



GOVERNMENT OF ODISHA

ACTIVITY REPORT

2017 - 18



DEPARTMENT OF AGRICULTURE
& FARMERS' EMPOWERMENT



CII
Confederation of Indian Industry



SHRISHA
Mr.



କୃଷି ଓଡ଼ିଶା
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**ACTIVITY REPORT
OF
DEPARTMENT OF AGRICULTURE AND
FARMERS' EMPOWERMENT
DURING 2017-18
AND
PROGRAMMES FOR 2018-19**

**DEPARTMENT OF AGRICULTURE AND
FARMERS' EMPOWERMENT**



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ACTIVITIES OF AGRICULTURE DEPARTMENT DURING 2017-18 AND PROGRAMMES FOR 2018-19

1. INTRODUCTION

Odisha is an agrarian State. Agriculture is the lifeline of the State's economy as it provides employment to about 62 percent of total workforce of the State. The State has total geographical area of 155.71 lakh hectares of which total cultivated land is about 61.80 lakh hectares which constitutes about 39.69% of the total geographical area of the State. Small and marginal farmers constitute more than 90% of the farming community. From the physiographic point of view, the State is divided into four Zones, viz. (i) the Northern Plateau (ii) the Eastern Ghat zone (iii) the Central Table lands and (iv) the Coastal zone. On the basis of climate, soil, rainfall, topography and cropping patterns, the State has been delineated into 10 Agro-Climatic Zones. The natural resources endowment of the State is eminently suitable for a wide variety of food grains, cash crops, horticultural crops and offers immense scope for agricultural growth.

The State has taken several steps for the development of agriculture and allied sectors. In order to provide special emphasis growth and allocation of funds to these sectors, a separate Agriculture budget is being presented from 2013-14 thereby enhancing the budget outlay of agriculture & allied sectors from ₹ 7162 crore in 2013-14 to ₹14930 crore during 2017-18 and it has further been proposed to enhance to ₹16765 crore during 2018-19. With a view to empower farmers of the State, the Agriculture Department has been renamed



as Department of Agriculture and Farmers' Empowerment. In order to facilitate development of short term and long term plan and strategies for empowerment and overall development & growth of agriculture and allied sectors "Agriculture Cabinet" as a Committee of Cabinet has been constituted in the State.

Despite several hurdles like frequent occurrence of natural calamities with erratic monsoon and uneven distribution of rainfall, agricultural production has been increasing. In spite of the adverse conditions, the State could be able

to produce higher food grains and the State was awarded with the prestigious "**Krishi Karman Award**" for the fourth times during 2010-11, 2012-13, 2013-14 and 2014-15. The Government has formulated State Agriculture Policy 2013 to have a definite growth in Agriculture Sector by providing enhanced assistance to the farming community and other stakeholders of the State. Government is committed to usher in a sustainable and inclusive growth in the Agriculture Sector as the Sector is still the "mainstay" of Odisha's economy.



The DBT seed module which has been implemented from Kharif-2016 throughout the entire State has been rewarded with the award of appreciation under e-Governance category by the Computer Society of India. Further Govt of India has instructed all the State to replicate the PFMS mode of payment of DBT Seed.

2. BUDGETARY SUPPORT TO THE DEPARTMENT

2.1. The Department's elaborate field organization is supported by the Non-Plan budget of the State Government. Strategic interventions for increasing production and productivity of various crops and plethora of watershed development programmes are supported by budget provision mainly under various Centrally Sponsored Plan Schemes. Budgetary support in the form of back-ended subsidy for investment subsidy on private L.I.Ps (Deep Borewell, Dugwells, Shallow Tube wells and Surface lift points) under Jalanidhi –I & II and capital investment subsidy on Commercial Agro-Enterprises, Agro Service Centres and several other important programmes are provided under the State Plan. For a holistic development of Agriculture & allied sectors, the flagship scheme namely Rashtriya Krishi Vikas Yojana (RKVY) is being implemented in the State from the year 2007-08. Several central sector schemes are being implemented in the State that include National Food Security Mission (NFSM), National Mission for Sustainable Agriculture (NMSA), National Mission on Oilseed

