

Work packages description

WP2: Key Ecosystem Dynamics

ZMT – Martin Zimmer & IRD Arnaud Bertrand

Objectives The development of ad hoc MSP is tightly linked to the availability of physical, chemical, biological, economic and human data that can be interconnected. This work package will select, provide, map and summarise critical bio-physical-chemical data to be integrated in knowledge-based MSP.

T2.1- State of the art and knowledge gaps

The aim is to summarise current knowledge on ecosystem dynamics in the Atlantic and other marine tropical ecosystems; identifying knowledge gaps and needs for more knowledge and the challenges involved in acquiring this knowledge; identifying threats, indicators of resilience, reference points and 'sliding the baseline syndrome'.

T2.2- A data-based review of critical ecosystem dynamics

Review of the literature (including unpublished reports and local knowledge) to collect available data and models on physical, chemical and ecological dynamics in marine ecosystems in the case-study areas of Brazil, Cape Verde and Senegal; evaluation of their relevance for MSP based on: (i) availability, (ii) evenness, (iii) documentation of key drivers of biological and human dynamics; and (iv) 'SMART indicators', i.e. specific, measurable, assignable, realistic and time-related indicators.

T2.3- Mapping ecosystem structure and dynamics

The aim is to assimilate and incorporate the information collected and selected in T1 and T2 in a mutual georeferenced information system.

T2.4- Innovative use of data and models and ecosystem scenarios

The aim is to identify the causes of habitat and (functional) biodiversity losses; to use multivariate analysis (including innovative functional data analyses) to identify ecological zones of relevance for MSP-related objectives, e.g., biodiversity preservation, the biological resource and fisheries sustainability; to develop a multivariate view of the ecosystem dynamics among connected coastal systems; to use decision-support tools (MARXAN, ZONATION, etc.) to produce recommendations for MSP for regional policy makers and decision makers

WP3: Policy and Governance Dynamics

WU – Hilde Toonen, Univ. Lisboa José Guerreiro

Objectives

The overall aim of WP3 is to contribute to the transfer of knowledge on and experience in MSP governance in a North-South transboundary Atlantic context. The development of joint research and innovation activities aimed at understanding and critically analysing, evaluating and comparing political, legal and governance frameworks in MSP will enhance the research skills and capabilities of academic and non-academic researchers with different social science backgrounds. International and inter-sectoral collaboration will support dynamic solutions and innovative governance designs for MSP in tropical waters.

T3.1- State of the art of marine governance frameworks in the Tropical Atlantic

Review and analyses of marine and coastal policies, agreements and legal and institutional frameworks, as well as (spatial) planning initiatives. The focus will be on institutional arrangements at the regional and international level, including international instruments and strategic plans designed by decision-makers from the EU and the Tropical Atlantic, and regional/global non-state actors with economic, societal/environmental stakes.



T3.2 – Mapping national and sub-national policies and policy-making in Senegal, Cape Verde and Brazil

Mapping of relevant policies for (future) MSP in the case study countries. Support for a presentation will be developed, including: (1) an analysis, selection and structuration of regulations; (2) the mapping of environmental law, to pinpoint redundancy, contradictions or continuity; (3) a presentation of the changes in regulations over time; (4) the production of relevant interactive maps online; (5) validation and updating of data in collaboration with administrations; (6) comparison of the analysis of experiments in West-Africa and North-East Brazil. In parallel with actual mapping, this task will apply a social constructivist approach to mapping and policy-making by decision-makers and stakeholders at the national and sub-national level. Work will be based on both previous studies conducted by different partners (e.g. TerraMaris, IRD) and joint research activities implemented in the PADDLE project.

T3.3- A critical review of MSP approaches

Identification of "best MSP practices" (i.e. EU pilot projects, such as BaltSeaPlan, Plan Bothnia, TPEA, MASPNOSE). The selected best practices will be reviewed and analysed along three important dimensions: 1) the political nature of interactions between actors involved in MSP initiatives (focus on either conflict or cooperation (or both); legitimacy; articulation of different legal/planning paradigms); 2) types and forms of stakeholder participation; processes and strategies of inclusion and exclusion; balancing interests; impacts on and involvement of coastal communities and the general public); and 3) the use and organisation of knowledge and informational MSP processes (production and use of scientific and "traditional" information).

T3.4- Governance designs and policy innovations: Exploring MSP potential in the Tropical Atlantic

T3.4 draws on lessons learned from the first three tasks in WP3. By combining and contrasting ideas for arrangements to support the development, designation and implementation of MSP in the Tropical Atlantic, will be further transformed into operational policy options, designs and/or guidelines. Insights gained in this Task are important building blocks for the integrated work carried out in WP5.

