No: 16-34/2015 – Fert Use
Government of India
Ministry of Agriculture & Farmers Welfare
Department of Agriculture, Cooperation & Farmers Welfare
(Fert Use Cell/INM Division)

Krishi Bhavan, New Delhi
Dated the 12th January, 2016

To

The Secretary (Agriculture),
Government of .....
(All States)

Subject : Modifications in the Operational Guidelines of Soil Health Management component of NMSA- reg.

Sir,

I am directed to enclose modifications made in the Operational Guidelines for implementation of Soil Health Management component of NMSA in respect of following:

(i) Involvement of Science College students in Soil Health card programme.
(ii) Inclusion of Mini Labs developed with ICAR technology in the guidelines for estimation of soil health / fertilizer recommendation and to assist state governments in the ratio of 60:40 basis.
(iii) Setting up of static / mobile soil testing laboratories as well as mini labs developed under ICAR technology through Capital Investment Subsidy Scheme (CISS) implemented through National Bank for Agriculture and Rural Development (NABARD).

The modified Operational Guidelines are also available on the Departments website – www.agricoop.nic.in .

Yours faithfully,

(Vandana Dwivedi)
Additional Commissioner (INM)

Encl: As above

Copy to:

Agriculture Production Commissioner / Principal Secretary (Agriculture) / Commissioner (Agriculture) / Director (Agriculture)/ Deputy Director (Soil Health) **(All States)**

Copy also to:

PPS to Secretary (DAC&FW) / PPS to Special Secretary (DAC&FW) / PPS to Additional Secretary (INM) / PS to JS (INM)

National Mission for Sustainable Agriculture (NMSA)

Operational Guidelines

Updated – 15.01.2016

Integrated Nutrient Management Division
Department of Agriculture, Cooperation & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Krishi Bhavan, New Delhi

INDEX

Chapter 1

Guidelines for implementation of Soil Health Management (SHM) component under National Mission for Sustainable Agriculture (NMSA)

Guidelines for implementation of Soil Health Management (SHM) component under National Mission for Sustainable Agriculture (NMSA)

The Mission intervention on Soil Health Management (SHM) will be implemented by INM Division of Department of Agriculture & Cooperation. This intervention will be governed by these operational guidelines.

1.1 Implementation of Mission Intervention on Soil Health Management (SHM)

1.1.1. Soil Health Management (SHM) is one of the most important interventions under National Mission for Sustainable Agriculture (NMSA). SHM will aim at promoting location as well as crop specific sustainable soil health management, creating and linking soil fertility maps with macro-micro nutrient management, judicious application of fertilizers and organic farming practices.

This component will be implemented by State Govt., National Centre of Organic Farming (NCOF), Central Fertilizer Quality Control & Training Institute (CFQC&TI) and sanctioned by INM division. It will have following approach for component specific planning.

1.1.1.1. Soil Health Card (SHC)

Objectives of SHC:

i) To issue soil health cards every 3 years, to all farmers of the country, so as to provide a basis to address nutrient deficiencies in fertilization practices.

ii) To strengthen functioning of Soil Testing Laboratories (STLs) through capacity building, involvement of agriculture students and effective linkage with Indian Council of Agricultural Research (ICAR) / State Agricultural Universities (SAUs).

iii) To diagnose soil fertility related constraints with standardized procedures for sampling uniformly across states and analysis and design taluqa / block level fertilizer recommendations in targeted districts.

iv) To develop and promote soil test based nutrient management in the districts for enhancing nutrient use efficiency. v) To build capacities of district and state level staff and of progressive farmers for promotion of nutrient management practices.

1.1.1.2 Ensure quality control requirements of fertilizers, bio-fertilizers and organic fertiliers 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;

1.1.1.3 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;

1.1.1.4 Support augmentation and 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. It will also 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 balanced use of fertilizers.

1.1.1.5 Paramparagat Krishi Vikas Yojana (PKVY): Organic agriculture is a production of agricultural products free from chemicals and pesticides residues by adopting ecofriendly low cost technologies. "Paramparagat Krishi Vikas Yojana" is an elaborated component of Soil Health Management (SHM) of major project National Mission of Sustainable Agriculture (NMSA). Under PKVY Organic farming is promoted through adoption of organic village by cluster approach and PGS certification

12 The details of the schemes are described in the following different chapters:

1.2.1 Centrally Sponsored Schemes

Chapter 2: Soil Health Card

Chapter 3: Soil Health

1.2.2 Central Sector Scheme

Chapter 4: Continuation & strengthening of CFQC&TI

1.2.3 Centrally Sponsored Scheme

Chapter 5: INM & Organic Component

Chapter 6: Paramparagat Krishi Vikas Yojana (PKVY)

1.2.4 Central Sector Scheme

Chapter 7: Continuation & strengthening of NCOF

All the schemes will be governed by the following:

1.3. Project Sanctioning System

Scheme Structure

1.3.1 National Level

The National Advisory Committee (NAC) under Chairmanship of Secretary (A&C) constituted under NMSA will be policy formulating body giving overall direction and guidance to the Mission, monitor and review its progress and performance. It is empowered to lay down and amend operational guidelines other than those affecting financial pattern and Cost Norms. The composition of the NAC is given below:-

Secretary, Department of Agriculture & Cooperation	Chairman
Additional Secretary & Financial Advisor, DAC	Member
Additional Secretary (INM), DAC	Member
Representative from Department of Agriculture Research & Education	Member
Joint Secretary (NHM)	Member
Joint Secretary (Crops)	Member
Joint Secretary (NRM & RFS)	Member
Joint Secretary (INM)	Member

1.3.2 Executive Committee

Executive Committee (EC) will comprise of the following Members:

Additional Secretary (INM), DAC	Chairman
Joint Secretary, Fertilizers	Member
Joint Secretary (INM)	Member Secretary
DDG (NRM), ICAR, Agriculture Commissioner, Horticulture Commissioner, ADC (INM), Director, NCOF and Director, CFQC&TI	Expert Members

1.3.2.1 EC will oversee activities of the Scheme and approve Action Plans of various states in accordance with the prescribed norms.

1.3.2.2 EC is empowered to reallocate resources across States and components and approve projects on the basis of approved financial assistance norms. EC will use its discretion in approving only those components of a project, for which cost norms/pattern of financial assistance have been approved.

1.3.2.3 EC will meet at least once every quarter.

1.3.3 INM Division in DAC will provide

1.3.3.1. Indicate tentative provisions for each component at the beginning of Financial Year (March-April) to facilitate the States in preparing Annual Action Plan (AAP) as per the prescribed format.

1.3.3.2. Visit the States regularly and frequently to provide guidance in organizational and technical matters.

1.3.3.3. Prepare the Agenda for the EC and NSC meetings.

1.3.3.4. Help in the implementation, monitoring and evaluation of various interventions in the mission and provide feedback reports to the NSC and EC.

1.3.3.5. In order to cater the diversified requirements of the scheme in an efficient and time bound manner, INM Division will engage technical experts.

1.3.3.6. The Project Management Team (PMT) constituted at the National level will continue to function under the leadership of the JS (INM). Consultants in Soil science programme Manager, Senior Programmers, Technical Assistants, and supporting staff will form part of the PMT.

1.3.3.7. The Project Management Team will have the following responsibilities:

1.3.3.7.1 Guide the States in organizational and technical matters.

1.3.3.7.2 Help in the implementation and monitoring of the various interventions of the scheme.

1.3.3.7.3 Assist the State agencies in concurrent evaluation based on case studies in identified districts and document and disseminate the success stories.

1.3.3.7.4 Undertake publicity/information campaign to create awareness about the scheme activities.

1.3.4 State Level

1.3.4.1 The State Level Executive Committee (SLEC) will comprise of the following:

Agriculture Production Commissioner/Principal Secretary Government	Chairman
Commissioner (Agriculture)/ Director (Agriculture)	Member Secretary
Commissioner (Horticulture)/ Director (Horticulture)	Member
Representatives of SAUs/ICAR/RCOF/other line departments	Expert Members

The Committee shall approve the Annual Action Plan prepared by the State nodal Department. The SLEC will oversee the implementation of scheme components of the respective States through regular meetings with the nodal and other line Departments. It will also provide inputs to the Executive Committee for appropriate policy formulation.

1.3.4.2. State Department of Agriculture shall be the nodal Department for implementation of this scheme. It will provide necessary support to SLEC and will have the following functions:

1.3.4.2.1. Prepare annual State Level Action Plan by compiling District-wise Action Plan and submit to the SLEC for approval and there after forward the same to EC.

1.3.4.2.2. Receive funds from DAC for implementing / outsourcing organizations and oversee, monitor & review implementations of the programmes.

1.3.4.2.3. Organise workshops, seminars and training programmes for all interest groups/associations at State level.

1.3.4.2.4. Operationalise Information Communication Technology (ICT) enabled management system up to grass-root level.

1.3.4.2.5. Conduct independent evaluation to assess the performance of the scheme in their States.

1.3.4.2.6. One percent (1%) of total allocation to the State may be earmarked for administrative and other contingent expenses. Expenditure in excess of 1% limit will be met by the States from their own resources.

1.3.5 District Level

The District Level Executive Committee (DLEC) will comprise of the following:

Collector	Chairman
Joint Director/Deputy Director (Agriculture)	Member Secretary
District Agriculture/Horticulture Officer	Member
Representatives of SAUs/IKVKs/ other line departments	Expert Members

1.3.5.1 DLEC will be responsible for carrying forward the objectives of the scheme for project formulation, implementation and monitoring. The office of JD(A)/DD(A) shall be the district nodal agency.

1.3.6. Role of Panchayati Raj Institutions (PRIs)

1.3.6.1 The State Government and other designated implementing agencies, to the extent possible, will ensure active participation of the Panchayati Raj Institutions (PRIs) in the implementation of this scheme.

1.3.6.2 PRIs may also be involved in publicizing the demonstrations and training of farmers and in ensuring participation of farmers from nearby areas for widespread dissemination of technology.

1.3.7. Procedure for Approval & Fund Flow Mechanism

1.3.7.1 AAP submission: Annual Action Plan (AAP) duly approved by SLEC along with the minutes of SLEC, shall reach DAC for examination, deliberation and final approval. INM Division in DAC will examine AAP before it is placed before the EC for consideration and sanction of AAP.

1.3.7.2 DAC will allocate the funds to the State and Implementing Agencies based on the following parameters:

1.3.7.2.1. The grants-in-aid/ funds would be released to the States/Implementing agencies in installment.

1.3.7.2.2. States/ implementing agencies will furnish utilization certificate (UC) in the prescribed format Form GFR 19-A and physical & financial progress report containing physical and financial targets of the previous grants-in-aid, if any, before requesting for release of subsequent installment.

1.3.7.2.3. Unspent balance and physical & financial progress report of the previous grant will be taken in to account while sanctioning the subsequent grant.

1.3.7.2.4. All implementing agencies are required to maintain subsidiary accounts of the grants-in-aid and get the same audited from a Chartered Accountant.

1.3.7.2.5. Release of grants-in-aid in excess of 75% of the total amount sanctioned for the subsequent financial year shall be done only after the Annual Audited Statement of Accounts (Audited UC, Income & Expenditure Account, Receipt & Payment Account and Balance Sheet) relating to grants-in-aid released during preceding year are submitted.

1.3.7.2.6. Eligible agencies: State Governments, State may implement the scheme through NGOs/ Institutes/Private agencies.

1.3.8. Monitoring

1.3.8.1. The Scheme envisages a coordinated approach for monitoring and evaluation with active involvement of implementing agencies, beneficiaries and other stakeholders.

1.3.8.2. A combination of periodic desk review, field visits, and web-based mechanism will be adopted for releasing of funds, physical and financial progress and monitoring the progress of Scheme interventions at National level by INM Division in the DAC.

1.3.9. Impact Assessment, Periodic Evaluation and Reporting

1.3.9.1 DAC may evaluate efficacy of this Scheme through a "third party". The agency will assess the efficacy, performance, outcome and shortcomings of the Scheme and recommend suitable corrective measures.

1.3.9.2. Information and communication technology will be deployed extensively for ensuring transparency in the implementation process and effective monitoring of the Scheme programme.

