

Soil Restoration and Rehabilitation of Degraded Soils for Food Security

Taking Rural India >> Forward

Dr. A V Bhavani Shankar National Bank for Agriculture and Rural Development

You Tube / nabardonline

www.nabard.org

गाँव बढे >> तो देश बढे

About NABARD



Development Bank of India

Mandated for Sustainable & Equitable Rural Prosperity

MISSION

Promote sustainable and equitable agriculture and rural development through participative financial and non-financial interventions, innovations, technology and institutional development for securing prosperity.

Major Functions

- Supervision of Rural Financial Institutions
- Credit Function
- Development Function

गॉव बढे >> तो देश बढे

• Policy Advocacy



Rural Partners

(3000+ CSOs, 24,450 Farmers Club, 7355 FPOs, 14 million SHGs)

PAN India Presence

32 ROs, 418 District Offices,7 Specialised Subsidiaries, 3134 staff

www.nabard.org



Internal

Initiatives



Flagship Natural Resource Management Programmes

Watershed Development Fund

- Unit of project micro watershed of 1000 ha
- Soil & Water Conservation
- Productivity enhancement measures
- Livelihood support
- Climate resilience

Impacts

- Promotion of CBOs
- Capacity building & knowledge management

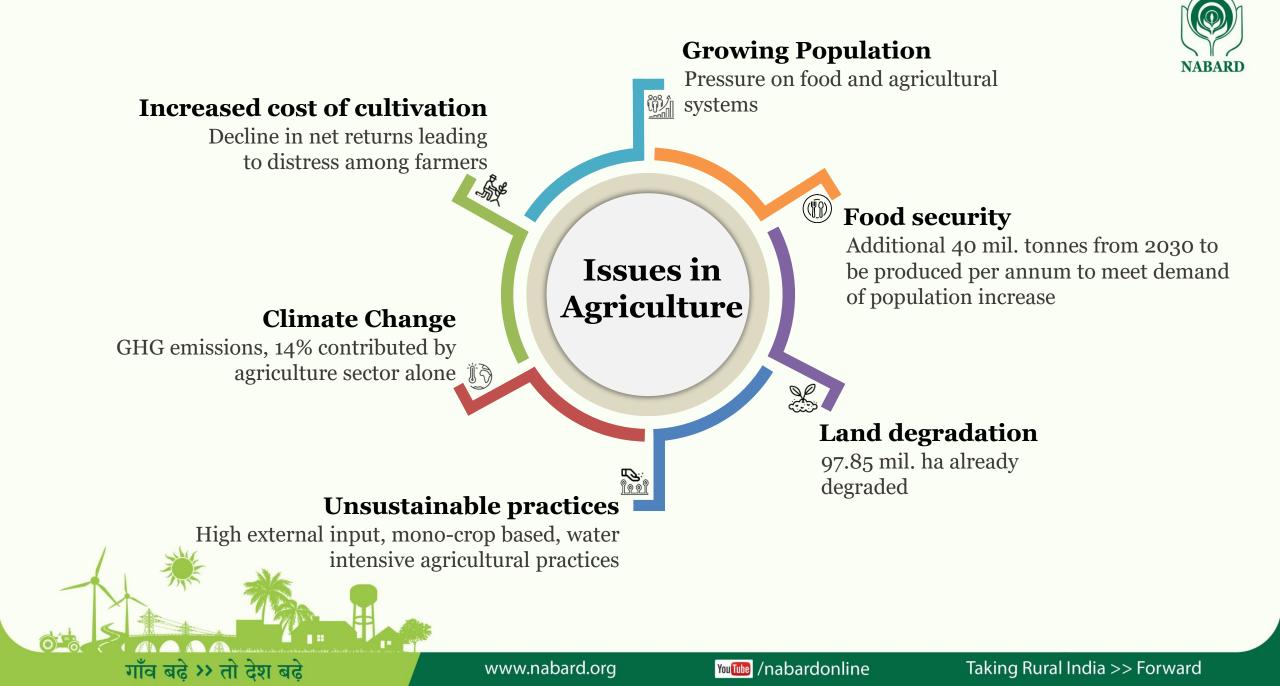
Tribal Development Fund

- Unit of project 500 tribal families
- Orchard based livelihood
 - Horticulture, forestry & crops
 - Forward linkages
- Soil conservation
- Water resource development
- Women empowerment , Community health
- Capacity building
- Promotion of CBOs





4773 INR 57.0 billion 2.9 million ha Projects Amount Area गाँव बढे >> तो देश बढे ww.nabard.org



Rainfed areas - Need for climate sensitive NRM



Importance

- 60% of Indian farmers
- 50% of cultivated area
- 40% of food grain production
- 90% of Millets & Pulses
- 70% of Cotton and Oilseeds
- 40% of Paddy

गाँव बढे >> तो देश बढे

Major Issues

- Land degradation
- Poor soil fertility
- Risk due to vagaries of monsoon
- Poor productivity
- Declining ground water table
- Poor technology adoption
- Under Employment
- Climate Change

Challenge: How do we address these inter-related issues to ensure basic needs (water, food, fuel and fodder) ?

