COASTAL
Collaborative Land-Sea
Integration Platform

NEWSLETTER/ Edition 5/ January 2021

European Union's Horizon 2020 Programme GA N° 773782

What is COASTAL about?

COASTAL is an EU funded 4-year multi-actor Horizon 2020 research and innovation action. The goal of the COASTAL project is to formulate and evaluate business solutions and policy recommendations aimed at improving the coastal-rural synergy to foster rural and coastal development while preserving the environment.

Read more | Download the project flyer

A FEW WORDS FROM THE PROJECT COORDINATOR

For many of us 2020 was a special and challenging year, with travel and meeting restrictions that have made it difficult to connect to our stakeholders and meet with the partners. But the work on the COASTAL project has continued as well as possible under the circumstances . We are keen to share our results in 2021, hopefully under better conditions than in 2020. The results from the previous workshops have been consolidated in Causal Loop Diagrams (CLDs). In a next phase, selected parts of these CLDs have been modelled. Pilot versions of the models were reported in a key deliverable. Fine tuning System Dynamic Modelling is an important and time consuming step, where data have to be collected and variables and interactions quantified to make the models evidence based. Within the project, we have exchanged model parts and modelling experiences between the partners to harmonize the modelling and learn from one another. Over the coming months these models will be refined (after feedback from stakeholder workshops) to build confidence in their correctness and usefulness. Next, the models will be used to quantify business and policy roadmaps, using scenarios for uncertain conditions. As a coordinator we are looking forward to this next phase, as our work will now start to produce more tangible results for the different coastal and rural stakeholders. In 2021, much of the modelling behind the scenes will start to produce useful outputs. We hope that the sanitary situation in late 2021 will also allow us to organize experience exchange events between the different EU regions, so that we can learn from each other's work and discuss the relevance of the project outcomes for the EU Green Deal.

Authors: Jean-Luc de Kok and Bastiaan Notebaert (VITO)

LATEST NEWS FROM COASTAL

Jean-Luc de Kok
VITO

VITO'S INTERVIEW ON USE OF COASTAL SPACE

On July 3 2020, Jean-Luc gave an interview on a topic concerning the impact of land-use change, modelled with the VITO Ruimtemodel, on coastal campings near the coastal town of Bredene, a tourist resort along the Belgian coast.

Click here for the video or read the transcript of the full interview in English.

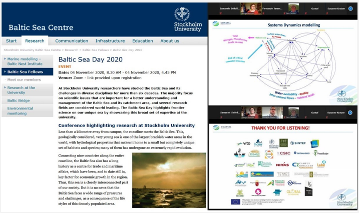
COASTAL AT THE VIRTUAL WORKSHOP AND COORDINATORS' DAY

COASTAL attended at the Virtual workshop and Coordinators' Day – Cluster session on Rural Policy and long-term vision of Rural Areas on 12 November 2020.

Participants were chosen from H2020 projects, that contribute to the most to research for rural communities with each of them contributing to a specific policy (agricultural, rural or urban); representatives from the European Commission: policy officers following the topics/ projects (DG AGRI); colleagues from other policy DGs and other executive agencies that have an interest in on-going activities/projects in the sector and REA and EASME project officers following the project.

Read more

COASTAL IN THE BALTIC SEA DAY CONFERENCE 2020



Baltic Sea Centre

Stockholm University

Start Research Communication Infrastructure Education About us

Stockholm University Baltic Sea Centre > Research > Baltic Sea Fellows > Baltic Sea Day 2020

- Marine modelling – Baltic Nest Institute
- Baltic Sea Fellows
  - Meet our members
- Research at the University
- Baltic Bridge
- Environmental monitoring

Baltic Sea Day 2020

EVENT

Date: 04 November 2020, 8.30 AM - 04 November 2020, 4.45 PM
Venue: Zoom - link provided upon registration

At Stockholm University researchers have studied the Baltic Sea and its challenges in diverse disciplines for more than six decades. The majority focus on scientific issues that are important for a better understanding and management of the Baltic Sea and its catchment area, and several research fields are considered world leading. The Baltic Sea Day highlights frontier science on our unique sea by showcasing this broad set of expertise at the university.

