COASTAL
Collaborative Land-Sea Integration Platform

Deliverable D10
Methodological report on business roadmap and policy recommendations development

AUTHORS	ICRE8: Ebun Akinsete, Alice Guittard, Phoebe Koundouri, Lefteris Lavantis, Nikos Mavrogiannakis, Lydia Stergiopoulou
CONTRIBUTORS	CEBAS: Joris De Vente, Javier Martinez-López; Raquel Lujan Soto HCMR: Aris Karageorgis, Erasmia Kastanidi; ICEADR : Pop Ruxandra ; Steliana Rodino, INCDM: Luminita Lazar; INREA : Francoise Vernier, Benoit Othoniel, Jean-Marie Lescot SU: Georgia Destouni, Giorgos Maneas, Samaneh Seifollahi; Guillaume Vigouroux Zahra Kalantari VITO: Jean-Luc de Kok, Bastiaan Notebaert, Nele D'Haese
APPROVED BY WP MANAGER:	Phoebe Koundouri (ICRE8)
DATE OF APPROVAL:	26 April, 2022
APPROVED BY PROJECT COORDINATOR:	Jean-Luc de Kok (VITO)
DATE OF APPROVAL:	28 April, 2022
CALL H2020-RUR-2017-2 Multi-actor Research and Innovation action	RURAL RENAISSANCE - FOSTERING INNOVATION AND BUSINESS OPPORTUNITIES - New approaches towards policies and governance
WORK PROGRAMME Topic RUR-02-2017	Coastal-rural interactions: Enhancing synergies between land and sea-based activities
PROJECT WEB SITE:	www.h2020-coastal.eu
COASTAL Knowledge Exchange Platform:	www.coastal-xchange.eu

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

COASTAL: Collaborative Land and Sea Integration Platform - Co-creating evidence-based business roadmaps and policy solutions for enhancing coastal-rural collaboration and synergies in Europe focusing on economic growth, spatial planning and environmental protection. Project timeframe: 01/05/2018 - 31/10/2022

Partnership:

This document was produced under the terms and conditions of Grant Agreement No. 773782 for the European Commission. It does not necessary reflect the view of the European Union and in no way anticipates the Commission's future policy in this area.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

1 TABLE OF CONTENTS

SUMMARY 5
OBJECTIVE 5
RATIONALE 5
1. INTRODUCTION 7
1.1. AIMS AND OBJECTIVES 7
1.1.1. RELATIONSHIP WITH OTHER DELIVERABLES 7
2. METHODOLOGY 9
2.1. DEFINING THE COASTAL BUSINESS ROADMAPS 10
2.1.1. A CO-CREATION PROCESS 10
2.1.2. CANVAS 11
2.2. BUSINESS ROADMAP DEVELOPMENT 14
2.2.1. STEP 1: IDENTIFY MAIN ISSUES AND CHALLENGES OF COASTAL-RURAL REGIONS 16
2.2.2. STEP 2: DEFINE SCOPE, DESIRED STATE TO BE ACHIEVED WITH THE BRM AND SECTORS TO BE INVOLVED 17
2.2.3. STEP 3: IDENTIFY BUSINESS OPPORTUNITIES AND POLICY RECOMMENDATIONS FOR LAND-SEA SYNERGIES AND CROSS-SECTORAL COLLABORATION 18
2.2.4. STEP 4: OPERATIONALIZATION AND VALIDATION OF A FINAL SET OF BUSINESS AND POLICY ACTIONS 19
2.3. SUMMARY OF TOOL USED 20
2.3.1. LOCAL KNOWLEDGE 21
2.3.2. QUALITATIVE AND QUANTITATIVE MODELLING TOOLS 22
2.3.3. BEST PRACTICES AND GENERIC TRANSITION PATHWAYS 22
2.3.4. SCENARIOS 23
3. CONCLUSION 24
REFERENCES 26
APPENDIX 1. WP3 GUIDELINE FOR MALS 28
APPENDIX 2. BEST PRACTICE FEEDBACK SURVEY 32
APPENDIX 3. POLICY MAPPING GRID 33

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

LIST OF FIGURES

FIGURE 1: WORKFLOW FOR THE COASTAL PROJECT. 8

FIGURE 2: MAIN COMPONENTS OF THE COASTAL FRAMEWORKS. CLD: CAUSAL LOOP DIAGRAM; SD: SYSTEM DYNAMIC; TPS: TRANSITION PATHWAYS; BRMS: BUSINESS ROADMAPS. SQUARE REPRESENT QUALITATIVE APPROACHES (PARTICIPATIVE APPROACH), CIRCLE REPRESENT A QUANTITATIVE APPROACH, SMALL DASHES IS THE STARTING POINT AND LARGE DASH IS THE OUTCOME..... 9

FIGURE 3: COASTAL BUSINESS POLICY ROADMAP CO-CREATION PROCESS WITH LOCAL STAKEHOLDERS..... 11

FIGURE 4: BUSINESS MODEL CANVAS (FROM OSTERWALDER ET AL., 2010)..... 12

FIGURE 5: COASTAL BUSINESS POLICY ROADMAP CANVAS..... 13

FIGURE 6: COASTAL MALS BUSINESS ROADMAP STEP BY STEP DEVELOPMENT (ADAPTED FROM TILLER ET AL., 2021)..... 15

FIGURE 7: TOOLS MOBILIZED IN DIFFERENT STEPS OF THE BRM DEVELOPMENT: LOCAL KNOWLEDGE AND SYSTEM MODELS ARE USED IN EACH STEP OF THE PROCESS; SCENARIOS ARE USED IN STEP 1, 3 AND 4; BEST PRACTICES AND TRANSITION PATHWAYS ARE USED IN STEP 3; LITERATURE REVIEW IS USED IN STEP 1 AND 4. 20

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

LIST OF TABLES

TABLE 1: GUIDING QUESTIONS FOR THE BUSINESS POLICY CANVAS 14

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

ABBREVIATIONS

BRM – Business Roadmap
BAU – Business As Usual
CLD – Causal Loop Diagram
FCM – Fuzzy Cognitive Map
KPI – Key Performance Indicator
M – Month
MA – multi-actor
MAL – Multi-Actor Lab
MS – Milestone
MSFD – Marine Strategy Framework Directive
RD – rural development
RRI – Responsible Research and Innovation
SAB – Scientific Advisory Board
SD – System Dynamics
SDG – Sustainable Development Goal
SI – System Innovation
SSP – Shared Socio-economic Pathways
WP – Work Package
WFD – Water Framework Directive

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

SUMMARY

Objective

The main objective of this deliverable is to present the methodology behind the development of the business roadmaps and policy recommendations for coastal-rural development co-created in the 6 case studies (Multi-Actor Lab) of the COASTAL project. It describes how local knowledge, models, transition pathways and examples of best practices were combined to develop innovative business and policy solutions for land-sea collaboration.

Rationale

The general objective of work package 3 (WP3) is to design and evaluate **evidence-based** business and policy solutions aimed at improving land-sea synergy in EU coastal regions, and translate the outcomes into strategic business road maps and policy guidelines. They will support policy-makers, business entrepreneurs and other local actors with evidence-based decision making. WP3 will be central to the project impact (see Figure 1), and in particular the exploitation project expertise and outcomes after the project conclusion. An iterative, multi-actor approach is used to exploit the local knowledge and experience of the MAL partners (WP1), model simulation (WP4), scenarios and transition pathways (WP5) to develop feasible, robust and accepted business road maps and policy guidelines.

Section 2 presents the methodology step by step.

Section 3 summarizes how local knowledge, models, transition pathways and examples of best practices have been used.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

This page is left blank deliberately

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

1. INTRODUCTION

This deliverable is developed as an output of work carried out under Work Package 3 – Business and Policy Support. The two main objectives of the WP are:

- to design and evaluate evidence-based business and policy solutions aimed at improving land-sea synergy in in the 6 Multi-Actors Labs (Project Objective 3)
- translate the outcomes of the systems modeling and scenario analysis into strategic business road maps and policy guidelines (interacting with WP4 and WP5)

Together the results of WP1 (Causal Loop Diagrams), WP2 and WP4 (Systems modeling), WP3 (policy analysis) and WP5 (scenario analysis) provide a toolset for supporting policy-makers, business entrepreneurs and other local actors with evidence-based decision making. WP3 is organized around three interdependent work tasks:

3.1 Business Solutions & Policy Recommendations for Coastal-Rural Synergy
3.2 Co-Learning, Synthesis and Validation
3.3 Business and Policy Diffusion Strategy

1.1. Aims and Objectives

The main objective of this deliverable is to describe the methodology used to develop the COASTAL Business roadmaps and policy solutions in the Multi-Actor Labs (MALs). The deliverable is the output of work conducted under Task 3.1 and Task 3.2, in developing the methodology and guidelines to support the co-creation process happening at MAL level in order to co-develop with local stakeholders, representing coastal and rural activities, business and policy strategies for land-sea synergies (T3.3). To this end, the lead partner for WP3 has worked in close collaboration with the MALs in order to report on the regional implementation of the methodology described in this deliverable.
This second deliverable of WP3 provides a step by step guideline on how the COASTAL Business roadmaps and policy solutions have been co-designed, based on a custom made Business Canvas, describing the use of local knowledge (WP1), expert knowledge (WP4), scenarios and transition pathways (WP5), and examples of best practices (WP3).
Partners who have contributed to the development of this deliverable include: ICRE8, VITO, INRAE, HCMR, SU, CSIC, NIMRD, ICEADR.

1.1.1. Relationship with other deliverables

The deliverable presented in this document is related to the following deliverables:

- D03 - Sectoral Analysis of Coastal and Rural Development

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

- D04 – Multi-Actor Analysis and Land-Sea Dynamics
- D09 – Inventory of Business Opportunities & Policy Alternatives
- D11 – Strategic Business Road Maps and Policy Guidelines for Coastal-Rural Synergy
- D14 – Operational SD Models for Coastal-Rural Interactions
- D15 – Generic Tools for Business & Policy Analysis
- D18 – Generic Scenarios and Transition Pathways for Coastal-Rural Analysis

This deliverable builds on the work of D03 and D04 (harness local knowledge to better understand the coastal-rural system, main issues and challenges), D09 which identifying best practices for land-sea synergies, as well as the generic coastal-rural scenarios (D18) and models (D14-15) as tools used in the co-creation process with local stakeholders. Finally, this deliverable forms the methodological background upon which deliverable D11 will be developed within Task 3.3.

