**Session Proposal**

# Session Title

*Soil salinity* management strategies for sustainable agriculture from plot to regional scales

# Session Organizers

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# Session Description

The symposium will provide a scope for critical discussion on soil salinity management cross multiple scales. With the escalating effects of climate change and global warming, both soil and groundwater are increasingly vulnerable to salinization. This session emphasizes the need for a comprehensive understanding of salt cycling within agri-environments and the revitalization of salt-affected agri-food systems.

The session will explore a variety of topics pertinent to soil salinity management, including the prediction of salinization risk under changing climatic conditions, optimization of saline water irrigation, advanced monitoring techniques for soil and groundwater salinity, the mobilization of salts across irrigated landscapes, and the physiological, biochemical and microbial mechanisms of crop salt tolerance. Additionally, the session will delve into modeling salt cycling and salinization processes, identifying the impact of salinity on crop yields, optimizing allocation of suitable crops, and creating innovative approaches by means of artificial intelligence and data-driven strategies.

Furthermore, the session will discuss policy innovations designed to combat salinization and will share valuable experiences that can inform agricultural water management practices. By addressing these diverse aspects of soil salinity management, the session seeks to provide a robust framework for sustainable agricultural practices that mitigate the risks associated with soil salinization from plot, farmland, to regional scales. The anticipated outcomes of this session are to enhance the resilience of agricultural systems and contribute to the broader goal of sustainable food production in the face of climate change and global warming.

# Format

Oral presentations

# Proposed Speakers

**Isaya Kisekka**, Dept. Land Air and Water Resources, University of California, Davis, CA, United States, a leading expert on watershed scale salinity management

**Chao Wang**, Nanjing University of Information Science & Technology, a expert on watershed irrigation impacts on soil salinity

**Nima Shokri**, Hamburg University of Technology, Germany, an expert on global soil salinization risk

**Alon Ben-Gal**, Agricultural Research Organization, Israel, a leading expert in precision irrigation to reduce soil salinization risk

**Andrew Binley**, Lancaster University, UK, a notable scientist in soil salinity survey

**Yair Mau**, Institute of Environmental Sciences, The Hebrew University of Jerusalem, Rehovot, Israel, an expert on soil salinity modeling across multiple scales

**Jorge F.S. Ferreira**, Agricultural Water Efficiency and Salinity Research Unit (US Salinity Laboratory), a leading research plant physiologist under saline alkali stress.

**Lihua Huang**, Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences, an expert on soil nutrient conversion and plant absorption mechanisms under saline alkali stress

**Yingxin Huang**, Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences. an expert on ecological management of sodic dryland farmland and grassland

**Zhenyong Zhao**, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, an expert on utilization of salt-affected soil using salt-tolerant plants and halophyte

**Kai Guo**, Center for Agricultural Resources Research, IGDB, Chinese Academy of Sciences, an expert on soil salinity management using multi-source water resources

**Yuyi Li**, Institute of Agricultural Resources and Regional Planning, CAAS. a leading researcher of soil salinity management and fertility enhancement using environmentally friendly materials

**Xuan Yu**, Institute of Soil Science, Chinese Academy of Sciences. a practiced researcher of modeling soil water flow and salt transport at multi-scales