Chapter 2

Soil Health Card

Soil Health Card

2.1. Introduction

Soil is a living medium which serves as a natural nutrient source for growth of plants. The components of soils are mineral, organic matter, water and air, the proportions of which vary and together form a system for plant growth. Soils are studied and classified according to their use. Soil surveys are made for Natural Resource Management and soil testing is conducted as part of Fertilizer Use and Management.

2.2. Nutrient Status of Soils

2.2.1. In India, intensive agriculture has resulted in impressive growth in food grain production powered by improved varieties of seeds, application of fertilizers and assured irrigation. The existing NPK consumption ratio in the country is skewed at 8.2:3.2:1 (2012-13) as against the preferred ratio of 4:2:1. A great variability is observed in fertiliser consumption among States from 250 kg / ha in Punjab, 212 kg / ha in Bihar, 207 kg / ha in Haryana to 4.8 kg / ha in Nagaland and 2 kg / ha in Arunachal Pradesh in nutrient form during 2012-13. However, imbalanced application of fertilisers have caused deficiency of primary nutrients (i.e. NPK), secondary nutrients (such as sulphur), and micronutrients (boron, zinc, copper etc.), in most parts of country.

2.2.2. Site specific nutrient management involving soil test based application of fertilizers is critical to enhance fertilizer use efficiency. A fertilizer not suitable to a soil type can be called as an incorrect fertilizer used for that soil, and in such case, fertilizer consumption ceases to be efficient to increase production. Different types of fertilizers are required to be used in acidic/ alkaline soils. Fertigation involving the use of water soluble fertilizers through drip and sprinkler irrigation is expected to give better use efficiency for water and fertilizers. Therefore, it is necessary to promote use of required sources of plant available forms of nutrients coupled with use of soil amendments in acidic/ alkaline soils so as to enhance soil nutrient availability. In India, in general, blanket fertilizer recommendations are followed for N, P & K which rarely matches soil fertility need, and often ignoring secondary and micro nutrients, in various cropping systems followed by small and marginal farmers. Keeping in view the above facts, Government of India is promoting integrated nutrient management (INM)i.e. balanced and judicious use of chemical fertilizers, along with bio fertilizers and locally available organic manures based on soil testing to maintain soil health and crop productivity.

2.3. Soil Testing Programme

2.3.1. Soil testing programme was started in India in the year 1955-56 with the setting up of 16 Soil Testing Laboratories (STLs) under "Determination of Soil Fertility and Fertilizer Use" programme. Total nutrient content varies from soil to soil, and plant available forms of nutrients are chemically determined in soil testing laboratories. Till 1980, the laboratories generally used to analyze for pH, texture, electrical conductivity, organic carbon (as an index of available N), and available P and K.

2.3.2. The process of setting-up of soil testing laboratories has continued with financial support from Government of India, year after year. In 2012-13, the soil analyzing capacity in the country was 128.31 lakh soil samples per annum. The soil testing facility is provided by State Governments to the farmers free of cost or with some nominal fee.

2.3.3. In view of the critical role played by soil testing in ensuring balanced and efficient use of fertilizers, states have been advised from time to time to enhance and improve their soil testing programme. The State Governments are preparing district wise and also block wise fertility maps. Some states have prepared village level fertility maps too. Other states have introduced soil testing on a ten hectare grid basis and are issuing soil health cards. Some state governments have started computerization of soil test data, which the farmers can access online and advisory can be sent through SMS to their mobile phones. Several states including Gujarat, Tamil Nadu, Haryana, Karnataka and Uttar Pradesh have made commendable progress in soil testing programme. They have taken up expansion of testing facilities, popularized the soil test analysis in a campaign mode and used information technology in delivering soil nutrient status and appropriate recommendations to farmers.

2.3.4. As seen from above, no uniform norms are followed in the country for soil analysis and distribution of Soil Health Cards. There is also a need to devise a mechanism to issue soil health cards every 3 years in respect of all landholdings in order to capture the soil fertility changes occurring due to plant uptake or other natural causes. More attention is required on the follow up measures on the soil nutrient deficiencies identified in soil health cards. Along with soil health cards that diagnose fertility related constraints small and marginal farmers need technical support to apply site specific fertilizer recommendations. Therefore, Soil Health Card scheme is proposed for periodic testing of soil and to recommend nutrient management.

2.3.5. The scheme will be implemented in all the States to promote the soil testing services, issue of Soil Health Cards and development of Nutrient Management Practices. The scheme on Soil Health will be implemented in accordance with the guidelines described here under. Cost of the interventions proposed under the scheme will be shared in the ratio of 75:25 between the Central and the State Governments.

2.4. Scheme Objectives

Objectives of scheme Soil Health Card are as follows:

2.4.1 To issue soil health cards every 3 years, to all farmers of the country, so as to provide a basis to address nutrient deficiencies in fertilization practices,

2.4.2 To strengthen functioning of Soil Testing Laboratories (STLs) through capacity building, involvement of agriculture students and effective linkage with Indian Council of Agricultural Research (ICAR) / State Agricultural Universities (SAUs).

2.4.3 To diagnose soil fertility related constraints with standardized procedures for sampling uniformly across states and analysis and design taluqa / block level fertilizer recommendations in targeted districts,

2.4.4 To develop and promote soil test based nutrient management in the districts for enhancing nutrient use efficiency,

2.4.5 To build capacities of district and state level staff and of progressive farmers for promotion of nutrient management practices.

2. 5. Scheme Components

2.5.1 Issue of soil health cards: Aims at periodic distribution of Soil health cards to all the farmers to provide information on soil fertility along with recommendations for application of plant nutrients.

2.5.2 Training for soil analysis: One-week hands-on orientation training to soil chemists, students/JRFs for soil analysis and fertilizer recommendation in the batches of 20 participants will be organized at SAUs/ICAR Institutes.

2.5.3 Financial assistance for package of nutrient recommendations : Aims to provide financial assistance

to farmers to apply corrective measures for nutrient deficiencies and popularizing balance and integrated nutrient management practices for their cropping systems.

2.5.4 Capacity building and regular monitoring and evaluation: Orientation for technical and line staff along with SAU/ ICAR institutions will be conducted by states.

2.5.5 Mission Management: For mission management, Project Management Team (PMT) will be constituted.

2.6. Ongoing programmes on Soil Health Management

Soil Testing Programmes are also being implemented through National Mission for Sustainable Agriculture (NMSA) and Rashtriya Krishi Vikas Yojana (RKVY). They would continue to be implemented subject to these guidelines. The soil testing techniques & INM practices developed under this mission will be implemented in all the DAC programme.

2.7. Expected Outcome

The Scheme envisages:

2.7.1 Distribution of Soil Health Cards to all the farmers in a round of every three years to promote Soil Health Management.

2.7.2 It will promote balanced and judicious use of plant nutrients.

2.7.3 Promotion of integrated nutrient system is expected to reduce the consumption of chemical fertilizers by 20%.

2.7.4 The productivity of selected crops is expected to increase significantly. v. The demand for organic sources of plant nutrient like bio-fertilizers, organic manure, vermi-compost, slow release nitrogenous fertilizer like neem/sulphur coated urea will increase, which in turn improve the soil fertility as well nutrient use efficiency.

2.8. Interventions

Interventions proposed for the Scheme includes development of modalities for soil sample collection along with standard sampling norms, quality control in the soil analysis, training of sampling staff and STL personnel, intensive use of ICT for database management for faster delivery of soil health cards in PPP mode and popularizing soil test based INM through field demonstrations/field days.

2. 9 Component 1: The Soil Health Card

2.9.1 Soil health card is field-specific detailed report of soil fertility status and other important soil parameters that affect crop productivity. Besides, soil health, it also provides an advisory on soil test based use of fertilizers and amendments.

2.9.2 Details in a Soil Health Card

2.9.2.1 Information regarding Soil Fertility.

2.9.2.2 Dosage of fertilizer application in crops.

2.9.2.3 Information on soil amendments of saline or alkaline soil.

2.9.2.4 Recommendation on integrated nutrient management.

2.9.3 Action Plan for Soil sampling

2.9.3.1 Diagnostic soil health assessment of farmer fields will be taken up periodically so as to issue health cards at least once in 3 years. Districts and villages within them will be selected in such a way that an action plan is in place to cover them every three years.

2.9.3.2 Selection of Districts The State Governments will prepare yearly action plan indicating number

of districts to be covered, number of irrigated holdings and rainfed holdings in the selected districts, number of soil samples to be drawn from irrigated holdings and number of samples to be drawn from rain-fed holdings and finally total number of samples to be drawn and tested.

2.9.3.3 Agencies that may be involved for sampling

a) Directly through Agriculture Department staff and soil testing laboratories.
b) By involving Science Colleges and students and its soil testing laboratory staff. c) By SAUs and its soil testing staff.

2.9.3.4 Agencies that may be involved in testing

a) By outsourcing to private agencies through tender.
b) By outsourcing soil testing laboratories.
c) By nominating Science Colleges and providing them equipment.
d) Directly through soil testing laboratories.

2.9.3.5 Universities and colleges in Soil Health Card Programme : Details are given at Annexure IX.

2.9.4 Norms of soil sampling

The quality of soil testing results and fertilizer recommendation depends upon soil sampling. For this, following scientific norms are prescribed;

2.9.4.1 In the irrigated areas, samples will be drawn in a grid of 2.5 ha. In rainfed areas, sampling will be done ina 10ha. grid.

2.9.4.2 In irrigated areas, large, medium and semi-medium holdings will be sampled and tested holding-wise. In case of marginal and small holdings sampling in a 2.5 ha. grid will be followed.

2.9.4.3 In rainfed areas, all the large holdings will be sampled and tested holding-wise and incase of medium, semi-medium, small & marginal holdings will be sampled and tested in a 10ha. grid. A statement indicating number of soil samples as per land use and class of holding is given at Annexure-I.

2.9.4.4 The ideal time for collection of soil samples is between sowing/planting of other crop, when fields are vacant.

2.9.4.5 The sampling depth for field crops should kept 0 to 15 cm.

2.9.4.6 Sample has to be collected preferably with the help of stainless steel tube augur, or alternatively with a khurpi/spade or kassi.

2.9.4.7 A brief training to the soil sampling staff/students/farmers/field extension machinery would be necessary to ensure collection of representative soil sample, their labeling and transport to th e STLs.

2.9.4.8 GPS co-ordinates have to be essentially recorded at the time of soil sampling which will be downloaded in the STL computer.

2.9.4.9 The target villages will use stratified sampling techniques. Samples will be collected from marginal, small and large farms to address variations that arise due to different management practices. Within each farm size class, samples will be chosen to represent all possible soil fertility variations.

2.9.5 Soil analysis

2.9.5.1 Soil samples should be processed following standard procedures and analyzed for various parameters namely pH, electrical conductivity (EC), Organic Carbon available N, P, K, S and micronutrients (Zn, Cu, Fe, Mn & B). In addition, science colleges having soil testing laboratories may be assigned the task of soil testing. The students can do the work of soil testing under guidance and micronutrients (Zn, Cu, Fe, Mn & B).

Added/Modified on 15.01.2016

2.9.5.2. In addition, science colleges having soil testing laboratories may be assigned the task of soil testing. The students can do the work of soil testing under guidance and supervision of professors.

2.9.5.3 To overcome staff shortage, the testing of samples in the soil testing laboratories may be outsourced to private agencies. Alternatively, JRFs may be employed for testing of soil samples.

2.9.5.4 The soil analysis has to be completed within 3 weeks of receipt of soil samples in the STL.

2.9.5.5 In addition to distribution of SHCs through post/extension staff, mechanism will be developed for online delivery of soil health cards also to the farmers using ICT.

2.9.5.6 The nodal soil test lab shall prepare time lines for scheduling the soil health cards in the district in phases. The year wise coverage of number of taluqas/blocks may be prepared so that a continuous soil analysis takes place every three years.

2.9.6 Fertilizer use / management

2.9.6.1Based on soil analysis, fertilizer recommendations will be developed, considering the available infrastructure for the small holders.

2.9.6.2 The critical values for delineating deficiency levels will be tested and doses recommended for applications.

2.9.6.3 Soil test based applications for removing deficiencies will be standardised as a component of agronomic practice for the selected crops.

2.9.6.4 Time lines will be determined for nutrient status mapping based on soil fertility analysis and productivity enhancement through application of deficient nutrients. Data will be developed for diagnostic soil analysis and deficient fields in each district. Nutrient recommendations will be prepared for Kharif and rabi crops. Block wise fertilizer dosage adjusted for soil test nutrient status for various crops will be developed.