Conference highlighting research at Stockholm University

Less than a kilometre away from campus, the coastline meets the Baltic Sea. This, geologically considered, very young sea is one of the largest brackish water areas in the world, with hydrological properties that makes it home to a small but completely unique set of habitats and species; many of them has undergone an extremely rapid evolution.

Connecting nine countries along the entire coastline, the Baltic Sea also has a long history as a centre for trade and maritime affairs, which have been, and to date still is, key factor for economic growth in the region. Thus, this sea is a closely interconnected part of our society. But it is no news that the Baltic Sea faces a wide range of pressures and challenges, as a consequence of the life styles of this densely populated area.

Samaneh Seifoll...
Fernando Jaram...
Gustaf
Susanne Kratzer
COASTAL
Systems Dynamics modelling
Total Nitrogen, Phosphorous Leads to coast
Surface water flows, N, P leads
Risk of critical seawater intrusion
Water availability - quality
Inter-sectoral flows – nutrient leads
Stockholm University
THANK YOU FOR LISTENING!
vito
hcmr
SINTEF
CSIC
NIRAS
CAMPUS ROSLAGEN
Luke
TEMES
GLOBAL

COASTAL AT THE IEMSS CONFERENCE

iEMSs Conference 2020
International Environmental Modelling and Software Society
Conference
Programme
iEMSs
iEMSs2020 App Instructions
10th iEMSs Conference 2020
Modelling for Environmental Sustainability (14 -18 September 2020) Brussels, Belgium
FULL PROGRAMME

In September 2020, COASTAL hosted a session at the bi-annual iEMSs conference of the Environmental Modelling and Software Society, organized by the Free University of Brussels - VUB in a digital format. The goal of session A3 – bringing local and expert knowledge together - was to explore the opportunities and difficulties of bringing local and expert knowledge together, with a special focus on the application of system dynamics modelling. Different researchers (both from within and outside our consortium) presented their view on this theme, followed by a discussion on how we can improve the combination of both types of expertise. **Jean-Luc de Kok** (VITO) and **Rachel Tiller** (SINTEF) presented results from the COASTAL project.

Read more

SECOND ROUND OF MULTI-ACTOR WORKSHOP IN THE

COASTAL was presented at the Baltic Sea Day Conference by Stockholm University (MAL3 leader).

The conference aimed to highlight frontier science on the unique and geologically very young Baltic Sea by showcasing a broad set of expertise at SU, that supports better understanding and management of the sea and its catchment area.

Read more

SECOND ROUND OF MULTI-ACTOR WORKSHOP IN THE MAR MENOR COASTAL LAGOON (MAL6)

The Spanish National Research Council (CSIC), the lead partner for MAL6, organized the second round of multi-actor workshops where local partners and stakeholders from rural and coastal sectors discussed the pilot system dynamics model, the business roadmap and policy solutions to promote more sustainable development in the region building on coastal-rural collaboration and synergies. Read more

BUSINESS ROADMAP AND POLICY RECOMMENDATIONS FOR LAND-SEA SYNERGIES

ICRE8 is working closely with COASTAL Multi-Actor Labs (MALs) to develop business roadmaps and policy recommendations for land-sea synergies.

Read more

NORRSRÖM/BALTIC SEA CASE (MAL3)

Stockholm University (SU), the lead partner for MAL3, organized the second round of multi-actor workshops where project MAL3 local partners and stakeholders from land, coast and sea sectors discussed the draft system dynamics model and business opportunities and policy solutions to tackle MAL3 focussed problems in modelling.

Read more

COASTAL'S DIGITAL TRIP WITH EU IN MY REGION

Gialova, Greece

Coastal

COASTAL is a European research and innovation project promoting a unique collaboration of coastal and rural actors and stakeholder working together to improve rural and coastal development while preserving the environment.