and Oil Palm (NMOOP), National Mission on Agricultural Extension and Technology (NMAET), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Paramparagat Krishi Vikas Yojana (PKVY) etc. Four Sub Missions namely Sub Mission on Agricultural Extension (SMAE), Sub-Mission on Seed and Planting Material (SMSP), Sub Mission on Agricultural Mechanization (SMAM) and Sub Mission on Plant Protection and Plant Quarantine (SMPP) under National Mission on Agricultural Extension and Technology (NMAET), are also implemented in the State. The horticultural development activities are mainly taken up under a comprehensive scheme namely Mission for Integrated Development of Horticulture (MIDH). National Horticulture Mission, is implemented under MIDH. Except area expansion under fruit crops all other initiatives of NHM are being implemented in all districts of the State. Government have launched a scheme for development of horticulture in 6 Non-Mission Districts namely Bhadrak, Boudh, Jagatsinghpur, Jajpur, Kendrapada and Jharsuguda under the State Plan. Several other strategic interventions in horticulture are supported by State Plan. An ambitious watershed development programme is supported under Integrated Watershed Management Programme (IWMP). Keeping in view the re-charging of ground water through a large number of watersheds, efforts are being intensified for sustainable harnessing of groundwater in water deficit areas of the State to increase production and productivity of various crops. Fortunately, the State has very good reserves of ground water in many villages located in the rain-fed areas. The State Government is initiating all round efforts to help to stem the tide of agrarian distress.

2.2. During the year 2017-18, under Budget provision including supplementary, the Department received a Non-Plan Budget provision of ₹ 765.60 crore and a State Plan Budget of ₹ 3372.915 crore which includes ₹ 1659.575 crore for State Sector schemes and of ₹ 1713.34 crore provisions for both State Share and Central Share of Central Sector Schemes (CSS). The CSS budget provision includes ₹ 702.67 crore under Rashtriya Krishi Vikas Yojana (RKVY), ₹ 145.5191 crore under National Food Security Mission (NFSM), ₹ 84.26 crore under National Mission for Sustainable Agriculture (NMSA), ₹ 24.60 crore under National Mission on Oilseed & Oil Palm (NMOOP), ₹ 196.4558 crore under National Mission on Agricultural Extension & Technology (NMAET), ₹ 102.04 crore under National Horticulture Mission (NHM), ₹ 171.98 crore under Integrated Watershed Management Programme (IWMP), ₹ 233.22 crore for Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), ₹ 39.88 crore under World Bank assisted Neeranchal Project, ₹ 11.46 crore under Paramparagat Krishi Vikas Yojana (PKVY) etc. Further, Government of India have released ₹ 174.4123 crore under Rashtriya Krishi Vikas Yojana, ₹ 54.90 crore under NFSM, ₹ 101.2468 crore under NMAET, ₹ 13.60 crore under NMSA, ₹ 10.29165 crore under NMOOP, ₹ 46.87 crores under NHM, ₹ 48 crore under PMKSY, ₹ 94.48 crore under IWMP, ₹ 0.50 crore under World Bank Assisted Neeranchal Project etc.

2.3. For the year 2018-19, Department has proposed a Budget provision of ₹776.7877 crore under Administrative Expenditure. Besides, a provision of ₹ 3941.8763 crore has been proposed under Programme Expenditure which includes ₹ 1982.34 crore for State Sector Schemes and ₹ 1959.53 crore for Centrally Sponsored Scheme (CSS). The provisions for CSS include ₹750.00 crore under Rashtriya Krishi Vikas Yojana (RKVY), ₹161.53 crore for National Food Security Mission (NFSM), ₹ 80.00 crore under National Mission for Sustainable Agriculture (NMSA), ₹27.00 crore under National Mission on Oilseed & Oil Palm (NMOOP), ₹ 350.48 crore for National Mission on Agricultural Extension & Technology (NMAET), ₹ 103.53 crore under National Horticulture Mission (NHM), ₹ 155.20 crore under Integrated Watershed Management Programme (IWMP), ₹50.00 crore under World Bank assisted Neeranchal Project, ₹ 30.53 crore under Paramparagat Krishi Vikas Yojana (PKVY), ₹250 crore under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) etc.

