Food and Agriculture Organization of the United Nations

20th Working Session of the Intergovernmental Technical Panel on Soils (ITPS)

19-21 March 2024

Soil Salinity working group: the latest updates

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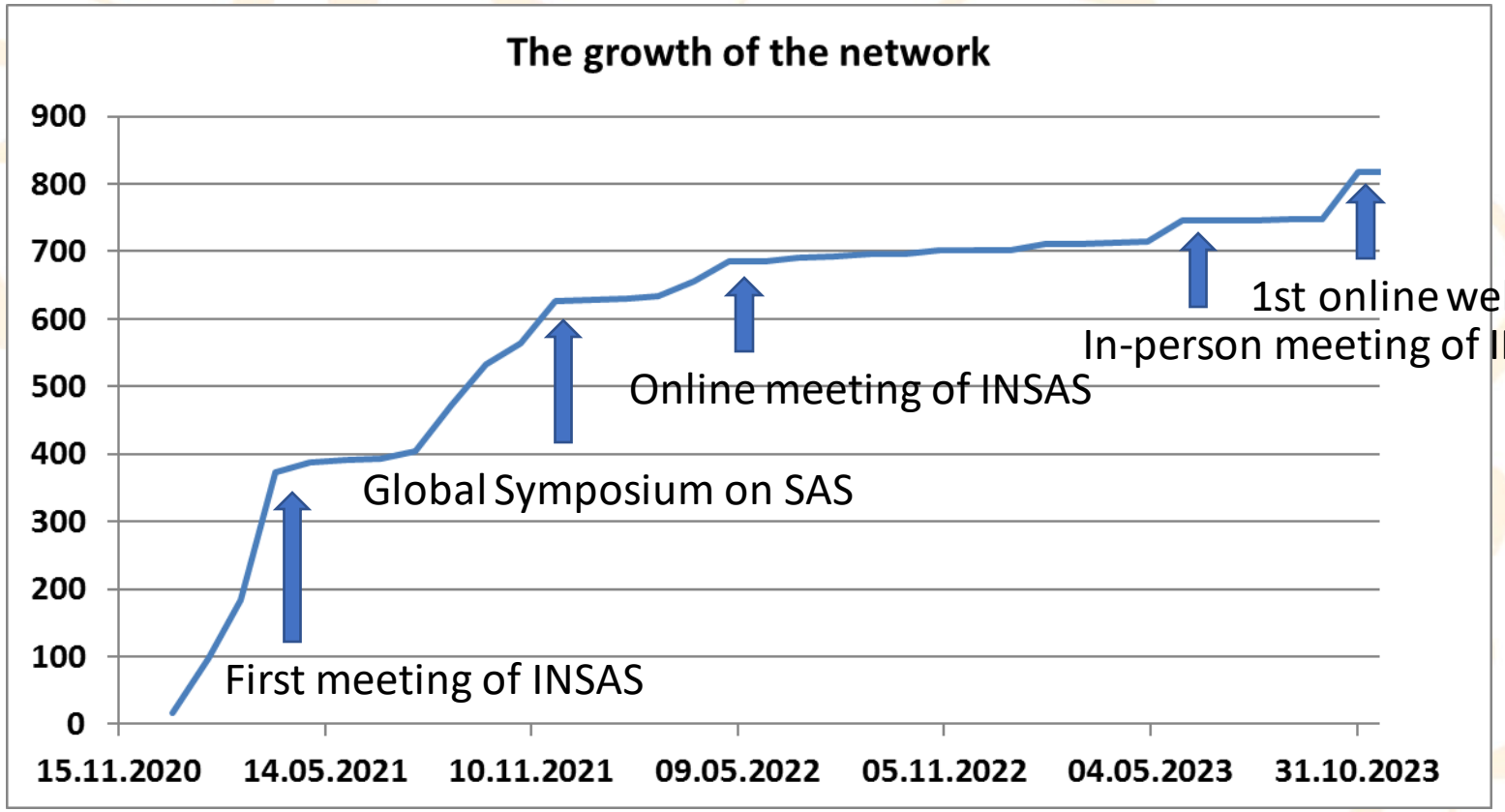
INTERGOVERNMENTAL TECHNICAL PANEL ON SOILS

GLOBAL SOIL PARTNERSHIP

823 members from 125 countries

(10% increase since previous ITPS meeting)



