

Assessing the state of the adoption of Nature-based Solutions for coastal risk management in the Mediterranean basin

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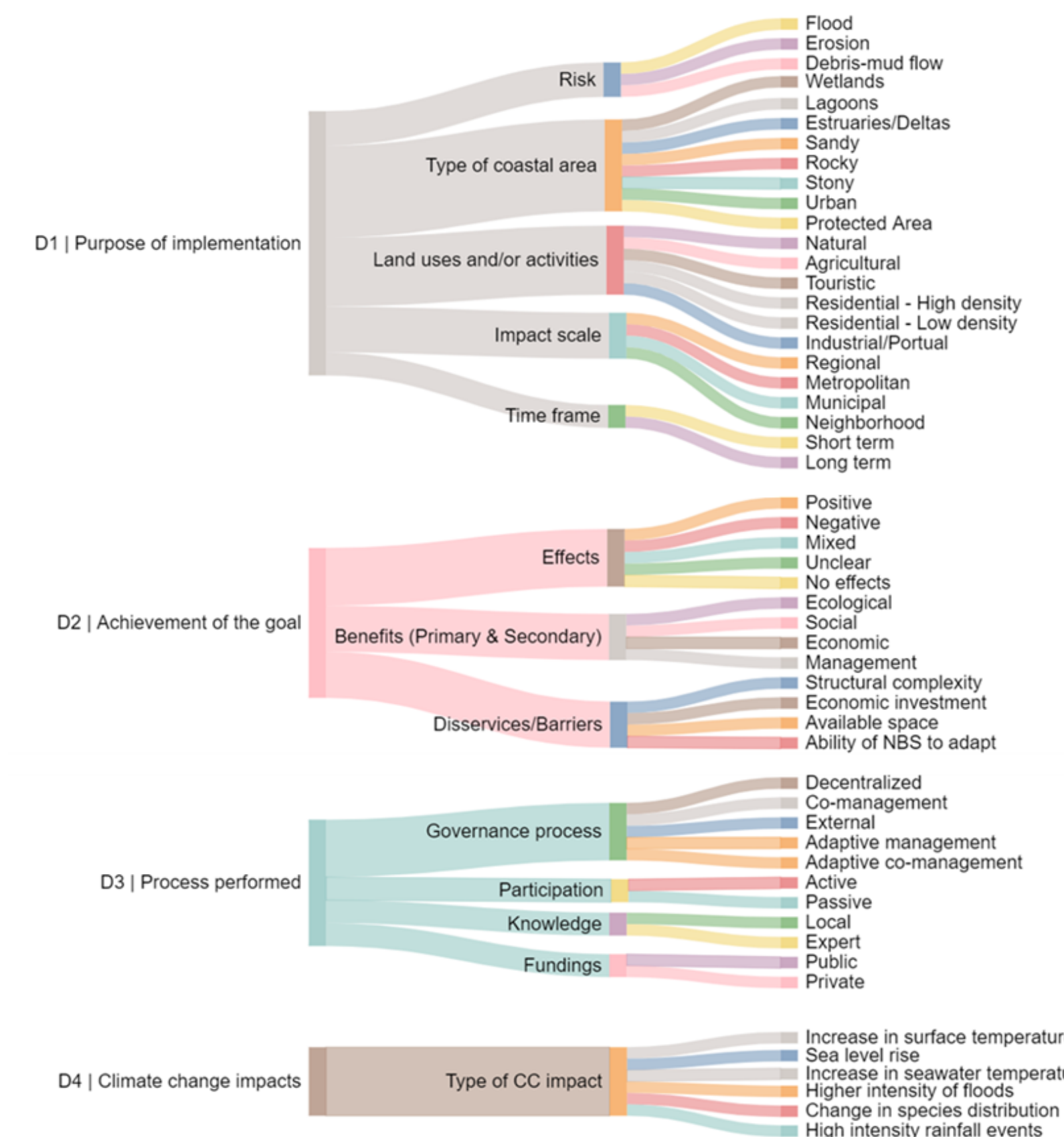
Key-words Coastal resilience, Coastal risks, Nature-based Solutions, Mediterranean Basin, Literature review