Total budget: 4 999 943 EUR
EU contribution: 4 999 943 EUR

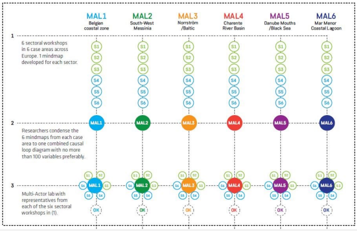
www.h2020-coastal.eu

An Environmental Journey across Europe

Pack your bags and scroll down

As you might remember, in our last newsletter we announced, that COASTAL was one of the winners of the **#EUinMyRegion** competition for which the project received 300 postcards for dissemination purposes. We are happy to announce that now this is all available digitally. If you click on the previous link, you will be able to see that the COASTAL project is the first project to appear under the Environmental path.

DEEP STAKEHOLDER INTEGRATION



1 6 sectoral workshops in 6 case areas across Europe. 1 mindmap developed for each sector.

2 Researchers condense the 6 mindmaps from each case area to one combined causal loop diagram with no more than 100 variables preferably.

3 Multi-Actor lab with representatives from each of the six sectoral workshops in (1).

An aim of the COASTAL project is to **develop a better understanding of rural-coastal** interactions and identify synergies between these. COASTAL does this continuously in the project period through multi-sectoral stakeholder engagement, **where we have been quantifying qualitative narratives using systems dynamics**.

Why is this important, you may ask yourself? **Read** SINTEF's article on the topic.

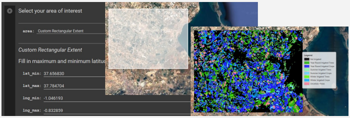
PARTICIPATORY MODELLING FOR THE SUSTAINABLE DEVELOPMENT OF THE MAR MENOR COASTAL LAGOON

The sustainable development of the Mar Menor coastal lagoon (SE Spain) depends strongly on the balance and interactions between inland agriculture, coastal tourism, salt pans and fisheries. The need to move towards sustainable modes of agriculture and tourism is increasingly recognized and recently revived strongly due to sudden increase in contamination levels resulting in a strong drop in tourism. Model-based holistic assessments can help identify potential solutions that consider the impacts on all sectors involved.

Read more

UNSUPERVISED SATELLITE IMAGE CLASSIFICATION USING GOOGLE EARTH ENGINE TO DISTINGUISH IRRIGATED AGRICULTURAL AREAS

A webinar was organized by the Soil and Water Conservation Research Group from CEBAS-CSIC to present the preliminary results of a study developing a methodology for unsupervised land cover classification using satellite imagery to distinguish irrigated agricultural areas in the Campo de Cartagena area (Murcia, Spain).



Select your area of interest

area: Custom Rectangular Extent

Custom Rectangular Extent

Fill in maximum and minimum latitud

lat_min: 37.656830

lat_max: 37.784704

lng_min: -1.046193

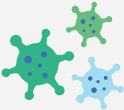
lng_max: -0.832859

Read more

COVID UPDATES

Below you can read how **COVID-19 impacts** COASTAL's MALs, and how local partners and sectors of interest have been affected.

- SW Messinia MAL2 partners concerns and preliminary lessons learned in the light of COVID-19 pandemic
- COVID-19 Impacts on the MAL3 region and its local partners in COASTAL
- How the economic activities of MAL4 were impacted by COVID-19
- COVID-19 in Spain and in the Murcia region



UPDATES ON THE COASTAL MULTI-ACTOR LABORATORIES

BELGIAN COASTAL ZONE (MAL 1)

From July 2020 to December 2020 the stakeholders, actor and research partners

involved in the Belgian Multi-Actor Lab (MAL) collaborated intensely to further develop their models and collect the supporting data. These models are based on the previous work, where sectoral workshops were organized to establish mental maps with stakeholders. Those mental maps were then combined in one intersectoral Causal Loop Diagram (CLD). From this CLD we selected two key themes for the Belgian coastal zone which are now modelled into detail (see below).