2.9.7 Random checking of soil analysis for quality improvement

2.9.7.1 Mechanism will be developed for random checking of 1 % samples of total, analyzed samples by external agencies for ensuring the quality of soil analysis.

2.9.7.2 A team of Deputy Director of Agriculture (Ext.), District Agriculture Officer, Assistant Director of Agriculture (STL) and a Soil Scientist from SAU/ ICAR would jointly monitor, inspect and evaluate the functioning of STLs / other concerned agencies pertaining to issue of soil health cards in the respective districts.

2.9.73 Joint certificate will be issued from District Agriculture Officer, Sarpanch and Gram Sevak regarding satisfactory sample collection work. Also the list of farmers whose soil sample has been collected will be displayed at gram Panchayat Office.

2.9.8 Norms of assistance

Norms of assistance for soil sample analysis and issue of Soil Health Card are given at Annexure-II.

2.10. Component - 2: Training for soil analysis

2.10.1 One-week hands-on orientation training to soil chemists students/JRFs for soil analysis and fertilizer recommendation in the batches of 20 participants will be organized at SAUs/ICAR Institutes. Norms of assistance for training of technical staff are given at Annexure-III.

2.11. Component-3: Financial assistance for package of nutrient recommendations

2.11.1 Utility of soil health cards lies in the adoption of recommendations entailed therein by the farmers. For this specific purpose, awareness programmes for farmers and soil sampling teams will be organized by experts under SAUs/ICAR institutes/Central Agricultural University (CAUs) and other agricultural colleges.

2.11.2 In the target villages, financial assistance for soil test based nutrient balancing will be provided to farmers. And productivity linked nutrient recommendations will be provided. Willing farmers will be registered for application of recommended doses to supplement organic and inorganic nutrients. Norms of assistance are shown at Annexure-IV.

2.11.3 For acidic soils (pH below normal) and alkaline/saline soils (pH above normal), Gypsum/liming materials are to be used. The Agriculture Officer of the area need to be contacted for reclamation of soil.

2.11.4 A field day shall be arranged at appropriate crop growth stage for farmers of the same and nearby villages. Subject matter specialists should explain the advantages of soil test based fertilization and need based use of soil amendments.

2.11.5 A feedback mechanism on the adoption of soil test based prescriptions given in the soil health cards will be developed by DAC involving the experts from SAUs/ICAR institutes and State Department of Agriculture, so as to assess the real utilization of the soil health cards by the farmers.

2.12. Component-4: Capacity building and regular monitoring and evaluation

2.12.1 Orientation for technical and line staff along with SAU/ICAR institutions will be conducted by states. Coordination committees will be constituted in the target districts for facilitating implementation for balanced nutrient practice and monetary backstopping. Norms of assistance for training of farmers, officers / staff, ICT and workshops are given at Annexure-V.

2.13. Component-5: Mission Management Norms for PMT and mission management expenditure at Annexure-Vl.

2.14. Norms of finance assistance for different components are summarized in the Annexure II to Vl

2.15. Total budget requirement may be seen at Annexure-Vll.

ANNEXURE I

Statement indicating number of soil samples as per land use and class of holding

Source: Agriculture Census 2010-11 (Phase-II)

Class of holding	Net Area sown (Million Ha.)	Wholly Irrigated Area (Million Ha.)	Rainfed Area (Million Ha.)	Average size of holding (Ha.)	No. of Soil Samples (Million)			No. of SHCs holding wise / class wise (Million)
					Irrigated	Rainfed	Total	
Marginal	32	15	17	0.39	6 (15/2.5)	1.7 (17/10)	7.7	93
Small	32	11	21	1.42	4.4 (11/2.5)	2.1 (21/10)	6.5	25
Semi-Medium	34	11	23	2.71	4.0 (11/2.71)	2.3 (23/10)	6.3	14
Medium	29	10	19	5.76	1.7 (10/5.76)	1.9 (19/10)	3.6	6
Large	14	4	10	17.38	0.2 (5/17.38)	0.5 (10/17.37)	0.7	1
Total	141	51	90		16.3	8.5	24.8	139 Million or say 14 crore

Note: Criteria of samples to be taken:

(i) Irrigated area – at 2.5 ha grid for marginal and small holdings.

(ii) Irrigated area – one sample each holding for semi-medium, medium & large holdings (Irrigated Area/Av.size).

(iii) Rainfed area – at 10 ha grid for marginal, small, semi-medium & medium holdings.

(iv) Rainfed area – one sample each holding for large holdings (Rainfed Area /Av.size).

ANNEXURE II

Norms for Component-1: Financial Assistance for soil sample analysis and issue of soil health card

1. Sampling Cost Norms

S.No.	Activities/Components	Annual expenditure per STL
1.	Cost of Sampling Material i.e. Cloth bag + metallic label + tag + transport @Rs. 12 (for 10,000 samples)	Rs. 1,20,000
2.	Honorarium for collection of Soil Samplings @Rs. 10 per sample.	Rs. 1,00,000
	Total	Rs. 2,20,000

2. Cost Norms for engaging Technical staff per STL

S.No	Activities/Components	Annual expenditure per STL
1.	Contractual services for soil analysis Two staff @Rs. 7,500 per month i.e. 15,000 per month. Plus one time training @ Rs. 5000	Rs. 1,90,000

3. Cost Norms required for analyzing soil samples

S.No.	Activities/Components	Annual expenditure per STL
1.	Cost of analysis of one soil sample for (chemicals) pH, OC, P_2O_5, K, Zinc, Iron, Copper, Manganese, Barron, requirement of gypsum/lime and texture Rs. 75 per sample. Rs.(75X10,000soil samples)	Rs. 7,50,000
2.	Misc. Expenditure (need based maintenance of lab equipment, consumables, i.e. glassware and plasticware, etc.)	Rs. 70,000
	Total per annum	Rs.8,20,000

4. Cost Norms for Printing of SHCs.

S.No.	Activities/Components	Annual expenditure per STL
1.	Printing @ Rs. 5 for 10 SHCs per sample for 10,000 soil samples per STL	Rs.5,00,000

5. Cost Norms for Distribution of Soil Health Card

S.No.	Activities/Components	Annual expenditure per STL
1.	Distribution of Soil Health Card per STL@ Rs 500 per Gram Panchayat (GP)(500X 110GP)	Rs. 55,000

6. Cost Norms for demonstration in one sample grid of 10 ha plus training

Sl.No.	Component	Amount (in Rs.)
1.	Subsidy on inputs	
	(a) Soil amendments @ Rs. 500/ha x10	5,000
	(b) Micronutrient @ Rs. 500/ha x10	5,000
	(c) Organic inputs @ Rs. 500/ha x10	5,000
	(d) Fertilizer @ Rs.2500/ha x10	25,000
2.	Training (one day)	5,000
	Total	**45,000**

7. Cost Norms for awareness

S.No.	Activities/Components	Annual expenditure per STL
1.	Awareness creation to be carried out by STLs through print and electronic media and awareness campaign about soil test based nutrient application / mission management by STLs	22,000

8. Global Positioning System (GPS)

Sl.No.	Component	Amount (in Rs.)
1.	GPS equipment for bench mark soil samples and visiting same spot to evaluate soil fertility status after a period of time & also for developing fertility maps. 5 GPS @ Rs.6000 for STL	30,000

Abstract : Cost Norms of one soil sample

S.No.	Activities/Components	Total expenditure per STL
1.	Sampling Cost@ Rs 22 per sample x10,000	2,20,000
2.	Fund for engaging contractual services & training per STL	1,90,000
3.	The funds required for analyzing soil samples (10,000 X Rs. 75) ie cost of chemicals + Misc Expd.(@70000/per LAB)	8,20,000
4.	Printing @ Rs. 5 for 10 SHCs per sample for 10,000 soil samples per STL.	5,00,000
5.	Distribution of Soil Health Card per STL@ Rs 500 per GP(500X 110GP)	Rs. 55,000
6.	Demonstration in one sample grid of 10 ha @ Rs. 4,000/ha plus training Rs. 5,000	45,000
7.	Funds for awareness/mission management/STL	22,000
8.	5 GPS @ Rs. 6,000 per STL	30,000
	Total funds required per STL of 10,000 sample analyzing capacity	18,82,000
	Cost of one Sample	**Rs. 188 or Say Rs. 190/-**

States shall use STLS or outsource analysis and issue of SHC @ Rs. 190/ sample.

ANNEXURE III

Norms for Component-2 :Training of Technical Staff

Expenditure for imparting one week orientation training to soil chemist for soil analysis and fertilizer recommendation in batches of 20 participants.

S.No.	Components	Expenditure involved (Rs.)
1.	Boarding and lodging charges @ Rs. 400 per person per day for 20 participants.	40,000
2.	Stationary & Soil testing manual.	5,000
3.	Honorarium to guest speaker @ Rs. 1,000 for 5 speakers	5,000
4.	Accommodation charges for Halls & other training facilities including lab work.	10,000
5.	Training for one orientation module/STL	60,000
i.	Cost for 800 orientation training module for 2014-15	480 lakh
ii.	Cost for 500 orientation training module for 2015-16	300 lakh
iii.	Cost for 200 orientation training module for 2016-17	120 lakh
	Total	900 lakh

ANNEXURE IV

Norms for Component-3 :Financial Assistance for Micro-Nutrients and soil ameliorants

Gypsum/phosphogypsum / bentonite sulphur	50% of the cost of material limited to Rs.700 per ha.
Micronutrients	50% of the cost limited to Rs.500 per ha.
All Bio-fertilisers	50% of the cost limited to Rs.300 per ha.
Lime/liming materials	50% of the cost material limited to Rs.1000 per ha.
Total	Rs.2500/ha
Cost for 1st year (60000 farmers)	Rs.15 crore
Cost for 2nd Year (90000 farmers)	Rs.22.50 crore
Cost for 3rd Year (90000 farmers)	Rs. 22.50 crore
Total	Rs.60.00 crore

Nutrients are illustrative and may be developed by States on basis of soil analysis

ANNEXURE V

Cost Norms for Component-4 :Capacity Building

Cost Norms for Training of Farmers

S.No.	Components	Rate	Amount (Rs.)
1	Training material/stationery/venue/cost/Audio-visual aids etc.	Rs.2500 per training	2500.00
2.	Dormitory/Travel/Transport etc.	Rs.4500 per training	4500.00
3.	Honorarium to SMS/Scientist etc.	Rs.250/lecture X 8 lectures in two days.	2000.00
4.	2 Meals / Refreshment for farmers	Rs.250/day X 30 farmers X 2 days.	15000.00
	Total		24000.00

Cost Norms for Capacity Building - Training of Staff (Agriculture / ICAR)

S.No.	Components	Rate	Amount (Rs.)
1	Training material/stationery/venue cost/Audio-visual aids etc.	Rs.5000 per training	5000.00
2.	Lodging/Travel/Transport visits etc.	Rs.15000 per training	15000.00
3.	Honorarium to Trainer/Scientist	Rs.500/lecture X 8 lectures in two days.	4000.00
4.	2 Meals / Refreshment for officers/extension workers.	Rs.300/day X 20 officers/extension X 2 days.	12000.00
	Total		36000.00

Cost Norms for Use of ICT

S.No.	Components	Rate	Amount (Rs.)
1.	Promoting use of ICT tools like "Nutrient Manager" developed by IRRI and "Nutrient Expert" developed by International Plant Nutrient Institute for nutrient recommendation.	Rs.12.93 lakh per State (for 29 States)	3,75,00,000

Cost Norms for Organisation of Workshop

S.No.	Components	Rate	Amount (Rs.)
1.	Workshops to create awareness among farmers and soil sampling teams by SAUs/ICAR experts	Rs.1.50 lakh per workshop (for 29 States)	44,00,000

Abstract for Financial Norms for Capacity Building

S.No.	Activities/Components	Total expenditure crore
1.	Training for farmers Rs.24,000 X 20 trainings X 29 States	1.39
2.	Training for staff : Rs.36,000 x 20 trainings x 29 States	2.09
3.	I.C.T @ Rs.12.93 lakh X 29 States	3.75
4.	Workshops @ 1.5 lakh x 29 States	0.44
	Total for States (for each year)	7.67

ANNEXURE VI

Norms for Component-5:Mission Management

For Mission Management Advisors / Consultants, Programme Manager, Senior Programmer, Technical Assistants, part time need based consultants, Stenographer, Data Entry Operators and Attendants/Peons will be engaged on remuneration / honorarium paid to similar staff engaged in Mission Management Cells / Technical Support Groups established for other plan schemes or mission being implemented by DAC in consultation with IFD.

