

<p>COASTAL - Collaborative Land-Sea Integration Platform at the Black Sea <i>(Luminița Lazăr, Mariana Golumbeanu, Florin Timofte)</i></p>	<p>“Cercetări Marine” Issue no. 49 Pages 166 - 172</p>	<p>2019</p>
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**Short communication: COASTAL - COLLABORATIVE
LAND-SEA INTEGRATION PLATFORM
AT THE BLACK SEA**

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ABSTRACT

Funded by the European Union’s Horizon 2020 research and innovation programme COASTAL is a research and innovation project (2018-2022), a unique multi-actor collaboration of coastal and rural business entrepreneurs, administrations, stakeholders, and natural and social science experts 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 (<https://h2020-coastal.eu/>). The overarching objective of COASTAL is to improve the rural-coastal synergies in strategic business and policy decision making and collaboration between coastal and rural actors. This is achieved by developing, demonstrating and applying a generic toolset and performance indicators by combining a multi-actor approach with system dynamics.

The COASTAL project contributes to integrated coastal-rural planning and coastal-rural synergy in the case study regions (one being the Danube’s Mouths – Black Sea) and the wider EU territory; develops a durable, online platform for knowledge exchange about coastal-rural synergy with concrete examples and tools for supporting land-sea collaboration dynamics modelling. This allows us to understand the interactions with market, demographic, environmental and climate forecasts, and quantify the positive and negative externalities.

Key-Words: Multi-Actor-Lab (MAL), System Dynamics, transition pathways, Black Sea

AIMS AND BACKGROUND

The aim of the COASTAL’S Romanian MAL, Danube’s Mouths – Black Sea is to elaborate a system dynamics model based on input from local actors and experts from the Danube Delta and Black Sea coastal zone. Their valuable contribution came through collaborative exercises to analyse problems, the underlying causes, propose and discuss solutions. During the project, the system dynamics model will be validated for the interpretation of the impacts of simulated business and policy decisions for a sustainable development of

the area (Danube Delta Integrated Sustainable Development Strategy 2030, 2014).

EXPERIMENTAL

By combining local knowledge and scientific expertise in a co-creation process the COASTAL project engages actors and stakeholders at all levels to improve coastal-rural interdependence and collaboration by identifying problems and setting up evidence-based business roadmaps and policy solutions, focusing on economic growth, marine spatial planning, and environmental protection, including inland water quality.

Thus, local actors and experts participated in collaborative exercises where qualitative (Casual Loop Diagrams - CLDs) and quantitative (Fuzzy Cognitive Maps - FCMs and Vensim models) techniques were combined in this co-creation process supported by graphical tools to gain in-depth understanding of the systemic transitions underlying the land-sea interactions.

These results will be further synthesized and analyzed with system dynamic models to produce multiple transition scenarios for key business and policy indicators. The results and their interpretation will be validated during the project and practical business roadmaps and policy solutions will be derived.

RESULTS AND DISCUSSION

The project is organized around six interacting, complementary Multi-Actor Labs (MALs) spread over the EU, exchanging their tools and expertise: Belgian coastal zone, Greece – South – West Messinia. Sweden – Norrstrom Baltic, France – Charente River Basin, Romania – Danube's Mouths - Black Sea, Spain – Mar Menor coastal lagoon. COASTAL Multi-Actor Labs will contribute to the COASTAL Knowledge Exchange Platform. The MALs will be connected through a Collaborative Knowledge Exchange Platform, to be further exploited and developed beyond the project lifetime (Fig.1).

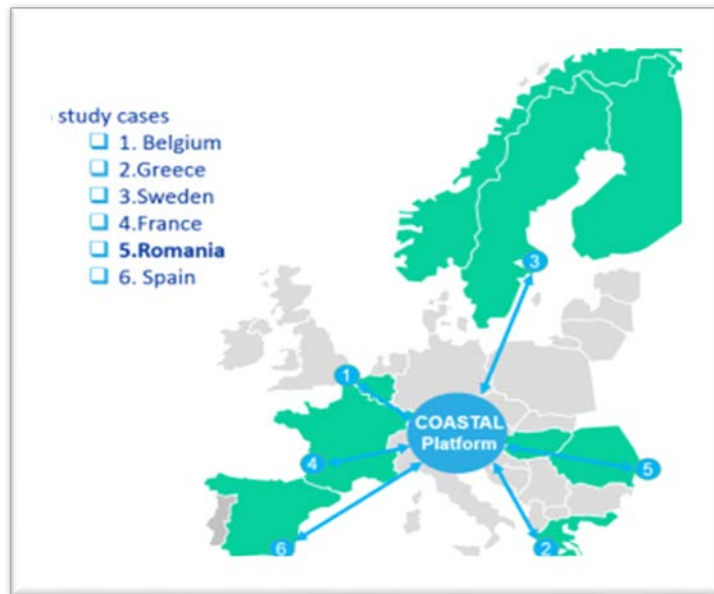


Fig. 1. COASTAL Platform and case study distribution

The Romanian case study covers the South Eastern Romania’s rural area and Danube Mouths - Black Sea coastal zone. Due to the semi-enclosed location and size of the contributing catchment area, the Black Sea is vulnerable to anthropogenic pressures and pollution sources (Golumbeanu M., Nicolaev S., 2015). Even today Black Sea is still under pressure from excess nutrients and contaminants due to emissions from agriculture, tourism, industry and urbanization in the Danube basin. The increased rates of eutrophication, pollution and bioaccumulation affect both the biodiversity and fishing sectors. Mass tourism is also an important growth sector for the Black Sea and eco-tourism is becoming more important in the region. Within COASTAL, local actors and experts from the Danube Delta and Black Sea coastal zone participated in collaborative exercises to analyse problems, the underlying causes, propose and discuss solutions, and validate and interpret the impacts of simulated business and policy decisions. Six interactive workshops were organized in autumn 2018, focusing on Blue Growth (industry, transport and administration); Tourism; Fishing and Aquaculture; Rural Development of Danube’s Delta region; Agriculture, cross-compliance and ecosystems services; Rural tourism, recreation and others rural activities attended by local stakeholders (Fig. 2) (Lazar L. *et al.*, 2018). During the three workshops, stakeholders were actively involved in identifying the main connections between the 8 drivers, specifically tailored for the activity sectors.



