

NATIONAL MISSION FOR SUSTAINABLE AGRICULTURE: A TIME BOUND PROGRAMME FOR AGRICULTURAL DEVELOPMENT IN INDIA

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Abstract

Agriculture still plays a crucial role in India's economic development. About two-third of India's population is, by and large, dependent on agriculture and allied activities. The development of agriculture and allied sectors is necessary to achieve the objectives of equitable and inclusive growth with social justice. Agricultural development depends upon the availability of basic infrastructure such as power, roads, railways, irrigation, credit, marketing and warehousing facilities, communication and telecommunication facilities. The government launched various nationwide and time bound programmes and schemes for sustainable development of agriculture. National Mission for Sustainable Agriculture (NMSA) is one of the eight missions launched under the National Action Plan on Climate Change. The NMSA aims at promoting sustainable agriculture through 17 deliverables and focuses on 10 key dimensions of agriculture. These dimensions were embedded during 12th Plan into missions or programmes through the restructuring and convergence. Major components of NMSA are: Rainfed Area Development, Soil Health Management, Pradhan Mantri Krishi Sinchayee Yojana, Sub-Mission on Agro-forestry, Integrated Nutrient Management, Soil Health Management, Balanced Use of Fertilisers, Soil Health Card Scheme, organic farming, Paramparagat Krishi Vikas Yojana, Development for North Eastern Region, Natural Resource Management Development of Management Information System, Watershed Development Fund, World Bank Assisted Projects, Sodic Land Reclamation and Development Project, Crop Diversification Project in Himachal Pradesh and Reclamation of Problem Soils. Due to government support and provision of adequate funds, the progress of National Mission for Sustainable Agriculture has been satisfactory to achieve the objective of promoting sustainable agriculture.

Keywords: Sustainable development, Basic infrastructure, Irrigation, Soil health, Information management system, Watershed development.



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Introduction

Agriculture development is a pre-requisite for the development of rural areas Agriculture is source of livelihood for more than 70% of Indians in the rural areas. It contributes around 18% to the total Gross Domestic Product of India. It provides employment to 54.6% population, contributes 17% to Gross Value Added (GVA) and 18% to Gross Capital Formation (GCF), and, earns 33% foreign exchange. The development of various agro-based

and other industries depend on the supply of raw materials and demand for machinery, fertilizers, chemicals and other consumer goods. The growth rate of the agriculture in India mainly depends on the rainfall.

Several schemes and programmes have been implemented by the government for the development of agriculture sector. Even today, various steps are taken by the government such as Soil Health Card Scheme to improve soil fertility, Pradhan Mantri Krishi Sinchan Yojana to enhance access to irrigation and water efficiency, Unified National Agriculture Marketing to boost income of farmers, Paramparagat Krishi Vikas Yojana to support organic farming and Pradhan Mantri Fasal Bima Yojana to mitigate risks in agriculture. The very purpose of all these schemes is to achieve sustainable development of agriculture.

Objectives of the Study

- (1) To explain the role and importance of agriculture in economic development of India.
- (2) To study the objectives of the National Mission for Sustainable Agriculture.
- (3) To find out the objectives and progress of different sub-schemes under NMSA.
- (4) To examine the achievements and failures of National Mission for Sustainable Agriculture.

Research Methodology

The present paper is an exploratory and descriptive study. The study is exclusively based on secondary data and information which have been collected from various published sources such as Annual Reports of Department of Agriculture and Co-operation and Farmers Welfare, Economic Surveys, research articles and papers, journals and websites. Wherever necessary available data is analysed by using simple statistical tools.

National Mission for Sustainable Agriculture(NMSA)

National Mission for sustainable agriculture(NMSA) was made operational since 2014-15 as one of the eight missions outlined under the National Action Plan on Climate Change. The aims of this mission was to make agriculture more productive, sustainable, remunerative and climate resilient. It can be achieved by promoting local specific integrated farming system, soil conservation measures, comprehensive soil health management, efficient water management practices and mainstreaming rain fed technologies.

Major Components of NMSA

The NMSA aims at promoting sustainable agriculture through 17 deliverables and focuses on 10 key dimensions of agriculture. These dimensions were embedded during 12th Plan into

missions or programmes through the restructuring and convergence. Major components of NMSA are as follows:

Rain fed Area Development (RAD)

This component focuses on Integrated Farming System for increasing productivity and income from rainfed agriculture for sustaining livelihood and also minimizing risks. It includes livestock, horticulture, dairy, fishery, agro-forestry, apiculture, etc. It enables farmers to maximize farm returns and also to mitigate the adverse impact of floods, droughts or any other extreme weather conditions. An additional income can be earned from allied activities at the time of crop failure.

