

A SYSTEMATIC REVIEW OF COASTAL ZONE INTEGRATED WASTE MANAGEMENT FOR SUSTAINABILITY STRATEGIES

PROBLEM

Coastal areas stand out because of their rich biodiversity and high tourist potential due to their privileged geographical position. However, one of the main problems in these areas is the generation of waste and its management, which must consider technical and sustainable criteria..

GENERAL OBJECTIVE

This work aims to conduct a systematic review of the scientific literature on integrated solid waste management (ISWM) by considering scientific publications on the scientific basis for the proposal of sustainability strategies in the context of use and efficiency.

PROPOSAL

The overall method comprises i) Search strategy, merging and processing of the databases (Scopus and Web of Science); ii) Evolution of coastal zone waste management; iii) Systematic reviews on coastal landfills and ISWM in the context of the circular economy; and iv) Quantitative synthesis in integrated waste management.

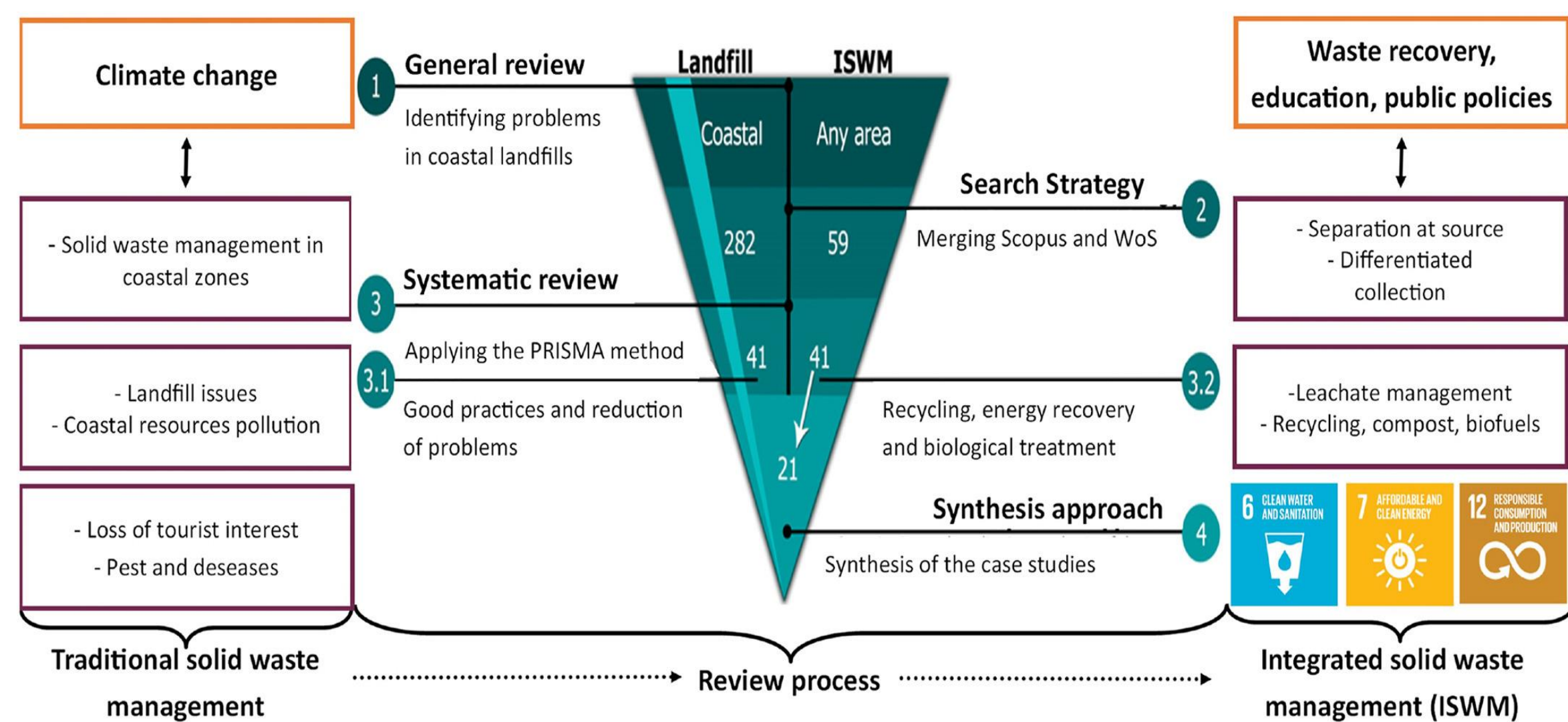


Fig.1 Graphical Abstract

RESULTS

The results show 282 studies focused on coastal landfills and 59 papers on ISWM with the application of circular economy criteria. Systematic reviews allowed for the definition of criteria for the selection of favorable sites, such as i) sites far from the coastline, ii) impermeable soils at their base to avoid contamination of aquifers, iii) use of remote sensing and geographic information system tools for continuous monitoring, iv) mitigation of possible contamination of ecosystems, v) planning the possibility of restoration (reforestation) and protection of the environment.