Expenditure on management of the scheme will be met out of 1% of the allocation earmarked for administrative and other contingent expenses. Excess expenditure, if any, will be borne by the Implementing Agencies from their own resources.

Abstract: Financial Norms for Programme Management Staff

S.No.	Activities/Components	Total expenditure (Rs in lakhs)
	1st Year	
1.	Staff at national level Rs.1.00 lakhs x 12	12.00
2.	Staff at state level approx. Rs. 0.35 lakhs X 29 x 12	121.15
	Total	133.15 Or say 1.33 crore
	2nd Year	
1.	Staff at national level Rs.1.50 lakhs x 12	18.00
2.	Staff at state level approx. Rs. 0.52 lakhs X 29 x 12	182.00
	Total	200.00 Or say 2 crore
	3rd Year	
1.	Staff at national level Rs.1.50 lakhs x 12	18.00
2.	Staff at state level approx. Rs. 0.52 lakhs X 29 x 12	182.00
	Total	200.00 Or say 2 crore
	Total all 3 years	
1.	Staff at national level	48.00
2.	Staff at state level	485.15
	Total	533.15 Or say 5.33 crore

BASIC QUALIFICATION, EXPERIENCE AND HONORARIUM OF ADVISORS/CONSULTANTS

Level and post	Educational Qualification & experience
1 Advisors/ Consultants	1. Doctorate Degree in Soil Science/having at least 15 years of field experience in soil analysis, interpretation of analysis results, issued of soil health cards, demonstrations,
	2. Ability to analyze data and preparation of projects, writing reports/seminar notes/articles as evidenced by publication in national and international journals.
	3. The person should have the ability of team leadership & motivation.
1. Programme Manager	1. At least 10 years experience of working in administration
	2. Working knowledge of Computer Application.
3. Senior Programmer	1 Masters degree in Computer Science from recognized university/ institutes with 4 years experience in web based applications and independently handling of projects
4. Technical Assistants	1. Master degree in Agronomy/Soil science/Agriculture Extension with specialization in soil analysis, interpretation of analysis results, issued of soil health cards, demonstrations, etc. Knowledge of computer essential.
	2. Person with experience of research and extension will be given preference.
5. Part time need based Consultants (Total 12 men months)	1. Doctorate Degree in Agronomy/ Agriculture Extension/Soil Science having at least 15 years of field experience in soil analysis, interpretation of analysis results, issued of soil health cards, demonstrations, etc.or 5 years experience in the rank of Additional Commissioner in Government of India.
	2. Ability to analyze data and preparation of projects, writing reports/seminar notes/articles as evidenced by publication in national and international journals.
	3. The person should have the ability of team leadership & motivation.
6. Stenographer (1)/ Data Entry Operator (4)	1. Graduate with six month computer course.
	2. Minimum 1 year experience in relevant field of work.
7. Attendant/ Peon (2)	1 Matriculate

While engaging consultants/Technical Assistants under the Mission the following guidelines may be followed:

Duties:

Consultants

To provide technical guidance to the JS(INM) on matters related to interventions proposed in the Mission. To develop standardized formats for sub-Mission of Action Plans

To assist State in planning, formulation of SHCM action plans, whenever required.

To provide technical assistance to SHCM staff in scrutinizing the action plans received from the States.

To Establish time-lines and indicators for completion of each activity

To supervise the quality of implementation of various interventions proposed in the Mission.

- To assist JS(INM) and other senior officers in synchronizing and synergizing with other divisions of DAC; State governments; State agriculture Universities; ICAR research institutions and other stake holders on technical front.

To constitute teams for monitoring the progress of works in the States and provide technical guidance to them in conducting Monitoring and evaluation.

To coordinate the work of State Project Management Team and District Management Team.
To visit the States periodically to provide technical guidance and impart knowledge about best practices.

To assist in the conduction of specific central and regional workshops.
To analyze the data received from various States and to come up with suggestions wherever improvements are required in the execution of the activities.

Documentation and dissemination of contribution of various interventions of cluster demonstration and success stories.

To render overall help to the technical staff working in the cell.
To perform other tasks specified by JS(INM).

TECHNICAL ASSISTANTS

To procure, compile and analyze the State wise data relating to the proposed interventions of the Mission activities.

To maintain relevant records/ file and data of the various Mission activities.

To assist in developing uniform formats for submission of action plans; monitoring and evaluation formats.

To scrutinize the action plans for the interventions proposed.
To undertake field visits to assess the progress of the Mission activities.
To assist senior officers of the SHCMcell on all technical matters.
To undertake other works assigned by the Mission director from time to time

ANNEXURE VII

Year-wise budget requirement

(Rs in crore)

S.No.	Component	2014-15	2015-16	2016-17	Total
1	Soil Health Cards @ Rs.190/sample 1st Year - 55 lakh 2nd Year - 97 lakh 3rd Year - 96 lakh	104.50	184.30	182.40	471.20
2.	Training for technical staff @ Rs.6 0,000/- training 1st Year - 800 trainings 2nd Year - 500 trainings 3rd Year - 200 trainings Total – 1500 trainings	4.80	3.00	1.20	9.00
3.	Financial assistance @ Rs.2500/ha 1st Year - 60000 farmers/ year 2nd year – 90000 farmers / year 3rd year – 90000 farmers / year (Total – 240000 farmers)	15.00	22.50	22.50	60.00
4.	Capacity building and use of ICT in states	7.67	7.67	7.67	23.01
5.	Mission Management	1.33	2.00	2.00	5.33
	Grand Total	133.30	219.47	215.77	568.54
	GOI share 75%	99.98	164.60	161.83	426.41
	State share 25%	33.32	54.87	53.94	142.13

ANNEXURE VIII

ANNUAL ACTION PLAN

State .....

Year .....

S. No	Component	Physical	Financial	Remarks
1.	**Soil Health Cards**			
(i)	No of districts to be covered			
(ii)	No of taluqas /blocks to be covered.			
(iii)	No of villages to be covered.			
(iv)	No of irrigated holdings			
(v)	No of rainfed holdings			
(vi)	No. of samples to be drawn from irrigated holdings			
(v)	No. of samples to be drawn from rainfed holdings			
(vi)	Total No. of Soil samples to be collected and analysed.			
(vii)	Total No. of Soil Health Cards to be issued.			
(viii)	Amount required.			
2.	**Training of Technical Staff**			
(i)	No of one week orientation training for soil chemist for soil analysis and fertilizer recommendation in batches of 20 participants.			
(ii)	Amount required @ Rs. 60,000/ - per training			
3.	**Financial assistance for Micronutrients and soil ameliorants**			
(i)	No of farmers to be covered under :-			
	(a) Gypsum/Phospho Gypsum			
	(b) Micronutrients			
	(c) Biofertilizers			
	(d) Liming materials			
(ii)	Area to be covered			
	(a) Gypsum/Phospho Gypsum			
	(b) Micronutrients			
	(c) Biofertilizers			
	(d) Liming materials			
	Total area to be covered.			
(iii)	Amount required			
4.	**Capacity Building**			
(i)	Farmers Training			
	(a) No of 2 days farmers training to be organized with 30 per participants.			
	(b) Amount required for training @			

	(b) Amount required for training @ Rs. 24,000/- per training			
(ii)	Training of staff (Agriculture/ICAR)			
	(a) No of 2 days Staff training to be organized with 20 per participants.			
	(b) Amount required for training @ Rs. 36,000/- per training			
(iii)	Use of ICT (details to be provided by State separately)			
(iv)	Workshops to create awareness among farmers and soil sampling themes by SAUs/ICAR Experts			
5.	**Mission Management** (Separate proposals to be submitted which should not exceed 1% of total budget).			
	Grand Total			
	GOI share 75%			
	State share 25 %			

Annexure IX

"GET ROOTED TO SOIL"

1. *In order to promote soil test based application of fertilisers in respect of all the 14 crore holdings in the country and to implement uniform norms in sampling and testing of soil a new scheme 'soil Health Card' has been launched.*

2. *Features of SHC Scheme :*

2.1 *To issue Soil Health (SHCs) to all 14 crore holdings in the country, about 2.53 crore samples are to be analyzed in each cycle of 3 years. This comes to about 83 lakh samples per year. The number of samples per district comes to about 13,000 samples per annum. However, cycle – I is proposed to be implemented in 2 years, with a target of 100 lakh samples for the year 2015-16 and 153 lakh samples for the year 2016-17.*

2.2 *Norms of soil sampling*

The quality of soil testing and fertilizer recommendation depend upon soil sampling. Following uniform norms are prescribed for sampling.

- *i. In the irrigated areas, samples will be drawn in a grid of 2.5 ha.*
- *ii. In rainfed areas, sampling will be done in a grid on 10.0 ha.*
- *iii. In all, 253 lakh number of samples will be tested to generate 14 crore soil health card in each of the cycles.*

2.3 *The State Governments will prepare yearly action plan indicating (i) number of districts to be covered, (ii) number of irrigated holdings and rain-fed holdings in the selected districts, (iii) number of soil samples to be drawn from the holding; and (iv) finally total number of samples to be drawn and tested.*

2.3.1 *Agencies that may be involved for drawing samples from field*

- *i. Directly through Agriculture Department staff and soil test laboratories.*
- *ii. By involving universities & colleges teaching chemistry.*
- *iii. By State Agriculture Universities (SAUs) /Horticulture Universities (SHUs) and their students and soil testing staff.*

2.3.2 *Agencies that may be involved in testing*

- *i. By outsourcing the process of testing & reporting to private agencies through tender*
- *ii. By outsourcing soil testing laboratories*
- *iii. By nominating universities and colleges (as at para 2.3.1 above) and providing them equipment (if necessary) to test the samples*
- *iv Directly through soil testing laboratories*

2.3.3 *Universities and Colleges in Soil Health Card programme :*

- *i. The State Government may enter into an agreement/MoU with the local college of Science / General university/SAU/SHU to undertake soil sampling. Soil test and generation of Soil Health Card (SHC) or only for collection of soil samples.*
- *ii. The State Government may assign a specific area like a Taluka/Block/Mandal/G.P/village to the MoU signatory, based on its ability to mobilize the students and availability of supervisory staff and lab infrastructure.*
- *iii. The State Government may establish laboratories with an annual capacity of 10,000 samples in Science Colleges/Universities (General/Agriculture/Horticulture) under Soil Health Management (SHM), at the rate of one for each district.*

iv. *The State Government may allocate the samples to be tested by the MoU signatory. The State Government may, agree to pay testing charges for EC, pH, OC, N, P, K, S, Zn, Mn, Cu, Fe @ Re 190 per sample, and they may be encouraged to test optimal number of samples per month, so as to cover expenses towards consumables and payments to the students.*

v. *The MoU signatory may calculate the payment to the students on pro rata basis at the following rates.*
   a. *Collection of soil sample – Rs. 10/sample*
   b. *Testing of soil, parameter wise – Rs. 6.25 / sample (Rs. 6.25 X 12 parameters = Rs. 75)*
   c. *Generation of Soil Health Card – Rs 5/SHC*

vi. *The students may collect samples, undertake soil tests and generates SHC either by using their public holidays including Sundays or working outside the class hours for fixed hours of Schedule or both.*

vii. *The students may be paid remuneration for the SHC related work under the concept of "Earn while You Learn" University/college may also consider payment of some periodic allowance to the students from the SHC allocation when they go out on full day's work or consider as though they have done a day's work, if they collect specified no. of samples, even if the same are collected on different days, as per their convenience.*

viii. *The supervising staff may be paid some honorarium from the SHC allocation and be made entitled to TA/DA for a full days field visit as per his eligible entitlements to be met from their own resources of the universities/colleges.*

ix. *The College/ University may invite students to apply to work in the laboratory for a period on one-three months to test the samples, preferably during vacations.*

x. *The selected students may be assigned the work of soil test under the guidance and supervision of the professors in-charge of the laboratory.*

Added / Modified on 15.01.2016

Chapter 3

Soil Health

Soil Health

The details of various components under Soil Health are given below and pattern of assistance is given at Annexure-I.