2.4. The Department operates through Directorate of Agriculture & Food Production, Directorate of Horticulture, Directorate of Soil Conservation and Watershed Development and 6 nos. of autonomous organizations namely Odisha State Seeds Corporation (OSSC), Odisha Agro-Industries Corporation (OAIC), Odisha State Cashew Development Corporation (OSCDC), Agricultural Promotion and Investment Corporation of Odisha Limited (APICOL), Odisha State Seeds and Organic Products Certification Agency (OSSOPCA) and Institute on Management of Agricultural Extension (IMAGE). The State has one Agriculture University namely the Odisha University of Agriculture & Technology (OUAT) with its affiliated colleges and research stations to cater to the needs of the farmers.



3. DIRECTORATE OF AGRICULTURE AND FOOD PRODUCTION

The Directorate of Agriculture and Food Production is fervently engaged in the process of Agriculture development through providing a host of extension services and implementing a number of crop-specific programmes. Different interventional activities are taken up under the State Plan and Central Sector Plan Schemes. The physical and financial achievement under different schemes during 2017-18 and the programme for 2018-19 is annexed.

3.1. Agricultural Extension Services

3.1.1. The Agriculture Extension machinery of the Directorate of Agriculture & Food Production is engaged in the transfer of recommended crop production technologies to the farmers round the year. The Agricultural Extension Workers, starting from the village level, play a significant role in the process of technology transfer. Besides personal contact and advice on package and practices on crop production, 2858 Farmers' Training Programmes, 23 Farmers' Field Schools, 1,68,847 demonstrations and 46, 407 hectares of line sowing/ transplanting have been conducted during 2017-18 (upto February'2018) under different crop oriented programmes like, "Promotion of Improved Agronomic Package and practices, NMOOP, NFSM, RKVY and their sub-schemes" for bringing the advanced production technologies to the door-step of the farmers.

3.1.2. Similarly, development/ strengthening of infrastructure & technology transfer, building awareness and confidence among the farmers for crop substitution from paddy to more remunerative non-paddy crops like pulses, oilseeds, vegetables and other horticultural crops, particularly in the uplands, encouraging varietal replacement and propagation of newer location-specific high yielding varieties, up-keeping soil health, promoting sustainable agriculture, popularizing the use of improved and mechanised farm implements for carrying out timely field operations effectively, Irrigation water management, pest surveillance and plant protection are the focus of our extension efforts.

3.2. Agricultural Farms

3.2.1. There are 63 farms existing under Agriculture Directorate having a total geographical area of 2126 hectares (including sukinda farm) scattered around the State. The Departmental farms are utilised for production of foundation and Certified Seeds for use in the Department's seed production and replacement programmes. During 2017-18, 20251 quintals of foundation Seeds (Paddy- 19855 qtls + Non-paddy- 396 qtls), 1099 quintals of certified seeds (Paddy- 1069 qtls + Non-paddy- 30 qtls.) and 190 quintals of Truthfully Labeled Dhanicha seeds is

estimated to be produced in these Farms. During 2018-19, it is programmed to produce 23402 quintals of foundation seeds (22400 qtls Paddy + 802 qtls Non-paddy) and 200 quintals of Truthfully Labeled non-paddy seeds in these farms.

