



**SaaP**  
Soil as a Platform



Soil as a Platform (SaaP)

# Territorial License Opportunity For India



## Soil degradation in India

According to a study by the Indian Council of Agricultural Research (ICAR), nearly 120.7 million hectares (Mha) of land in India, or about 37% of the total geographical area, is affected by various forms of soil degradation, including water and wind erosion, salinization, and nutrient depletion

source: <https://www.currentscience.ac.in/Volumes/104/09/1241.pdf>

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## Indian agriculture's contribution to GDP

Agriculture and allied sectors contribute around 16.5% to India's Gross Domestic Product (GDP)

source: <https://www.ibef.org/industry/agriculture-india.aspx>

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## Indian population dependent on agriculture

Approximately 58% of India's population relies on agriculture for their livelihood.

source: <https://www.worldbank.org/en/news/feature/2021/03/22/agriculture-and-farmers-welfare-in-india>

## Executive Summary

India, with its vast population and diverse climatic conditions, is heavily reliant on agriculture to bolster its economy and ensure food security for its people. Soil degradation poses the number one challenge, jeopardizing agricultural productivity, the livelihoods of millions of farmers and the health of India's citizens.

The current reckless overuse of chemical fertilizers and unsustainable farming practices to counteract declining soil fertility is wreaking havoc on the environment, culminating in severe health crises, water contamination and further degrading soil.

If allowed to continue unchecked, this soil degradation could plunge India into a catastrophic scenario, with far-reaching consequences for its environment, food security, economy and health.

Soil as a Platform (SaaP) holds the key to combating soil degradation and boosting agricultural productivity. By harnessing the power of SaaP, India can safeguard its environment, economy, and food security for future generations.

## Soil Degradation

India is a vast country with diverse climatic conditions and varying soil types. Soil degradation is more severe in some regions than others, with states like Punjab, Haryana, and Uttar Pradesh experiencing significant soil fertility decline due to intensive agriculture. The problem is further exacerbated by increasing population pressures and climate change, which intensify soil degradation and further reduce agricultural productivity.

# Local Soil Degradation Issues in India by Region

## Indo-Gangetic Plains

The Indo-Gangetic Plains are the most fertile and agriculturally productive region in India. However, intensive agricultural practices, overuse of chemical fertilizers and pesticides, and excessive groundwater extraction have led to soil salinity, depletion of essential nutrients, and declining groundwater levels.

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## Northwest India

This region, including states such as Punjab and Haryana, faces severe soil degradation due to overuse of fertilizers, improper irrigation practices, and monocropping. Soil fertility has become a prevalent issue.

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## Western Ghats

In the Western Ghats, deforestation and unsustainable land-use practices have led to soil erosion, loss of soil organic matter, and reduced soil fertility. The region's steep slopes and heavy rainfall exacerbate these issues.

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## Eastern and Northeastern India

In Eastern and Northeastern India, factors such as shifting cultivation, deforestation, and improper land management practices have resulted in soil erosion and loss of soil fertility. Furthermore, flood-prone areas face issues such as soil nutrient leaching.

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## Deccan Plateau

The Deccan Plateau, including states like Karnataka and Maharashtra, is characterized by semi-arid conditions and degraded soils. Soil erosion, nutrient depletion, and low organic matter content are significant concerns in this region due to unsustainable agricultural practices.

## Soil as a Platform (SaaP) Solution

SaaP offers a customised, packaged solution to India's soil degradation problem. The first stage of SaaP introduces beneficial organisms into the soil. These organisms can improve soil health, agricultural productivity, and environmental sustainability by:

a. **Enhancing nutrient availability**

Beneficial organisms break down organic matter and convert nutrients into forms that plants can absorb more easily.

b. **Boosting plant growth and yield**

These organisms produce hormones and chemicals that stimulate plant growth and improve overall crop yield.

c. **Suppressing pathogens and pests**

By competing for resources and producing antimicrobial compounds, the beneficial organisms help protect plants from diseases and pests.

Once established, SaaP can tailor a diverse range of solutions to ensure sustainable soil fertility and reduce erosion.

## Potential Impact on India

If successfully implemented and adopted on a large scale, SaaP could have a transformative impact on India's agriculture, environment, and economy:

a. **Improved food security**

By enhancing soil health and crop productivity, SaaP helps contribute to greater food security for India's growing population.

b. **Stabilized food prices**

Increased agricultural productivity leads to more stable food prices, benefiting consumers and farmers alike.

c. **Reduced environmental impacts**

Healthier soils can sequester more carbon, reducing greenhouse gas emissions. Additionally, by decreasing the need for chemical fertilizers and pesticides, SaaP contributes to a more sustainable agricultural sector.

d. **Economic benefits**

Licensing SaaP in India could create new economic opportunities, including job creation in the agricultural sector and related industries, and fostering research and development in the field of soil health and sustainable agriculture.

# Economic Benefits

## Increased agricultural productivity and income for farmers

The implementation of SaaP would lead to improved soil health and fertility, resulting in higher crop yields. This would translate into increased income for farmers, contributing to the overall growth of the agricultural sector in India.

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## Job creation

Licensing SaaP in India could create new jobs in various sectors, including manufacturing, distribution, marketing, and sales. Additionally, the introduction of SaaP would likely lead to an increased demand for skilled professionals in the fields of agronomy, soil science, and sustainable agriculture.

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## Boost to the agro-based industries

With the improvement in soil health and crop yield, the agro-based industries, such as food processing, textiles, and biofuels, would also witness growth. This would further contribute to the overall economic development of the country.

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## Reduced dependence on chemical fertilizers

By enhancing the natural fertility of the soil, SaaP would reduce the need for chemical fertilizers, leading to cost savings for farmers and a decrease in the negative environmental impacts associated with fertilizer production and use.

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## Attracting foreign investment

The successful implementation of SaaP in India could attract foreign investors interested in sustainable agriculture and soil health solutions. This would bring in additional capital, technology, and expertise, further supporting the growth of the Indian agricultural sector.

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## Strengthening local economies

As SaaP improves agricultural productivity in various regions, it would contribute to the overall economic growth of those areas. This would lead to better infrastructure, more robust local markets, and increased financial stability for rural communities.

## Enhancing India's global competitiveness

By adopting SaaP, India would showcase its commitment to sustainable agriculture and environmental stewardship, positioning itself as a global leader in these areas. This could improve India's trade prospects, as more countries seek to engage with partners committed to sustainable practices.

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## The sublicensing opportunity in India

Sublicensing Soil as a Service establishes a mutually beneficial relationship between the territorial license holder and local licensees, fostering localized expertise, accelerated market penetration, and shared costs. This collaboration enables a more extensive and effective adoption of SaaP throughout the country.

Moreover, sublicensing generates additional revenue streams for the territorial license holder while promoting local investment in the technology. By retaining the majority of the benefits within the local communities served, sublicensing not only keeps money circulating locally but also contributes positively to the broader economy.

## Conclusion

India faces a critical challenge in addressing soil degradation, a growing threat to its environment, food security, and economy. The country's reliance on agriculture to sustain its vast population and diverse climatic conditions underscores the urgent need for innovative solutions like Soil as a Platform (SaaP). By leveraging SaaP's potential, India can enhance agricultural productivity, protect the livelihoods of millions of farmers, and promote sustainable farming practices.

By embracing SaaP and prioritizing sustainable soil management, India can safeguard its environment, economy, and food security for present and future generations.