Fig. 2. Blue Growth Workshop debates with local stakeholders (30th October 2018, NIMRD headquarter)

Generally, the main findings of the workshops were related to policies and underdevelopment. It was evidenced the excessive bureaucracy and authorities directly linked to lack of communication and the limitations of the local authorities and communities. Despite of many strategies, the area needs improvement and sustainable development involving infrastructure, social protection, health and education. Further, on 5 September 2019, the National Institute for Marine Research and Development “Grigore Antipa” Constanta, Romania (NIMRD) hosted a MAL meeting for the Danube’s Mouths - Black Sea Case Study, with the participation of partners from the Research Institute for Agriculture Economy and Rural Development (ICEADR), Local Activity Group Danube Delta (GAL DD) and Local Activity Group Central Dobrogea (GAL DC). The meeting was attended by local actors, representing municipalities, research institutions/academia, authorities, entrepreneurs and civil society, who all contributed to develop future narratives about the development of the region. There were two working groups and the main development directions identified in the area were eco-tourism, aquaculture (for the coastal and delta communities) and integrated agriculture (for inland rural areas) (Golumbeanu *et al.*, 2019).

Group 1 future narrative - The main discussion topic for future development of the Danube Delta and Black Sea coastal area is tourism

(generating 90% of the GDP). As fisheries are declining, most of the Danube Delta population is employed in touristic activities. A green friendly tourism should be approached, by promoting electric transportation and clean technologies (e.g. waste-water treatment). Another key-point is preserving the specificity of the zone with regards to traditions, folklore, gastronomy (during summer 2019 were approved by the Sanitary Veterinary Directorate the operation of *Local Gastronomy Points*). Households can function as guesthouses, offering accommodation and catering services, in an authentic traditional environment. Another development direction was promoting of different types of tourism activities - sophisticated travellers following belletristic itineraries, routes based on ancient ruins (Greek, Roman) or following literary/cultural routes: multicultural cemetery of Sulina, Lighthouse of Sulina, the houses of the old owners, 2 wrecks very well preserved. One of the mayors of the villages on the Danube delta upstream envisaged the village as a mini port for cruises on the Danube and tourists are following the neighbouring wine rand archaeological routes. Agriculture practices in the area should change from large landowners to smaller surfaces cultivated by locals (pre-emption rights) and the resulting products should be used for their livelihood, marketed in local pensions/hotels, and only the surplus (if any) marketed elsewhere.

Group 2 future narrative - The discussions focused on three main directions, namely aquaculture, tourism and agriculture. The envisaged development of marine aquaculture in the future foresees the legal settlement of the water body concession issue and the implementation of the shellfish areas sanitary-veterinary classification for safe human consumption. For fish farming, on land recirculating aquaculture systems (RAS) are the solution. In a long-term timeframe, four shellfish farms, one cage fish farm in open sea and two RAS fish farms on land are desired. Another potential development direction could be the capitalization of chlorophyll from micro and macroalgae. With regards to tourism development, the trend of passing from classic tourism to eco-tourism is clear. The Danube Delta, a rather expensive destination, will be visited especially by foreign tourists whom seek beautiful landscapes and nature, birdwatching, local traditions. For inland rural areas, the future relies on integrated agriculture, namely each community should focus on a complete production: from cereals, animal farming, processing units, in order to deliver finite products. Moreover, lower interest rates for credits and more subsidies are desirable, together with adapting to novel technologies (smart irrigation systems).

CONCLUSIONS

The novel approach of the COASTAL project will allow for a joint co-creation effort between scientists and stakeholders acting in the Romanian Black Sea coastal zone - Danube Delta area.

The Danube's Mouths – Black Sea coastal zone represents a special study case because of the natural beauty of the buffer unique area, Danube Delta. Like the entire country, the area was strongly suffering from communism period but also the transition to a new society. Nowadays, 30 years after the revolution and 12 years as European Member State, the impact of legislation and administration expressed as too many, unharmonized legislation and bureaucracy, overlapped with corruption and a demographic decline brought the region in a state which is not desirable as Business As Usual (BAU) scenario. All COASTAL meetings (with stakeholders, mental mapping seminar and Multi-Actor-Lab) conclusions were in line with the 2030 vision for Danube Delta [2] *“An attractive area – with precious biodiversity and vibrant, small/medium scale (artisanal and modern) agriculture and business - where people live in harmony with nature; integrating economies of tourism, farming and fishery; and supported by urban service centers”*. The project will bring the theory into reality and simulate different options through models and scenarios and to help the decision makers to use the best policies for the area's sustainable development. Thus, based on conclusions so far, we will focus on tourism – as the main option of the coastal area and delta, fisheries, agriculture and rural development as the main sectors of interest. Also, considering the improvement of coastal water's quality the sub-models developed with all CLDs and FCMs information for the nominated sectors will be combined.

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