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## Salinity impacts on agriculture in sub-Saharan Africa – State of the art and call for action

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### Abstract

Soil and groundwater salinisation is a major challenge for agriculture and a pervasive problem throughout sub-Saharan Africa (SSA). Exacerbated by climate change, salinisation has profound impacts on the region's environment, economy, and people. However, reported data on the extent and impacts of salinity in SSA remains fragmentary. Recent studies conducted at the Vrije Universiteit Amsterdam (VU) and international expert networks such as the International Network of Salt-affected Soils (INSAS) worked towards systematising the available information and identifying knowledge gaps and action needs, principally through desk research along with key informant questionnaires and interviews. We present key outcomes of these research efforts, focusing on: (i) geographic extent of salinity along with classifications across countries, (ii) economic, environmental and social impacts of salinity, and (iii) the governance of salinity through international initiatives and policies. Estimates of salt-affected soils in sub-Saharan Africa range widely, from 19 to 161 million hectares, highlighting inconsistencies in research and classification methods. The level of information on salinity varies starkly between countries. While coastal areas are well studied, inland salinity also requires attention. More research is therefore needed, especially in arid and semi-arid regions. Furthermore, inconsistencies in salinity classification conventions between countries hinder supra-national comparisons and data alignment. Salinity has profound economic, environmental, and social impacts on affected countries, leading to significant crop yield losses and reduction of agricultural land, affecting livelihoods and food security. While international cooperation exists, the number of initiatives varies from country to country and focuses mainly on knowledge sharing and pilot projects. However, stronger commitments to funding, standards and long-term strategies are crucial for effective adaptation. Direct policies on salinity are rare, but they're often integrated into broader policies on soil, water, biodiversity and land degradation. The case study of salinity impacts on rice production systems in Eastern Africa is presented as an illustrative example, highlighting the prospects and challenges for supra-national efforts towards a conclusive understanding and management of the salinity problem in SSA. Our presentation intends to raise awareness and provide impulses for strengthening salinity research and action in SSA.

**Keywords:** Agricultural policy, climate change adaptation, food security, governance, groundwater salinity, land degradation, rice production, saline agriculture, salinity classification, salt-affected soils, soil salinity