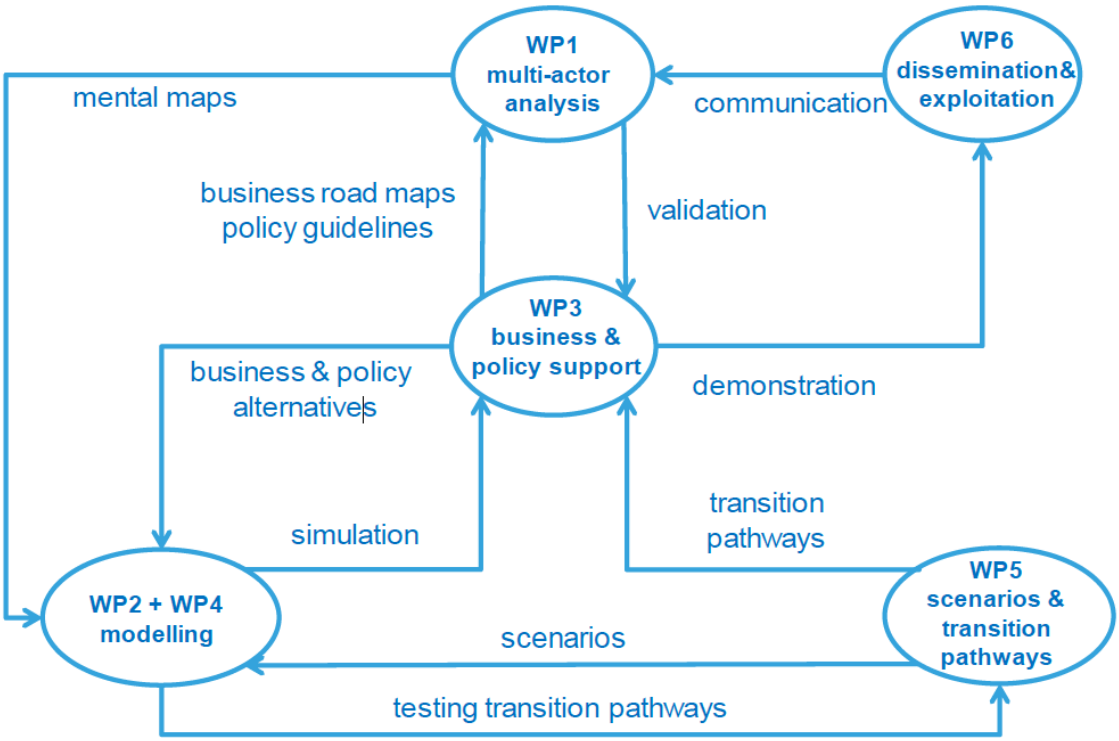


Figure 1: Workflow for the COASTAL project.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

2. METHODOLOGY

The COASTAL business roadmaps are based on a standard business model canvas (Osterwalder et al., 2010; de Reuver et al. 2013) which was customized to the needs of a strategic territorial development roadmap document, with coastal-rural synergies for a sustainable future as main driver. The aim of the roadmap is to propose a set of business and policy solutions/actions, able to support coastal-rural regions in the transition towards a sustainable future, co-created with local stakeholders across sectors within the whole region. The coastal-rural system dynamic models allow the identification of key points of intervention (leverage points) within the coastal-rural system, and the simulation of different scenarios tested against the desired future state to be achieved. While scientists and local stakeholders identify and propose solutions, involving different sectors, based on local knowledge and national to international best practices, generic transition pathways serve as seeds for innovative solutions to emerge; solutions involving multiple sectors, fostering coastal-rural collaborations and/or land-sea synergies are favored. Once scientists, local experts, business representatives and local policy makers along the source-to-sea continuum agree on the solutions to focus on, those local actors are asked to define the short, mid and long term actions required for the successful implementation of the proposed solutions. In addition, the stakeholders identify the specific actors and target groups to be involved in order to successfully implement the solutions proposed. The proposed solutions/actions are then tested using the SD models under different scenarios (e.g. business-as-usual) to verify and quantify expected impacts. Figure 2 below presents a schematic of the COASTAL work flow.

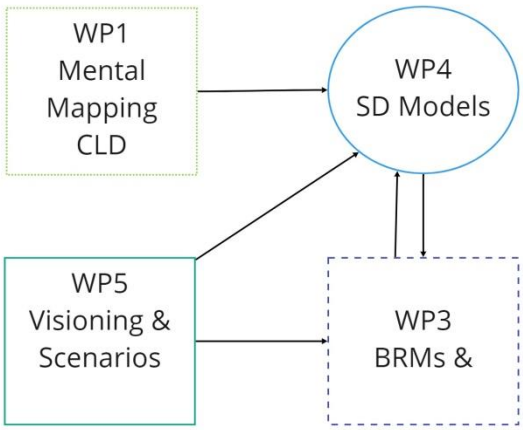


Figure 2: Main components of the COASTAL frameworks. CLD: Causal Loop Diagram; SD: System Dynamic; TPs: Transition Pathways; BRMs: Business Roadmaps. Square represent qualitative approaches (participative approach), circle represent a quantitative approach, small dashes is the starting point and large dash is the outcome.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

2.1. Defining the COASTAL Business Roadmaps

The COASTAL Business Roadmap is a short to long-term plan of key actions (milestones) for the implementation of innovative, cross-sectoral solution(s) at the scale of the local case-study. It must inherently integrate the dimensions of land-sea synergy and/or coastal-rural collaborations in support of the sustainable development of coastal-rural regions and the transition towards the desired future conditions (WP5). It documents expected impacts, synergies and added value, key actors to involve in key activities visualized in a time series, adding a financial and policy dimension, key resource needed and key beneficiaries.

> *"A business roadmap is considered as an overview of a strategic initiative or project visualized by a series of sequential or parallel milestones tasked to different teams and stakeholders".*
> *-roadmunk-*

Here a business-oriented solution can focus on the development of one specific activity (e.g. organic agriculture, sustainable aquaculture, rehabilitation of a salt marsh, gastronomic tour involving local producers…) or having a wider scope (e.g. development of inland tourism, development of a branding name for the area) which will be breaking down into a combination of business and/or policy actions. In combination, a policy guideline provides policy recommendations to support the implementation of the solution as well as on how to increase land-sea / coastal-rural synergies governance and legal framework.

2.1.1. A co-creation process

The methodological background behind the co-development process of the COASTAL business roadmaps lies within the fundamentals of system innovation (SI) (Matti et al. 2020) and Responsible Research and Innovation principals (RRI) (EC 2018; Schuijff et Dijkstra, 2022). It uses a System Innovation Approach (SIA) which is an analytic approach towards systemic change based on interconnected set of innovations, where each influences the other; with innovation both in the parts of the system and in the ways in which they interconnect. The concept of a system of innovation brings together in a single framework the elements of good practice required to foster innovation in the context of climate adaptation (De Vicente López, J. and Matti, C., 2016), implemented as follow:

-Defining the scope: systems boundaries (spatial, temporal or conceptual), setting focus/objectives
-Mapping: Mapping of the socio-environmental system including the role of stakeholders, issues and challenges
-Problem Definition: Challenge statement and problem isolation
-Envisioning: Outlining the desired future state/goal
-Back casting: Identification of Innovation Pathways working backwards from the Future Vision
-Building: Elaboration of the Innovation pathways and identification of concrete actions

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

SI and RRI concepts are themselves rooted into the wider Transition Management methodology (Loorbach and Rotmans, 2006; COASTAL D18), with the aim to align the needs and views of society and research, from the design phase through the implementation, promoting dialogue between science, industry, policy-makers, NGOs through a co-creation process with stakeholders to support the transition toward sustainable coastal-rural regions.

Co-creation is at the core of COASTAL methodology and the business roadmap development (figure 3), using a combination of qualitative and quantitative holistic systemic tools (Tiller et al. 2021). Stakeholder representatives of the quadruple helix (policy-science-industry-society), from coastal and rural sectors, who are identified as problem-owners, are engaged from the design stage of the process, identifying and agreeing on the common challenge the strategic business roadmaps will tackle, the aim of the strategy and the design of the roadmap itself. This creates a common ownership of solutions developed, maximizing their uptake while aligning with existing plans and priorities.

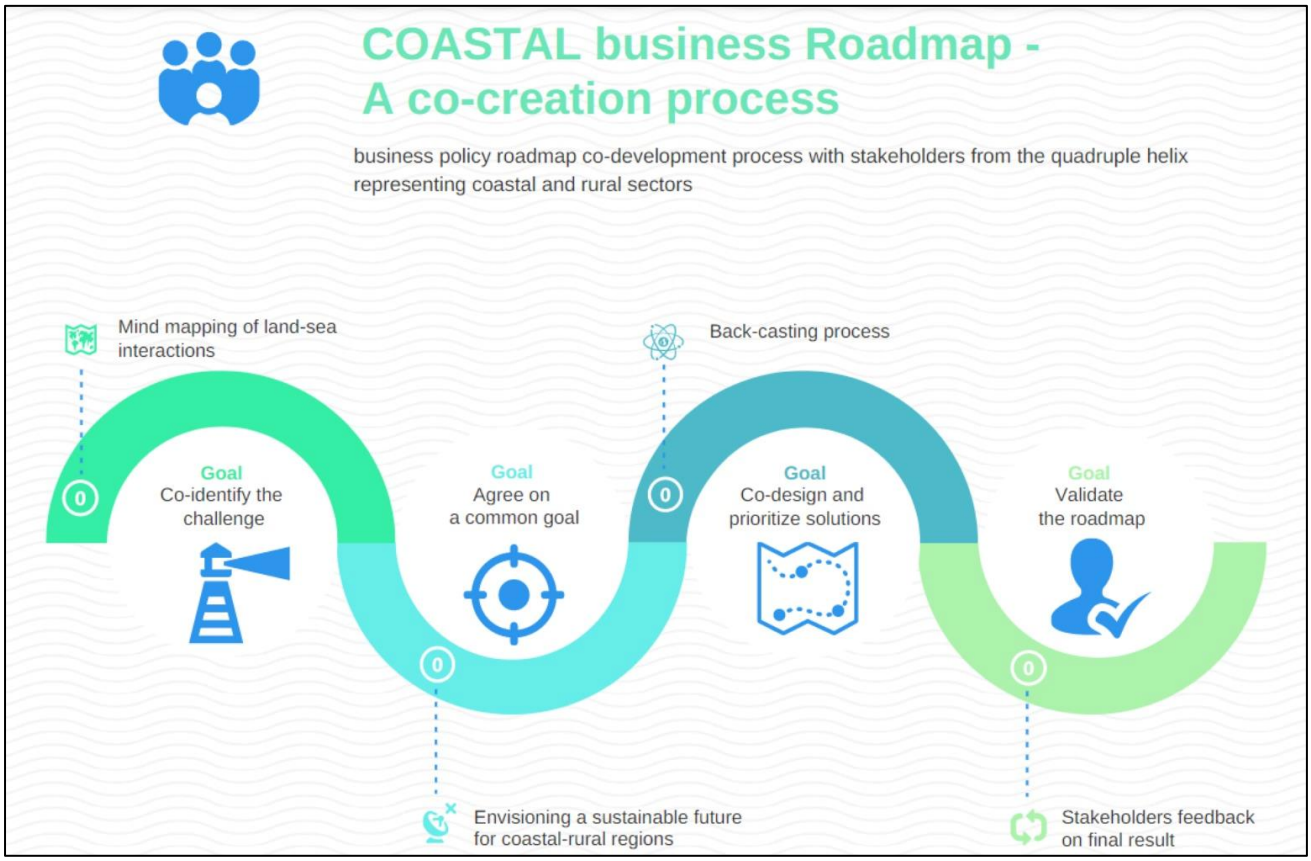


Figure 3: COASTAL Business Policy roadmap co-creation process with local stakeholders

