

National Mission on Sustainable Agriculture (NMSA)

The conservation of natural resources along with the development of rain fed agriculture is necessary for the sustainable growth of agriculture. National mission on sustainable agriculture (NMSA) has been formulated to enhance agricultural productivity focusing on integrated farming, water use efficiency, soil health management, and synergizing resource conservation. National Mission on Micro Irrigation and National Project on Management of Soil Health & Fertility have been merged into NMSA in the 12th plan.

Extent of the Problem

- 2°C global warming by the 2040s will cause a 12% reduction in crop production in South Asia. (World Bank, 2013)
- 60% of groundwater sources will be in a critical state of degradation within next 20 years. (World Bank, 2010)
- In the most seriously affected north-western states of India, recent satellite measurements indicate an average decline of groundwater at 33 cm per year from 2002 to 2008. (Nature Journal, 2009)
- Imbalance in crop nutrients has pulled the Nitrogen-Potash ratio to 10:1, with the ideal ratio being 3:1. (Potash Corporation, 2012)

Objectives

- To make agriculture more productive, sustainable, remunerative and climate resilient by promoting location specific Integrated/Composite Farming Systems
- To conserve natural resources through appropriate soil and moisture conservation measures
- To adopt comprehensive soil health management practices based on soil fertility maps, soil test based application of macro & micro nutrients, judicious use of fertilizers etc.
- To optimize utilization of water resources through efficient water management

Framework for Implementation

National Level

- **National Advisory Committee (NAC)** - Chaired by Secretary, Agriculture and Cooperation, it will include representatives of other ministries such as Rural Development, Panchayati Raj, etc. It will provide strategic guidance to the mission and planning.
- **Project Sanctioning Committee (PSC)** - Chaired by Mission Director, NMSA, it will include representatives from Indian Council of Agricultural Research, Department of Land Resources, and other ministries. It will prioritize and approve projects under NMSA.
- **Standing Technical Committee (STC)** - It will include representatives of Indian Agricultural Research Institute, Central Arid Zone Research Institute, Central Research Institute for Dry land Agriculture, and Indian Institute of Soil Science. It will provide knowledge and technical support to NAC and PSC.
- **Institutions within Department of Agriculture and Cooperation** - Climate Change Cell, Soil and Land Use Survey of India, National Centre of Organic Farming, Central Fertilizer Quality & Training Institute will serve as knowledge networking centres providing assistance to the mission.

State Level

- **State Level Committee(SLC)** - Chaired by Agriculture Production Commissioner(APC)/Principal Secretary/ Secretary (Agriculture/ Horticulture) with representation from concerned line Departments like Revenue, Animal Husbandry, Fisheries, Forests etc. will oversee the planning and implementation of the Mission. Present National Mission on Micro Irrigation Committee may be notified as the SLC as the mission has been merged with NMSA.
- **State Standing Technical Committee (SSTC)** - States may set up a SSTC to provide similar functions as the Central STC and support the SLC. It will have support from the State Agricultural Universities.

District Level

- **District Mission Committee (DMC)** - Chaired by Collector or CEO of Zila Parishad with representatives from line departments such as animal husbandry, horticulture, forest, etc. It will be responsible for project formulation, implementation and monitoring of NMSA.

Funding Mechanism

State Level Committees will prepare Annual Action Plans on the basis of tentative outlay communicated to them by the Department of Agriculture and Cooperation. 3% of funds will be earmarked for administrative expenses at the central level and 5% at the state level. At least 50% of the allocation must be utilized for small, marginal farmers of which at least 30% must be women beneficiaries. Further 16% & 8% of the total allocation or in proportion of SC/ST population in the district will be utilized for Special Component Plan (SCP) and Tribal Sub Plan (TSP). The funding is available under 4 broad programmes:

Rain-fed Area Development

- 50% of input costs limited to Rs 10,000 per hectare (maximum 2 hectare per beneficiary) including land preparation, seeds, and fertilizers will be provided for rice/wheat, coarse serial, oil based, fiber based and pulse based **Cropping Systems**. For e.g., Rice-Wheat-Vegetables, Maize-Potato-Onion, Soyabean -Wheat-Cowpea, etc.
- 50% of input costs limited to Rs 25,000 per hectare (maximum 2 hectare per beneficiary) will be provided for **Horticulture Based Farming System**.
- 50% of input costs limited to Rs 15,000 per hectare (maximum 2 hectare per beneficiary) will be provided for **Tree and Grass Plantations**.
- 50% of input costs of cropping system including cost of animals with 1 year food limited to Rs 40,000 per hectare (maximum 2 hectare per beneficiary) will be provided for **Livestock Based Farming Systems**.
- 50% of input costs of cropping/vegetable system including cost of fish farming limited to Rs 25,000 per hectare (maximum 2 hectare per beneficiary) will be provided for **Fishery Based Farming System**.
- 50% of input costs limited to Rs 1000 per colony and Rs 20,000 per beneficiary will be provided for **Bee-keeping**.
- 100% assistance will be provided for **Silage Making Unit** limited to Rs 1.25 lakh per farm family. Silage is fermented, high-moisture stored fodder which can be fed to animals or used as bio-fuel feedstock for anaerobic digesters.
- 50% of input cost for **Green House Construction** limited to Rs 10,00,000 per beneficiary (Tubular Poly house), Rs 5,40,000 per beneficiary (Wooden & Naturally Ventilated green house) and Rs 75,000 per beneficiary (Low Tunnel Poly house).
- 50% of construction cost limited to Rs 75,000 for plain areas and Rs 90,000 for hilly areas for construction of **Water Harvesting Structures** such as tanks, ponds and wells. 50% of cost of plastic/RCC lining limited to Rs 25,000 per structure will also be provided. The component will be implemented in convergence with MGNREGA wherever possible.

