Integrated Soil Salinity Leaching System: Natural Saline and Alkaline Soil Restoration System

ISSLS, Naturally restoring salt-affected and alkaline farmland for Egyptian smallholder farmers!

The Natural Saline and Alkaline Soil Restoration System restores degraded saline and alkaline farmland through a natural soil restoration process. The technology supports sustainable land and water management while improving the long-term productivity of agricultural land without chemical amendments.



ICARDA
Mohie Omar

This technology is **not yet validated**.

9·2 Scaling readiness: idea maturity 9/9; level of use2/9

Inclusion assessment 8 8 8

Climate impact 7

Problem

- Declining productivity: Salinity and alkalinity reduce agricultural production.
- Land degradation: Poor soil conditions limit sustainable farmland use.
- High restoration costs: Chemical reclamation increases public and farmer costs.
- Poor water management: Inadequate drainage accelerates soil degradation.
- Reduced production potential: Salt-affected land limits agricultural development.

Solution

- Land restoration: Restores salt-affected agricultural land.
- Higher productivity: Improves the long-term use of farmland.
- Lower reclamation costs: Reduces dependence on chemical amendments.
- Better water management: Improves drainage and water-use efficiency.
- Programme integration: Supports national land, irrigation, and soil-restoration programmes.

Key points to design your project

ISSLS helps governments restore salt-affected and alkaline farmland, improve agricultural productivity, and strengthen sustainable land and water management while contributing **to SDG 2, SDG 6, SDG 13, and SDG 15.** Successful implementation should:

- Target salt-affected and alkaline agricultural areas with declining productivity.
- Integrate the technology into national soil restoration, irrigation, drainage, and climate resilience programs.
- Strengthen extension services, demonstration activities, and farmer awareness.
- Build partnerships with ICARDA and key implementation partners.
- Monitor soil health, agricultural productivity, water-use efficiency, and technology adoption to support long-term scaling.

IP

Open source / open access

Technology from

PRMS

Commodities

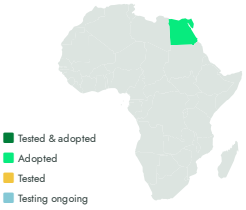
Rice, Fish

Sustainable Development Goals

Categories

Production, Pre-production, Practices, Soil restoration

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Farmers, Governments