2.1.2. Canvas

To facilitate the design of the COASTAL business roadmap (BRM), ICRE8 developed a business roadmap

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

canvas built upon the 9 basic building box of a common business model canvas customized for the need of the project (see figure 4 below), and a guideline (Appendix 1) to support the MAL leaders in their co-creation process.

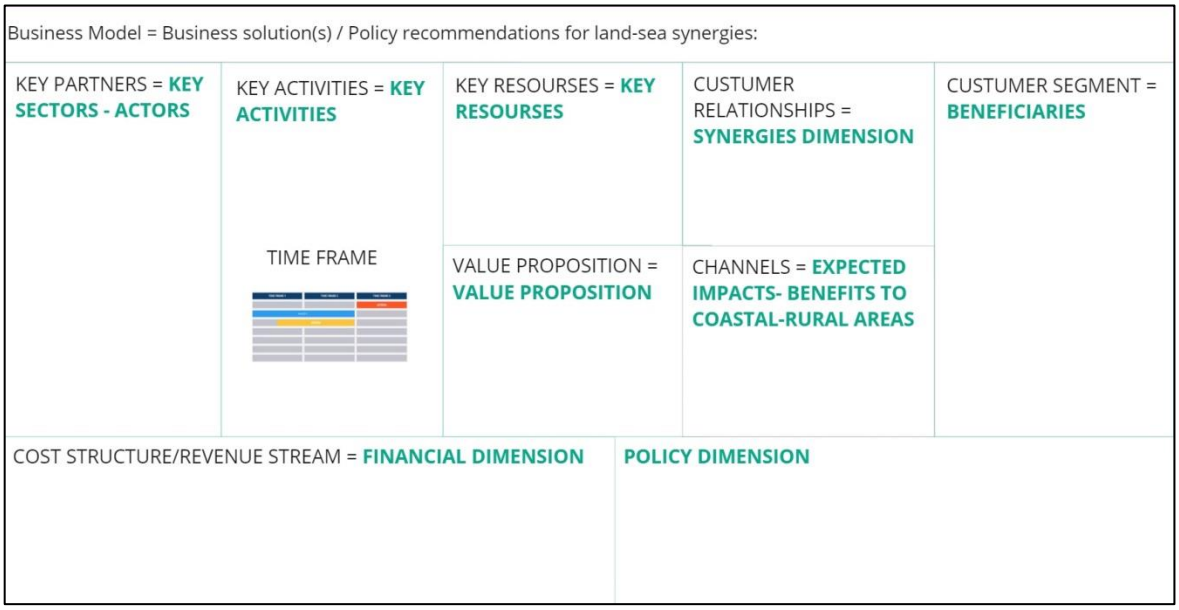


Figure 4: Business model Canvas (from Osterwalder et al., 2010)

The COASTAL BRM is made of 6 elements (see figure 5):

- (1) Start by presenting the expected synergies and impacts for coastal-rural area of the business and systemic policy solutions proposed within the BRM, having in mind that the COASTAL project seeks to tackle on-going coastal challenges through increased collaboration and synergies across sectors from source-to-sea.
- (2) MAL leaders are asked to pay a particular attention to the solutions' added value for the transition toward a sustainable future, ensuring that the BRM proposed is in line with the transition pathways for coastal-rural regions developed within WP5.
- (3) The BRM includes a list of key target groups: actors and sectors to be mobilized for ensuring effective implementation of the listed actions (4).
- (4) A combination of short (0-5 years), mid (5-10 years), and long term (+10 years) actions are identified related to specific objectives or sectors (e.g. objective 1: "developing sustainable practices in agriculture", objective 2 "promoting coastal and rural ecotourism", objective 3: "integrated water management across coastal and rural area") which is the core of the BRM for COASTAL. In the case of complex coastal-rural problems, a combination of business and policy solutions is more likely to have a strong multiplier effect in the system response than a single business solution. The planning of actions is complemented by a policy section which highlights the barriers, gap and policy support needed to effectively and successfully implement the BRM, pointing out potential risks in the context of lack of policy support. The financial dimension corresponds to a first scan of potential availability or lack of funding (from local to supra-national, public to private) to support the

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

necessary investment required for implementing the listed actions.

- (5) The BRM also highlights the key resources required (technological, human, physical, human) which can represent enabler or limitation (risks) depending on their availability and sustainability.
- (6) Lastly the expected beneficiaries are also identified (which sectors, stakeholder groups, ecosystems) to ensure that all parts of the socio-ecological system, from source-to-sea, will benefit from the BRM implementation.

A list of guiding questions for each step was provided with the canvas to support MAL leaders in developing the BRM (table 1).

