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Salinity in African Countries: From Local Challenges to Global Solutions

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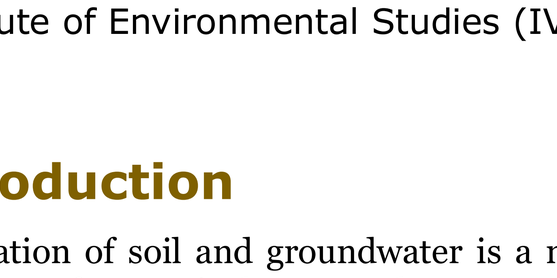
Introduction

Salinization of soil and groundwater is a major challenge for agriculture and a pervasive problem throughout the sub-Saharan region. Exacerbated by climate change, salinization has profound impacts on the region's environment, economy, and people.

A research project commissioned by the Netherlands Enterprise Agency (RVO) and conducted by the Institute of Environmental Studies (IVM) at the Vrije Universiteit Amsterdam, aimed at synthesizing scientific knowledge, evaluating impacts of salinization, addressing international governance, and proposing recommendations to better address salinization in 12 selected African countries.



Methodology

To evaluate the current scientific understanding of salinization in the focus countries, a comprehensive literature review was conducted, complemented by an examination of FAO questionnaires on salt-affected soils. The collected information was systematically categorized into country profiles. The impact of salinization on agriculture and food security in these nations was assessed based on semi-structured interviews with experts and extension officers. To provide an overview of the governance landscape of saline agriculture, international cooperative initiatives were analyzed based on several characteristics, using the methodology developed by Negacz et al.

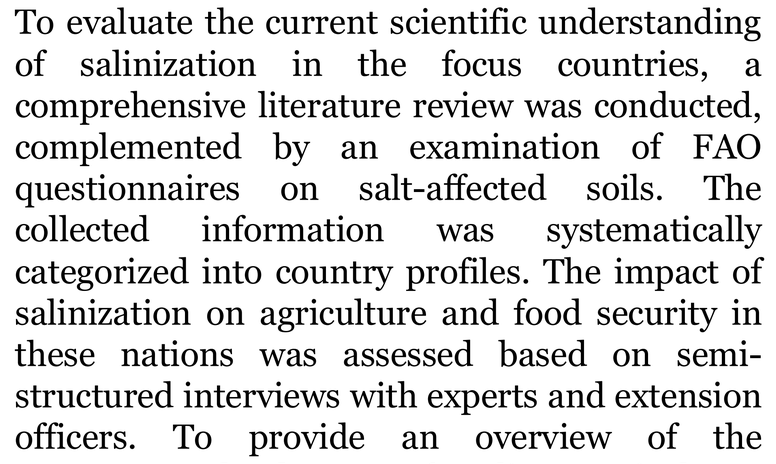


Figure 1: Research process

Results and Discussion

The study finds that significant disparities exist in the availability and quality of scientific knowledge regarding salinization, with coastal areas and river deltas being relatively well-studied while inland salinity lacks compressive analysis.

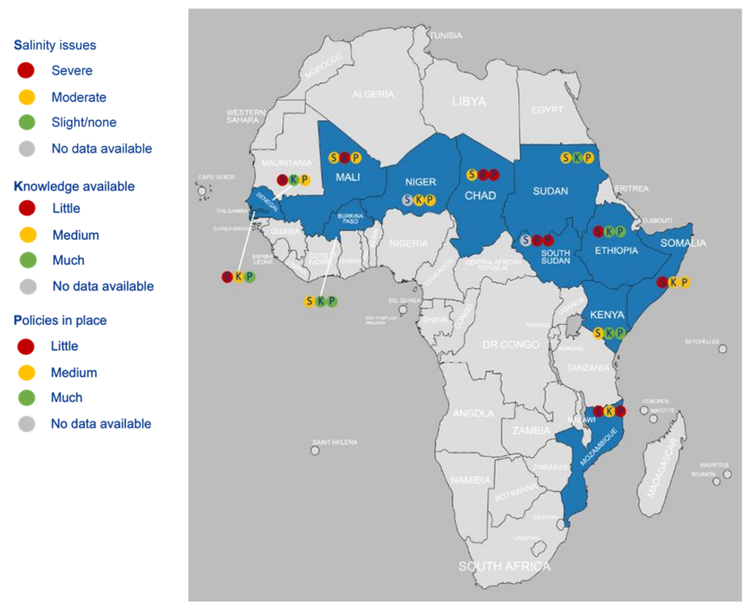


Figure 2: Map of key findings from the country profiles

Economic, environmental, social, and cultural impacts of salinization are profound, affecting livelihoods, food security, water quality, biodiversity, and exacerbating poverty and stakeholder conflicts. International initiatives are active across the region and are mainly involved in information sharing and operational activities, while funding and long-term commitments remain insufficient.

Table 1: Impacts of salinization across 5 of the focus countries.

IMPACTS	Economic	Environmental	Social	Cultural
The Gambia	X	X	X	
Senegal	X	X	X	
Ethiopia	X	X	X	X
Mozambique	X	X	X	
Kenya	X	X	X	X

Comparing these results with those from the North Sea, Mediterranean, MENA and Asian regions (Negacz et al., 2022; Smaoui & Negacz, forthcoming), where the governance landscape of international salinity initiatives was analyzed using the same methodology, we can gain some interesting insights into the differences in salinity management in different world regions. Compared to the other world regions, it is noticeable that there is no initiative in Africa that performs financing functions.

In addition, there is a notable focus on Sustainable Development Goal 1 - no poverty - among the initiatives in this region compared to the others. This underscores the serious threat that salinization poses to the livelihoods of smallholder farmers and highlights it as a key concern.

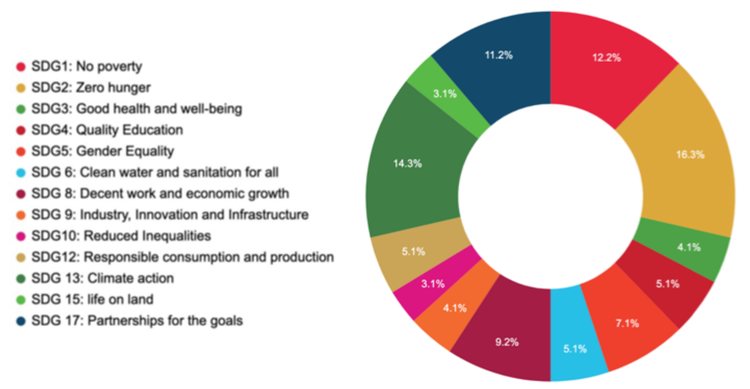


Figure 3: SDGs addressed by ICIs in sub-Saharan Africa

Conclusions

Policy and practice recommendations include allocating resources for studies, establishing regional monitoring programs, fostering collaboration among affected countries, promoting saline agriculture practices, integrating salinization into existing policies, mobilizing funds, involving civil society and private actors, and raising awareness about water management practices. In conclusion, addressing soil and groundwater salinization in sub-Saharan Africa requires coordinated efforts, resource allocation, and policy integration to mitigate its adverse impacts on livelihoods, food security, and the environment, ensuring sustainable development and economic growth in the region.

References

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Acknowledgements

This study was commissioned by the Sustainable Development Goals Partnership (SDGP), a programme of the Netherlands Enterprise Agency. Through SDGP, the Netherlands Enterprise Agency contributes to achieving food security and private sector development on behalf of the Dutch Ministry of Foreign Affairs.

International Network of Salt-Affected Soils

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