the State Fisheries Association and the Ministry for Energy Transition, Agriculture, Environment and Rural Areas of Schleswig-Holstein” by Christian Prien and Heike Schwermer:

“The Baltic Sea Info-Center (OIC) offers environmental education for big and small sea explorers in an exhibition and directly on the Baltic Sea. The goal is to arouse fascination for the habitat beneath the water surface, its inhabitants, peculiarities, and secrets. In the environmental education facility, through various aquariums, exhibits, and events, the habitats typical of the local Baltic Sea and the species found therein are made experiential and tangible with all the senses. The OIC is actively cooperating with local fishers. Baltic Sea fishers in Schleswig-Holstein are voluntarily taking measures to reduce the bycatch of diving ducks and porpoises, going beyond legal requirements. This includes gillnet shortening during July and August, a Porpoise Alert (PAL) system, an anonymous collecting service for porpoise bycatch, and closed areas for diving ducks from November 15th to March 1st. [...] Overall, these measures demonstrate the fisher’s commitment to protecting the marine environment and offer a sustainable solution to reduce bycatch while preserving small-scale fisheries.”



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Eckernförde. Visit of "Baltic Information Centre" with Christian Prien and Heike Schwermer (Kiel University).

Finally, during a boat trip the participants experienced a live fishing tour at the Baltic Sea together with the cooperating **fisherman Eckhard Michaelsen**.



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Eckernförde. Visit of live fishing tour with fisherman Eckhard Michaelsen.

In another wrap up all participants answered questions about their personal perspective and the gathering of new experiences during the Transformation Lab workshop days.

The participants

All together 28 participants with representatives from all reSEArch-EU partner universities were engaged in the second Transformation Lab in Kiel. Included in this group of participants were eight stakeholders from different transdisciplinary projects and organizations.

Conclusions

The Transformation Lab in Kiel 2023 became a diverse pool of information exchange in context to transdisciplinary research. All participants were familiar with transdisciplinarity in science and

exchanged experiences from their own work. The result was an intense interaction. As the information was provided in a theoretical but also in a practical way and included changes of location, the days were formed dynamically.

The Wrap up sessions bore good feedback with new and confirming output on that further work can continue.

1.5 Evaluation of questions Day 1: Science and Society

What are the conditions supporting the interaction of science and society?

All members of the SEA-EU universities dealing with the question how to implement the interaction between science and society. For getting an overview about their personal experience, all participants were asked at Day 1 to present case studies showing the conditions supporting the interaction of science and society at their university.

We suggest to cluster the answers in four categories:

Vision and mission. In vision and mission statements, the universities outline their relation to society. This defines the frame for further institutional support structures. One example was **the vision** to be the leader in transfer of knowledge and **the mission** to embed the knowledge into the local community.

Place to go. Supporting structures are helpful for those who want to run transdisciplinary projects. Such a “place to go” is important for both, for scientist to get consultation and for stakeholders to have a first entry point to university. All SEA-EU partners have such support in some way but to a different extent. Some have responsible **offices of stakeholder dialogue** respectively **knowledge transfer** and engagement are integrated to the university structure **available for research, private sectors, governance and others** which are open for **research questions and stakeholder needs**, e.g. providing a FAQ program for the first steps for transdisciplinary work.

Science Communication. The Universities work actively towards the public sharing of information about topics of the recent research. The information transfer used as the first step to show transparency and directness between science and society.

As a way to support the interaction from sciences perspective, it is even more common **to step up to the society** via education, cooperation with local institutions and using social media for data gathering (e.g. community data). It is already realized to make research infrastructure available to the public by **promotion of science**, e.g. science festivals, educational events for children, social media/apps, using the “transversal axis” to communicate for all citizen understandable.

Interaction. For the implementation of an interactive cooperation different structures emerged considering the motivation of stakeholder engagement. This interaction is used as the second step in cooperation between science and society.

The **engagement** of “**young researchers**” and **school-leavers** is already constantly involved in many research projects. Supplemental **citizen science volunteers** of every age from local communities are also successfully participating in science.

During the interaction with stakeholders it is possible that the cooperation is **mostly driven by stakeholders** collateral **denying the truth just to preserve the social consensus** and the results are **failing the problems**. In the case of the **process of decision-making**, e.g. of politicians

There are **no specific units** for stakeholder engagement as well as a **lack of common systematic approaches** to channel the general needs of stakeholders. Resulting in difficulties to implement the social aspects to the solutions due to the fact that currently existing tools are not adapted to the new needs of transdisciplinary questions.

(evaluation by flipchart at the end of the third workshop day)

Question 1

Which project has impressed you the most? And why?

The question was answered quite individually, led by different personal points of interest. Emerging two main foci: firstly the cooperative work with other people, secondly the implementation of scientific questions and their methods respectively technologies.