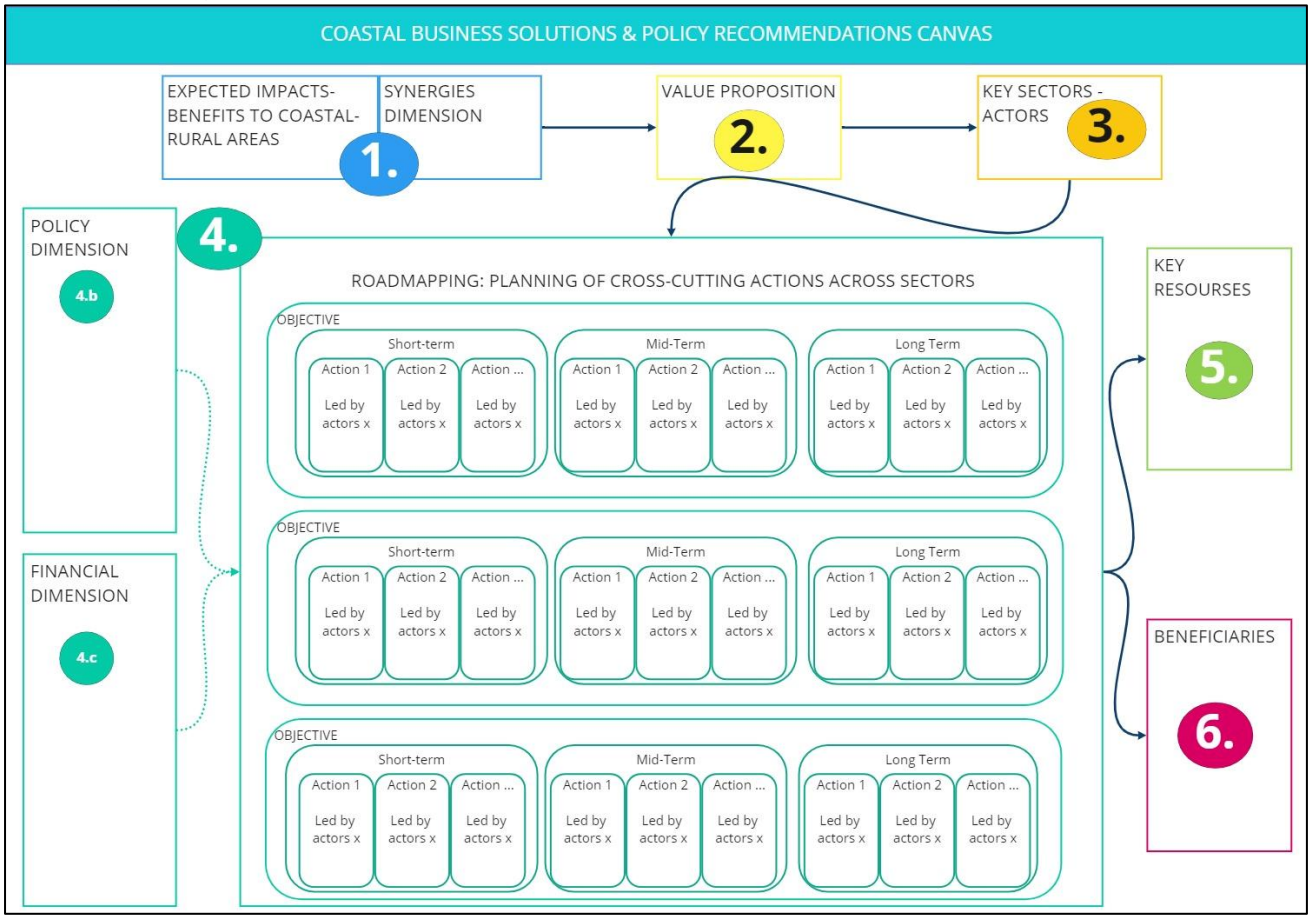


Figure 5: COASTAL Business Policy Roadmap Canvas

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

Table 1: Guiding questions for the Business Policy Canvas

Box	Guiding questions
1.EXPECTED IMPACTS- BENEFITS TO COASTAL-RURAL AREAS	Economic (in terms of employment / Additional revenue...) Environmental Social Governance
1.SYNERGIES DIMENSION	Does the roadmap involve multiple businesses? Sectors? Is it built on synergies between sectors? How the actions contribute to land-sea synergies? How the actions foster coastal-rural collaborations?
2. VALUE PROPOSITION	How is the roadmap supporting the transition? Contribute to reaching the vision of the MAL? What is the added value brought by the roadmap to coastal-rural area? Which problem are we solving?
3. KEY SECTORS - ACTORS	Who to involve? Who will lead the implementation of the proposed actions? Who will directly contribute to the implementation of the business solutions? Who needs to be involved to support the implementation of the actions?
4. ROADPMAPPING: PLANNING OF CROSS-CUTTING ACTION ACROSS SECTORS	Prioritize actions (short-term; mid-term; long-term) per objectives or sectors Identify institution to be involves and or that should lead the actions *The combination of all the actions will lead to the achievement of the roadmap end goal (the stakeholders' vision)*
4.a. POLICY DIMENSION	Are there any policy barriers, governance hurdles for the implementation and success of the combined actions? What policy change/support do we need for the implementation and the success of the actions, if any? What change/support in terms of governance do we need for the implementation and the success of the actions, if any? Does the solution contribute to the implementation of the Green Deal? Does it need the effective implementation of the Green Deal to be successfully implemented? How?
4.b. FINANCIAL DIMENSION	Where is the most important cost inherent to the implementation proposed actions? What key resources are more expensive? What key activities are more expensive? Who will support the costs inherent to the implementation of the proposed actions? Who can finance the proposed actions? Potential financial support (loan/subsidies/tax reduction...) From whom? (public/private entities, local/national/EU level)
5. KEY RESOURSES	What are the key resources needed to implement the identified actions? (available and not avaialble) - Physical/technological - Intellectual (brand patents, copyright, data) - Human - Financial Are the natural resources needed used and manage in a sustainable way?
6. BENEFICIARIES	Who will benefit from the implementation of the actions? Which Stakeholders? Which Resource/Ecosystem? Which segment? (Coastal area, Rural area? Hinterland?)

2.2. Business Roadmap Development

The development of the business roadmap and related policy recommendations is broken down into four steps, aligning with WP1 stakeholder engagement process (figure 6).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

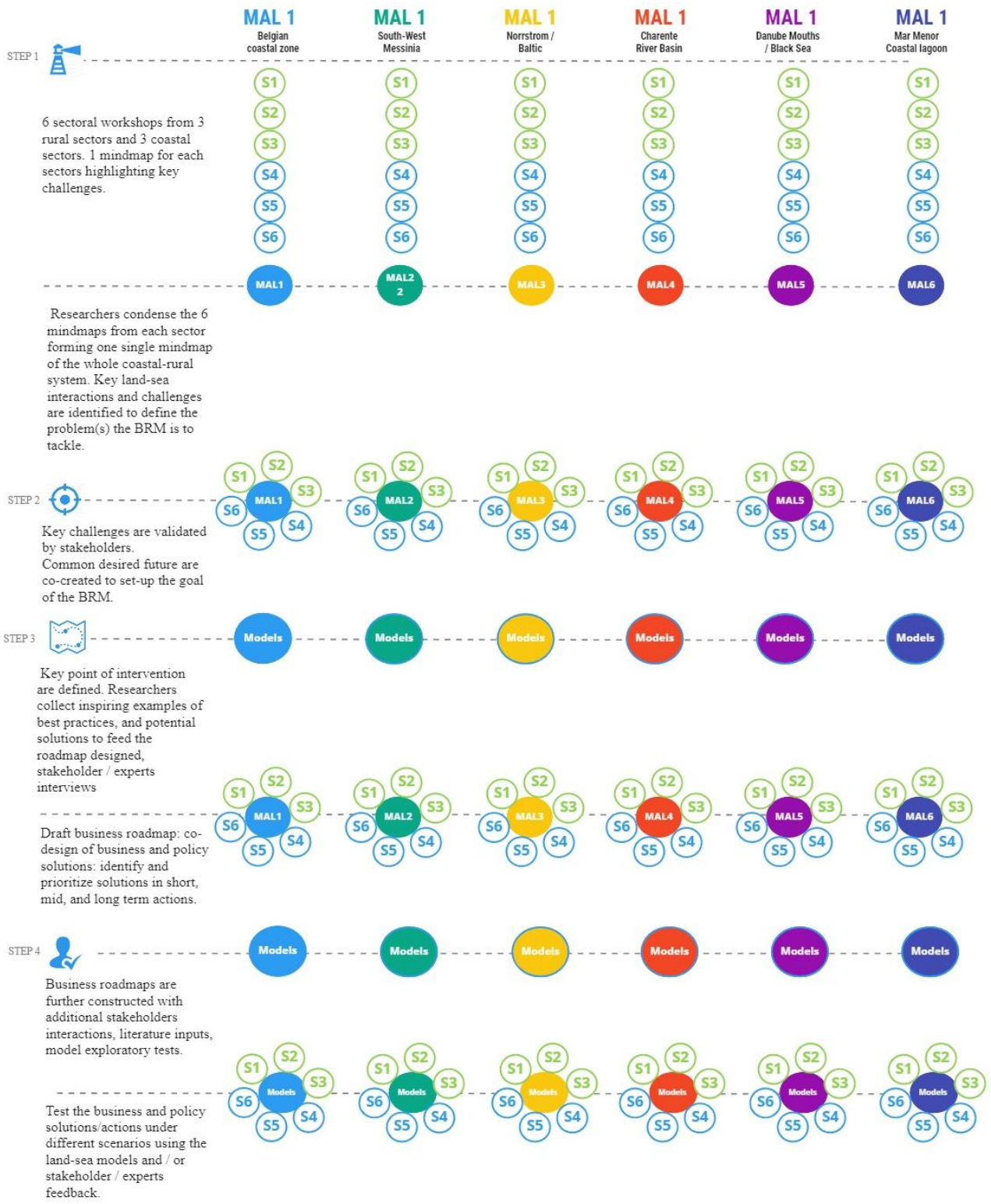


Figure 6: COASTAL MALs Business Roadmap step by step development (adapted from Tiller et al., 2021)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

2.2.1. STEP 1: Identify main issues and challenges of coastal-rural regions

The first step of the BRM development process was the identification of issue(s) and challenge(s) of the coastal-rural system to be potentially tackled by the BRM.

As part of WP1, sectoral stakeholder workshops were carried out to co-create mental maps and regional scale Causal Loop Diagrams (CLD) for land-sea interactions, structured and synthesized from the stakeholder perceptions of the system variables and their interactions. A graphical concept mapping tool was used during the sectoral workshops with local stakeholders, to identify the main issues and challenges to be tackled by the Business Roadmaps and visualize these in mental models. These were developed during the 6 sectoral workshops (3 from coastal sectors, 3 from rural sectors) and helped stakeholders identify the multiple issues and barriers affecting the sustainability of coastal-rural regions, the drivers and key variables of the land-sea system and to draw relationships between them (COASTAL D03).

During a second phase, the MALs consolidated the initial sectorial mental maps, based on those stakeholder discussions on issues and challenges, and merged them to formulate one single graphical CLD integrating the perceptions and ideas proposed by representatives from all sectors, forming a holistic view of the local land-sea system. The combined CLDs supported the identification of coastal-rural interactions in a qualitative way, including the most relevant feedback mechanisms explaining main problem domains (dominant issues) affecting the coastal-rural region.

Based on the unified regional CLDs, the MALs developed and used semi-quantitative Fuzzy Cognitive Mapping (FCM) for performing exploratory scenario analyses. Using this approach, scenario simulations can be carried out by changing the states of economic, policy and natural drivers alone (single-driver) or in combination (multi-drivers). This semi-quantitative exploratory scenario modelling has been helpful in identifying bottleneck issues and key challenges (e.g. needs to handle so far largely neglected legacy sources, and to develop synergistic cross-sectoral and cross-scale management strategies in MAL3) and has been described in WP1 deliverable D04.

In parallel, a mapping of the policy frameworks at MAL level was conduced (template Appendix 3), identifying the key policy documents under which the local territory is evolving (from European Directives and strategies to national and local development plans). This created a better understanding of the local policy context, constraints and opportunities, but also potential policy gaps when it comes to support synergies and collaboration across sectors within costal-rural regions. The policy mapping was carried out via literature review and stakeholder discussions as part of the sectoral workshops.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

2.2.2. STEP 2: Define scope, desired state to be achieved with the BRM and sectors to be involved

The issues and challenges discussed and emphasized by stakeholders in the sectoral workshops were consolidated during the first round of multi-actor workshops where the unified coastal-rural CLD was presented to assess whether stakeholders' realities and views of the system were effectively reflected in the combined CLD. Stakeholder feedback helped validate the interactions across the different elements (variables) of the system, and the scope (boundaries) of the study, paving the way for quantitative analysis (systems modelling). The combined CLD enabled to show common values for all sectors, explain and validate with stakeholders which variables play a more important role, and analyse how multiple variables interact with each other. Through this exercise sectors playing a central role in the system are highlighted. Dominant issue(s) / challenge(s) to tackle are then to be acknowledged and agreed upon by all representatives.

Defining the scope and main goal of the BRM is then defined by engaging participants in a visioning exercise (De Vicente Lopez et Matti, 2016), to co-design the desire state local stakeholders wish for their region. Thepurpose here is to build a shared positive vision of the future (horizon 2050) across coastal and rural sectors. In a multi-sectoral workshop setting, stakeholders are split in small groups formed by stakeholders from different sectors to agree upon a common vision for the future, based on rural and coastal synergies, collaboration, and mutual benefits. Participants are encouraged to consider the long-term systemic transitions, and not to be confined by the status quo or the way things are at present. Visionary images ought to be conceptually rich enough to be meaningful, , creadible and feasible enough to be useful (De Vicente Lopez and Matti, 2016), this is not a predictive exercise but rather a mean to provide a sense of direction, a goal to be achieved by the business roadmap, as well as the ambitions to get there.

As a preparatory exercise for identifying business and policy solution (STEP3), participants are also asked to think about Milestones that should be reached in a long, mid and short terms using a back-casting process (starting from the future vision, going backwards towards the present; COASTAL D18), and which stakeholders should be involved in each steps to reach the vision. They are also asked to pay attention to the policies and resources which would be needed to realise it.

Once all common visions are developed by each group, they are presented to all participants and discussed. The group's visions are then integrated into one holistic common vision representing the voices and milestones proposed by each of the groups upon agreement by all participants.