3.2.2. During 2017-18, Infrastructure strengthening and development (creation of irrigation potential, repair & construction of boundary wall, Irrigation channel, farm roads, renovation of existing seed processing plants, renovation and construction of new seed storage godowns, threshing floors, Purchase & repair of farm implements, land development, electrification etc.) of 49 Agricultural farms have been taken up with an expenditure of ₹500.00 lakh under State Plan scheme “Development of Agricultural Farms”. It is envisaged to further strengthen the 57 nos. of Govt. Agricultural Farms with a proposed outlay of ₹555.00 lakh during 2018-19.

3.3. Soil Testing Services

3.3.1. Soil testing is important as regards scientific fertilizer management by Farmers. For catering to this need of the farmers of the State, the Department provides facilities for soil testing through 27 Static Soil Testing Laboratories (STL) and 17 Mobile Soil testing Labs with a target to test 3.34 lakh soil samples annually. Besides these, 3 more static STLs are going to be commissioned very soon.



3.3.2. During 2017-18 (till Feb'2018), 361948 Soil Health Cards have been issued successfully.

3.3.3. During 2018-19, it has been programmed to analyze 3.34 lakh soil samples through Soil Testing Laboratories. Basing on which, around 23.51 lakh Soil Health Cards would be provided to farmers with necessary recommendations for fertilizer use to upkeep soil health.

3.4. National Mission on Oilseeds and Oil Palm (NMOOP)

National Mission on Oilseeds and Oil Palm (NMOOP) is being implemented in the state comprising of three Mini Missions, viz. Mini Mission-I of Oilseeds (Vegetable Oilseed Crops), Mini Mission-II of Oilseeds (Oil Palm) and Mini Mission-III of Oilseeds (Tree Based Oilseeds). During 2017-18, ₹2460.00 lakh have been provided in the budget for implementation of the

NMOOP programme. A sum of ₹ 2700 lakh has been proposed for 2018-19 for implementation of the scheme in the State.

3.4.1. Mini Mission-I of Oilseeds (MM-I of NMOOP)

The scheme is being implemented with the objective of development and cultivation of vegetable oilseed crops. During 2017-18, a sum ₹421.67 lakh has been expended till Feb'2018. It is envisaged to take up different interventions during 2018-19 with a total cost of ₹1620.60 lakh (CS-₹972.36 lakh + SS-₹648.24 lakh).

3.4.1.1. Under Seed Distribution Programme quality seeds of different oilseeds were supplied to the farmers at subsidized rates. 316 quintals of certified seeds have been supplied during 2017-18 to the farmers with a total subsidy of ₹7.90 lakh.

3.4.1.2. During 2018-19, it has been programmed to distribute 17500 quintals of various certified seeds with a financial involvement of ₹437.50 lakh as subsidy.

3.4.1.3. It is programmed to support production of 2200 quintals of foundation seeds and 6000 quintals of certified seeds with a proposed expenditure of ₹22.00 lakh and ₹60.00 lakh respectively during 2018-19.

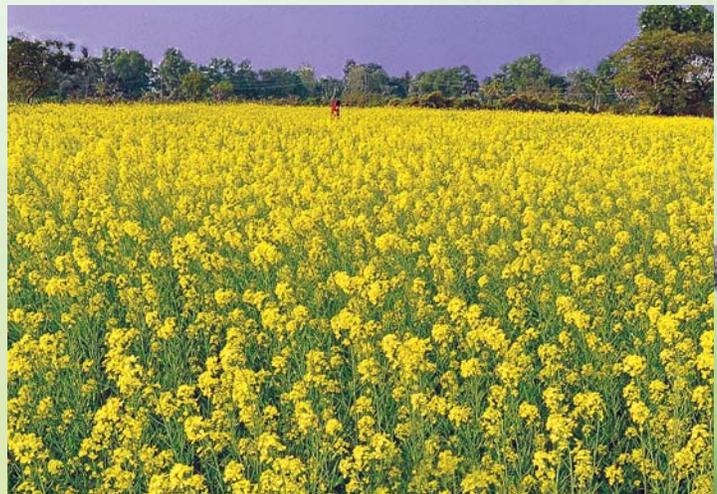
3.4.1.4. During 2018-19, for improving availability of HYV Seeds, it has been programmed to procure 1500 quintals of breeder seeds with a proposed cost of ₹150.00 lakh.