- Highlights**
- The Mediterranean basin is the most critical erosion hotspots in Europe
 - NbS are recognized a promising step-forward in coastal risk management
 - Novel framework for the analysis of past and present NbS implementation
 - Lack of consideration of NbS for coastal risk management in the Mediterranean
 - NbS are perceived as less attractive alternative to conventional approaches

01 Introduction

The **Mediterranean basin** is one of the most vulnerable regions worldwide due to its population density, the concentration of economic activities along the coasts and borderline climatic balance. It is identified as one of the most critical **erosion hotspots** in Europe, mainly due to the degradation of coastal areas, overexploitation and unsustainable practices affecting beach tourism, agriculture and fishing. To mitigate and adapt to these environmental and climatic changes, **Nature based Solutions (NbS)** are considered a promising step-forward, as it is based on the principle that the enhancement and protection of natural processes provides multiple benefits to society, thus ensuring a sustainable provision of benefits and co-benefits and counteracting the negative climate change impacts.

To better specify and disaggregate the necessary information needed, each of the four dimensions has been subdivided into factors and sub-factors.

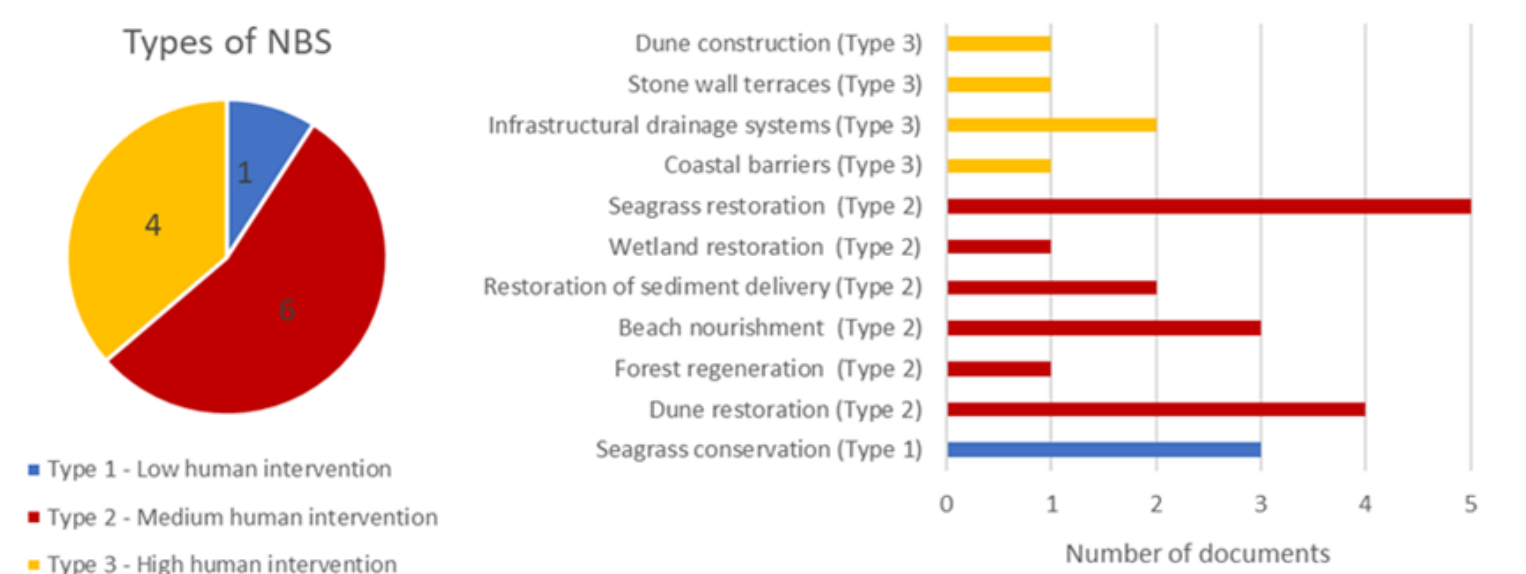


05 Results/Findings

From a general overview, the word cloud shows the principal keywords gathered from the collected data



Taking into account the three types of Nature-based Solutions (Low, Medium and High human intervention) the analysis shows that only one NbS has been recognized as a "Low human intervention", six as "Medium human intervention" and four as "High human intervention".