The purpose of creating small break-out groups with representatives from different sectors within a workshop setting is to, beside avoiding conflicts and facilitate agreement, foster synergies, collective thinking and win-win situations, include (avoid exclusion) and place importance in all the objectives to be attained, but also deepen the detail of multiple common visions.

The discussion in smaller groups can alternatively happen prior to the multi-actor workshop using preparatory meetings and working groups, the multi-actor workshop is then used to present the outputs of the prepararoty work, combined the visions and agree among all parties on the common desired future. It also allows to dedicate more time to go into details when describing the paths towards the vision. The

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

choice to organize the smaller sessions prior or during the workshop depends on the scope of the discussion, the number of participants, and time and resources available.

2.2.3. STEP 3: Identify business opportunities and policy recommendations for land-sea synergies and cross-sectoral collaboration

Once the scope of the BRM has been defined, key leverage points of intervention are to be identified within the coastal-rural local systems such as the sectors to focus on, the interactions to capitilized on, the places in the system which cristalized tensions and opportunities for actions, to drive the sustainable transition in the most effective way. Stakeholder discussions around the CLDs, expert contributions, policy documents are mobilized. Quantified models help identify variables and interactions playing a key role in the system using scenario exploratory analysis ("what if?") from the Fuzzy Cognitive Maps (semi-quantitative modeling), comparing impact of business/policy interventions and exogenous drivers (e.g. drought, economic crisis, etc.) between a standard Business-As-Usual (BAU) scenario and a custom scenario (COASTAL D04). FCM are also useful to prioritize intervention points by illustrating how a change in one part of the system (eg. in one sector) could affect multiple other parts of the system (in multiple sectors, multiple ecosystems).

Screening of literature and initiatives specific to the scope of the BRM, feedback on the COASTAL best practices inventory from COASTAL D09, examples of solutions highlighted in the generic transition pathways from COASTAL D18 local and scientific knowledge on potential business and policy solutions already discussed during previous workshops are combined, creating an initial list of potential solutions / actions. At this stage, FCM can be used as a tool for initial semi-quantitative scenario analysis giving some valuabe insights on potential scenarios or solutions impacts while the generic scenarios and transition pathways provide useful insights on the role of stakeholders as well as for consideration of barriers and enabling conditions. First test runs of potential business and policy intervention with the system dynamics models can then be added as a complementary tool to design or adjust the BRM, by revealing critical policy levers to intervene in the system (COASTAL D13).

In the second round of multi-actor workshops, the milestones and objectives identified in the previous workshop are reviewed and validated, the various solutions listed serve as seeds for the BRM co-design process with local stakeholders, and used as source of information and inspiration for co-developing the roadmap, their relevance and effectiveness are discussed forming the basis for suggesting innovative solutions and the supporting actions to implement. Stakeholders agree and prioritize a combination of actions to address the main coastal-rural challenges, involving the key sectors, barriers and opportunities for

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

their implementation are reviewed. The outputs of the second multi-actor workshop form the draft version of a synergistic business roadmap, which is further consolidated with additional expert inputs (from local partners, sectoral experts). This information is used to assess and further detail the solutions (e.g. policy implications) described in this draft version, but also providing insights on the external factors that might affect the impacts of proposed solutions. It helped to examine the impact of uncertainty and/or supplement the proposed solutions of the BRM with additional information.
Policy recommendations are identified within the business roadmap co-creation process (stakeholder workshops, experts interviews), and drawn at different level: either as a direct short, mid, or long-term solution/action within the roadmap, or else as an enabler to support the effective implementation of the roadmap ("policy dimension") and identified actions. More generic policy recommendations for land-sea synergies and cross-sectoral collaboration are also developed based on the outcomes of the 6 projects Multi-Actor Labs, in the context of the European Green Deal, the Sustainable Development Goals and the EU new approach for a sustainable Blue Economy.

The second round of COASTAL multi-actor workshop coincided with the COVID 19 pandemic, which forced the MAL leaders to hold their workshops online to avoid any further delay, which automatically hampered the co-design process due to the inherent constraints of an online meeting and technical issues (limited time, reduced interactions across participants, absence of networking space, not being familiar with online tools for certain group of stakeholders, reluctance of other groups to participate,...). Nevertheless, with the support of online interactive tools during (collaborative board, breakout rooms, live survey) and after (post-workshop questionnaire and online word document) to collect additional stakeholder inputs, MAL leaders were able to sustain the co-creation process. In this configuration, the capacity of the MAL leaders to keep stakeholers engaged in further contributing to the BRM development through interviews, email conversations, telephone calls, questionnaire was crucial.

2.2.4. STEP 4: Operationalization and validation of a final set of business and policy actions

The final STEP of the roadmap is the operationalization phase which consist of testing (WP4 Task 4.4) and validating the different policy and business solutions proposed within the BRM, via a robustness analysis (WP5 Task 5.4), using the System Dynamic models and/or the stakeholder / expert feedback.

The land-sea SD models developed within WP4 allow to examine the impacts of the BRM on different sectors of the land-sea system through a short to long-term period, and evaluate its impacts against key performance indicators of sustainability which include social, economic, and environmental dimensions, under different scenarios. They are used to explain in quantitative terms the impact that certain actions can

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

have under different scenarios (Business As Usual scenario and SSPs scenarios downscaled at MAL level in WP5). Comparison of the potential impacts of implementing the BRM under different scenarios is crucial to assess the robustness of the BRM and adjust the actions to be taken to achieve intended objectives under a wide range of circumstances. The SD models are also used to identify the optimal combination of solutions (prioritize solutions), in other words, to help assess which combination of business and policy solutions is most efficient to support the transition to the envisioned future.

Stakeholders and experts feedback are also used as a means of verification and validation of the roadmap in complement to the model testing. As not all solutions could be tested with the models (some solutions couldn't be modelled and quantified, some fell outside of the model boundaries), this feedback were used as first mean of validation in some cases, along literature review (proven effectiveness of the solution). Most of the MALs were able to organise an additional workshop to present and disseminate the initial results and collect final feedback to fine-tune the roadmap.

2.3. Summary of tool used

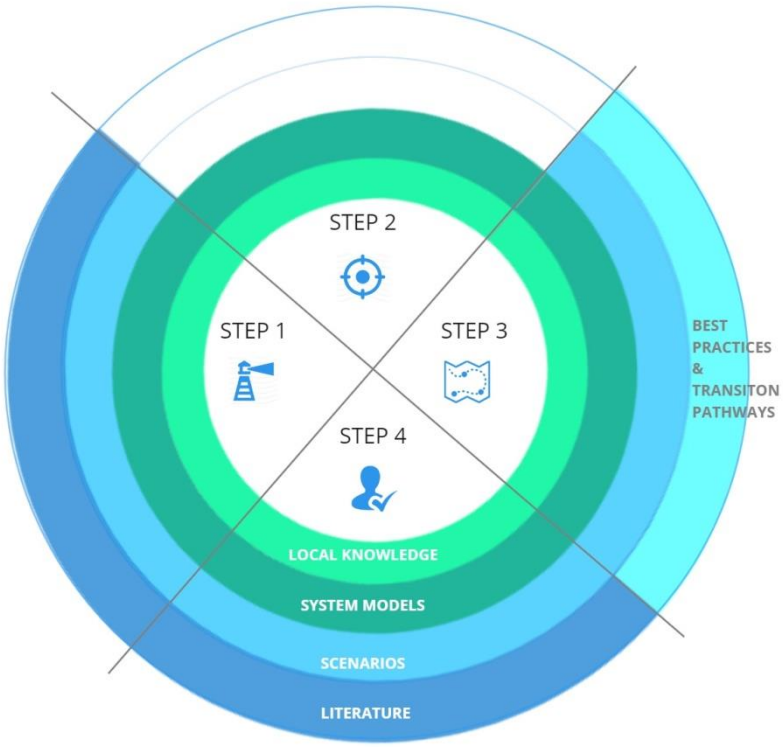


Figure 7: tools mobilized in different steps of the BRM development: Local knowledge and system models are used in each step of the process; Scenarios are used in STEP 1, 3 and 4; Best practices and transition pathways are used in STEP 3; Literature review is used in STEP 1 and 4.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

2.3.1. Local Knowledge

Local knowledge (as opposed to expert or scientific knowledge) was used throughout the whole process, from identifying the issues and challenges to tackle, define the scope and goal of the roadmap, identifying actions, and validate the roadmap itself (STEP 1 to STEP 4, figure 7 above). Local knowledge first harnessed via the sectoral and multictoral workshops, but also via expert interviews, formal or informal stakeholder working groups, email exchanges, online questionnaires, and informal exchanges with the project partners. It was also harnessed beyong the project itself, using other means of interactions with stakeholders depending on the specific context of each MAL and their capacity (in terms of expertise, time, opportunities for synergies with other ongoing stakeholder engagement processes) to further engage stakeholder .
In the case of the MAL 6, a local blog[1] was set-up for the Mar Menor region to support a wider engagement which was particularly effective for involving the civil society. MAL 4 created a dedicated website[2] to disseminate progress and results to keep local stakeholder interested and informed, allowing themto provide comments and contributions. In MAL 2 public discussion event were organised (evening "cafe NEO") as an other form of knowledge exchange, less fomal thus facilating the engagement of a wider audience. In MAL 3, stakeholder engagement activities from parallele participative processes (regional round-table discussion in the Baltic Sea[3]) enabled to harness knowledge from representatives of the whole Baltic Sea region. In MAL 1, the stakeholder engagement process took place within the scope of the formal Oudlandpolder land development project. Although it implied evolving under certain constraints, particularly regarding the timeline, it triggered interest and involvement of a higher level of policy representatives and access to crucial knowledge, beside ensuring maximal impact of the COASTAL co-creation process and BRM output which directly answered the need of the first stage regional spatial planning process in MAL1 case study area.

Furthermore, this local knowledge was used to map the system interactions, based on the knowledge accumulated within their own activity, through the mental mapping exercise (basis of CLD and FCM). This created a better understanding of the system structure by scientist and local stakeholders, with consideration for the interactions across sectors and interrelationship between the different component of the system. For the BRM development, the CLD mapping was used to identify common issues and challenges to tackled across sectors, highlight potential synergies between sectors and between coastal and rural areas the BRM can build upon (STEP1). It fed the co-creation process with the vision and goal to be achieved by the BRM (STEP2) but most importantly local knowledge was at the core of the identification and review of business and policy solutions best fitting the local context (STEP3). Finally, local knowledge also contributed to validation of the business roadmaps and policy recommendations (STEP4). Local partners

[1] www.marmenorcoastal.blog
[2] https://projet-coastal.inrae.fr/Projet-de-Recherche
[3] SEI, one of the local partners of MAL 3, organized an international workshop in June 10, 2020, with around 50 participants representing organizations of different types from multiple Baltic countries. The stakeholder inputs emerging from these round-table discussions were very helpful for the further BRM developments for MAL3, considering the inter-linked local and whole-region scales of essence for this case

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

knowledge was particularly useful to validate qualitative and quantitative results, provide expert knowledge and advise in every step of the BRM design.

