National Mission for Sustainable Agriculture (NMSA)

Chapter II

Component:

A- Soil Health Management (SHM)

B- Organic Farming (OF)

Approach for component specific planning

- Ensure quality control requirements of fertilizers, bio-fertilizers and organic fertilizers under the Fertilizer (Control) Order (FCO), 1985, including revision of standards and testing protocols keeping in view the advances in research and technology and covering organic inputs under quality control regime;

- Promote Integrated Nutrient Management (INM) through judicious use of chemical fertilizers, including secondary and micro nutrients, in conjunction with organic manures and bio-fertilizers, for improving soil health and its productivity;

Approach for component specific planning ….contd

- Strengthening of soil and fertilizer testing facilities and provide soil test based recommendations to farmers for improving soil fertility and enhancing economic return to farmers.
- Support up-gradation of skill and knowledge of Soil Testing Laboratories (STL)/extension staff and farmers and their capacity building through training and demonstration including demonstration on farmers fields on soil health care;
- Training on appropriate measures on soil nutrient management and judicious distribution of fertilizers as per soil/crop need for enhanced productivity with reduced cost of cultivation.

Soil Health Management: Major activities

- Monitoring and Evaluation of Soil Health
- Integrated Nutrient management
- Organic Farming

Monitoring and Evaluation of Soil Health

- Setting up of new Soil Testing Laboratories (Static and Mobile)

- Strengthening of Existing Soil Testing Laboratories

Integrated Nutrient management

Promote Integrated Nutrient Management (INM) through judicious use of chemical fertilizers, including secondary and micro nutrients, in conjunction with organic manures and bio-fertilizers, for improving soil health and its productivity

Strengthening of Existing Soil Testing Laboratories

- At present, there are 1087 soil testing laboratories (930 STLs and 157 MSTLs)with annual analyzing capacity of about 12 million soil samples.
- Many of the existing STLs do not have facilities for micronutrient analysis
- Existing analyzing capacities of NPK also is not being fully utilized.

12th Plan Components for Soil Health

Sl. No	Component	Pattern of assistance
1.	Setting up of new Mobile/Static soil testing laboratories (MSTL/ SSTL)	75% Assistance of total project cost to State Govt. for SSTL subject to a maximum limit of Rs 56 lakh per SSTL/MSTL.
2.	Strengthening of existing SSTL/MSTL.	75 % Assistance to State Govt. subject to a maximum limit of Rs 30 lakh per MSTL/SSTL.
3.	Providing Portable Soil Testing Kit to field level officers of State Govt.	Assistance @ Rs.15,000/Kit
4.	Creation of databank on location specific balanced use of fertilizers	One time assistance to State Govt. up to Rs. 10 lakh per state.

12th Plan Components for Soil Health

Sl. No	Component	Pattern of assistance
5.	Creation of District-wise Digital soil fertility maps	One time assistance to State Govt. up to Rs. 6.00 lakh per district subject to maximum of Rs. 50 lakh for one State per annum.
6.	Strengthening of existing Fertilizer Quality Control Labs (FTLs) by State Govts	Assistance to State Govt. subject to a maximum limit of Rs.30 lakh per FTL
7.	Setting up of new Fertilizer Quality Control Labs by State Govts	100% assistance to State Govt. subject to a maximum limit of Rs 75 lakh per FTL.
8.	Promotion and Distribution of micronutrients.	50% of cost subject to a limit of Rs. 500/- per ha. and / or Rs. 1000/- per beneficiary.
9..	Training of STL / FTL Staff, Field Functionaries, Farmers training including field demonstrations.	Rs. 25,000/- per training for STL/ FTL Staff, Rs. 10,000/- for farmers training including field demonstrations.

Norms for assistance

Performance assessment based on existing staff

- Existing performance level of the STL
- Achieve higher efficiencies
- Clearly defined and transparent guidelines for Pvt. Sector

Training Programme for Staff: two days

- Importance of Soil testing
- Soil Fertility Management
- Sampling Methodology
- Testing protocols;
- Interpretation of soil test results
- Calculation of nutrient requirement
- Cropping system based nutrient management
- Importance of balanced nutrition on productivity
- Quality of produce and soil health maintenance etc.