- 50% of cost of installation and transmission of **Electricity Connectivity** to community tube wells or water sources (without scope of gravitational flow) limited to Rs 1.25 lakh per unit.
- 50% of cost limited to Rs 4000 per hectare (maximum 2 hectare per beneficiary) for **In Situ Moisture Conservation** through land leveling, field bunding, mulching, etc.
- 50% of cost limited to Rs 50,000 per unit for **Construction of Vermi Compost Unit**.
- 50% of cost for **Reclamation of Soil** limited to Rs 25,000 per hectare (alkaline soil) and Rs 3000 per hectare (acidic soil).
- Assistance of Rs 10,000 per training session (for 20 participants or more) and Rs 20,000 per demonstration (for 50 participants or more) training in climate change adaptation and demonstration of good agricultural practices.

Soil Health Management

- 75% of cost of setting up new mobile/static **Soil Testing Laboratories** subject to a limit of Rs 56 lakh per lab, as assistance to state government. Assistance of 75% of cost of strengthening existing labs with a limit of Rs 30 lakh per lab will also be provided.
- **Training and Demonstration on Soil Health Management**- Training on soil health management will be provided to farmers including field demonstrations. Assistance of Rs 25,000 per training session for 20 or more participants will be provided.
- One time assistance to State Governments for **Creation of Databank on Location Specific Balanced Use of Fertilizers** up to Rs 10 lakh per state.
- One time assistance to State Governments for **Creation of District-wise Digital Soil Fertility Maps** up to Rs 6 lakh per district subject to a maximum of Rs 50 lakh for one state.
- 100% assistance for setting up of new **Fertilizer Quality Control Labs** subject to a limit of Rs 75 lakh per lab. Assistance to State Governments for strengthening of existing Fertilizer Quality Control Labs subject to maximum limit of Rs 30 lakh per lab.
- 100% assistance to State Govts/ Govt. Agencies for setting up agro waste, fruit/vegetable market waste **Compost Production Unit** subject to a maximum limit of Rs 190 lakh per unit.
- 100% assistance to State Govts/ Govt. Agencies for setting up state of art liquid/carrier based **Biofertilizer / Biopesticide Unit** subject to a maximum limit of Rs 160 lakh per unit.
- 50% of cost subject to a limit of Rs 5000 per hectare and Rs 10,000 per beneficiary for **Promotion of Organic Inputs on Farmer's Fields** such as manure, bio-fertilizers, vermin-compost.

Climate Change and Sustainable Agriculture Modeling & Networking (CCSAMN)

CCSAMN will provide creation and dissemination of climate change related information and knowledge by way of piloting climate change adaptation/mitigation research/model projects. Assistance of Rs 10 crore per block to disseminate climate change mitigation technologies.

Drip Irrigation Initiative, Rajasthan

Kaladera village in Jaipur district of Rajasthan falls under the “vegetable basket region” of the state. Vegetable cultivation puts increased pressure on groundwater due to predominant use of traditional flood irrigation techniques. The Public-Private-Community Partnership (PPCP) model to promote drip irrigation for water use efficiency was initiated. It involved the local farmers, Department of Horticulture, Govt of Rajasthan, Krishi Vigyan Kendra, Takedra as knowledge partner and Coco Cola India as funding partner. It was rolled out in 2008 with 27 projects covering 13.5 hectares. By the end of 2011, 400 projects had been executed covering 205 hectares of land under drip irrigation involving 503 farmers.

Implementation of drip irrigation has led to savings of approximately 1200 m³ of water for a cropping cycle of 110 days/ hectare. The estimated average savings on account of electricity, fertilizers and pesticides is Rs 2000/hectare/year. Adoption of drip irrigation led to a shift in cropping pattern from mono-cropping to inter-cropping, thereby improving quality and quantity of yield, resulting in better price realization for the farmers.