Rainfed Area Development has been implemented in 27 states in India since 2016-17. Under RAD, Integrated Farming System is promoted. Along with regular cropping system, other activities like livestock, agroforestry, plantation, dairy, fishery, horticulture, and other activities are undertaken in order to improve the income of the farmers in rainfed areas. The area covered by various activities based farming system under Integrated Farming System during 2016-17 was about 33000 ha. And Rs. 157 crore were allocated to states for implementing this programme.

Soil Health Management

It aims at promoting locations and crop specific sustainable soil health management. It includes residue and moisture management, organic farming practices, use of soil fertility maps, macro-micro nutrient management, proper land use based on type of land.

Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)

Pradhan Mantri Krishi Sinchayee Yojana has been implemented since 2015-16 by three ministries viz., Ministry of Water Resources, RD and GR with an outlay of Rs. 50,000 crore sanctioned for a period of 5 years. The objective of this programme is to develop a long term permanent solution to mitigate the effects of scarcity and droughts. The motto of the scheme is “ Water to Every Field.” The scheme has been launched by merging various ongoing schemes Accelerated Irrigation Benefit Programme, River Development and Ganga Rejuvenation, Integrated Watershed Management Programme and On Farm Water Management. Major objectives of PMKSY are to increase investment in irrigation sector, expand area under assured irrigation, create protected irrigation by using rainwater like harvesting, conservation and storage, improve on farm water use efficiency, reduce wastage of water, promote sustainable water conservation practices, enhance the use of precision irrigation and other water saving technologies.

As per guidelines of the scheme, two committees viz. National Steering and National Executive Committee under the chairmanship of Prime Minister and Chairman of NITI Aayog have been constituted. Per Drop More Crop component of PMKSY is being implemented by the DoACFW to enhance water use efficiency and drought mitigating measures. It has two sub components viz. Microirrigation and other interventions. The objective of this mission (PMKSY) to complete 99 major and medium on going projects with irrigation potential of 76 lakh ha. Funds are made available through NABARD for completion of these irrigation projects including command area development. The Ministry of Water Resources is administering and monitoring this mission. During 2016-17, about Rs.1640 crore has been utilized to cover 3.54 lakh ha. area under micro irrigation. The website of PMKSY has been operationalized with MIS with integrating and collecting information from various ministries for PMKSY. About 584 district irrigation plans have been prepared which are crucial for planning and implementation of the scheme

Sub-Mission on Agro-forestry

The National Agro-forestry Policy announced in 2014 gave specific focus on development of agro-forestry by bringing coordination convergence and synergy among various components of agro-forestry scattered in various programmes, schemes and agencies. As per recommendations of NAFP a Sub-Mission on Agro-forestry was approved by GOI with an outlay of Rs. 935 crore in 2016-17. The objectives of SMAF are:

- To encourage tree plantations with crops and livestock to improve productivity, employment, income generation and livelihood of rural households, particularly small and marginal farmers.
- To ensure supply of quality seeds and planting material like seedlings, clones, hybrids, and improved varieties.
- To popularise appropriate agro-forestry models and practices which are suitable to different agro-climatic and ecological regions and land use conditions.
- To create database, information and knowledge support for agro-forestry.
- To provide extension and capacity building support to this sector.

Soil Health Management (SHM)

Soil Health Management (SHM) is one of the most important schemes under National Mission for Sustainable Agriculture. various aims of this scheme are to promote Integrated

Nutrient Management through judicious use of chemical fertilizers in conjunction with organic manures and bio-fertilizers for improving soil productivity; strengthening of soil and fertilizer testing facilities for improving soil fertility, ensuring quality control requirements of fertilizers, bio fertilizers and organic fertilizers, up-gradation of skill and knowledge of soil testing laboratory staff, extension staff and farmers through training and demonstrations, promoting organic farming practices, etc. The components under Soil Health include trainings for fertilizer dealers, inspectors and laboratory staff, foreign nationals, setting up of new static and Mobile Soil Testing Laboratories, strengthening of existing STLs, setting up of new Fertilizer Quality Control Laboratory, strengthening of FQCL and trainings and demonstrations on balanced use of fertilizers.

The components under organic farming include trainings on organic farming, refresher courses for analysts, field functionaries, trainers training, publishing of News Letters on organic farming and bio-fertilizers, setting up of agro waste compost production units, setting up of bio-fertilizer and organic fertilizer production units and quality control laboratories, promotion of organic inputs, training on organic farming, etc.

Under SHM component, setting up of 277 Soil Testing Laboratories, 3 Mobile STLs, Strengthening of 38 STLs, Strengthening of 8 FQCLs, 709 trainings, setting up 6308 Mini Soil Testing Labs, etc., have been approved during 2016-17.

A new scheme "Soil Health Card" has been approved by the government to provide 14 crore Soil Health Cards to the farmers in the country. SHC provides information to farmers on soil nutrient status of their soil and recommended dosage of nutrients for improving soil health and its fertility. These cards will promote balanced and integrated use of plant nutrients. Under the scheme, soil health card are issued every 2 years for all land holders. Till 2016-17, 240 lakh soil samples were collected and 445 lakh soil health cards were issued by states.