These models are the primary tools for policy and business analysis, and will be used to design business road maps during the next multi-actor workshop, planned by the end of February 2021. Due to the imposed safety regulations related to the covid-19 pandemic the frequency of personal interactions during this time had to be far less intensive than anticipated, but this did not affect the quality of the work and results. Models are being developed in a step-wise manner: more detail is only added if relevant and the previous design has been implemented and tested. Given the complexity of the land-sea system for the Belgian Multi-Actor Lab, with over 100 identified environmental and economic land-sea interactions, the strategy to develop models was to focus on two central themes in the system with strong land-sea interactions: (1) the climate resilience, water balance and land use of the the Oudland polder, an important coastal rural area for agriculture, tourism and nature between Oostende, Brugge and Blankenberge; and (2) the economic and infrastructure aspects of decommissioning offshore wind parks in the Belgian Coastal Zone with the port of Ostend as main hub supporting the Green Deal. Partners involved were the Flemish Land Agency (VLM), the West Flanders Development Agency (POM West-Vlaanderen), the Bluebridge incubator company for blue growth, the Port of Ostend (AGHO) and the Flanders Marine Institute (VLIZ). The Flemish Institute for Technological Research (VITO) was responsible for the implementation of the models. Currently, we are fine-tuning the model design and simulations are prepared for the oncoming multi-actor workshop. In this workshop stakeholders will have the opportunity to provide feedback on the model and its main outcomes, and together we will see how models can be used as a start for policy and business roadmaps.

Authors: Bastiaan Notebaert and Jean-Luc de Kok (VITO)

SOUTH-WEST MESSINIA (MAL 2)

An improvement of the environmental status of the Gialova wetland

Gialova wetland is a multifunctional ecosystem, which is located at the core of the SW Messinia case study. Apart from its high fisheries value (the fish management is assigned to fishers by the Sub-region of Messinia), the area attracts students and visitors from all over the world due to its high educational, aesthetic and cultural value. It is part of a wider area which is characterized as an Important Bird Area, a Wild Life Refuge, and is included in the Natura 2000 network as a Special Protection Area (SPA), under the Birds Directive (site: GR2550008, 2001; Birds Directive 2009/147/EC, 2009), as well as a Site of Community Importance (SCI) and as a Special Area of Conservation (SAC), under the Habitats Directive. In addition to the site's natural value, the lagoon and the surrounding area are part of the extended archaeological site of

Pylos which includes many important monuments from different eras, demonstrating the importance of the sites for the communities in different times. As such, it is vital not only to the areas' local economy, but also to the area's identity.

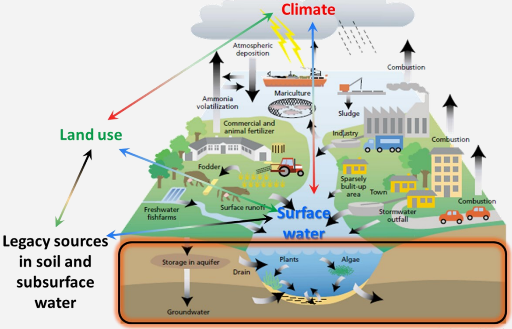
The functions of the wetland and the corresponding ecosystem services (e.g. provision of fish, habitat for waterbirds, educational/touristic destination) depend on the water balance of the system, which is controlled by the availability of fresh water inputs and the water exchanges with the sea. However, since the 1960s, the water balance has been greatly affected by existing constructions which limit surface freshwater inflow by diverting it to the sea as well as by the increase use of groundwater resources for irrigation and domestic use. Recent studies have shown that at present the lagoon is characterized as saline with hypersaline conditions for nearly 30% of the year, a percentage which is expected to increase under future warmer and drier climatic conditions. The increased salinity at the wetland has already profound implications in the area's habitats and species (especially on fish and waterbirds), and concrete water management decisions are needed to tackle the degradation of the wetland.

However, such management decisions need to be based on a holistic approach which will aim to ensure a) better wetland conditions for fish, waterbirds, and mosquito management, and b) sufficient water availability for irrigation and domestic use. To that end, and to further help our stakeholders to understand the complex connections of the Gialova system, we have constructed a model which describes how the different inland water uses affect the wetland water conditions under current and future climatic conditions and water uses. The model is quantified based on available data on the area, and has the possibility to provide outcomes based on decisions proposed by the stakeholders (e.g. increase fresh water inputs from Tyflomitis, increase fresh water inputs from Xerolagados, improved network efficiency) during the upcoming MAL workshop.