Training Programme for Farmers

- Balanced Use of Fertilizers
- Importance of Soil Testing
- Soil Health Management
- Importance of balanced fertilizer use in crop productivity
- Soil Health Management
- Sampling protocols
- Sending samples to testing laboratories
- Importance of organic manures & biofertilizers in balanced nutrition
- Implementation of soil test results for soil fertility management

Field Demonstrations

- Field Demonstrations on Balanced Use of Fertilizers on FFs
- Cultural practices such as ploughing, disking, leveling,
- Plot should preferably be of one acre (4000 sq. mt.)
- Control part(existing practices)& Treated part(Soil test based balanced fertilization)
- Fertilizers such as SSP, Neem coated Urea, micro nutrients and Bio-Fertilizers & soil amendments

Creation of Data Bank for site specific Balanced Use of Fertilizers by State Govts

- GPS based data bank
- Yearly update
- A new Cell needs to created for monitoring at DAC
- All STLs must have GPS
- Their analysis should be GPS based
- On line data collection
- Need to be linked with NIC
- Any farmer can take their report by feeding Khasra No.

Creation of Data Bank for site specific Balanced Use of Fertilizer…contd.

- Region specific and location specific data on soil fertility
- Systematic data does not exist in the country–
  - for recommending Site–specific nutrient requirement
  - delineation of secondary &micronutrient deficiencies
- State Governments can implement through–
  - ICAR institute
  - SAUs
  - National Informatics Centre
  - private sector
- Proposal should specifically cover an action plan for the use of this date for educating farmers.

Adoption of village by STLs (max. 10 Villages/STL) through FLD

- 8000 villages by 800 Soil Testing Laboratories
- conduct frontline field demonstration(FLD) on balanced use of fertilizers.
- These 800 STLs shall be chosen by the State Government
- Norms for Assistance–Rs.20,000/FLD

Preparation of Digital District Soil Maps and Global Positioning System (GPS) based Soil Fertility Monitoring

Lack of GPS based district soil fertility maps is the major hindrance in adopting balanced use of fertilizers

- During 11th Plan IISS, Bhopal was entrusted the work of preparation of fertility maps of 171 districts in 19 major States
- It is proposed to prepare digital district soil maps
- GPS based soil fertility monitoring system in remaining agricultural districts during the 12th Five Year Plan.
- State Governments/SAUs/ICAR Institutes/National Informatics Centre/KVKs or other central/state Government agency can be associated for implementation of this project.
- Norms for Assistance @ Rs.6.0 lakh/district
-

Portable Soil Testing Kits for Balanced Use of Fertilizers

For faster and on-farm testing of soil nutrient for balanced use of fertilizers assistance to State Government subject to maximum of Rs. 0.15 lakh/per kit will be provided. It is proposed to distribute 3000 soil testing kits to field functionaries during 12th plan period.

Promotion and Distribution of Micronutrient

Intensive agriculture is experiencing widespread deficiency of micronutrients particularly of Zinc followed by Iron, Manganese, Boron, etc. It is proposed to promote and distribute micronutrients during the entire 12 the Five Year Plan. Assistance will limited to 50% of the cost of requisite nutrients subject to a maximum of Rs. 500 per hectare

Setting up of new Fertilizer Quality Control Labs by State Govt.

- 3.25 lakh dealers by the end of 12th FYP
- Capacity of existing testing facilities 1.25 lakh i.e 20 % only
- 20 new FQCLs by the State Governments
- Each with annual analyzing capacity of 4000 samples
- One time financial assistance Rs.75.0 lakh for additional annual analyzing capacity of 0.80 lakh

Human resource development through trainings by NCOF and its Six RCOFs

- **International Trainers' training/cooperation and liaison with international bodies**
- **Certificate Course on organic farming**
- **Training/Refresher course on production and quality control of organic inputs**
- **Trainers trainings**