02 Objective

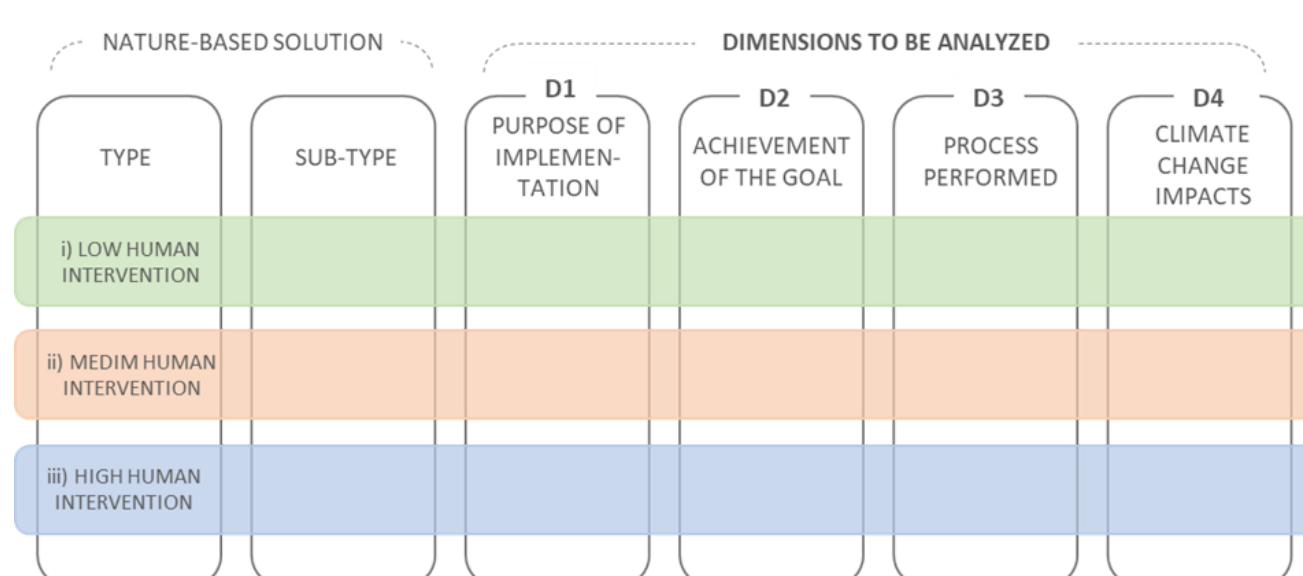
The research aims at bringing a comprehensive understanding of the state of the adoption of Nature-based Solutions for coastal risk management in the Mediterranean basin.

03 Framework of the analysis

The study provides a systematic literature review of information on past and current Nature-based Solutions efforts for coastal risk management in the Mediterranean.

The literature review is guided by the overarching question: "To what extent are Nature-based Solutions used for the Mediterranean Coastal risk management?"

To guide the answer to the overarching question, the following framework has been structured.



04 Data collection

The literature review has been performed by using different sources and by following the Preferred Reporting Items for Systematic Review (PRISMA) recommendations (Moher et al., 2009).

Out of 162 scientific papers and documents, only 23 were found to be relevant to the study. A novel framework has been built to analyze the NbSs.

06 Conclusion

Nature based Solutions are globally heralded as a promising alternative or complement to traditional grey infrastructures for addressing the increase and intensification of climate change-related risk.

The results show a lack of consideration of NbSs for coastal risk management in the Mediterranean, resulting in difficulties in facilitating NbS mainstreaming and uptake.

This situation leads NbSs to appear as a less attractive alternative to conventional approaches, and thereby hinder decision-making with regards to future investments in Nature based projects.