Ongoing activities of INSAS

Activity	Status
Global assessment of salt-affected soils (Main report)	Writing finalized (final review in March-April)
Global assessment of salt-affected soils (National reports)	Preparation to publication (6 countries out of 39 have been finalized)
Series of **webinars** covering measurement, sampling, modeling and management of salt-affected soils	2 webinars held and 3 webinars will be released soon
Database of good practices (jointly with Soil Doctors)	Template under internal revision
Standard Operating Procedures for salt-affected soils (jointly with GLOSOLAN)	No progress since previous ITPS meeting
Harmonized protocols for soil salinity/sodicity sampling, mapping and assessment	No progress since previous ITPS meeting (work postponed to second half of 2024)

Status with the Global Assessment of Salt-Affected Soils

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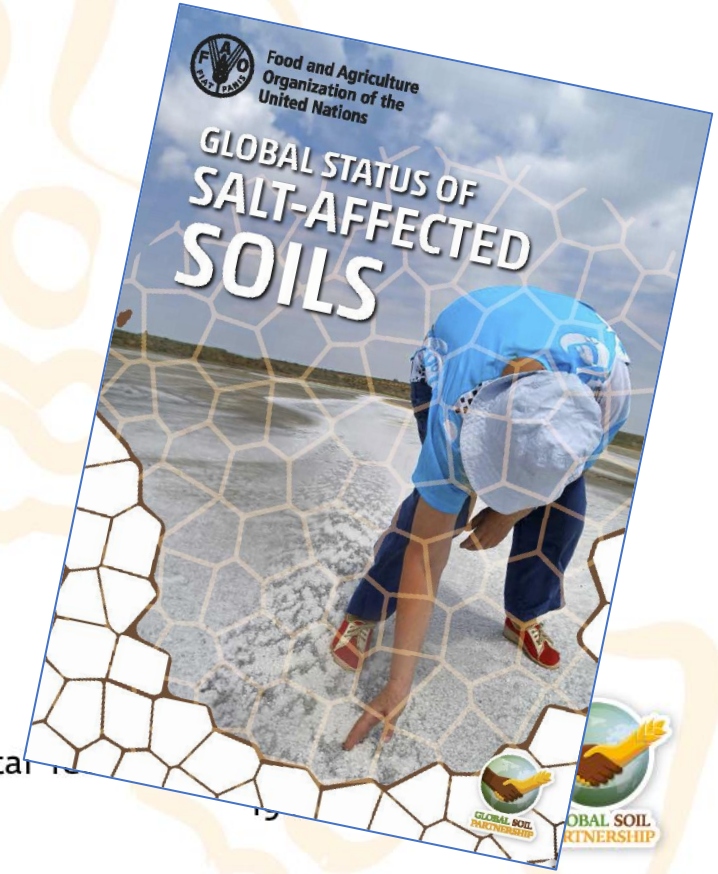
Release (planned): GSP Plenary Assembly (June 3, 2024)

Introduction
Chapter 1. Salt-affected soils: the global perspective
Chapter 2. Human-induced soil salinization and sodification
Chapter 3. Status of salt-affected soils (regional assessments)
Chapter 4. Effect of salinization/sodification on food production, food security, and socio-economic situation
Chapter 5. Responses to the challenges
Conclusions



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Status with the Global Assessment of Salt-Affected Soils: Main findings

1. The total area of salt-affected soils of the world amounts to **1 381 Mha, or 10.7 percent of the total global land area**. The ten top countries (Table) account for 70 percent of the total area of salt-affected soils of the world. The area of soils potentially **under risk of salinization (with an EC of 0.75–2 dS/m) amounts to 1 038 Mha.**

Top ten countries with largest areas of salt-affected soils (by area and by percentage)*

Country	Area of salt-affected soils, km²	Country	Percent of SAS of land area
Australia	3 570 000.0	Oman	93.5
Argentina	1 531 252.6	Uzbekistan	92.9
Kazakhstan	939 823.0	Jordan	90.6
Russian Federation	769 639.9	Kuwait	88.8
United States of America	734 057.6	Iraq	70.5
Iran (Islamic Republic of)	556 000.0	United Arab Emirates	60.5
Sudan	435 720.2	Afghanistan	58.6
Uzbekistan	409 281.6	Argentina	56.0
Afghanistan	382 449.9	Australia	46.4
China	360 000.0	Eritrea	40.1

Status with the Global Assessment of Salt-Affected Soils: Main findings

2. Estimates dating back to the 1980s and early 1990s stated that 45 Mha (19.5 percent) of irrigated land and 32 Mha (2.1 percent) of the world's rainfed croplands, totalling 77 Mha, were affected by salinity or sodicity (Oldeman, Hakkeling and Sombroek, 1991). The new estimates performed on the basis of the FAO's *Global map of salt-affected soils* (GSASmap) (FAO, 2021) covering 75 percent of the total land indicate that **10 percent of irrigated cropland and 10 percent of rainfed cropland** are affected by salinity or sodicity.