3.1 Setting up new Soil Testing Laboratories (STLs) and Mobile Soil Testing Laboratories (MSTLs) for macro nutrients and micro nutrients analysis.

3.2 Strengthening of existing State STLs for micronutrient analysis.

3.3 Capacity building through training of STL staff/extension officers/farmers and field demonstration/workshop etc.

3.4 Creation of data-bank for balanced use of fertilizers, which is site specific.

3.5 Adoption of village by STLs (10 villages each) through Frontline Field Demonstrations.

3.6 Preparation of digital district soil maps (using Global Positioning System) and soil fertility monitoring system by ICAR/ State Agriculture Universities (SAUs).

3.7 Providing portable soil testing kits to field level officers of State Govt.

3.8 Promotion and distribution of micronutrients.

3.9 Strengthening of Fertilizer Quality Control Laboratories

3.9.1 Strengthening/up-grading existing State Fertilizer Quality Control Laboratories.

3.9.2 Setting up of New Fertilizer Quality Control Laboratories by State Governments.

3.1 Setting up new Soil Testing Laboratories (STLs), Mobile Soil Testing Laboratories (MSTLs) and Mini-labs for macro nutrients and micro nutrients analysis

States can procure any soil testing equipment validated by ICAR or State Agricultural Universities following their procurement procedures.

3.1.1 Setting up new Soil Testing Laboratories (Static, Mobile and Mini-lab) *- In order to promote soil test base balanced and judicious use of chemical fertilizers, assistance will be provided to set up new static/ mobile/ mini-lab. However, static and mobile labs will preferred option. Mini-labs will be promoted when they can analyse both macro and micro-nutrients and are needed to meet contingency arising from time, reach of location or such other situation(s).*

3.1.2 Norms *for Assistance- In case of static STLs 60% of the project cost, subject to a limit of Rs.45 lakh, will be provided as subsidy for purchase of machinery & equipment, chemicals & glass wares, miscellaneous laboratory articles and contingencies as per indicative list at Annexure II.*

In case of mobile STLs, financial assistance from DAC shall be 60% of the project cost subject to a maximum of Rs. 45 lakh per Mobile STL as per indicative list at Annexure III.

In case of Mini-lab, financial assistance shall be 60% of the project cost subject to a maximum of Rs. 45,000 per Mini-lab as per indicative list at Annexure IX.

The suggested list of equipments can be changed in special circumstances only with the specific approval of INM Division.

3.1.3 Expected Outcome*- It is expected that each of these static, mobile & mini labs can analyse NPK and micronutrients. The expected annual capacity to test both macro and micro-nutrients of static STL at 10,000 samples, of mobile STL at 5,000 samples and that of mini-lab at 3,000 samples should be optimally utilized.*

In case of Labs with ICP, such capacity will get enhanced to atleast 1 lac samples per annum and should be used accordingly.

3.1.4 Involvement of Private Sector- Whereas normally Soil Testing labs will be set up by state government through state agencies, it is expected that state government will encourage involvement of other agencies such as Private Companies associated with Agriculture Extension in some way such as Fertilizer Companies, Agriclinics, NGOs, Cooperative Societies and private entrepreneurs(Agri-preneurs). The State Governments will need to announce clear guidelines for involving these private sector agencies in the operation and management of these Soil Testing labs. State Governments are encouraged to announce innovative PPP Guidelines for involvement of Private sector for running of these Labs. The guidelines should, inter alia, clearly define all the terms and conditions including the soil testing charges to be charged from farmers and the MOU/Agreement to be signed with these private agencies, clear cut monitorable targets. State Governments will monitor and review performance of these private sector labs periodically.

3.2. Strengthening of Existing Soil Testing Laboratories

3.2.1 At present, there are 1087 soil testing laboratories (930 STLs and 157 MSTLs) working in the country having annual analyzing capacity of about 12 million soil samples. Many of the existing STLs do not have facilities for micronutrient analysis and the existing capacities of analysing NPK also is not being fully utilised. A onetime grant shall be provided to create facilities for analysis of micro-nutrients such as Zinc, Iron, Copper, Manganese, Boron, etc. Atleast 125 existing STLs will be strengthened during the 12th Five Year Plan period.

3.2.2 Norms for assistance- Rs. 30 lakhs per/lab for creating micronutrient analysis facilities through purchase of Inductively Coupled Plasma Spectrophotometer ICP)/Atomic Absorption Spectrometer (AAS), its accessories with required chemicals and glassware of standard quality as per indicative list at Annexure-IV.

3.2.3 Normally Existing STLs/MSTLs working under the control of the State Governments/UTs will be eligible for strengthening. For strengthening of STLs having no micro-nutrient analysis facility, performance assessment should be made keeping in view the existing staff before any assistance is given. Only working STLs should be supported. The State Government should carefully study the existing performance level of the STL and whether it requires any process change to achieve higher efficiencies. Moreover, a system of bench-marking should clearly be put in place. State Governments are encouraged to announce clearly defined and transparent guidelines for taking help of private sector as defined in para 1.4 above for operation and management of existing STL and MSTL, along with strengthening under the scheme.

3.3 Capacity Building through training of STL staff/extension officers/ farmers and field demonstration/ workshops etc. on Soil health management/INM/balanced use of fertilizers

3.3.1 Training Programme for Staff

The training programme to be organized for STL staff and field functionaries on Balanced Use of Fertilizers will be a two day programme. The course content shall inter alia, include Importance of Soil testing in Soil Fertility Management; Sampling Methodology; Testing protocols; Interpretation of soil test results and calculation of nutrient requirement; Cropping system based nutrient management & Importance of balanced nutrition on productivity and quality of produce and soil health maintenance etc.

3.3.2. Training Programme for Farmers

The training programme to be organized for farmers on Balanced Use of Fertilizers will be a two day programme. For organizing the two day training for farmers on Balanced Use of Fertilizers, the course content shall include, topics such as Importance of Soil Testing in Soil Health Management; Importance of balanced fertilizer use in crop productivity and Soil Health Management; Sampling protocols and sending samples to testing laboratories; Importance of organic manures and biofertilizers in balanced nutrition; Implementation of soil test results for soil fertility management as per the requirement of crop etc.

3.3.3. Field Demonstrations

Field Demonstrations on Balanced Use of Fertilizers should be conducted at the farmers' field. The entire package of practices except fertilization should be taken up uniformly. Cultural practices such as ploughing, disking, leveling, etc should be done before sowing/planting. The demonstration plot should preferably be of one acre (4000 sq. mt.) each in one single patch. Two or more well divided plots of total one acre can also be selected. Each demonstration plot should be divided into 2 equal parts i.e. Control part - based on existing practices adopted by the farmer and Treated part - based on soil test based balanced fertilization including economic fertilizers such as SSP, Neem coated Urea, Sulphur Coated Urea, Zincated Urea, Customized Fertilizers, micro nutrients and Bio-Fertilizers & soil amendments, if required. All other cultural practices should be kept uniform till harvesting.

3.3.4. Farmers' fair

A one day farmer's fair should be organized a time when the crop is at almost grain forming/ fruiting stage or on the day of harvesting. 50 farmers from the nearby villages should be invited to demonstrate the impact and usefulness of balanced and soil test based fertilization practice. Efforts should be made to supply technical literature in the regional language. Two subject matter specialists should also be invited for proper technology transfer and for addressing farmer's queries.

3.3.5. State Governments may implement this component though any of the selected agencies such as ICAR institute/SAIs/KVK/Agriculture Department/State agency/Fertilizer Industry or may also involve any agriculture graduate or progressive farmer in its implementation. The number of programs will be decided by the INM division based on proposal received from states and UTs. Details of Norms for assistance and duration have been given in Annexure V.

3.3.6. GOI or state Government will organize or assist organization of regional and national workshop/seminar/exhibition through central agency or state agencies for promotion of Soil Health Management, Integrated Nutrient management or Balanced use of fertilizers.

3.4 Creation of Data Bank for site specific Balanced Use of Fertiliser

3.4.1 Objective For promoting balanced use of fertilizers, it is essential to maintain region specific and location specific data on soil fertility. As on today, there is no systematic data or system available in the country for recommending site- specific nutrient requirement and delineation of secondary and micronutrient deficiencies. It is proposed to create a National Data Bank.

3.4.2. State Governments can implement this intervention by any agency of their choice such as ICAR institute/SAUs/National Informatics Centre etc. or even private sector, but the proposal should specifically cover an action plan for the use of this data for educating farmers. Transparent guidelines for selection of Private sector will need to be in place for approval of the proposal.

3.5 Adoption of village by STLs (maximum 10 villages per STL) through Frontline Field Demonstration (FFD)

3.5.1 Objective

For confidence building of farmers about usefulness of balanced use of fertilizers, it is essential that STLs' recommendations are effectively demonstrated in villages. It is proposed to adopt 8000 villages by 800 Soil Testing Laboratories to conduct frontline field demonstration on balanced use

of fertilizers. These 800 STLs shall be chosen by the State Government, a list will be sent to GOI along with the proposal.

3.5.2. Around 10 farmers belonging to the adopted village should be selected. A field day shall invariably be arranged for farmers of the same or nearby villages. Subject matter specialists should explain the requirement and usefulness of soil test based fertilization and the importance of soil amendments.

3.5.3. Norms for Assistance-Rs. 20,000 per FFD as per the details at Annexure VI.

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

3.6.1. Objectives

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 and GPS based soil fertility monitoring system in remaining agricultural districts during the 12th Five Year Plan.

3.6.2. State Governments/SAUs/ICAR Institutes/National Informatics Centre/KVKs or other central/state Government agency can be associated for implementation of this project.

3.6.3 Norms for Assistance will be restricted to around Rs. 6.00 lakh per district.

3.7. 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. Preference will be given for kits having micro nutrient facility. Technical suitability of kit will be decided in consultation with IARI, New Delhi.

3.8. 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 12th Five Year Plan. Assistance will limited to 50% of the cost of requisite nutrients subject to a maximum of Rs. 500 per hectare.

3.9 Strengthening of fertilizer quality control system

3.9.1. Strengthening/Up gradation of the existing State Fertilizer Quality Control Laboratories

i. In order to check the quality of the fertilizers sold in the country, at present there are 74 FQCL working under the control of different State Governments. Since quality testing is a statutory requirement under the Fertilizer Control Order (FCO), it is imperative to maintain all the instruments and equipment and to ensure supply of quality chemicals and glasswares for the analysis. This requires time-to-time upgradation and replacement of the equipment. Many of the State Laboratories are also facing acute financial problem to maintain these facilities. Therefore, in order to maintain the high standard of analysis potential, it is proposed to upgrade and strengthen the existing FQCLs.

ii. Eligible Agencies-FQCLs under State Governments. Assistance will be provided to only those State laboratories, which are functional and working well and there will be no recurring liability on the part of the Central Government.

iii. Norms for Assistance-Rs.30 lakh per laboratory is to be provided for purchase of machinery & equipment, chemicals, glasswares and miscellaneous laboratory articles as indicated Annexure VII.

3.9.2. Setting up of new Fertilizer Quality Control Laboratories by State Governments

Considering that the total number of dealers in the country by the end of the 12th Five Year Plan would be about 3.25 lakhs, the minimum requirement of fertilizer samples to d for ensuring quality is 6.50 lakh (to cover each dealer during kharif and rabi). The capacity of existing testing facilities (1.25 lakh) is quite inadequate and is only around 20 per cent of the requirement. It is, therefore, proposed to set up 20 new FQCLs by the State Governments for quality testing with annual analyzing capacity of 4000 samples each.

i. A onetime financial assistance @ Rs.75 lakh/laboratory is proposed to be provided to the State Governments. This will provide an additional annual analyzing capacity of 0.80 lakh samples.

ii. No. of Laboratories to be set up – 20 new FQCLs will be set up during the 12th File Year Plan.

iii. Norms for Assistance-One time grant of Rs.75 lakh per laboratory shall be provided for purchase of machinery & equipments, chemicals, glass wares and miscellaneous laboratory articles as per Annexure-VIII to create facilities for analysis of NPK, secondary and micronutrients.