Authors: Giorgos Maneas (NEO), Erasmia Kastanidi (HCMR)

NORRSTRÖM/BALTIC SEA (MAL3)

Urban expansion, population and tourism growth and associated water supply and wastewater handling issues, water availability/water-logging for green sectors and terrestrial ecosystems, sectoral land competition, active and significant contribution of past nutrient legacy sources to inland, coastal and marine waters, lack of water flow and nutrient monitoring, and policy implementation are the key problems addressed in system dynamics (SD) modelling for MAL3 (Figure 1). Potential solution pathways that may be driven by policy and/or market forces will be explored through model simulation and testing for various types of local/regional development/change scenarios. These scenario analyses and their implications can be related to the key overarching frameworks of the European Green Deal (protecting nature, eliminating pollution, and climate past-law), the UN sustainable development goals (SDGs) in Agenda 2030 (SDGs 6, 13, 11, 14 and 15), the spatial socioeconomic pathways of global change scenarios (through urbanization, population, RCP-climate scenario, and GDP relations), and the marine spatial planning of Sweden specifically for the Baltic Sea proper. To engage relevant stakeholders in developing scenarios and identifying business and policy potentials for promoting land-coast-sea synergies, the MAL3 lead partner organized the second round of multi-actor workshops in November 2020 in form of an online event due to the COVID-19 pandemic. In this workshop, key local and regional stakeholders discussed the types of expected results from scenario analysis by the MAL3 SD model to be associated with quantification of water availability/exchanges, water quality relating to seawater intrusion risk and coastal wastewater handling, and waterborne nutrient loads/exchanges for various hydro-climatic changes and sector development. Participants also highlighted possible business and policy solutions and suggested relevant transition actions. The outcomes of the workshop will be summarized and shared with the COASTAL WP3 and WP5 lead partners to further support their tasks of developing MAL-specific business roadmaps and transition pathways.



Ærtebjerg et al. (2003)

Figure 1. Schematic representation of the key problem aspects and scenario analysis in focus for SD modelling in the MAL3. Norrström/Baltic Sea case

Author: Samaneh Seifollahi (SU)

CHARENTE RIVER BASIN (MAL 4)

Over the past few months, the MAL4 team has worked to develop dynamic models as part of the Land Sea system and to collect the supporting data, using different sources of information and previous work in the area. Our work centeredon land-sea interdependencies and competition for water and space, dealing with environmental pressures from economicactivities - mainly agriculture and population increase - on the quality and quantity of water resources, and pressure on protected areas and wetlands.

We developed specific models for issues relating to water resources, agriculture, shellfish farming, ports, and infrastructure as part of the overall model. We conducted interviews with key stakeholders from the agricultural, shellfish farming and ports sectors, focusing on the development of business roadmaps and policy solutions for sustainable development, based on rural-coastal collaboration and land-sea synergies to prepare the new workshop. Solutions were identified to achieve the objectives set out in the common vision of a desirable future, which emerged from the previous workshops: a harmonious and diversified territory that allows the continuation and development of major economic activities, agriculture and shellfish farming,while preserving water resources.

The structure and first results of SD models will be presented and discussed in our second multi-actor workshop, which will take place by video conference (due to Covid-19) at the end of January. This feedback will be taken into account for further developments. Stakeholders from coastal and rural background will also share and discuss their views on transition pathways and business solutions, keeping in mind the common goal of enhancing synergies and promoting sustainable development of their territory.

Author: Françoise Vernier (INRAE)

DANUBE MOUTHS/BLACK SEA (MAL 5)

MAL 5 development of COSTAL project for the second semester of 2020, included activities related to Knowledge Transition, SD modelling of coastal-rural interactions and dissemination of results achieved so far.