- The project in “Morphological Protection Baltic Sea 2100” in Stohl impressed due to the applied technology drone to address a particular problem and the great result of implementation of the methods.
- Others were mostly impressed by the successful implementation of the target and methods of the “Kiel Science Factory” in general.
- Still in mind was also the project “Sandy Coast” in St. Peter-Ording where the environmental management convinced with its effort to eliminate invasive species in such a large-scale geomorphology.
- Some others brought the cooperative work to the foreground. They considered the projects of the Kiel Science Factory and its work with younger generations, e.g. the project “Plastic Pirates”, useful for science and society.
- Others highlighted the “Voluntary agreement for the protection of harbour porpoises and diving ducks” in Eckernförde, impressed by the efficiency, collective action and public awareness at once, calling it “somewhat unexpected”.
- Finally, the implementation of seismic equipment on Malta to cooperate and answer the needs of the government and society was named.

Question 2

What questions do you take with you?

The participants were asked to report what questions they take with them from the Transformation Lab workshop. Even if clustering the answers is difficult, some tendencies can be figured out.

The participants paid attention to the **relationship between stakeholders**. They questioned the relationship between the national park and the university and wondered how the involvement of the public in national parks looks like in detail. Additionally, the question about the implementation of a constant relationship between scientists and fishermen in a friendly manner came into focus.

Furthermore, the participants were concerned about **the way of involving stakeholders**. They asked how to reach and involve stakeholders in regards to specific questions, environmental awareness and especially national parks. Ideas of possibilities were initiated, that go further than the existing boundaries and beyond the common project partners of stakeholder involvement. These ideas were complemented by the way how to involve stakeholders with outcome-oriented thoughts like the institutionalization of engagement and paying attention to engaged biases (e.g. lobbying, voices for others...)

Some participants asked for **general structures**. They questioned the already existing structures at universities and furthermore, within these structures referred to a necessary adaptation of the funding scheme towards stakeholder engagement.

Resulting from these mind-crossing thoughts, the following questions could be interesting **new research questions**:

- “Is there a plant succession on eroding cliff faces – development of a time series”?
- “Could the fishery solution in Germany become a part as a solution of the Baltic Sea? “
- “What is the status of the Baltic Sea?”
- “What is the status of Malta’s fishery?”

Personal experience with stakeholder interaction: A Mentimeter questionnaire

During the Transformation Lab workshop in Brest in April 2022, the personal experiences of the participants were shared using the Mentimeter Software which prioritises the given answers by highlighting the most chosen ones. This questionnaire was repeated with the participants of the Transformation Lab workshop in Kiel 2023 and the respective results were compared.

The goal of the questionnaire was the identification of the most important experiences with transdisciplinary work of the different reSEArch-EU partners.

With which stakeholders do you work regularly?

Mentimeter



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The answers were widely diversified with some overlapping answers in named stakeholders, e.g. schools, agencies, cities and project experts/professionals.

What are the needs to work with these stakeholders?

Mentimeter



The given answers of the participants in Kiel clearly assess that communication is an important need for the work with stakeholders beside the perspective in which manner the needs are implemented. The participants in Brest had turned out to care mostly about the goal of the stakeholder work needs, as knowledge and help were relevant keywords.

What are the main challenges in working with stakeholders?

Mentimeter



In conclusion, it becomes clear that conflicts between the involved stakeholders are most common. From the perspective of the participants in Kiel, communication, different aims, expectations and motivation are challenging for the result of the work with stakeholders. From the perspective of the participants in Brest, the main obstacles in working with stakeholders are a lack of time and funding, but also communication in a less weighted form.

What was the lesson learned from cooperations with stakeholders that did not work out?

Mentimeter

no common interest cheating
no sustainability result
more empathy with needs
different intetest different approach
high expectations better preparation
works with politician no imposition
misunderstandings no completion
be outside the consortium

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In consequence of failed challenges, the participants in Kiel noted a bunch of unsatisfying side effects, e.g. cheating, high expectations, misunderstandings and no completion of projects. The answers from the participants in Brest showed more solution-oriented answers, e.g. the need for more involvement and time as well as feedbacks and clarity.

Which key factors reasoned a successful cooperation with stakeholders?

Mentimeter

empathy enough time
respect involvement
success ownership money
clear communication
interactive processes joined goals
positive approach
happiness political same expectations
honesty
positivity patience
mutual respect
work with technicians
low expectations
financial support

10

A successful cooperation for the participants in Kiel turned out with a wide overlapping of the challenges in stakeholder work. A distribution on two levels is visible: firstly the “social level” including a respectful handling with empathy, honesty and positivity; and secondly the “technique level” that includes enough money and time.

The answers of the participants in Brest show the same two levels. The “social level” highlights the involvement, trust and sharing whereas the “technique level” names also the money and time aspects.