WP4: Challenges and Solutions

Uac – Helena Calado

Objectives/ Key words: This WP seeks to understand the involvement and equilibrium of Tropical Stakeholders (T4.1), their views on- and potential involvement in – the development of the maritime economy (T4.3) and in the emergence of conflicts (T4.4). In order to harmonize information gathering and communication, one task (T4.2) is entirely dedicated to mapping such concerns.

T4.1- State of the art

In this task, researchers will assess and compare different strategies used in existing experiments to identify successful cases of conflict solving and stakeholder engagement.

The second focus of this task will be on methods for stakeholder identification, weighting and representation.

T4.2: Mapping of Marine Uses

Based on the presentation support developed in Task 3.2, the actions for the mapping of marine uses will be: (1) to present the approach taken to administrations and stakeholders in order to evaluate and analyse needs linked to MSP; (2) to elaborate on a model of requirements specifications for the implementation of such studies.

T4.3: Critical review of economic trends in the blue economy in marine spatial planning

Traditional activities like coastal artisanal fisheries are an important part of local economies in tropical regions. However, in several cases, poor coordination, lack of supporting infrastructure and even less environmental friendly practices seriously threaten these activities. "New users" (i.e. heavy shipping traffic, bunkering, sea mining and even massive tourism) represent both



opportunities and threats. Along with an assessment of the development of these uses, the identification of other potential uses (such as aquaculture) will represent a significantly step forward for these nations in terms of both social and economic development.

A1: Identification of existing Blue Growth /Economy sectors and uses as well as the identified potential ones

A2: Analyses of the links between globalisation and MSP

T4.4: Mapping of present and future users and conflicts

In the marine environment mapping involves some challenges that are not yet fully understood, such as: how to represent the three-dimensional aspects? How to represent different use timelines?

Another aspect of the co-allocation of uses, or multiple uses in the same maritime space, concerns conflicts arising from different and cumulative impacts, specific needs, constraints imposed on the use of space etc. In order to achieve transparency, promote economic activities and environmental conservation all at the same time, existing and potential conflicts and synergies first have to be identified. The use of a compatibility matrix has proved to be useful in existing experiences in Europe. PADDLE also aims to identify conflicts in typologies beyond the "Uses-Uses" and "Uses-Environment" ones as well as solutions for conflict solving (e.g from Use of AIS Data to demonstrate the impact of MSP on artisanal fisheries to the identification of a hierarchy of objectives and multiple criteria analysis)

T 4.5: Innovation in stakeholder interactions

A1: New technical to human options for blue growth

A2: Innovation in the participation of local stakeholder to limit Bandwidth and stakeholder burnout. Use of serious games.

A3: Cross-analysis of conflict matrix in tropical zones

WP5: From key processes of tropical socio-ecosystems to a network of tropical MSP tools

IRD- Sophie Bertrand

Objectives: WP5 aims to create an interdisciplinary platform at the crossroads of the WP2, 3 and 4, thus making it possible to incorporate and make available policy-relevant knowledge and decision support tools. The aim of the platform will be to help practitioners assess alternative and balanced MSP and governance options, their pertinence with respect to policy targets, their possible combination and their impacts on the environment and human communities during the decision-making process. WP5 also aims more specifically at creating a forum for the exchange of practice and knowledge between African, Brazilian and European experts on appropriate methods and tools to develop and to implement marine spatial planning in tropical regions.

T5.1: Centralizing policy-relevant knowledge

An Internet platform, open to all participants, will enable access to continually updated monitoring of the scientific and institutional literature and web resources on the tools and topics analysed by the PADDLE consortium. A professional librarian will manage this internet platform.

T5.2: Selecting an innovative toolbox for tropical MSP

A critical review of existing Decision Support Tools (DST) will guide the selection and adaptation of a portfolio of existing DST including ecological, legal and socio-economic perspectives to be applied to the case studies.

T5.3: Building a multivariate portrait of the case study socio-ecosystems and exploring governance scenarios

T5.3.1: Integrate scientific knowledge (e.g. GIS-data, key process inputs) and non-scientific knowledge identified for the study cases in WP2, 3 and 4.



T5.3.2: Portray the current multivariate state (socio-eco-normative-ecological) of the case studies: identify possible governance challenges, normative incoherencies, scientific data gaps, development opportunities and strategic issues. T5.3.3: Together with stakeholders (scientific and non-scientific, end users and decision makers, etc.), build and assess scenarios for the three case study areas.

T5.4: Consolidating an interdisciplinary network for innovative tropical MSP

T5.4.1: Compare challenges and opportunities in the three case study regions, develop the exchange of best practises among the three regions and with other tropical areas, provide feedback to the European Union with solutions for its outermost tropical regions.

T5.4.2: Establish links with other MSP Forums: IOC MSP Forum, JPI ocean Expert group, etc.

