Indian Economy · GS - III

Examine the importance of soil testing and balanced fertilizer application in promoting sustainable agriculture in India. Suggest measures to improve soil health and nutrient-use efficiency.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 26/10/2026	GS - III	Indian Economy

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Soil Health Card Scheme; soil fertility; balanced fertilization; integrated nutrient management; fertilizer subsidies; water pollution; sustainable agriculture; farmer awareness

Model Answer

Introduction

Soil health is essential for agricultural productivity, food security and environmental sustainability. Soil testing helps farmers identify nutrient deficiencies and apply fertilizers according to crop requirements rather than relying on indiscriminate application.

Importance of Soil Testing and Balanced Fertilization

- **Improved productivity:** Appropriate nutrient application supports crop growth and can improve yields.
- **Lower input costs:** Soil-based fertilizer recommendations reduce unnecessary expenditure.
- **Environmental protection:** Balanced application limits nutrient runoff and groundwater pollution.
- **Long-term soil health:** Integrating organic matter and suitable nutrient sources helps maintain soil fertility.

Challenges

Limited access to testing facilities, inadequate farmer awareness, imbalanced fertilizer use, regional nutrient deficiencies and excessive dependence on selected fertilizers can undermine sustainable farming.

Measures Required

1. Expand accessible soil-testing laboratories and mobile testing services.
2. Strengthen the Soil Health Card Scheme through practical, locally relevant recommendations.
3. Promote integrated nutrient management using chemical fertilizers, compost, green manure and biofertilizers where appropriate.
4. Improve agricultural extension services and demonstrate efficient fertilizer application.
5. Encourage precision farming and regular monitoring of soil health.

Conclusion

Soil testing and balanced fertilization can improve farm profitability while protecting natural resources. Combining scientific advice, farmer awareness and sustainable nutrient management is vital for resilient Indian agriculture.

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