The clausal loop diagrams from the multi-sectoral workshop were further on refined, in order to define the stocks, flows and the interrelated processes, targeting the in-depth description and understanding of land sea interaction in the study area. The goal of the final model is to explore alternative scenarios to improve the quality of life and sustainability within Danube Delta Biosphere reserve and its marine waters (Black Sea) as one of the most impacted area along the Romanian littoral. The land sea interactions that will be considered are defined by the ecosystem-based management approach, as follows:

- Improve Sustainability of the area.
- Adaptation and Mitigation to Climate change.
- Use of Knowledge to improve sustainability and climate change impacts in the area

The **next steps** will be to organize the stakeholders meeting and show them results of the model, to fine-tune the model considering the stakeholders requirements.

Overall, the model will tackle issues on how to use the key points of growth within rural areas (that is agriculture, tourism and fishery) to improve the socio- economic state of the area, while conserving the environmental assets. Therefore, the following problems might be addressed upon the stakeholders' requirements.

- How can agriculture contribute to improved management of natural resources (water and soil);
- How climate change is affecting the human economic activity in the rural coastal area?
- Which is the role of financial instruments for rural infrastructure in increasing the quality of life?
- How will the development of services to individuals and of the residential economy affect the freshwater quality?
- How will cooperation help farmers to deal with the economic and environmental challenges?
- How can investment in capacity building (education) bring added value to environmental quality?
- How far can tourism be developed without affecting the biodiversity of the area?
- What effect will have the proper management of clogged channels on economic activities of the area?

Author: Steliana Rodino (ICEADR)

MAR MENOR COASTAL LAGOON (MAL 6)

Over the last months, we have been working hard to convert the qualitative causal loop diagrams that were developed jointly with stakeholders during sectorial and multi-sector workshop in 2018 and 2019, into quantitative models based on System Dynamics (SD). In the recent second multi-actor workshop, we presented and discussed the SD model structure and interactions with stakeholders from all sectors involved, and we continued discussions on the development of business roadmaps and policy solutions for sustainable development based on rural-coastal collaboration and synergies.

Current and next steps in project development include: (a) to extend and enhance model structure after the discussions with stakeholders during our second multi-actor workshop; (b) organization of sectoral expert interviews to check and complete current model equations and input data; (c) testing the impacts of different possible solutions on each of the sectors involved; (d) further develop the business roadmaps and policy solutions including a timeline for the implementation of different solutions leading to optimal model results based on stakeholder input; (e) testing model results under future socio-economic scenarios; and (f) discussing preliminary model outputs in 2021 together with stakeholders in order to look for consensus solutions.

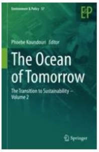
Author: Joris de Vente, Javier Martinez (CSIC)

RECENT PUBLICATIONS

Stockholm University published their article on how coastal water quality is affected by nutrient pollution and hydroclimatic effects in the journal of Ocean & Coastal Management. **Read it here**

Stockholm University, as a co-lead partner for the Greek MAL2 case in COASTAL, has developed a modelling approach based on coupled water and salt balance equations to estimate currently unknown water exchange fluxes through the Gialova coastal lagoon, Greece. **Read it here**

COASTAL as one of the thirteen projects funded by the European Commission introduced in the book "The Ocean Of Tomorrow" vol.2 .



Phoebe Koundouri Editor

The Ocean of Tomorrow

The Transition to Sustainability – Volume 2

Springer

These projects propose concrete measures and mechanisms to improve the efficiency and excellence of marine and maritime research to address the challenges and opportunities presented by the oceans and seas. These 16 projects and initiatives, some completed but the vast majority ongoing, form the "Sustainable Blue Growth" research domain of the Greek cluster of the institutions directed by Prof. Phoebe Koundouri, which includes the ReSEES Research Laboratory of the Athens University of Economics and Business, EIT Climate KIC Hub Greece at the ATHENA Research and Innovation Center, the United Nations Sustainable Development Solutions Network-Greece. As a response to the climate crisis and its effect on marine ecosystems and coastal populations , the Sustainable Blue Growth domain is one of the many research domains of the cluster, COASTAL will contribute to establishing transformation pathways towards Sustainable Blue Growth, supported by technically and socially innovative solutions.