Balanced Use of Fertilisers

Ministry of ACFW has been promoting soil test based balanced and judicious use of chemical fertilisers, biofertilizers and locally available organic manures such as farm yard manure, vermi-compost and green manure to enhance/maintain soil health and its productivity.

In order to promote use of balanced fertiliser, government has been providing financial grant for setting up / strengthening of soil testing laboratories, trainings and demonstrations to office staff, farmers and others on balanced use of fertilizers and also promotion of

application of micro-nutrients. Till 2016-17, there are 1414 soil testing laboratories with analyzing capacity of 1.95 crore samples per annum.

Soil Health Management (SHM)

Ministry of ACFW has been providing financial assistance on various components under Soil Health Management such as setting up new static/mobile/mini Soil Testing laboratories and strengthening of existing STLs, setting up of new Fertilizer Quality Control Laboratories and strengthening of existing state FQCLs, promotion and distribution of micronutrients, training of STL staff, extension officers, farmers, field functionaries and field demonstrations on balanced use of fertilizers, etc. Total funds of Rs. 44.40 crore have been released during 2016 under Soil Health Management component.

Soil Health Card Scheme

Soil Health Card Scheme has been approved by the government during 12th Plan period. This scheme provides farmers information on soil analysis and recommends an appropriate dosage of nutrients to be applied for cultivation of different crops. Soil analysis is performed in accordance with uniform sampling techniques and procedure. Soil Health Card are issued at 2 years intervals to all the 14 crore land holdings in the country.

Organic Farming

Ministry of ACFW is implementing INM & organic farming component under National Mission for Sustainable Agriculture. The financial assistance on various components under this scheme is provided such as setting up of mechanized fruit and/ or vegetable market waste and agro waste compost production units, setting up of state of art liquid/carrier, setting up of bio-fertiliser and organic fertiliser testing laboratory or strengthening of existing laboratory, promotion of organic inputs on farmer's fields, support to research for development of organic package of practices specific to cropping system and setting up of separate Organic Agriculture Research and Teaching Institute.

Paramparagat Krishi Vikas Yojana

Paramparagat Krishi Vikas Yojana (PKVY) is one of the schemes under National Mission for Sustainable Agriculture (NMSA) to promote certified organic cultivation in 2 lakh ha. covering 10,000 clusters in the country. Under this scheme, financial assistance of Rs 50,000 per ha. per farmer is provided in 3 years.

Financial assistance is given to various clusters for mobilization of farmers, organic seeds, quality control, harvesting biological nitrogen, etc., PKVY includes various sub components, for instance, mobilization of farmers like training of farmers and visits by farmers, quality control such as soil sample analysis, documentations and inspection of fields, conservation practices including transition to organic farming, procurement of organic inputs, organic seeds and biological nitrogen harvest planting, integrated manure management like procurement of liquid bio fertilizer, bio pesticides, neem cake, vermin compost and phosphate rich organic manure, custom hiring centre charges to hire implements, labeling, packaging and transport assistance and marketing through organic fairs. During 2012-13 to 2016-17, total funds released under Paramparagat Krishi Vikas Yojana was Rs. 196 crore.

Watershed Development Fund

The Watershed Development Fund was created in the year 2000 with an amount of Rs. 200 crore which was contributed Rs.100 crore each by the DAC and NABARD. The management of this corpus is vested with the NABARD. The objective of the WDF is to promote participatory watershed development involving various stakeholders' viz., watershed community, state government departments, banks and NGOs. This scheme was initially implemented in 31 distressed districts of A.P., Karnataka, Kerala and Maharashtra 2006. It was decided to implement WDF in all districts of 13 states through WDF. During 2015-16, Rs. 791 crore had been released to develop 764 watershed projects in distressed districts of 4 states, where as Rs. 242 crore were released for the development of 506 watershed projects in non-distressed districts of 16 states.

Development of Watershed Models through ICRISAT, Hyderabad and CSWCRTI, Dehradun

There are various agro ecological and agro climatic regions in the country having different dimensions and climatic conditions. About 18 Model Watershed Projects were created to address bio-physical and socio-economic dimensions of specific agro-climatic conditions and to develop an appropriate technologies for achieving maximum development under watershed programmes. Of these 18 MWP, 9 projects have been assigned to Central Soil & Water Conservation Research and Training Institute (CSWCRTI), Dehradun and remaining 9 projects were assigned to International Crop Research Institute for Semi Arid Tropics (ICRISAT), Hyderabad. These watershed projects are models revealing the successful use of technologies which would be used in other national and state watershed projects. The

CSWCRTI and ICRISAT received Rs. 3.0 crore and Rs. 9.25crore respectively during 2015-16.