3.4.1.5. During 2017-18, gypsum/ pyrite and other soil application materials for soil amelioration in 3500 hectares with a cost of ₹26.25 lakh.

3.4.1.6. During 2018-19, there is a programme to supply gypsum/ pyrite and other soil application materials for soil amelioration in 9000 hectares with a proposed cost of ₹67.50 lakh.

3.4.1.7. 23 Farmers' Field School and 95 nos. of Farmer's Training have been conducted with an expenditure of ₹6.15 lakh and ₹22.80 lakh respectively during 2017-18.

3.4.1.8. It is programmed to conduct 28 numbers of FFS and 170 nos. of farmer's training during 2018-19 with an expense of ₹7.48 lakh and ₹40.80 lakh respectively.



3.4.1.9. 5283 Block demonstrations were conducted with an expenditure of ₹270.99 lakh to demonstrate improved methods of different Oilseeds production during 2017-18.

3.4.1.10. It has been programmed to take up 7250 nos. of block demonstrations during 2018-19 at an expense of ₹361.00 lakh.

3.4.1.11 During 2017-18 (till Feb'2018), 1280 power operated sprayers have been popularized at a subsidy cost of ₹38.40 lakh. Besides, 50 sprinkler sets have been popularized providing subsidy to the tune of ₹4.90 lakh.

3.4.1.12. During 2018-19, it is programmed to assist farmers for procurement of 1450.00 nos. of sprinkler sets and 11800 sprayers at an expense of ₹67.50 lakh and ₹138.00 lakh respectively.

3.4.1.13. Subsidy worth ₹8.64 lakh was extended to cover 1728 hectares under PP chemicals application during 2017-18.

3.4.1.14. During 2018-19, there is a programme to extend subsidy worth ₹27.42 lakh for covering 5484 hectares under PP chemicals.



3.5. National Food Security Mission (NFSM)

The scheme is being implemented from 2007-08 as a Central Sector Scheme with an objective to enhance production and productivity of Rice and Pulse crops in selected districts of the state in Mission Mode. From 2014-15, NFSM-Commercial crops (Sugarcane, Cotton & Jute) and NFSM-Coarse Cereals (Ragi & Maize) started to be implemented under NFSM. During 2017-18, "Targeting Rice Fallow Areas" was added to NFSM as a New Component. A sum of ₹12796.29 lakh (CS-₹5479.14 lakh + SS-₹3652.75 lakh) was received under the above components and ₹4264.62 lakh (CS-₹2558.77 lakh + SS-₹1705.85 lakh) was spent during 2017-18. Similarly during 2018-19, different components of NFSM would be taken up with a provision of ₹16153.00 lakh (CS-₹9691.80 lakh + SS-₹6461.20 lakh).

3.5.1. NFSM-Rice

NFSM-Rice is being implemented in 8 districts; Angul, Deogarh, Jharsuguda, Kandhamal, Keonjhar, Malkanagiri, Nuapada, & Sundargarh. Various interventions are being taken up as follow: .

3.5.1.1. During 2017-18 (till Feb'2018), Cluster demonstrations on Line Transplanting, SRI, Direct seeded Rice, Stress Tolerant Variety and Cropping Systems were taken up in 18155 hectares at a cost of ₹1118.15 lakhs. During 2018-19, there is a programme to conduct such cluster demonstrations in 57,700 hectares at a total cost of ₹4962.50 lakh.



3.5.1.3. During 2017-18 (till Feb'2018), assistance was provided for use of Micronutrients, Plant Protection Chemicals, Bio-agents and Weedicides under Plant Protection and Soil Management in 24,520 hectares with a total cost of ₹122.60 lakh.