An approach: Holistic and Integrated Watershed Development based on climate vulnerability assessment



KfW Soil Programme - At a glance



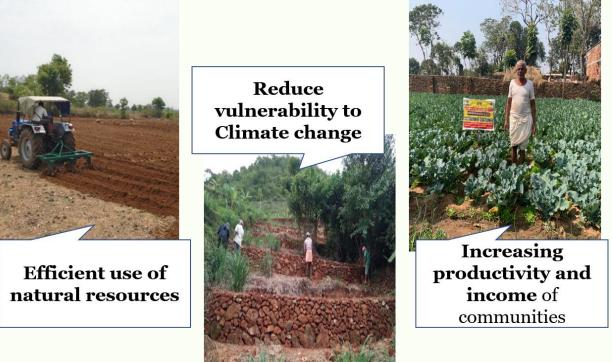
Support under 'One World, No Hunger' initiative by Government of Germany through KfW

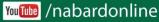
Purpose: Rehabilitation and regeneration of degraded soils for ensuring food and nutrition security



गाँव बढे >> तो देश बढे

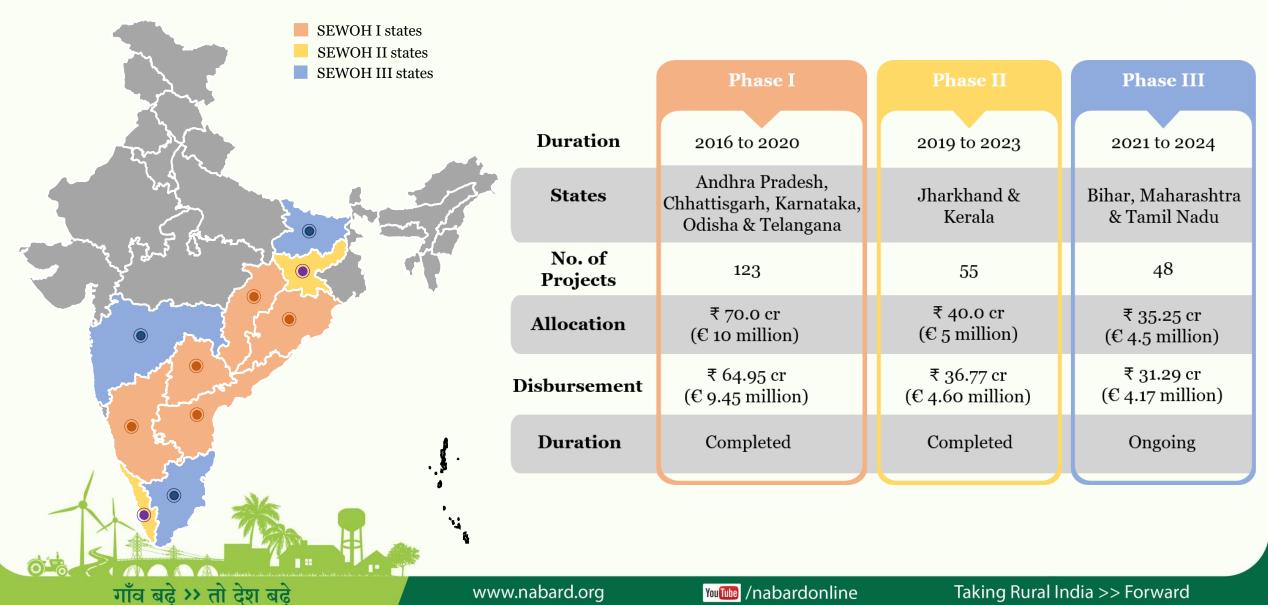
Programme Goal



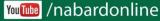








www.nabard.org



Taking Rural India >> Forward

Climate Change Vulnerability Assessment



TOP-DOWN APPROACH

Identify the suitable technical agency

Assessment of impact of climate change by the experts

Climate Risk Mapping – Agriculture, Water, Soil, Animal Husbandry, Livelihood & Food Security

Climate Proofing – Climatic & non-Climatic Stresses, Activities Suggested

List of Interventions

गाँव बढे >> तो देश बढे

BOTTOM-UP APPROACH

Introduction to climate change concept

Livelihood Mapping

- Identification of hazards
- Assessment of impact of hazard on resources
 - Vulnerability assessment of social groups & critical sectors, their resilience capacity
- Assessment of coping and adaptation strategies