Externally Aided Projects

(A) World Bank assisted Projects

The DAC&FW is involved in supervision, coordination and monitoring of World Bank assisted Projects in various states like Himachal Pradesh, Assam, Rajasthan and Uttar Pradesh. Assistance for these projects is given directly by the World Bank to these state governments. These projects are as follows:

(1) Himachal Pradesh Mid-Himalayan Watershed Development Project

The aims of this project are to prevent degradation of soils, protection of biodiversity, increasing productivity of livestock, improving accessibility to rural areas, institutional strengthening, watershed development and management, enhancing livelihood opportunities, project management and coordination. The total cost of the project is estimated at Rs. 510 crore covering 602 gram panchayats in 10 districts. Till 2017, about Rs. 115crore has been utilized under this project.

(2) Rajasthan Agricultural Competitiveness Project

The objective of this project is to demonstrate the feasibility of a range of agricultural development approaches by integrating technology, organization, institution and market innovations, where each selected regions/ districts have different agro-ecological, climatic, water resource and socio-economic conditions. The total project cost to develop 20 clusters is Rs 832.5 crore and the expenditure incurred is Rs. 20 crore for preparatory work of this project.

(3) Sodic Land Reclamation and Development Project in Uttar Pradesh

The projects aims at reclamation and development of 3.10 lakh ha. area with the help of financial and technical assistance from World Bank. Though total estimated cost of the project is Rs. 2000 crore, the World Bank provided Rs. 1224 crore for reclamation and development of 1.35 lakh ha. degraded land. Till 2017, more than Rs. 1000 crores have been spent on this project.

(B) Crop Diversification Project in Himachal Pradesh with JICA

Crop Diversification Project in Himachal Pradesh has been implemented with an estimated cost of Rs. 321 crore. The financial assistance for this project has been given by Japan International Cooperation Agency (JICA). Overseas Development Assistance agreement was signed in 2011 for implementation of various interventions for crop diversification in five
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selected districts viz., Kangra, Hamirpur, Bilaspur, Mandi and Una. During, 2016-17, more than Rs. 162 crore has been utilized for various interventions for crop diversification.

National Rainfed Area Authority

National Rainfed Area Authority was established as an Advisory Body for formulation of policies and programmes and their monitoring related to degraded and rainfed areas. The authority is also provides technical assistance in planning and implementation of rain water harvesting, its conservation, watershed development, its management and such other programmes in rainfed areas under PMKSY. Six studies regarding watershed and water management have been completed and the recommendations of these studies are accepted by the government. These studies include: Preparation of State Specific Technology Manual for Watershed Development in Rajasthan, Preparation of State Specific Manual for Watershed Development in Tamil Nadu, Pilot Study on Capitalizing Opportunities of Rice Fallow for Sustainable Livelihood Development in the State of Jharkhand, Pilot Study on Capitalizing Opportunities of Rice Fallow for Sustainable Livelihood Development in the State of Chhattisgarh, Inter institutional, Livestock Centric Intervention for livelihood improvement in arid regions in Nagore Districts, Rajasthan and Agro-forestry Study on Identification of extent of forest lands and their productive status in 275 districts of the country by Forest Research Institute, Dehradun.

The National Institute of Rural Development and Panchayati Raj has been providing training to IAS and IFS officers for formulation of District Irrigation Plan under PMKSY. More than 200 IAS and IFS officers of different states have been trained by organizing eight training programmes. During 2016-17, Rs 1.99 crore were allocated and Rs. 1.35 crore has been utilized for various training and other activities.

Reclamation of Problem Soils

Reclamation of Problem Soils is one of the sub scheme of the RKVY. About 243 lakh hectares area is reported as problem soils of which alkali soil, saline soil and acid soil is 37 lakh ha., 27.3 lakh ha. and 179.3 lakh ha. respectively. It is quite necessary to reclaim this problem soils to sustain soil fertility and productivity. The department has launched Reclamation of Problem Soils as sub scheme of the RKVY on Pilot basis in 15 states where the extent of problem soils is very large. A sum of Rs.50 crore has been sanctioned by the government for the year 2016-17 and Rs. 16 crore were utilised.

Conclusion

The government of India has launched and implemented several schemes and programmes for the development of agriculture sector. National Mission for Sustainable Agriculture is such a programme launched in 2014-15 for promoting sustainable agriculture through 17 deliverables and focuses on 10 key dimensions of agriculture. The objective of this mission is to make agriculture more productive, sustainable, remunerative and climate resilient. Though the progress made under different components of NMSA seems to be satisfactory, there is still scope to achieve higher targets. The Government has to make all efforts like provision of adequate funds, government full support, review and appraisal of achievements of various components under NMSA to achieve the goal of promoting sustainable agriculture in the country.

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