ANNEXURE-I

Component wise Pattern of assistance (under centrally sponsored scheme) Soil Health components of SHM under NMSA

Sl.	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 t o a maximum limit of Rs 30 lakh per MSTL/SSTL.
3.	Training and demonstration on Soil Health management	Training to STL / FTL Staff, field functionaries. Rs.25,000/- per training session for 20 participants or more. Training to farmers including field demonstrations; Rs. 10,000/ - per training session for 20 participants or more. Rs. 20,000/- per Front Line Field Demonstration
4.	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.
5.	Providing Portable Soil Testing Kit to field level officers of State Govt.	Assistance @ Rs.15,000/Kit
6.	Promotion and distribution of micronutrients	50% of cost subject to a limit of Rs. 500/ - per ha and/or Rs. 1000/- per beneficiary.
7.	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
8.	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.

ANNEXURE-II

Admissible items including illustrative list of equipment for setting up of Mobile/ Static Soil Testing Laboratory with annual analyzing capacity of 10,000 samples per annum (For analyzing NPK, secondary nutrients & micronutrients in soil and water)

List of suggestive Equipments for Static STLs

S.No	Item	Quantity
1	Inductively coupled Plasma Spectrophotometer/ Atomic Spectrophotometre (ICP/ AAS)	1
2	Conductivity Meter	2
3	pH Meter	2
4	Shaking Apparatus	2
5	Electronic Balance	1
6	Analytical Balance/Top Loading balance	2
7	Drying Oven	1
8	Computer with appropriate software	1
9	Table Top Centrifuge	1
10	GPS System with Mobile Phone	1
	Miscellaneous equipments such as distillation unit, Sieving system, Auto titrators, bar code scanner & printer etc	- -

The States May Take up ICP based or AAS based equipment depending upon their requirement for analysis of Zn, Fe, Cu, Mn, B etc

ANNEXURE-III

List of Suggestive Equipments for MSTL.

S.No	Item	Quantity
1	Atomic Absorption Spectrophotometer (AAS) for MSTL	1
2	Flame Photometer	1
3	Conductivity Meter	2
4	pH Meter	2
5	Shaking Apparatus	2
6	Electronic Balance	1
7	Analytical Balance/Top Loading balance	2
8	Drying Oven	1
9	Computer with appropriate software	1
10	Table Top Centrifuge	1
11	GPS System with Mobile Phone	1
12	Portable Genset of 7.5 KVA silent type	1
13	Portable Kit	2
14	Customized vehicle	1

ANNEXURE-IV

List of admissible items and equipment for strengthening of Soil Testing Laboratory (Items to be procured from the following list only)

S.No.	Items	Quantity
1	Inductively coupled Plasma Spectrophotometer/ Atomic Spectrophotometre ICP/AAS)	1
2	Conductivity Meter	1
3	pH Meter	1
4	Shaking Apparatus	1
5	Electronic Balance	1
6	Analytical Balance/Top Loading balance	1
7	Drying Oven	1
8	Computer with appropriate software	1
9	Table Top Centrifuge	1
10	GPS System with Mobile Phone	1
11	Portable Genset of 7.5 KVA silent type	1
12	Miscellaneous equipments such as distillation unit, Sieving system, Auto titrators, bar code scanner & printer,etc	1

ANNEXURE-V

Training & Field Demonstration

Two days training for STL staff and Field functionaries

SL	Component	Amount (in Rs.)
1.	Lodging and Boarding @ Rs. 400/ -per person/day for 20 participants	16000.00
2.	Folder/Stationery/Literature	5000.00
3.	Honorarium to Guest Speakers @ Rs. 500 per speaker – 4Nos	2000.00
4.	Tea/Coffee/Misc. expenses including POL, Transport	2000.00
	Total	**25000.00**

Two days Farmers training

SL	Component	Amount (in Rs.)
1.	Working lunch/tea/training arrangements @ Rs. 150/ - per person/day for 20 participants	6000.00
2.	Stationery/literature	2000.00
3.	Honorarium to Guest Speakers @ Rs. 500 per speaker including miscellaneous expenses	2000.00
	Total	**10000.00**

Field Demonstration

SL	Component	Amount (in Rs.)
1.	Assistance to farmer for inputs, labour etc.	5000.00
2.	Field Day expenses a) Refreshment to 50 farmers @ Rs. 50/ farmer b) Miscellaneous expenses such as POL/Transport/ Honorarium etc.	 2500.00 2500.00
	Total	**10000.00**

ANNEXURE-VI

Norms for Assistance for village adoption through Frontline Field Demonstrations

Sl.	Component	Amount (in Rs.)
1.	Subsidy on inputs	
	(a) Soil amendments @ Rs. 200/acrex10	2000.00
	(b) Micronutrient @ Rs. 200/acre x10	2000.00
	(c) Organic inputs @ Rs. 200/acrex10	2000.00
	(d) Fertilizer @ Rs.1000/acre x10	10000.00
2.	Field Day-cum-Farmers Fair (one day)	
	(a) Tea snacks etc for 50 farmers @ Rs. 50/ farmer	2500.00
	(b) Misc expenses for field day	1500.00
	Total	**20000.00**

ANNEXURE-VII

Illustrative list of Equipments for Strengthening of existing State Govt Fertilizer Testing Labs

S.No.	Items	No.
1	Inductively Coupled Plasma Spectrophotometer/ Atomic Spectrophotometer (ICP/AAS)	1
2	Auto N-Analyzer	1
3	Spectrophotometer	1
4	Waster Bath-cum-shaker	1
5	Muf*e Furnace + Oven	1
6	pH Meter	2
7	Vacuum Pump	2
8	Electronic Balance	2
9	Analytical Balance	1
10	Digestion/Distillation set	2
11	Karl Fisher Apparatus	2
12	Deionizer	1
13	Computer with appropriate software	1
14	Lab. Articles	1
	Misc equipments such as auto titrators, bar code scanner & printer,etc	-

ANNEXURE-VIII

Illustrative list of Equipments for setting up of new State Govt Fertilizer Testing Labs

S.No.	Items	No.
1	Inductively Coupled Plasma Spectrophotometer/ Atomic Spectrophotometer (ICP/AAS)	1
2	Auto N-Analyzer	1
3	Spectrophotometer	1
4	Waster Bath-cum-shaker	1
5	Muffle Furnace + Oven	1
6	pH Meter	2
7	Vacuum Pump	2
8	Electronic Balance	2
9	Analytical Balance	1
10	Digestion/Distillation set	2
11	Karl Fisher Apparatus	2
12	Deionizer	1
13	Computer with appropriate software	1
14	Lab. Articles	1
	Misc. equipments such as auto titrators etc	-

Annexure-IX

Illustrative list of equipment for Mini-lab

S.No.	*Item*	*Quantity*
1.	*Balance*	*1*
2.	*Shaker*	*1*
3.	*Hot Plate*	*1*
4.	*Meter to display readings*	*1*

Added/Modified on 15.01.2016

Chapter 4

Continuation & Strengthening of Central Fertilizer Quality Control & Training Institute (CFQC&TI)

Continuation & strengthening of CFQC&TI

41 Analysis of Fertiliser Samples for Quality Control

The CFQC&TI and its 03 Regional Laboratories are the notified labs under clause 29 of FCO for analysis of the fertilizer samples drawn by the fertilizer inspectors from fertilizer dealers and other sources. During 12th plan period it is proposed to continue analyse of fertilizer samples.

42 Human resource development through trainings directly by CFQC&TI and its 03 Regional Labs At CFQC&TI / RFCLs

4.2.1 Training Programme on Fertiliser Quality Control for Fertiliser Analyst- Four week duration with 20 participants in each course will be organized during 12th plan.

4.2.2 Training Programme on Fertiliser Quality Control for Fertiliser Inspectors - Two week duration with 20 participants in each course will be organized during 12th plan.

4.2.3 Training Programme on Fertiliser Quality Control for Fertiliser Enforcement officers of N.E. States Two week duration with 20 participants in each course will be organized during 12th plan.

4.2.4 Training Programme on Fertiliser Quality Control for Notified authorities - One week duration with 20 participants in each course will be organized during 12th plan.

4.2.5 Training Programme on Fertiliser Quality Control for Foreign Participants - Five week duration with 20 participants in each course will be organized during 12th plan.

In States

4.2.6 Training Programme on Fertiliser Quality Control for Fertiliser Enforcement/ Extension Officers - Two days duration with 50 participants in each course will be organized during 12th plan.

4.2.7 Training Programme on Fertiliser Quality Control for Fertiliser Dealers One days duration with 50 participants in each course will be organized during 12th plan.

Chapter 5

Organic and INM Component of SHM

INM and Organic Component

INM & Organic Component of SHM (Annexure-I)

5.1 Components to be implemented by NABARD are as under:

5.1.1 Setting up of mechanized Fruit/Vegetable Market/Agro Waste Compost production unit (3000 TPA capacity)

5.1.2 Setting up of State of art liquid/carrier based Bio-fertilizer/Biopesticide Production Units (200 TPA/50000 LPA Capacity)

5.2. Components to be implemented by State Govts / ICAR / SAUs are as under:

5.2.1 Setting up of Biofertilizer and Organic Fertilizer Testing/Quality Control Laboratory (BOQCL) under FCO

5.2.2 Strengthening of existing Biofertilizer and Organic Fertilizer Testing/Quality Control Laboratory (BOQCL) under FCO

5.2.3 Support to research for development of organic package of practices specific to state and cropping system

5.2.4 Setting up of separate Organic Agriculture Research and Teaching Department

5.2.5 Promotion of Organic Inputs on farmer's field (Manure, Vermi-compost, Bio-Fertilizers Liquid / solid, Waste compost, Herbal extracts etc.)

5.2.6 Setting up of mechanized Fruit/Vegetable Market/Agro Waste Compost production unit (3000 TPA capacity) and Setting up of State of art liquid/carrier based Bio-fertilizer/Biopesticide Production Units (200 TPA/50000 LPA Capacity).

ANNEXURE –I

Organic & INM Components of SHM

Sl. No	Component	Pattern of Assistance	Remarks
1	**Setting up of Input Production Units and Soil Testing Labs**		**To be implemented by NABARD in consultation with NCOF**
1.1	Setting up of mechanized Fruit/Vegetable market waste/ Agro waste compost production unit;	33% of cost limited to Rs. 63 lakh/unit for individuals/private agencies through NABARD as capital investment for 3000 TPA production capacity	For establishment of large mechanized compost plants by fertilizer companies / private industries / private entrepreneur / individual etc. for fruit and vegetable waste/agro waste compost unit Annexure-II
1.2	Setting up of State of art liquid/ carrier based Biofertilizer/ Biopesticide units;	25% of cost limited to Rs. 40 lakh/unit for individuals /private agencies through NABARD as capital investment of 200 TPA or 50000 LPA production capacity	For establishment of state of the art sterile liquid/carrier based biofertilizers and microbial biopesticides production units by fertilizer companies/ private industries/ private entrepreneur/ individual etc Annexure III
1.3	*Setting up of Soil Testing Laboratories (Static/Mobile)*	*33% of cost limited to Rs.25 lakh/lab for individuals / private agencies through NABARD as capital investment per annum analyzing capacity.*	*For establishment of Soil Testing Labs (Static/ Mobile) with facility to analyse 12 parameters viz. pH, EC, OC, N, P, K, S, Zn, Fe, Mn, B & Cu by fertilizer companies/ private industries/ private entrepreneur/ individual etc.*
1.4	*Setting up of mini-lab developed by ICAR technology*	*44% of cost limited to Rs.33000/ lab for individuals/ private agencies through NABARD as capital investment for 3000 samples per annum analyzing capacity*	*For establishment of mini-lab with facility to analyse 10 parameters viz. pH, EC, OC, N, P, K, S, Zn, Fe & B by fertilizer companies/ private industries/ private entrepreneur/ individual etc.*
2	**Setting up of Input Production Units**		**State Governments shall send proposal for approval of Project Sanctioning Committee**
2.1	Setting up of mechanized Fruit/Vegetable market waste/ Agro waste compost production unit;	100% Assistance to State Govt/Govt. Agencies upto a maximum limit of Rs. 190.00 lakh /unit for 3000 TPA production capacity	For establishment of large mechanized compost plants by State Government/APMCs/ Municipalities/other public sector enterprise etc. for fruit and vegetable waste/agro waste compost unit under PPP or otherwise mode.