CONCLUSIONS

1. It is necessary to apply the ISWM approach to avoid landfill flooding and protect the marine environment, reducing rubbish and waste on beaches and oceans.
2. Applying the circular economy in ISWM is critical to sustainability in coastal environments, with the planet's natural processes and variations due to climate change.
3. Source separation is essential for any initiative: the role of education and the implementation of public policies is crucial.

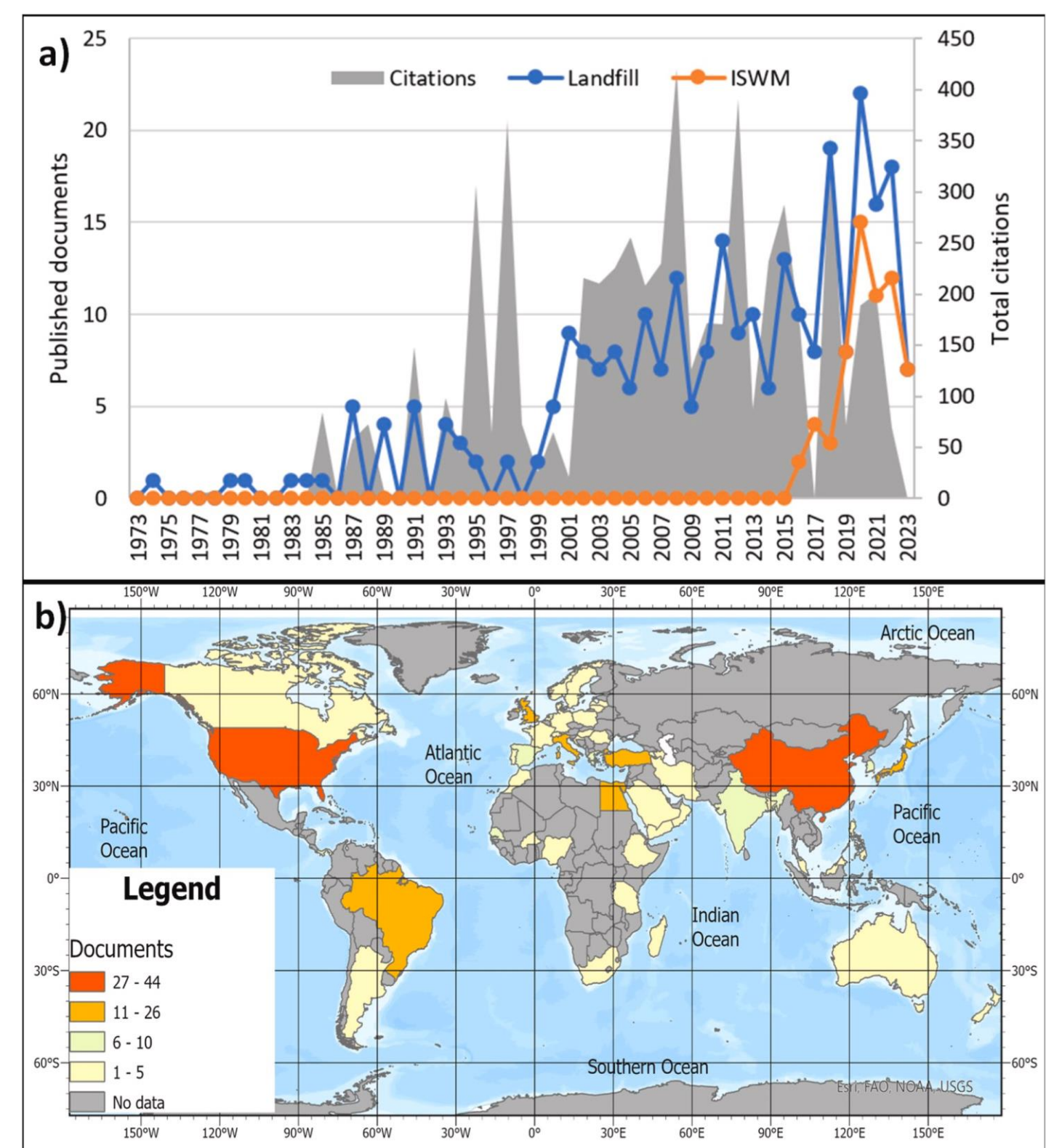


Fig. 2a. Documents and citations published on coastal landfills and ISWM. Fig. 2b. Geographical distribution of publications on coastal landfills.

ACKNOWLEDGMENTS

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