3. In the countries most affected by salinity of the cropland, potential crop losses due to salinity stress are up to 72 percent for rice, 68 percent for bean, 45 percent for sugarcane, 40 percent for potato, 38 percent for sweet potato, 37 percent for maize, 15 percent for wheat, 14 percent for barley, 12 percent for sorghum, 11 percent for cowpea, and 4 percent for cotton and sunflower, according to estimates covering 644 Mha of global cropland.

Status with the Global Assessment of Salt-Affected Soils: Main findings

4. The status of the measurement, monitoring and management of salt-affected soils was evaluated by the INSAS survey. In total, 59 questionnaires **from 53 countries** filled by 94 experts were received and analysed by the regional lead authors. Many countries still lack the regulations to protect salt-affected soils that support valuable ecosystems and rare species. most surveyed countries (76 percent out of 50 countries) lack regulations over the sustainable use and management of salt-affected soils. Half of the surveyed countries had no governmental body to monitor or supervise the management of salt-affected soils (and soil salinization or sodification). The findings of this survey have served as a main source of information for identifying the critical gaps, action areas, project planning and targeting the activities of INSAS.

INSAS Webinars

No	TITLE	RELEASE	Participants
1	Health of salt-affected soils	November 21, 2023	1150 registrants (from 115 countries), 500 unique attendees (from 80 countries)
2	eHALOPH and the economic uses of salt-tolerant plants	February 13, 2024	393 registrants (from 92 countries), 196 unique attendees
3	Salinity in Sub-Saharan Africa: impacts and initiatives	March 25, 2024	
4	Assessing soil salinity and sodicity using remote and proximal sensing data	April 2024	
5	Crop nutrition in salt-affected soils	May 2024	
6	Reactive transport modelling (with crop growth) in salt-affected soils	April – May 2024	

INSAS at COP28

Promoting the declaration of 2028 as "Year of Saline Agriculture":

Climate resilient agriculture for sustainable production systems and healthy ecosystems in salt-affected areas

Sunday 10 December 2023

18:00 | 19:00 UTC+4

With a high-level panel, inspirational movie & interaction

FOOD SYSTEMS PAVILION COP28 UAE 2023

More information on *foodsystemspavilion.com*

Ministry of Agriculture, Nature and Food Quality of the Netherlands

WAGENINGEN UNIVERSITY & RESEARCH

TECHNICAL PANEL ON SOILS

Food and Agriculture Organization of the United Nations

WASAG The Global Framework on Water Scarcity in Agriculture

International Network of Salt-Affected Soils

ICBA AGRICULTURE FOR TOMORROW

IVM Institute for Environmental Studies

NFP Netherlands Food Partnership

NWP Netherlands Water Partnership

on Soils (ITPS)
21 March 2024

GLOBAL SOIL PARTNERSHIP

Third meeting of INSAS (27-31 May, 2024, Valencia, Spain)

Day	INSAS
1	Workshop
2	Technical sessions of INSAS (regional assessments and way forward)
3	Trainings: - SAS&Water (Hydrus modelling) - SAS&Crops - SAS&Management
4-5	Field trip to the coastal marshlands (Las Moros and Prat de Cabanes-Torreblanca) and water desalination factory; fotovoltaic plant, inland salt playa under restoration (Laguna de Salinas, Villena valley), gypsiferous soils high in NaCl under orchards (Villena valley), solar salt mining and salt-affected cotton fields (Santa Pola)

Timeline:

- Call for abstracts, early April (Deadline: April 21, 2024)
- Notification on the status of abstract, 10 May, 2024
- Draft agenda published, 20 May, 2024
- INSAS meeting (hybrid), 27-29 May, 2024
- Field trip, 30-31 May, 2024

Regional meeting of INSAS for Asia (Aksu, China, September 23-25, 2024)

Day	INSAS
1	Workshop
2	Regional meeting of INSAS for Asia
3	Field trip to Aksu station with SAS management

Timeline:

- Call for abstracts, 7-10 June
- (Deadline: June 30, 2024)
- Notification on the status of abstract, 30 July, 2024
- Draft agenda published, 20 August, 2024
- INSAS-Asia meeting (hybrid), 23-24 September, 2024
- Field trip, 25 September, 2024

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Thank you!

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