2.3.2. Qualitative and quantitative modelling tools

Causal loop diagrams and fuzzy cognitive maps (Tiller et al., 2021) were of great value to trigger stakeholders to seek for proposals of solutions that would benefit the largest number of sectors and generate coastal-rural synergies. Altogether, the mental mapping, CLD development and FCM were crucial throughout the whole process to help define and develop the BRM.

The mental mapping and CLD (qualitative modeling tools) served as a basis for identifying key issues and challenges, the boundaries and scope of the BRM (STEP 1 and 2). The CLD was used to develop a semi-quantitative fuzzy cognitive map that further helped stakeholder to identify system interactions and complementarity of solutions. Identifying land-coast-sea system interactions and analyzing feedback loops using the fuzzy cognitive approach based on the CLD has helped identifying the main challenges associated with these issues that need to be tackled by the BRM, such as a need for synergistic analysis of measures. CLDs and FCMs are useful, intuitive graphical tools which trigger stakeholder willingness to seek for solutions that would benefit the largest number of sectors and generate coastal-rural synergies at an early stage of the modeling process (STEP2 and 3). FCMs, as semi-quantitative modeling tools, were also used by the research teams to draw exploratory scenario, testing different potential leverage points. This proved helpful in highlighting key challenges (STEP 1), identifying relevant point of interventions, and objectives of the business roadmap, and testing optional solutions (STEP 3). Finally the running SD models (see deliverable D14) were used to test and validate business and policy solutions (STEP 4), and to draw attention to the potential impacts and consequences of not implementing the BRM on the environmental, economic and social sustainability of the study area.

To be noted, for some MALs CLDs and FCMs methods were more difficult to grasp and less useful in the context of stakeholder engagement, for common farmer, for instance, this method can be too much out of his comfort zone. Depending on the problem scope the result can be too complex to understand or translate into meaningful SD models without considerable polishing to remove duplications and inconsistencies.

In many cases, the MALs were not yet able to exploit SD modeling at its full potential. For instance the models were of limited use for supporting the design process of the BRM (exploratory testing of potential options) as planned due to delays occurring in the modeling development.

2.3.3. Best practices and generic transition pathways

The best practices and generic transition pathways (see deliverable D18) were used to support the BRM co-creation, co-development process (STEP 3), using successful initiatives for land-sea synergies and cross-

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

sectoral collaboration as example of initiatives to be considered by local stakeholders as potential solutions or means of inspiration for local tailor-made actions.

WP3 collected stakeholder feedback on the best practices inventory using an online survey (Appendix 2) translated in local language which provided an initial list of relevant actions for each of the MALs (stakeholder vote on the most relevant ones).

This proved to be useful for some of the MALs (for example the best practices related to water resource management were inspiring for MAL 4), much less so for others (best practice inventory wasn't relevant for the challenges to be tackled by MAL 1 and 3). The reason is that a best practices inventory, which happened early in the project, didn't always cover the challenges which turned out to be the focal point of their BRM; nor did it answer certain needs which rised later in the project (e.g. nutrient legacy in MAL 3, spatial planning for MAL 1). Moreover, the inventory was completed based on the hypotheses that cross-sectoral and land-sea synergetic initiatives will provide relevant solutions to the MAL issues initially identified while at the same time creating business opportunities. Stakeholder feedback analysis gives a less straightforward answer, as the solutions collected in the inventory supporting collaboration and synergies are often not the ones stakeholders identified as best answering the main challenges of their region. Finally, in many occasion, stakeholder were looking for examples close to their local context which were considered more relevant to their specific context (economically, politically, culturally) - looking for examples from the same region or country while the inventoy was looking specifically at other regions then the project's case studies.

As a result the initial best practice inventory wasn't equally useful for all the MALs; depending on their capacity (mainly related to time constraint) some MALs were able to update the inventory with additional examples of best practices more relevant to their needs as stakeholders asked for such inspiring examples.

2.3.4. Scenarios

Different types of scenarios were used at different stages of the BRM development fulfulling different needs. As previously mentioned, the semi-quantitative exploratory scenario developed early in the project using the FCM tool, has been helpful for some MALs in identifying bottleneck issues and key challenges. The analysis of those exploratory scenarios have also been used as a preparatory work of the roadmap co-design phase by giving valuable insights on the potential impacts of various measures pre-identified by the research team.

The generic coastal-rural scenarios (COASTAL D18) provided inspirational visions of what a synergetic coastal-rural regions could look like and a list of useful indicators to be used as Key Perfomance Indicators (KPIs) in the testing / validation phase of the BRM.

Finaly the downscaled scenarios (COASTAL D19) are used in the testing phase, to assess the robustness of the solutions proposed under different probable scenarios (SSPs scenarios).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

3. CONCLUSION

Based on Transition Management theory, System Innovation Approach and Responsible Research and Innovation principles, the COASTAL business roadmaps and policy recommendations for coastal-rural synergies are co-designed with local stakeholders following a 4-STEP process: (1) -Defining the challenge(s); (2)-Defining the goal; (3)-Identifying actors, short, mid, long-term actions, barrier and enablers; (4)-Validating the actions), using a combination of system thinking qualitative (mental mapping, envisioning, qualitative scenarios) and quantitative tools (FCM, SD models, prospective scenarios). The approach allowed harnessing and capitalizing on local knowledge in each and every step.

As the co-creation process is at the core the BRM methodology, continuously engaging and actively involving local stakeholders beyond the required workshops is of highest importance. MAL leaders who had the capacity to further engage, beyond the project requirements and duration, using additional tools (e.g. implementing working groups, multiple expert interviews, additional workshops, use of a blog or a dedicated website) were able to better sustain the stakeholder engagement process, enabling the co-creation of robust business and policy solutions with the capacity for high impacts in term of exploitation of result (e.g. the business roadmap and policy recommendations become legitimate decision-support tools for local policy makers). It is worth noting the importance of paying attention to the learning process a group of people has to go through before being able to define meaningful policy recommendations and business actions.

In the same way, MALs' team with higher level of expertise in SD modeling were able to benefit more early and completely from the potential of the tools in each step while teams without any expertise in modeling had to dedicate more time than anticipated with less successful outcome which reduced the capacity of using the models as a validation tool. On the other hand this experience was very valuable in terms of familiarization with the use of this type of model and capacity building. Ultimately the SD modelling has been a challenging part of the process.

To support the stakeholder engagement and modeling, the MALs benefited from the use of complementary tools, methods and resources at their disposal, answering specific needs. For exmple, MAL 3 took advantage of the water modeling work (and competences) already developed within the SU research team which facilitate the use of the FCM scenario analysis tool. MAL 1 used tools already developed by VITO: the spatial model for Flanders (as a starting point for the Oudlandpolder SD modeling) and the Nature Value Explorer[4] (to identify the added value of certain interventions from a biodiversity and nature restoration perspective), which facilitate the development of a robust BRM. The three horizon method[5], used by MAL 2 as a workshop supporting tool to illustrate the BRM 4 steps process, helped local stakeholders not familiar with pathways development processes to better understand and contribute. In MAL 4 and 6, due to the complexity of the stakeholder network, various power and influence shaping relationship between the different groups, and inherent conflicts across sectors and actors, the local teams felt the need to go deeper in the analysis of

[4] https://vito.be/en/nature-value-explorer

[5] https://resources.h3uni.org/facilitation-guide/three-horizons-action-planning/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

stakeholder relationships through social network analysis which was a valuable complement to the stakeholder mapping for the stakeholder engagement process for those 2 cases. The MAL 5 team familiarized itself with the significance of systemic interactions, limiting factors and role of feedback for understanding the long-term transition phenomena.

On the other side, reflecting on the proposed tools and methods for the development of the COASTAL BRM, we conclude that the methodology was effective to identify issues and challenges across coastal and rural stakeholders, create common systems understanding and support the co-development of business and policy solutions. The participatory modelling work has been the most challenging aspect, moving from relatively straightforward mental mapping into increasingly complex SD modelling while maintaining stakeholders involved until the end required a continuous effort, particularly in the covid-19 context. However, it appears that some tools can be used in a more effective way in the future. A best practice inventory seems better appropriate once the goal and draft milestones have been agreed upon (STEP 2), while the SD modeling could be used in a more efficient way if developed in parallel with the identification of business and policy actions (STEP 3) to ensure that the proposed solutions fall within the system boundaries and allow translation into SD models, given the data, knowledge and resources to develop these. The SSPs scenarios downscaled at case study level provided valuable insight of probable futures, knowledge which can be valuable as a starting point for the co-creation of BRMs and policy recommendations at an early stage and not only during the final validation stage.

The business road maps and policy analysis are key exploitable results (kers) and contribute to the project legacy and uptake of the coastal portfolio as demonstrators. This deliverable (D10) presented the methodology used to developed the COASTAL business roadmaps and policy recommendations for coastal-rural synergies, illustrating the use of the COASTAL toolbox and expertise (key outcome of the project) in developing strategic business roadmaps and policy recommendations for land-sea synergies while the final WP3 deliverable (D11) due in July 2022 will present the results of the methodology: the business roadmaps and policy recommendations co-created in each MAL. WP5 deliverable D20, also due in July 2022, will present the robustness analysis aimed at validating the proposed business and policy solutions while WP4 deliverable D16 will describe how the SD models help compare the impacts for the business and policy alternatives represented in the BRM.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

REFERENCES

COASTAL (Collaborative Land-Sea Integration Platform) Deliverable D03: Sectoral Analysis of Coastal & Rural Development, funded from the European Union's Horizon 2020 research and innovation program under grant agreement N° 773782.

COASTAL (Collaborative Land-Sea Integration Platform) Deliverable D04: Multi-Actor Analysis of Land-Sea Dynamics, funded from the European Union's Horizon 2020 research and innovation program under grant agreement N° 773782.

