



## 5.4 Farm Sector Promotion Fund



# Healing the Earth: Reclaiming Alkaline Soils and Renewing Agricultural Potential

**Name of the Project:** Reclamation and Restoring Fertility of Alkaline Soils

**NABARD's Support:** The sanctioned grant assistance is ₹38.7 million (Implementation Phase)

**Year of Sanction:** 2022

**Year of Completion:** 2024

**Location of the Project:** Sangrur and Patiala districts of Punjab

- ✘ Land levelling and bunding for rainwater storage and uniform distribution of irrigation water
- ✘ Uniform Application of 5,992 MT powdered gypsum procured from FAGMIL with provision of quality checks as per the soil test recommendation



## Challenges Addressed

- ✘ Alkaline soils with an Exchangeable Sodium Percentage (ESP) greater than 15, pH more than 8.2, and Electric Conductivity (EC) below 4 ds/m, with a hard calcareous layer at 0.5 to 1 metre depth.
- ✘ Reduced yield in the salinity-affected fields (35% of Punjab's cultivable land) as compared to other areas of State.
- ✘ Inadequate use of appropriate quantities based on soil testing and non-availability of quality gypsum.
- ✘ Lack of awareness w.r.t. technical aspects (SoPs) on gypsum application process

## Strategies

- ✘ Technological support from ICAR-CSSRI
- ✘ Community Mobilisation.
- ✘ Soil sampling and analysis for determination of gypsum requirement
- ✘ Land levelling and bunding for rainwater storage and uniform distribution of irrigation water
- ✘ Uniform Application of 5,992 MT powdered gypsum procured from FAGMIL with provision of quality checks as per the soil test recommendation
- ✘ Mixing gypsum in the surface soil to about 10 cm soil by ploughing
- ✘ Ponding of water for minimum of one week before transplanting of rice
- ✘ Transplanting of salt tolerant rice varieties.
- ✘ Post gypsum application, crop cultivation (wheat & paddy) as per SoPs suggested by ICAR-CSSRI was followed by farmers.
- ✘ Crop cutting experiments and soil & water sample analysis have been conducted to ascertain the productivity improvement achieved post reclamation of soil.



## Impact

- 1. No. of Beneficiaries:** 517 farmers (323 in Patiala and 194 in Sangrur).
- 2. Area Covered:** 1,000 hectares.
- 3. Increase in Income Per Family:**
  - a. Increase in wheat yield from 32 qtl per hectare in 2021-22 to 49 qtl per hectare in 2023-24; increase in paddy yield from 49 qtl per hectare in 2021-22 to 61 qtl per hectare in 2023-24.
  - b. Incremental income of ₹42,500/ per hectare from wheat cultivation and ₹60,255/ per hectare from paddy cultivation.
- 4. FPOs Formed:** Two Village Soil Reclamation Committees formed under the projects in both the districts and converged into FPO for sustainability of project.
- 5. Training Provided:** 20 Training & Capacity building programmes were conducted both on field & at ICAR-CSSRL, Karnal to educate & train farmers for gypsum application, wheat & paddy crop varieties recommendation & geo-tagging of fields.
- 6. Procurement Business:** The Committees formed under the project desire to undertake business of direct procurement of gypsum from agencies so that the soil reclamation in scientific manner may be replicated in other areas as well.