3.5.1.4. During 2018-19, it is proposed to provide similar assistance in 1.60 lakh hectares at an estimated cost of ₹800.00 lakh.

3.5.1.5. About, 9457 nos. of Resource conservation tools were popularized by extending subsidy worth ₹416.57 lakh during 2017-18. It is proposed to popularize 18400 such resource conservation tools and 9870 pumpsets with an estimated subsidy cost of ₹825.00 lakh and ₹987.00 lakh respectively.

3.5.1.7. 260 nos. of Cropping System based Training programmes were organized with an expense of ₹33.50 lakh during 2017-18 (till Feb'2018).

3.5.1.8. It is proposed to organize 200 nos. of such trainings during 2018-19 at a cost of ₹28.00 lakh.

3.5.1.9. Subsidy worth ₹118.92 lakh was extended for popularizing use of 11890 quintals of HYV seeds during 2017-18 (till Feb'2018).

3.5.1.10. It is proposed to extend subsidy assistance worth ₹250.00 lakh to farmers for procurement of 10000 quintals of HYV paddy seeds during 2018-19.

3.5.2. NFSM- Pulses

Implementation of this scheme has brought about a substantial increase in acreage and production of different pulse crops. The major achievements for 2017-18 (till Feb'2018) and programme for 2018-19 have been given below-

3.5.2.1 During 2017-18, 3115 nos. of Cluster demonstrations, 2308 nos. of Intercropping demonstrations and 3260 nos. of cropping system based demonstrations were conducted at a total cost ₹525.39 lakh. Similarly, it has been programmed to conduct 47000 nos. of such demonstrations with an estimated cost of ₹4525.00 lakh during 2018-19.



3.5.2.2. Subsidy assistance worth ₹23.93 lakh has been extended under Integrated Nutrient Management and Integrated Pest Management components covering 4785 hectares of pulses during 2017-18. Similarly, it is programmed to extend subsidy assistance of ₹710.00 lakh for the two components covering 1.40 lakh hectares during 2018-19.

3.5.2.3. During 2017-18 (till Feb'2018), 12254 nos of resource conservation tools and 290 Mobile rainguns have been popularized at a subsidy cost of ₹298.02 lakh and ₹40.60 lakh respectively.

3.5.2.4. It is programmed to popularize 17780 nos of resource conservation tools and 3560 efficient water application tools along with 570000 meters of pipes carrying water at an estimated cost of ₹581.08 lakh and ₹359.00 lakh respectively during 2018-19.

3.5.2.5. A total of 290 cropping system based trainings have been conducted at a cost of ₹40.60 lakh during 2017-18 (till Feb'2018).

3.5.2.6. During 2018-19, it is programmed to conduct 150 such trainings at a cost of ₹21.00 lakh.

3.5.2.7. A special drive has been made for bringing additional area under pulses and demonstrations on improved package and practices were conducted covering 19000 hectares at a cost of ₹384.80 lakh. Steps are also being taken to cover around 1330 hectares under sprinkler irrigation and popularize 50000 meters of HDPE pipes during 2017-18.

3.5.3. NFSM-Targeting Rice Fallow Areas (TRFA)

A sizeable area (around 12.0 lakh Hectares) with cultivation of rice remain fallow due to various reasons. It is envisaged to target these fallow areas and take up different pulse

and oilseed crops. A sum of ₹970.05 lakh (CS-₹582.03 lakh + SS-₹388.02 lakh) was spent during 2017-18. The activities taken during 2017-18 and programme for 2018-19 are given below:



3.5.3.1. During 2017-18 (till Feb'2018), 43500 demonstrations on improved package and practices had been taken up at a cost of ₹970.05 lakh.