COASTAL (Collaborative Land-Sea Integration Platform) Deliverable D09: Inventory of Business Opportunities & Policy Alternatives, funded from the European Union's Horizon 2020 research and innovation program under grant agreement N° 773782.

COASTAL (Collaborative Land-Sea Integration Platform) Deliverable D13: Pilot SD Models for Coastal-Rural Interactions, funded from the European Union's Horizon 2020 research and innovation program under grant agreement N° 773782.

COASTAL (Collaborative Land-Sea Integration Platform) Deliverable D18: coastal-Rural Generic Scenarios and Transition Pathways, funded from the European Union's Horizon 2020 research and innovation program under grant agreement N° 773782.

European Commission. (2018). The EU Framework Programme for Research and Innovation. Science with and for Society. Retrieved April 8, 2019, from https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation.

Loorbach D., Rotmans J. (2006) *"Managing Transitions for Sustainable Development"* [Online] Available: https://www.semanticscholar.org/paper/MANAGING-TRANSITIONS-FOR-SUSTAINABLE-DEVELOPMENT-Loorbach-Rotmans/1ef955ff6bc117bd16fd824dd454ab6034bb8203 (Last accessed: 20th April 2022)

Matti C., Martín Corvillo JM, Vivas Lalinde I., Juan Agulló B., Stamate E., Avella G., and Bauer A. (2020). Challenge-led system mapping. A knowledge management approach. Transitions Hub series. EIT Climate-KIC, Brussels ISBN 978-2-9601874-3-4

Osterwalder, A., Pigneur, Y., Clark, T. (2010). Business Model Generation: A Handbook For Visionaries, Game Changers, and Challengers. Strategyzer series. Hoboken, NJ: John Wiley & Sons. ISBN 9780470876411. OCLC 648031756.

de Reuver M., Bouwman H., Haaker T. (2013), business model roadmapping: a practical approach to come from an existing to a desired business model. international journal of innovation management 17.01

Roorda, C., Akinsete E. (2013). MUSIC Aberdeen, "Mini Guide to Transition Management" Rotterdam: Dutch Research Institute For Transitions

Schuijff M., Dijkstra A.M. Practices of Responsible Research and Innovation: A Review. Sci Eng Ethics 26, 533–574 (2020). https://doi.org/10.1007/s11948-019-00167-3

Tiller RG, Destouni G, Golumbeanu M, Kalantari Z, Kastanidi E, Lazar L, Lescot J-M, Maneas G, Martínez-López J, Notebaert B, Seifollahi-Aghmiuni S, Timofte F, de Vente J, Vernier F and de Kok J-L (2021) Understanding Stakeholder Synergies Through System Dynamics: Integrating Multi-Sectoral Stakeholder

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

Narratives Into Quantitative Environmental Models. Front. Sustain. 2:701180. doi: 10.3389/frsus.2021.701180

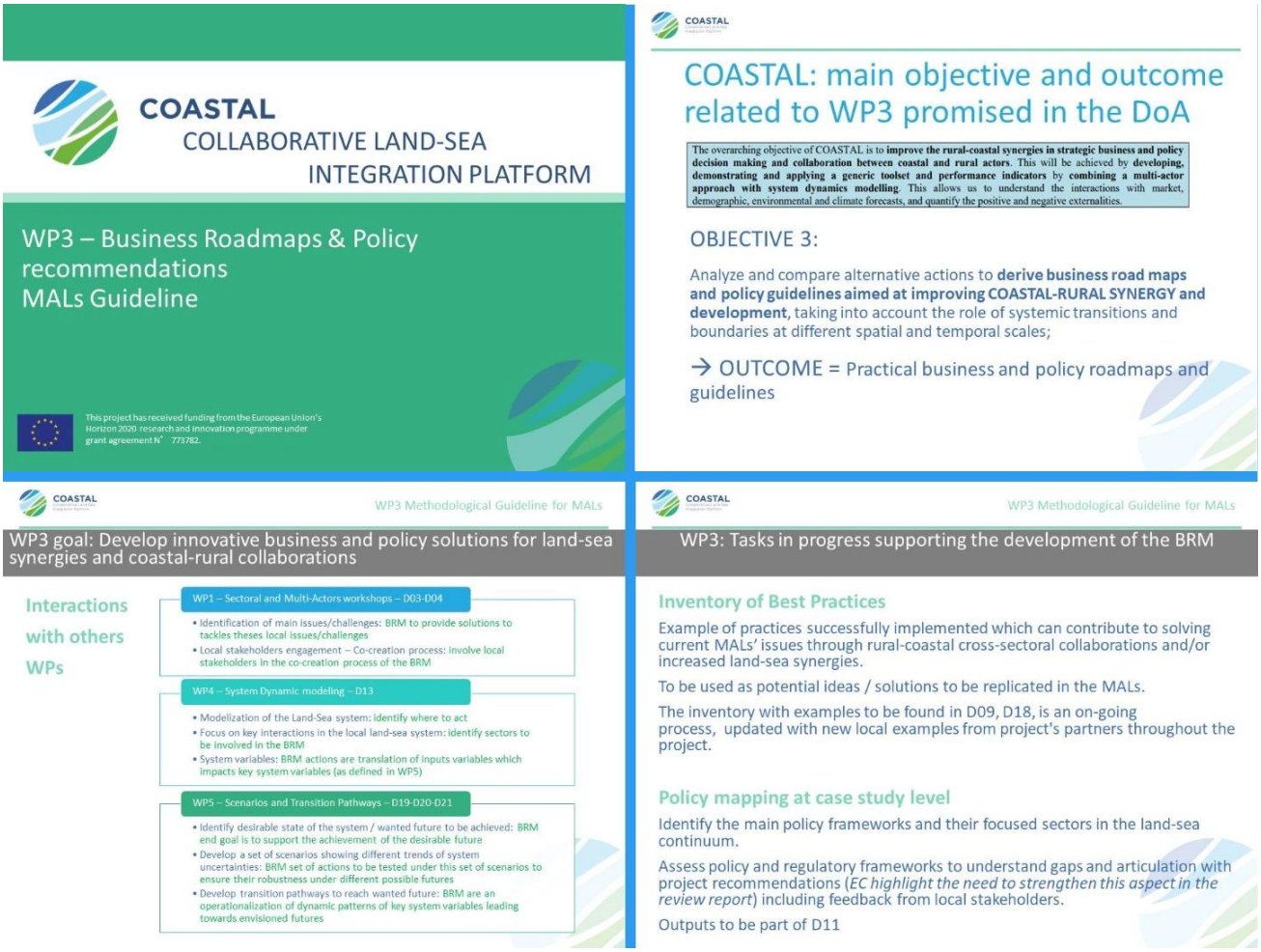
De Vicente Lopez J. and Matti C. (2016). Chapter 3: visioning and backcasting the future, in Visual toolbox for system innovation. A resource book for practitioners to map, analyse and facilitate sustainability transitions. Transitions Hub Series. Climate-KIC, Brussels 2016. ISBN 978-2-9601874-1-0

Website:

https://roadmunk.com/guides/what-is-a-business-roadmap/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

APPENDIX 1. WP3 GUIDELINE FOR MALS



COASTAL

WP3 Methodological Guideline for MALs

WP3 goal: Develop innovative business and policy solutions for land-sea synergies and coastal-rural collaborations

How? Co-design business roadmaps and policy guidelines

What is a Business Roadmap & Policy Guideline in COASTAL?

A business roadmap is an overview of a strategic initiative or project visualized by a series of sequential or parallel milestones tasked to different teams and stakeholders.

The COASTAL Business Roadmap is a short to long-term planning of key actions (milestones) for the implementation of an innovative, cross-sectoral solution *at the* ***scale of the local case-study****. It must integrate the dimensions of land-sea synergy and/or coastal-rural collaborations, support the sustainable development of coastal-rural areas and the transition towards the desired future conditions (WP5). It enable the identifications of expected impacts, synergies and added value, key actors to involve in key activities visualized in a time series, adding a financial and policy dimension, key resource needed and key beneficiaries.*

Here a solution, business oriented, can focus on the development of one specific activity (e.g. organic agriculture, sustainable aquaculture, rehabilitation of a salt marsh, gastronomic tour involving local producers…) or having a wider scope (e.g. development of inland tourism, development of a branding name for the area).

The policy guideline will provide policy recommendations to support the implementation of the solution as well as how to increase land-sea / coastal-rural synergies governance and legal framework.

Key synergetic environmental and economic performance indicators will be developed to measure expected impacts of business models and policy recommendations.

They will be tested and validated by WP4-5 using the models and scenarios developed in WP5 to ensure their robustness.

WP3: What can we say about the timing of T3.1-3.2 and WP5?

1. Define scope & desire state to be achieved with the BRM and sectors to be involved
2. Identify business opportunities and policy recommendation in your land-sea model

Preferably prior to November 2020 workshop

3. Link business opportunities and policy recommendations to variables in your model
4. Development of Business Roadmap & Policy Recommendations (using the canvas)

November 2020 - March 2021

5. Finalize Draft BRM
COASTAL MALs MIRO board https://miro.com/app/board/o9J_km5fdYU=/0=/

March 2021

6. Actions to be tested in the different set of scenarios from WP5 (Task 4.4- 5.4) – Update draft document to formulate the operational version

April – August 2021

WP3: What's the main work that has to be done for the BRM?

Identify business opportunities and policy recommendation in your land-sea model

1) Identify possible business opportunities/solutions that will support the vision developed in WP5, based on your model, following exchange with your local stakeholders, with your local partners, taking examples from the generic coastal-rural transition pathways D18), the best practice inventory (D09, excel file for feedback), and other examples relevant to your case study

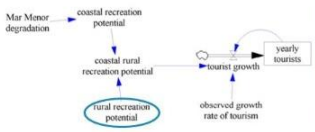
2) Prioritize these business solutions/opportunities:
- Based on your model and their link to your key system variables (define as part as 5.3) (Which one can be represented by a variable in your system? What are the business opportunities/ solutions with high positive impact on your system? Which ones will support the most the achievement of the MAL vision and transition (WP5) ?
- Based on sector you wish to focus on
- Based on your stakeholders feedback (which solution they would like to see implemented first)

Reminder, the strategic business roadmaps and policy guideline must include land-sea synergies and coastal-rural collaborations dimension

WP3: What's the main work that has to be done for the BRM?