Selection of activities / investments for CC adaptation





Integrated Adaptation Strategies based on analysing and comparing bottom-up & top-down assessment

www.nabard.org

Mabardonline

Taking Rural India >> Forward

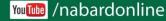
Programme Components





www.nabard.org

गाँव बढे >> तो देश बढे

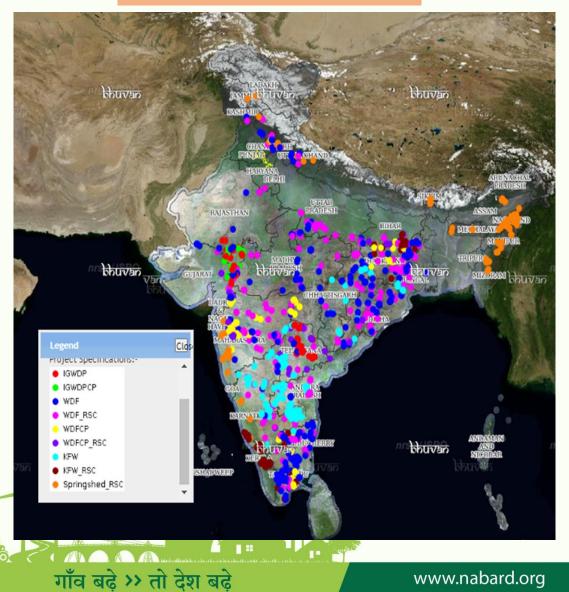


Taking Rural India >> Forward

Geospatial technology based monitoring



NABARD Bhuvan Portal





Hosted all projects under SEWOH (Phase I - III)

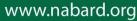
Online status of implementation for tracking of progress at HO, ROs as also at district level.



Geotagged Assets: 40,810



Impact Evaluation of SEWOH Projects





Key interventions for food security



Soil & Water Conservation

Techniques like mulching, ploughing, and organic fertilizers rehabilitate degraded lands, improving soil productivity.

Agro-Biodiversity & Crop Diversification

Multiple cropping systems and horticulture diversify food sources, boosting resilience to pests and climate stress.

Climate-Resilient Crops

Promotion of drought-resistant crops (e.g., millets, pulses) through crop diversification stabilizes food production.

Integrated Nutrient Management & Organic Practices

Replacing chemical fertilizers with organic methods restores soil fertility and enhances biodiversity.

गाँव बढे >> तो देश बढे

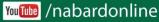
Climate-Smart Agriculture

Adapted farming models and crop contingency planning ensure food security under changing weather conditions.

Livelihood Diversification

Integrating poultry, fisheries, and agroforestry, etc. to enhance income and nutrition security.

www.nabard.org



Field Activities







46,000 ha treated with soil & water conservation measures

51,000 ha treated with soil improvement measures

- 29,589 kitchen gardens established
 - 85% beneficiaries took up soil testing and adopted recommendations



गाँव बढे >> तो देश बढे

75% beneficiaries reported improvement in nutrition



45% beneficiaries adopted intercropping, mixed cropping, SRI, & improved varieties, etc.

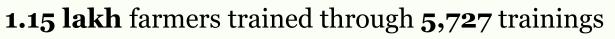


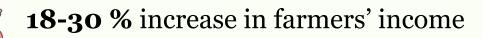
Increased per capita consumption of milk and chicken/meat



Improved access to drinking water







www.nabard.org

Magazina / nabardonline

Impact





Enhancing Nutrition

Improving soil fertility and promoting diversified cropping systems increase the availability of nutrient-rich foods, benefiting communities, especially women and children, and supporting better nutritional outcomes.

Climate Smart Agriculture

Climate-resilient farming practices help farmers adapt to unpredictable weather, ensuring sustainable food production despite climate change.



Focusing on small and marginalized farmers, particularly women, the programme ensures equitable access to resources, training, and income diversification, benefiting vulnerable communities.

www.nabard.org



गाँव बढ़े >> तो देश बढ़े





- Integrating Nutritional Objectives: Targeted investments in soil health, sustainable agriculture, and climate resilience can drive both food security and improved nutrition.
- Leveraging Public & Private Funding: Mobilizing resources for large-scale, sustainable agricultural interventions ensures broader impact.
- Participatory Development: Prioritizing local knowledge and community empowerment leads to effective solutions for food security and livelihoods.

KfW Soil Programme shows how investments in soil conservation, climate-smart practices, and nutritionsensitive interventions tackle soil degradation, food insecurity, and poor nutrition. By aligning with SDGs and climate goals, it highlights how agricultural investments can enhance food security, climate resilience, and nutrition for vulnerable communities.



गाँव बढ़े >> तो देश बढ़े



Thank you !

www.nabard.org

Mathematical Mathe

Taking Rural India >> Forward

NABARD