Sl. No	Component	Pattern of Assistance	Remarks
2.2	Setting up of State of art liquid/ carrier based Biofertilizer/ Biopesticide units;	100% Assistance to State Govt/Govt. Agencies upto a maximum limit of Rs. 160.00 lakh /unit for 200 TPA or 50000 LPA production capacity	For establishment of state of the art sterile liquid/carrier based biofertilizers and microbial biopesticides production units by State Government /APMCs/ Municipalities/ other public sector enterprise etc. under PPP or otherwise mode.
3	**Quality Control of Bio-fertilisers and Organic Fertilisers**		**State Governments shall send proposal for approval of Project Sanctioning committee**
3.1	Setting up of Bio - fertilizer and Organic fertilizer testing Quality Control Laboratory (BOQCL)	Assistance up to maximum limit of Rs. 85 lakh for new laboratory	For setting up of Biofertilizers/Organic Fertilizers Testing/Quality Control Laboratories assistance as Grant -in-Aid shall be provided to State Government Annexure IV
3.2	Strengthening of existing Laboratory under FCO	Assistance up to a maximum limit of Rs. 45 lakh for strengthening of existing infrastructure of State Government Laboratory under Agriculture or Horticulture Department.	For existing Biofertilizers/Organic Fertilizers Testi ng/Quality Control Laboratories established by State Government under FCO assistance shall be provided as Grant -in-Aid for their strengthening in terms of equipments / instruments etc.
4	**Promotion of Organic Input on Farmers' Fields**		**State Governments shall send proposal for approval of Project Sanctioning committee**
4.1	Promotion of Organic Input on farmers field (manure, Vermi compost, Biofertilizer liquid/ solid, Waste compost, Herbal extracts)	50% of cost subject to a limit of Rs. 5000/ - per ha and Rs. 10,000 per beneficiary.	For promotion of organic inputs assistance shall be provided to the State Governments.
5	**Promotion of Organic Research and Development**		**State Governments shall send proposal for approval of Project Sanctioning Committee**
5.1	Support to research for development Of organic package of practices specific to state and cropping system	Against specific proposal	For development of organic package of practices specific to cropping system and state-specific assistance as Grant -in-Aid to eligible ICAR/SAUs/Other research institutions/State Government agencies with research facilities for development of organic package of practices, shall be provided on specific proposal basis.

S.No	Component	Pattern of Assistance (in Rs)	Remarks
5.2	Setting up of separate Organic Agriculture Research and Teaching Department	Against specific proposal	For proper popularization of organic agriculture, there is a need to establish separate departments under State Agricultural Universities where diploma/degree courses on organic agriculture can be conducted. For this purpose assistance as Grant-in-Aid shall be provided to SAUs against specific proposal from SAUs.

Added/Modified on 15.01.2016

ANNEXURE-II

Project Outlay- Model Project on 100 TPD Fruit & Vegetable Waste composting Unit.

S. No.	Particulars	Quantity	Rate (Rs)	Cost (Rs lakh)	Remarks
1	Cost of land	2-3 ha			on lease
2	Civil Works				
	Land development including approach & internal road		LS	5.00	
	Processing shed	1000 sqm	2000	20.00	
	Concrete yard	2000 sqm	1000	20.00	
	Drainage for storm water & leachate collection system		LS	3.00	
	Green belt & buffer zone development & environmental requirements		LS	3.00	
	Office & Store	100 sqm	8000	8.00	
	Water source supply system including over head tank		LS	2.00	
	Sub total			**61.00**	
3	Plant & Machinery				
	Rotary trauma screens with screen cloth of spring steel and suitable drives and chutes	4	1.50 lakh	6.00	
	different sieve size as per requirement	4	7.50 lakh	30.00	
	Inclined belt conveyor with drive, feed hopper, chutes, scrappers, cover plates, guards etc	1	4.00 lakh	4.00	
	Belt feeder, inclined, full seurt board with VFD and discharge chutes	1	3.00 lakh	3.00	
	Hoppers for additives	2	1.00 lakh	2.00	
	Bucket elevators, paddle mixers, cutters and crushers	1	4.00 lakh	4.00	
	Stitching bag conveyor, stitching machine, weighing scale etc	1	4.00 lakh	4.00	
	De-stoner	1	3.00 lakh	3.00	
	Vehicle/JCV/Tractor/DCM	3	16.00 lakh	48.00	
	Misc. Equipments / other attachments		LS	2.00	
	Sub total			**106.00**	
4	Misc. fixed assets				
	Plant and machinery erection, commissioning	LS	LS	7.00	
	Power connection, transformers & electrical fixtures etc.		LS	8.00	
	Lab equipments, chemicals, glassware etc.		LS	3.00	
	Furniture, fixture, computers with accessories and tools etc		LS	5.00	
	Sub total			**23.00**	
5	**Total project cost**			**190.00**	
Grant in aid for 3000 MT finished compost/annum capacity			**190.00 lakh**		

ANNEXURE-III

List of Equipments and project outlay for 200 MT / annum or 50,000 Liters Per Annum (LPA) production capacity bio-fertilizer/ bio-pesticide units

Essential equipments, for strain maintenance and quality control glassware, plastic ware etc (Rs. lakh)

Sl.	Item	Quantity required(No)	Rate	Amount
1	Vertical Autoclave 600x350 mm	2	0.8	1.600
2	[illegible]	1	0.3	0.300
3	Refrigerator 300 lit	2	0.3	0.600
4	BOD Incubator 290 lit	2	1.2	2.400
5	Laminar air flow work station , working table size 3' x 2'	2	1.5	3.000
6	Rotary shaker (capable of holding 25no., flasks of 100- 500 ml capacity)	2	1.25	2.500
7	Binocular research microscope with phase contrast attachment (MOST IMPORTANT) having turret condenser and matching phase objectives of 10x, 40x and 100x magnification, 1 0x wide field eye pieces and telescopic centering eyepiece.	1	2	2.000
8	pH Meter(Micro Processor based)	1	0.3	0.300
9	Small oil free air compressor	2	0.5	1.000
10	Airconditioners 1.5 ton split type	4	0.3	1.200
11	Miscelleneousequipments and tools such as colony counter, balances, microliter pipettes etc	-	LS	2.500
12	Glassware and plastic ware aids		LS	2.200
13	Centrifuge	1	0.5	0.50
14	Deep Freeze – 300 lit capacity (For culture storage or culture Bank)	1	0.4	0.400
	Total for A			**21.00**
B. Fermentation and biomass up-scaling equipments and machines				
1	Mother culture glass vessels/ fermenters 1-2 lit cap.	30	0.05	1.500
2	Stainless steel seed fermenters 50 lit cap., aerated, stirred type with auto pH, aeration and temperature control	4	4.0	16.000
3	Stainless steel fermenters, aerated, stirred type, with auto pH, aeration and temperature control. Total vessel cap 750 lit and working cap. 500 lit.	3	10.0	30.000
4	Air compressor oil free type, 2,000 lit air/min cap with moisture cum oil trap and filters	2	2.0	4.000
5	Chiller 1 ton cap	2	2.0	4.000
6	Automatic steam generator 100 kg cap.	1	6.5	6.500
7	Fittings, pipe lines, filters, miscellaneous items		LS	3.000
	Total for B			**65.000**
C. Product handling, packaging equipments and machines and storage equipments				
1	Autoclave Horizontal 2x2x4 ft chamber size	1	6.0	6.00
2	Automatic bottle filling machine with necessary conveyor system and laminar air-flow provision at filling chamber	1	13.5	13.500
3	Capping and labeling machines and miscellaneous items	1	5.0	5.000
4	Miscellaneous fittings, electrical installation, other tools and equipments		LS	3.000
5	Air conditioners for storage	4	0.5	2.000
6	Peddal Mixer or Ribbon Blender	1	0.5	0.500
7	Generator (DG Set of 65 KVA)	1	4.0	9.000
	Total for C			**39.00**
Grand total for A+B+C				**125.00**
Grant in aid for 200MT/annum production capacity		**176.00 lakh**		

Project Outlay – Model Project on 200 TPA / Shift Bio-fertiliser Unit.

(Rs.lakh)

Sl.No.	Particulars	Quantity	Rate	Cost
Land and Building				
1	Cost of Land	2000 sq.mt.	0	0
2	Land Levelling	Lumpsum	Lumpsum	1.000
3	Fencing and Compound Wall and Gates	Lumpsum	Lumpsum	5.000
4	Civil Structure	5,000 sq ft	600/sq ft	30.000
	Sub Total			**36.000**
Plant, Machinery and Equipments				
5	**As per Annexure I**			**125.00**
Other expenses capitalised				
6	Interest during gestation/ construction period and first year expenses capitalised		Lumpsum	5.0
14	Margin money for working capital			5.0
15	Preliminary and Pre-op. Expenses		Lumpsum	5.0
16	Total Project outlay			176.00
	Say			**176.00**

ANNEXURE-IV

List of Equipments and Plant and Machinery For Setting up New Biofertilizer and organic fertilizer (organic manures) Quality Control Laboratory for Capacity of 1000 samples / year (Essential equipments, for strain maintenance and quality control glassware, plastic ware etc (Rs. lakh)

S.No.	Item	Quantity required(No)	Rate	Amount
1	Vertical Autoclave 600x350 mm	2	0.8	1.600
2	m	2	0.6	1.200
3	Refrigerator 300 lit	1	0.3	0.300
4	BOD Incubator 290 lit	2	1.2	2.400
5	Laminar air flow work station , working table size 3' x 2'	2	1.5	3.000
6	Rotary shaker (capable of holding 25no., flasks of 100- 500 ml capacity)	2	1.25	2.500
7	Binocular research microscope with phase contrast attachment (MOST IMPORTANT) having turret condenser and matching phase objectives of 10x, 40x and 100x magnification, 10x wide field eye pieces and telescopic centering eyepiece.	1	2.20	2.200
8	pH Meter(Micro Processor based) and conductivity meter	1 each	0.3	0.600
9	Small oil free air compressor	2	0.5	1.000
10	Airconditioners 1.5 ton split type	4	0.3	1.200
11	Miscelleneousequipments and tools such as colony counter, balances, microliter pipettes/Deionizer etc	-	LS	4.000
12	Glassware and plastic ware aids		LS	2.500
13	Centrifuge 15,000 rpm	1	1.50	1.50
14	ICP	1	30	30.00
15	Auto N-Analyzer	1	10.00	10.00
16	Moisture analyzer	1	2.0	2.0
17.	Chemicals etc	LS	-	2.50
18	Assistance for hired manpower on contract	LS		10.00
19	Computer with appropriate software	1	1.50	1.500
20	Contigencies	LS	-	5.000
	Total for A			**85.00 lakh**

For strengthening of existing BOQCL assistance shall be limited to Rs. 45.00 lakh. Any of the equipments mentioned above shall be the admissible items for strengthening.

Chapter 6

Paramparagat Krishi Vikas Yojana (PKVY)

Paramparagat Krishi Vikas Yojana (PKVY)

6.1 **Objective** Organic agriculture is a production of agricultural products free from chemicals and pesticides residues by adopting ecofriendly low cost technologies. "Paramparagat Krishi Vikas Yojana" is an elaborated component of Soil Health Management (SHM) of major project National Mission of Sustainable Agriculture (NMSA). Under PKVY Organic farming is promoted through adoption of organic village by cluster approach and PGS certification (Annexure-I).