Link business opportunities and policy recommendations to variables in your model

The business roadmaps and policy recommendations have to be tested and validated by the models under the different scenarios developed in Task 5.3. As such the solutions must be associated to a **variable** from your models (multiple actions can be aggregated into one variable).

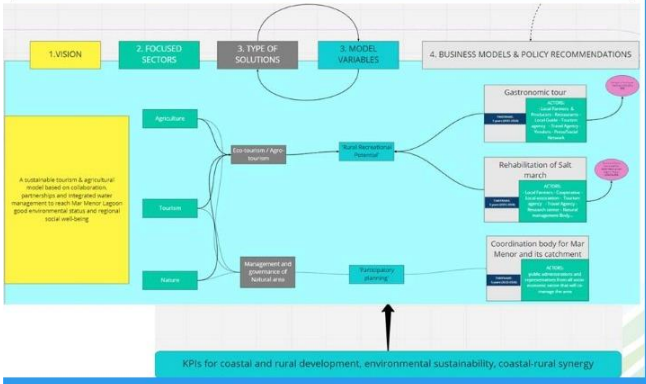


Example from the Mar Menor with the "Coastal-rural recreation potential" model: Business solutions such as, 'gastronomic touristic tours', 'restoration of windmill for Touristic purposed' can be tested through the variable "rural recreation potential"

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

WP3: What's the main work that has to be done for the BRM?

Recap methodology to identify business opportunities and policy recommendations



WP3: What's the main work that has to be done for the BRM?

Business Roadmap development & Policy Recommendations Framework

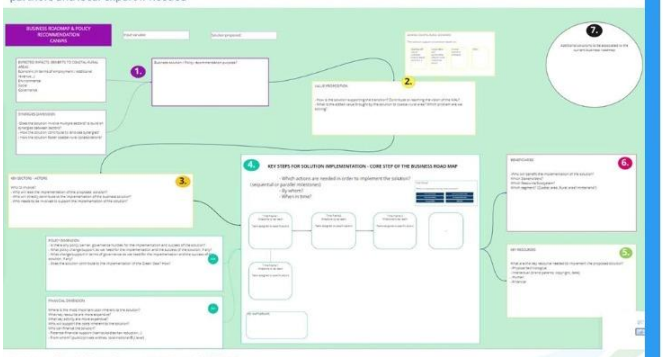
0) PRIOR to Business Roadmap Development: **Prioritize the solutions** during the 2sd round of Multi-Actor Workshop (which solution to be developed into Business Roadmap and Policy Recommendation)
1) Business / policy recommendation **purpose** – State the expected **impacts/Benefits to Coastal-Rural areas:** Economic (In terms of employment / Additional revenue...), Environmental, Social, Governance); and **Synergies** aspects (Does the solution involve multiple sectors? Is built on synergies between sectors? How the solution contribute to land-sea synergies? How the solution foster coastal-rural collaborations?)
2) Proposed **added value** of the solution (How is the solution supporting the transition? Contribute to reaching the vision of the MAL? What is the added value brought by the solution to coastal-rural area? Which problem are we solving?); Link to generic coastal-rural scenarios (Task 5.2)
3) **Key sectors/actors**
4) **Key steps for solution implementation in a sequential or parallel time series** (Which steps are needed to implement the solution? By whom? When in time?) – Including **financial and policy dimension**
5) State the **beneficiaries** of the solution (stakeholders/resources/ which segment of the hinterland-coastal-sea continuum)
6) Key **resources needed** for the implementation of the solution

COASTAL MALs MIRO Board:
https://miro.com/app/board/o9J_kmSfdYU=/

FAVOR
Cross-sectoral actions,
Collaborations between rural and coastal actors,
Land-Sea Partnerships
Innovative business models

Business Roadmap development & Policy Recommendations Framework

As a starting point use this template with your local stakeholders in your next MA workshop to start developing the Business Roadmap and Policy Recommendations; Further develop/detail the framework following the workshop with your local partners and local expert if needed –



MALs deadline inputs: March 2021

WP3: What's the main work that has to be done for the BRM?

Key Environmental and Economic Performance Indicators

ICRE8 will identify **sustainable development goals** and **key performance indicator measuring coastal and rural development, environmental sustainability and coastal-rural synergy, and**

Examples of **KPI to be used for the tourism sector**:
- → Number of visitors in rural area staying overnight on the seaside
- → Number of tourist routes that include the destination in their itinerary
- → Tourist route combining coastal and rural destinations (*adapted to COASTAL*)
- → Ratio of low-season tourists to peak-season tourists

Source: Lozano-Oyola et al 2012

Examples of **KPI to be used for water management**:
- → Change in water-use efficiency over time
- → Change in the extent of water-related ecosystems over time

Source: SDGIs

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

WP3: What's the main work that has to be done?

WP3 Methodological report (Del 10) and Strategic BMR for land-sea synergies report (Del11)

Deliverable D10 (M42): Methodological report describing the use of local knowledge, models, transition pathways, and examples of best practices have been used to develop innovative business and policy solutions **for land-sea collaboration**.

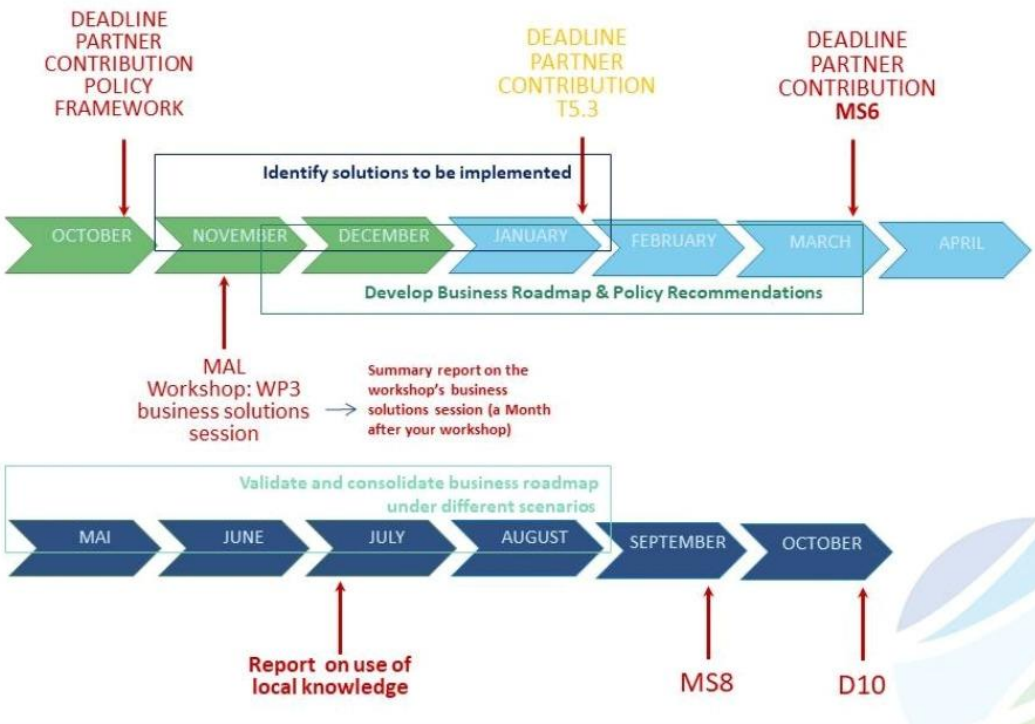
Related to the **use of local knowledge**: D10 will report on how local stakeholders / expert and local partners have been involved in the process?

→ Keep track of who have been involved, why and how (e.g. interview, activity within a MAL workshop, specific task assigned…).
Summary report on use of local stakeholders' knowledge by **June 2021**

Deliverable D11 (M45): Strategic Business Roadmaps and Policy Guidelines for Coastal-Rural Synergy. Synthesis report defining strategic business roadmaps and policy guidelines, and **generic strategies and performance indicators for land-sea collaboration**, using the examples of the case studies.

WP3: Timeline summary

COASTAL MALs MIRO board
https://miro.com/app/board/o9J_kmSfdYU=/



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

APPENDIX 2. BEST PRACTICE FEEDBACK SURVEY

Through this survey, the COASTAL project team wish to get your opinion on practice examples that had positive impacts in other coastal rural areas in Europe and could be replicated in your region
1 What is your main activity?
2. Indicate the extent to which these initiatives could increase collaborations between coastal and rural activities in your region?
3. Indicate the extent to which these initiatives could create synergies between activities on land and at sea in your region?
4. Indicate the extent to which of these initiatives will best answer main challenges and issues previously identified in your region as part of the activities of the COASTAL project?
5. Indicate the extent to which of these initiatives could create business opportunities in your region?
6. Which of these initiatives would you like to see implemented in your region?
7. What would be the barriers to the implementation of the initiatives you wish to see implemented?
8. From the initiative you would like to see implemented, in your opinion which one could actually be implemented in your region?
9. What are the conditions in favor of the implementation of these initiatives? Associate conditions to specific initiative
10. Do you have other examples of practices that could be implemented in order to increase collaboration between rural and coastal activities as well as land-sea synergies, for a sustainable development of your region?

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

APPENDIX 3. POLICY MAPPING GRID

Analysis of the policy frameworks relevant for the case study and Land-Sea /coastal-rural synergy (EU, national, local) .

EU level		
National Level		
Regional level		
short introduction		
Institution in charge of framework implementation at case study level		
Implementation status: fully implemented / partly implemented /in progress/ not yet (reasons for non-full implementation if known/ planned target for full implementation)		
Soft law (non-binding) / Hard law (legal obligations))		
Law Enforcement: Does public authorities ensure a correct application of the policy?		
Focused sector(s)		
Applied to coastal areas (at case study level)		
Applied to Rural areas / hinterland (at case study level)		
Applied to maritime areas (at case study level)		
Land-Sea Interactions	Stated in the law	
	Favor it at case study level	
Collaboration between coastal and rural activities	Stated in the law	
	Favor it at case study level	
General impacts at the case study level (positive/negative)		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.

How is the law perceived? Is the law/plan/strategy currently reaching its goal(s)?		
Main impacts to highlight per sectors at case study level (if relevant)		
Agriculture		
Ports industry		
Tourism	Rural	
	Coastal	
Shellfish industry		
Environment	Water resource	
	Marine Biodiversity	
	Land biodiversity	
Offshore energy		
Will favor cross-sectoral innovations and business opportunities		
Will favor greater cooperation between sea-based and land-based businesses		
Will support stakeholders' vision		

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773782.