



## Soil Health Card Scheme: Impact on Indian Agriculture

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Soil health plays a crucial role in sustaining agricultural productivity and ensuring food security in a country like India where agriculture supports the livelihood of millions of farmers. Over the years, excessive and imbalanced use of chemical fertilizers, declining organic matter, and poor nutrient management have resulted in significant deterioration of soil quality across many agricultural regions. To address these challenges, the Government of India launched the **Soil Health Card (SHC) Scheme** in 2015 with the objective of promoting balanced nutrient management and improving soil fertility. The scheme provides farmers with soil health cards that contain information about the nutrient status of their soil along with crop-wise fertilizer recommendations. Through systematic soil testing and scientific advisory services, farmers are able to adopt appropriate nutrient management practices. This initiative not only helps in reducing the excessive use of fertilizers but also enhances crop productivity, improves soil fertility, and reduces input costs. The scheme has also encouraged farmers to adopt integrated nutrient management practices including the use of organic manure, bio-fertilizers, and micronutrients. Moreover, it contributes to sustainable agriculture by preventing soil degradation and improving environmental quality. Several studies indicate that the Soil Health Card Scheme has increased farmer awareness regarding soil testing and nutrient management. Although challenges such as limited soil testing infrastructure and awareness gaps still exist, the scheme represents an important step toward sustainable agricultural development in India. Strengthening extension services, improving laboratory capacity, and encouraging farmer participation will further enhance the effectiveness of this scheme in the long term.

**Keywords:** Soil fertility, nutrient management, soil testing, sustainable agriculture, fertilizer use efficiency, soil health card.

### Introduction

Agriculture is the backbone of the Indian economy and provides livelihood to nearly half of the country's population. However, the sustainability of agricultural production largely depends on the health and fertility of soil. Healthy soil ensures proper nutrient availability, water retention, and microbial activity that ultimately supports plant growth and crop productivity. Over the past few decades, the increasing pressure to enhance crop yields has led to excessive use of chemical fertilizers and neglect of organic nutrient sources. This has resulted in **soil nutrient imbalance, depletion of micronutrients, and deterioration of soil structure**. In many regions of India, farmers apply fertilizers without knowing the exact nutrient status of their soil. As a result, crops may receive either excessive or insufficient nutrients, which affects both productivity and soil health. Recognizing this problem, the Government of India introduced the **Soil Health Card Scheme in 2015** under the Ministry of Agriculture and Farmers Welfare. The main objective of the scheme is to provide farmers with information on soil nutrient status and appropriate fertilizer recommendations so that they can adopt balanced nutrient management practices. By encouraging scientific fertilizer

application, the scheme aims to enhance crop productivity, improve soil fertility, and promote sustainable agricultural practices.

### Soil Health Card Scheme

The **Soil Health Card Scheme (SHC)** was launched in **February 2015** by the Government of India to promote soil testing and balanced nutrient use across the country. Under this scheme, soil samples are collected from farmers' fields and analysed in soil testing laboratories to determine the levels of major nutrients such as **Nitrogen (N), Phosphorus (P), and Potassium (K)**, as well as secondary nutrients and micronutrients including **Sulphur, Zinc, Iron, Copper, and Boron**.

### Objectives of the Soil Health Card Scheme

1. To assess the nutrient status of soils across the country.
  - a. To promote balanced and judicious use of fertilizers.
  - b. To improve soil fertility and agricultural productivity.
  - c. To reduce the cost of cultivation by minimizing excessive fertilizer use.
  - d. To encourage the adoption of integrated nutrient management practices.

### Impact of Soil Health Card Scheme on Indian Agriculture

**1. Promotion of Balanced Fertilizer Use:** One of the major benefits of the scheme is the promotion of balanced fertilizer application. Farmers now receive scientific recommendations based on soil nutrient status, which prevents excessive use of fertilizers and improves nutrient use efficiency.

**2. Improvement in Soil Fertility:** Regular soil testing helps farmers identify nutrient deficiencies and take corrective measures such as applying micronutrients, organic manure, or bio-fertilizers. This leads to gradual improvement in soil fertility and long-term productivity.

**3. Reduction in Cost of Cultivation:** By following recommended fertilizer doses, farmers can avoid unnecessary fertilizer application. This reduces input costs and improves profitability.

**4. Increase in Crop Productivity:** Balanced nutrient management improves crop growth and yield. Studies have shown that adoption of soil health card recommendations has resulted in **5–10% increase in crop productivity** in several regions.

**5. Increased Awareness among Farmers:** The scheme has increased awareness about soil testing and soil health management among farmers. Many farmers who previously applied fertilizers without soil testing are now adopting scientific nutrient management practices.

**6. Promotion of Integrated Nutrient Management:** The scheme encourages farmers to use **organic manures, compost, green manure, and bio-fertilizers** along with chemical fertilizers, thereby supporting integrated nutrient management.

**7. Environmental Benefits:** Excessive fertilizer use can lead to soil degradation, water pollution, and greenhouse gas emissions. Balanced fertilizer application helps reduce these environmental impacts and promotes sustainable agriculture.

**8. Development of Soil Testing Infrastructure:** The implementation of the scheme has led to the establishment of new soil testing laboratories and mobile soil testing units across the country. This improves access to soil testing services for farmers.

### Conclusion

The Soil Health Card Scheme is a significant initiative by the Government of India to promote sustainable soil management and balanced fertilizer use in agriculture. By providing farmers with scientific information about soil nutrient status and crop-specific fertilizer recommendations, the scheme helps improve soil fertility, crop productivity, and economic returns. It also contributes to environmental protection by reducing excessive fertilizer use and preventing soil degradation. Although certain challenges remain in terms of awareness, infrastructure, and adoption of recommendations, the scheme has already created a strong foundation for scientific nutrient management in Indian agriculture. Strengthening extension

services, expanding soil testing facilities, and encouraging farmer participation will further enhance the effectiveness of the Soil Health Card Scheme and support the long-term sustainability of Indian agriculture.

## References

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