6.2 Expected Outcome

The Scheme envisages:

6.2.1. Promotion of commercial organic production through certified organic farming.

6.2.2. The produce will be pesticide residue free and will contribute to improve the health of consumer.

6.2.3. It will raise farmer's income and create potential market for traders.

6.2.4. It will motivate the farmers for natural resource mobilization for input production.

ANNEXURE-I

Paramparagat Krishi Vikas Yojana (PKVY)

S.No	Component	Pattern of Assistance (in Rs)				Remarks
1	Adoption of PGS certification through cluster approach					State Governments shall propose to Project Sanctioning Committee an action plan for number of clusters for PGS certification
		1st year	2nd year	3rd year		
1.1	**Mobilization of farmers / local people to form cluster in 50 acre for PGS certification**	-	-	-		For adoption of organic farming through cluster approach under Participatory Guarantee System (PGS) certification, assistance will be provided for three year term.
1.1.1	Conducting of meetings and discussions of farmers in targeted areas to form organic farming cluster @ Rs. 200 / farmer	10000	0	0		State Government will identify targeted 50 acre area of cultivated fields of farmer for formation of cluster. State Government will conduct meeting of farmers of the targeted area to facilitate to form one cluster.
1.1.2	Exposure visit to member of cluster to organic farming fields @ Rs. 200 / farmer	10000	0	0		After formation of cluster, an exposure visit for members will be arranged by State Government to create more practical knowledge and awareness about organic farming.
1.1.3	Formation of cluster, farmer pledge to PGS and Identification of LRP from cluster	0	0	0		State Government will identify one lead resourceful person (LRP) from the cluster who represents the cluster and becomes Trainer of Trainer (TOT)

1.1.4	Training of cluster members on organic farming (3 trainings @ Rs. 20000 per training)	60000	0	0		State Government in association with experts of NCOF/RCOF/ICAR/ SAUs will organize three (3) trainings separately for members of cluster within early 6 mont hs of project 1. 1st Training will be given on following; i. Raising seedlings/ plants in nurseries ii. Organic seed production 2. 2 nd Training on manure and composting; i. Green manure plantation and bund planting, ii. Production and use of compost and vermicompost. 3. 3 d Training on Biofertilizer and Biopesticides; i. Production and use of Panchagavya, Beejamruth, Jeevamruth etc. ii. Use of biofertilizer (seed/seedling treatment, seed treatment, drip irrigation, spraying, handling of biofertilizers and biopesticides.
	Total	**80000**	**0**	**0**	**80000**	

S.No	Component	Pattern of Assistance (in Rs)			Remarks	
1.2	**PGS Certification and**	**1st year**	**2°d year**	**3rd year**		
1.2.1	Training on PGS Certification in 2 days @ Rs. 200 per LRP	400	0	0		Training will be organized for 20 LRPs for two days on following i. Registration of farmers ii. Organic production and process documentation iii. Preparation of annual action plan iv. Maintenance of meeting and training register, data management. v. Administration, roles and responsibility of cluster in promotion of PGS certified organic farming.
1.2.2	Training of Trainers (20) Lead Resource Persons@ Rs. 250 /day/ cluster for 3 days.	0	750	0		State Government in association with NCOF/RCOF/ICAR/ SAUs will organize training for three days for LRPs on the following: i.Soilsample collection and quality control ii.Packaging, labeling, branding and marketing of organic produce iii. Community infrastructure required for preparation of biopesticides and biofertilizers
1.2.3	Online Registration of farmer @ Rs.100 per member cluster x 50	0	5000	5000		Registration of farmer in PGS certification system with details like farm history, cropping pattern followed, inputs used, farmer pledge, meetings, trainings and others details etc., for PGS certification. Data entry operator and consultant appointed at each cluster will be responsible for maintaining data

1.2.4	Soil sample collection and testing (21 samples/year/cluster) @ Rs.190 per sample for three years	3990	3990	3990		LRPs will be responsible for collecting soil samples from both agricultural and horticultural fields. They will be tested by State/Central soil testing laboratories / ICAR / SAUs laboratories. Based on the soil test results suitable package and practices o f organic farming will be recommended to members of a cluster.
1.2.5	Process documentation of conversion into organic methods, inputs used, cropping pattern followed, organic manures and fertilizer used etc., for PGS certification @ Rs.100 per member x 50	5000	5000	5000		The data entry operator and consultant will maintain both hard and soft copies of details of packages and practices and PGS certification process of individual farmer at office of cluster.
1.2.6	Inspection of fields of cluster member @ Rs. 400 /inspection x 3 (3 inspections will be done per cluster per year	1200	1200	1200		LRPs of cluster will be responsible for inspection of each individual farmer's field for effective implementation of PGS certification. The details of observations on farming practices will be recorded and farmer diary will be maintained by LRPs. He will also guide each farmer about various practices of organic farming and also record it in diary.
1.2.7	Residue analysis of samples in NABL (8 samples per year per cluster) @ Rs. 10,000/ sample	0	80000	80000		LRP members through association of NCOF/RCOF will collect organic samples from selected field. The analysis of samples for pesticides and chemical residues will be don e by sending samples to NABL laboratories.

1.2.8	Certification Charges	0	2000	0		PGS certification will be given on the basis of inspection, documentation and sample testing.
1.2.9	Administrative expenses for certification	26150	16900	16900		Assistance to maintain office of a cluster will be given to meet the expenses of rental charges of office, salary of coordinator and data entry operator, office furniture, computer, printer, stationeries etc.
	Total	**36740**	**114840**	**112090**	**263670**	
S.No	**Component**	**Pattern of Assistance (in Rs)**				**Remarks**
2	**Adoption of organic village for manure management and biological nitrogen harvesting through cluster approach**					**State Governments shall propose to Project Sanctioning Committee an action plan for adoption of organic village**
2.1	**Action plan for Organic Farming for one cluster**	**1st year**	**2nd year**	**3rd year**		State Government shall be provided assistance æs Grant-in-Aid for adoption of organic villages
2.1.1	Conversion of land to organic @ Rs.1000/acre x 50	50000	50000	50000		Support for conversion of conventional land to organic land through preparation of annual action plan on the basis of soil testing and adopting suitable organic cultivation practices , buffering of land (making of pits / hedges around land) to prevent contamination.

2.1.2	Introduction of cropping system; Organic seed procurement or raising organic nursery @ Rs.500/acre/year x 50 acres	25000	25000	25000		Annual action plan will be prepared and suitable organic cropping system based on soil testing will be introduced. Each farmer member will be assisted for land preparation, plant protection, labor charges and other materials required for raising organic seeds / planting material in the farm field.
2.1.3	Traditional organic Input Production units like panchagavya, Beejamruth and Jeevamruth etc. @ Rs.1500 /unit / acre x 50 acre	75000	0	0		Each farmer member will be assisted for procurement of materials required (glass, plastic bottles, drum, filters, sprayers, other utensils etc) for construction and operation of organic input production units.
2.1.4	Biological Nitrogen Harvest planting (Gliricidia, Sesbania, etc) @ Rs. 2000/acre x 50 acre	50000	25000	25000		Each farmer member will be assisted for procurement of seeds, preparation of land /pits, labor etc for plantation of nitrogen harvesting plants.
2.1.5	Botanical extracts production units (Neem cake, Neem oil) @ Rs.1000/unit/ acre x 50 acre	50000	0	0		Each farmer member will be assisted for procurement of materials required (glass or plastic bottles, drum, filters, Sprayers, other utensils etc) for construction and operation of botanical extract production units.
	Total	250000	100000	100000	450000	

S.No	Component	Pattern of Assistance (in Rs)				Remarks
2.2	**Integrated Manure Management**	**1st year**	**2nd year**	**3rd year**		
2.2.1	Liquid Biofertilizer consortia (Nitrogen fixing / Phosphate Solubilizing/ potassium mobilizing biofertilizer) @ Rs. 500/acre x 50	25000	0	0		Each farmer member will be assisted for procuring liquid biofertilizer and its application to soil/seed to increase crop production.
2.2.2	Liquid Biopesticides (*Trichoderma viridae, Pseudomonas fluorescens, Metarhizium , Beaviourie bassiana, Pacelomyces,verticilliu m*) @ Rs. 500 /acre x 50	0	25000	0		Each farmer member will be assisted for procuring and application of liquid biopesticides for suppression of disease in crop plants.
2.2.3	Neem Cake/ Neem Oil @ Rs.500/acre x 50	0	25000	0		Each farmer member will be assisted for procuring and application of Neem Cake/ Neem Oil for control of pest and disease.
2.2.4	Phosphate Rich Organic Manure / Zyme Granules @ Rs. 1000/acre x 50	50000	0	0		Each farmer member will be assisted for procuring and application of Phosphate Rich Organic Manure / Zyme Granules to soil to meet phosphorus / Zinc deficiency in soil.
2.2.5	Vermicompost (size 7'x3'x1') @ Rs.5000/ unit x 50	250000	0	0		Each farmer member will be assisted for procurement of earth worms, preparation of pits, construction of brick wall, labour charges and other raw materials required for construction of vermi composting units.
	Total	**325000**	**50000**	**0**	**375000**	

2.3	**Custom Hiring Centre (CHC) charges**	**1st year**	**2nd year**	**3rd year**		**Remarks**
2.3.1	Agricultural implements (As per SMAM guidelines) i. Power tiller ii. Cono weeder iii. Paddy thresher iv. Furrow opener v. Sprayer vi. Rose can vii. Top Pan balance	15000	15000	15000		Financial assistance will be given for a cluster to manage their members to pay the charges of custom hiring centre for utilizin g the agricultural implements (Power tiller, Cono weeder, Paddy thresher, Furrow opener, Rose can, Top balance) for processing / grading / cleaning / threshing of organic produce and land preparation etc ., it is assumed that CHC under SMAM is sanctioned. State Government may give any additional financial support under SMAM.
2.3.2	Walk-in tunnels for horticulture (As per guidelines of MIDH)	0	0	0		State Government may give any additional financial support under MIDH
2.3.3	Cattle shed / poultry /piggery for animal compost (As per Guidelines of Gokhul Scheme)	0	0	0		State Government may give any additional financial support under Gokhul Scheme.
	Total	**15000**	**15000**	**15000**	**45000**	
2.4	**Packing, Labeling and Branding of organic products of cluster**	**1st year**	**2nd year**	**3rd year**		**Remarks**
2.4.1	Packing material with PGS logo + Hologram printing @ Rs. 2500 / acre x 50	0	62500	62500		Financial assistance will be given for procuring packing material, preparation of labels, Holograms, printing etc., and branding of organic products. It will be managed by LRPs of cluster. PGS-India Green Logo used for area under conversion and PGS India Organic logo used for completely converted organic area. The labeling may be

						designed consisting of name of cluster, district and unique product packing used for branding organic produce.
2.4.2	Transportation of organic produce (Four wheeler, 1.5 tone load capacity) @Rs. 120000 max. assistance for 1 cluster	0	120000	0		Financial assistance will be given for collection and transportation of organic produce to market places. The funds will also be utilized for purchasing four wheel transport vehicle.
2.4.3	Organic Fairs (maximum assistance will be given @ 36330 per cluster)	0	36330	0		Financial assistance will be given for a cluster for organizing organic fair to meet the expenses of arranging stalls, rent charges, labor charges, publicity material, transportation and management of event.
	Total	**0**	**218830**	**62500**	**281330**	

Chapter 7

Continuation & strengthening of National Centre of Organic Farming (NCOF)

Continuation & strengthening of NCOF

7.1 National Centre of Organic Farming (NCOF) will act as a national centre and its regional centres will coordinate all activities required for promotion of organic farming in the country through technical capacity building of all the stakeholders including human resource development, transfer of technology, promotion and production of quality organic and biological inputs, awareness creation and publicity through print and electronic media. Statutory quality control of 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, authentication/ distribution of strains and technology and bringing remaining organic inputs under quality control regime. Capacity building for organic input resource management, technology development through support to research and low cost certification system known as "Participatory Guarantee System".

72 Certificate Courses:

7.2.1 Certificate Course on organic farming–To create first generation organic agriculture extension workers and field workers in the field of organic farming and to create a rural force of soil testing entrepreneurs through rapid soil testing kits it is propose to conduct one month certificate courses on organic production practices, on farm input management, certification process (third party and PGS both), documentation, post harvest processing, storage and marketing. The course will be open for rural youth having Degree/Diploma in agriculture/Science with Biology; SAUs/Educational institutes can also sponsor their undergraduate students for ten such courses (two per year) will be organized at NCOF, Ghaziabad.

7.2.2 Training/Refresher course on production and quality control of organic inputs – To update the analytical skills, sample collection and handling requirements of State Government officers/personnel from organic inputs production units on quality analysis requirement as per FCO for biofertilizers and organic fertilizers and to transfer appropriate production technology to personals associated with the production of organic and biological inputs, 10 days training/refresher courses are proposed.

7.2.3 Trainers trainings – To create a cadre of organic agriculture trainers it is propose to organize five days customized trainers training courses for Fertilizer inspectors, Senior level extension officers, KVK trainers, NGO trainers, PGS Regional Council members and technical staff of production and quality control units etc. on FCO, certification systems, PGS operational strategy, organic management, production and quality control of organic inputs.

7.2.4. Training of Field Functionaries/Extension Officers on Organic Farming, PGS-India programme, soil health management and for input dealers on quality control- As organic farming and sustainable soil health management practices are primarily on farm management practices, to disseminate appropriate management protocols to field functionaries and extension officers, working in both Government and NGO sector, two days training courses are proposed.