

4. SOLAW 2025- Geography

SOLAW 2025 launched today. The FAO's SOLAW 2025 report warns that global food security is under threat as land and water resources are finite and critically degraded, yet agriculture must produce 50% more food by 2050 to feed a growing population. The report advocates shifting from resource-intensive practices to sustainable, integrated systems like rainfed agriculture optimization and agroforestry.

Report Overview

Report Title- The State of the World's Land and Water Resources for Food and Agriculture (SOLAW 2025).

Releasing Body- Food and Agriculture Organization (FAO).

Core Warning- The report emphasizes that land, soil, and water are finite resources that are becoming increasingly degraded. These resources are the absolute central pillars for future global food security.

Key Challenges to Global Food Security

The Hunger Burden

Current Crisis- As of 2024, approximately 673 million people faced hunger globally.

Persistent Emergencies- Many regions are trapped in recurrent food emergencies, unable to break the cycle of food insecurity.

Future Demands (2050 Projections)

Population Growth- The global population is projected to reach 9.7 billion by 2050.

Production Targets- To meet the needs of this population, the agriculture sector faces steep targets compared to 2012 levels-

Food Production- Must increase by 50%.

Freshwater Availability- Agriculture will require 25% more freshwater.

Global Resource Stress & Degradation

Land Degradation

Extent of Damage- Over 1.6 billion hectares of land is currently degraded.

Global Share- This represents roughly 10% of total global land.

Agricultural Impact- Critically, 60% of this degraded land is agricultural land, directly threatening food production capabilities.

Water Scarcity

Agricultural Dominance- Agriculture is the largest consumer of water, accounting for 72% of global freshwater withdrawals.

Consequences- This high consumption is intensifying general water scarcity and leading to the rapid depletion of groundwater reserves.

Analysis of Past Production Trends (1964–2023)

Growth Strategy- Intensification vs. Expansion

Intensification- The majority of agricultural production increases in the last six decades were achieved through **intensification** (getting more yield from the same land) rather than expanding the land area.

Limited Expansion- Physical land expansion for agriculture grew by only 8% during this period.

The Role of Irrigation

Growth- The total area of irrigated land has doubled since 1964.

Efficiency/Value- Although irrigated land makes up only 23% of total cropland, it contributes a massive 48% of the global crop value.

Negative Externalities (The Cost of Growth)

Unsustainable Practices- The reliance on intensive fertilizer application and monocropping (growing a single crop year after year) has had severe ecological costs- Accelerated soil degradation. Significant biodiversity loss. Widespread pollution (soil and water).

Comparative Analysis- Current Status vs. Future Requirements

Feature	Current Status / Recent Trends	Future Requirements (By 2050)
Population	~8 billion (Current)	9.7 billion
Hunger Burden	673 million people (2024)	Goal- Zero Hunger (SDG 2)
Production Mode	High input, monocropping, intensification	Sustainable, integrated, and resilient systems
Resource Demand	Base Level (2012 reference)	+50% Food; +25% Freshwater
Land Health	1.6 billion ha degraded (10% global land)	Restoration and sustainable management required

Solutions for Better Production (The Way Forward)

Enhancing Rainfed Agriculture- Since water is scarce, optimizing rainfed areas is crucial.

Conservation Agriculture- Minimizing soil disturbance to maintain structure.

Crop Selection- Adopting drought-tolerant crop varieties.

Moisture Management- Techniques for soil moisture conservation.

Soil Health- Diversification of crops and the use of organic composting.

Increasing Land Productivity

Narrowing Yield Gaps- Focusing on bringing low-yielding regions up to their potential.

Resilient Varieties- Selecting crops specifically suited to local agro-climatic conditions.

Urban Farming- Promoting Urban and Peri-urban farming methods such as-

Hydroponics- Growing plants without soil.

Vertical Farming- Growing crops in vertically stacked layers.

Benefit- Reduces pressure on rural land/water and enhances local food supply.

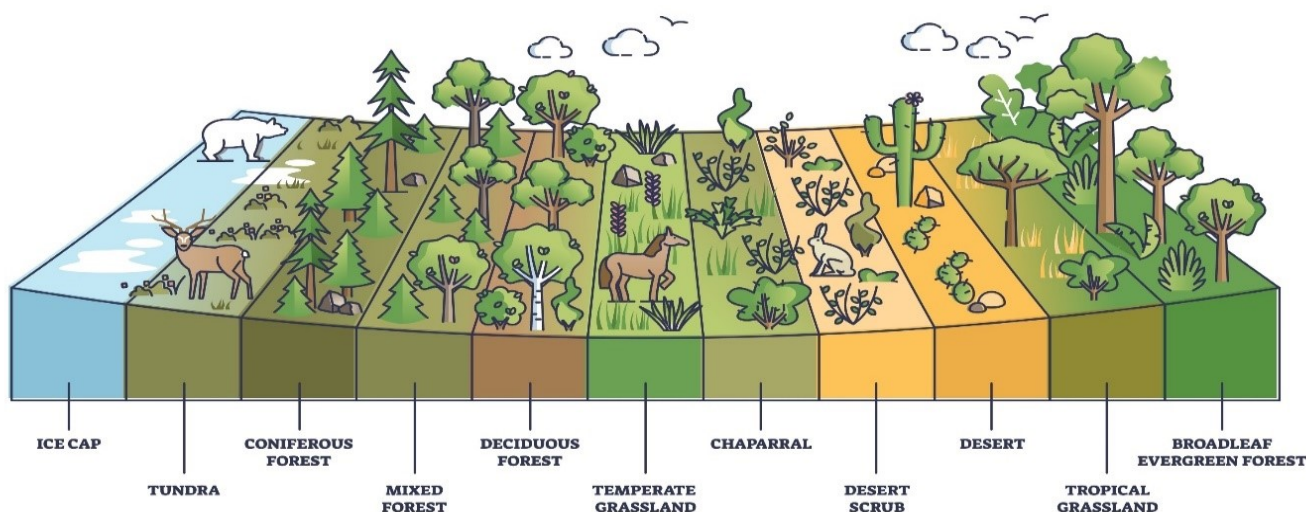
Integrating Production Systems

Moving away from monoculture toward mixed systems strengthens ecological resilience.

Agroforestry- Integrating trees and shrubs into crop and animal farming systems.

Rotational Grazing- Moving livestock systematically to prevent overgrazing.

DISTRIBUTION OF LIFE ON LAND



Rice-Fish Farming- A symbiotic system where fish are reared in rice paddies.

Strengthening Institutional Capacity

Extension Services- Modernizing agricultural extension tools to reach farmers effectively.

Farmer Field Schools (FFS)- Utilizing FAO's FFS model to train farmers directly in sustainable practices and technology adoption.

About the Report- SOLAW

Nature of Report- It is the FAO's flagship report assessing the global condition of land and water resources.

Publication History- Previous editions were published in 2011 and 2021.

Primary Purpose-

1. Raise awareness about the status of global/regional land and water resources.
2. Present recommendations for policy formulation.

Key Focus Areas-

Resource Status- Evaluating the quantity and quality of land/water.

Rate of Use- Analyzing the speed of exploitation vs. sustainability.

Socio-economic Drivers- Examining how food security, poverty, and climate change drive resource degradation.

Source- <https://www.fao.org/land-water/news-archive/news-detail/en/c/1755383/>