The Ocean of Tomorrow | SpringerLink

COOPERATION WITH OTHER PROJECTS

COASTAL cooperation with fellow project ROBUST

co-dissemination
Working together
COASTAL
Synergy
COASTAL
collaboration
outreach activities
interact
teamwork
Combination
co-action
Synergy
Combination
Collaboration
interact
teamwork
Synergy
ROBUST
collaboration
co-creation
combined effort
Working together
ROBUST
Collaboration
co-dissemination

On November 18, 2020, the COASTAL coordination team of VITO interacted in an online meeting with the coordination team of the ROBUST sister project of the Department of Rural Sociology of Wageningen University to discuss complementary aspects and differences in methodology and opportunities for joint dissemination actions. COASTAL tools discussed with the ROBUST team

ROBUST Fellow project highlights

For more information visit the ROBUST project website

The latest updates from our partner project, ROBUST, feature Live Cases filled with innovations in enhancing rural-urban linkages. These Living Labs are showcasing new models of governance and cooperation, whether that's through the lens of food policy in Ede and Lucca, new modes of co-governance in Helsinki, networking and co-creation in Valencia, or land-use planning in Frankfurt.

Read all of the posts to stay up-to-date on the latest included Fuzzy Cognitive Mapping to graphically support stakeholder exchanges during brainstorm sessions, the VITO RuimteModel, a spatial-dynamic model for land use change in Flanders, and System Dynamics modelling. All these tools were considered interesting by the ROBUST team for theirresearch activities, but the main interest was in the RuimteModel as an instrument to support rural development with spatial-dynamic analyses.

ROBUST developments:

Co-Creation during COVID-19

Proximity and Resilience in Times of Sanitary Emergency

Diving Deeper into Local Public Procurement

Embedding Research in Regional Policy Processes

ICRE8 participate to a series of workshops on Land-Sea Interactions for Marine Spatial Planning

As part of the EU SIMAtlantic project, the University of Liverpool organized a series of online workshops in replacement of an on-site session due to take place in the European Maritime Day in Cork, Ireland in 2020. The COASTAL multi-sectoral participative approach combined with system thinking tools (fuzzy cognitive maps, causal look diagrams, system dynamic models) was presented and identified as an innovative approach which could be adapted to MSP process in order to facilitate the assessment and prioritization of LSI in the context of MSP as well as identifying stakeholders conflicts at an early stage of the process.

Did you know you can read the EIP-Agri Practice Abstracts of the COASTAL project?

COASTAL being a multi-actor H2020 project contributes to the EIP-AGRI repository of practical knowledge across the EU in the form of short and concise practical information, so called 'practice abstracts'. Practice abstracts are being developed throughout the course of the project, currently being 53.

Follow up the COASTAL EIP AGRI practice abstracts

DOWNLOADS

3rd International Baltic Earth Conference proceedings

Understanding the coupled land-sea system dynamics in coastal regions through a participatory approach: A Baltic case study

Multiple drivers of change in coastal water quality and ecosystem status: From participatory mental mapping to systems modelling

Land-Sea Interactions in the Coastal Marine System of the Baltic Sea Under Hydro-Climatic Variability

Understanding interactions between urban development policies and GHG emissions: A case study in Stockholm Region

Watch the latest videos of COASTAL

JOIN US

Your active engagement is important to ensure that the innovative tools, approaches and policy recommendations we develop reflect the views of those who are directly concerned with improving the coastal-rural synergy to foster rural and coastal development while preserving the environment.

GET INVOLVED IN COASTAL

- Participate in national workshops;
- Take part in the Multi Actor Labs;

SUBSCRIBE TO OUR NEWSLETTER

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ΙΔΡΥΜΑ ΚΑΠΕΤΑΝ ΒΑΣΙΛΗ & ΚΑΡΜΕΝ ΚΩΝΣΤΑΝΤΑΚΟΠΟΥΛΟΥ
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