3.5.3.2. Steps are being taken up under a special drive for making available production inputs like micronutrients, bio-fertilisers, PP Chemicals to cover around 1.60 lakh hectares, 2.0 lakh meters of HDPE pipes and 1000 Sprinkler sets at a cost of ₹920.00 lakh during 2017-18. In addition to these 750 farmers training has been organized at an estimated cost of ₹105.00 lakh and engaging 1800 scouts at a cost of ₹464.40 lakh.

It is decided to take up such interventions during 2018-19.

3.5.4. NFSM-Coarse Cereals

The major Coarse Cereals-Maize & Ragi were grown in 2.56 lakh hectares and 1.15 lakh hectares respectively during 2017-18. It is mostly cultivated in Kharif in Ganjam, Gajapati, Keonjhar, Koraput, Nawarangpur, Mayurbhanj and Kalahandi districts. The productivity of Maize and ragi in the State are estimated at 3031 kg and 896 kg per hectare respectively during 2017-18 (as per 2nd Advance estimate). The Coarse Cereal development activities are being taken up through NFSM-Coarse Cereals.



3.5.4.1. During 2017-18 (till Feb'2018), 1726 demonstrations on improved packages of Maize had been taken up at a cost of ₹80.21 lakh.

3.5.4.2. There is a programme to take up 7000 such demonstrations on Maize and Ragi at a cost of ₹350.00 lakh during 2018-19.



3.5.5. NFSM-Commercial Crops-Cotton

Cotton is a major commercial crop predominantly grown in the KBK districts in Kharif. During 2017-18, emphasis was laid on Front Line Demonstrations on Integrated Crop Management and Intercropping. Besides, trials were taken up in High Density Planting system of cotton. The interventions those were made and programmed are as under.

3.5.5.1 During 2017-18, front line demonstrations on Integrated Crop Management and Inter cropping were taken up in 1434 hectares with cost of ₹80.98 lakh.

3.5.5.2 it is programmed to take up 1722 nos. of Frontline Demonstrations under such categories with an estimated cost of ₹120.54 lakh during 2018-19.

3.5.5.3. In order to popularize high density planting system among the farmers, trials on high density planting system were conducted in 25 hectares at an expense of ₹2.25 lakh.

3.5.5.4. It is programmed to take up 32 such trials during 2018-19 at a proposed cost of ₹2.88 lakh.



3.5.6. NFSM-Commercial Crops-Jute

3.5.6.1. During 2017-18 although ₹57.00 lakh have been received from Govt. of which no programme have been taken up as the fund was received late. However, it is envisaged to take up the following programmes for enhancing area and production of jute in the state during 2018-19.



3.5.6.2. It is programmed to conduct Front Line Demonstrations on Production Technologies in around 1217 hectares at a cost of ₹97.36 lakh under NFSM-Commercial Crops (Jute) during Kharif 2018. Besides, six state level trainings are proposed to be organised at a cost of ₹2.40 lakh.

3.5.7. NFSM-Commercial Crops- Sugarcane

An Annual Action Plan has been approved for ₹40.00 lakh during 2017-18 and the funds amounting ₹20.00 lakh has been released by GoI during Jan'2018. Steps are being taken to implement the envisaged programme.



3.5.7.1 During 2017-18, Demonstrations on Intercropping and Single Bud-chip technologies will be conducted in around 468 hectares at an expense of ₹37.44 lakh. There is a programme to conduct such demonstrations in 540 hectares at a cost of ₹43.20 lakh during 2018-19.

3.5.7.2. Around 50286 tissue culture seedlings has been provided at subsidized cost of ₹1.76 lakh. Besides, one State Level Training, was conducted with an expenditure of ₹0.40 lakh. Similarly, it is programmed to conduct two state level trainings for middle level officers at a cost of ₹0.80 lakh during 2018-19.

3.6. National Mission on Sustainable Agriculture (NMSA)

The Scheme is implemented from 2014-15 with an objective of promoting sustainable agricultural practices while indulging in modern crop husbandry. The scheme includes components viz., Soil Health Management (SHM), Soil Health Card (SHC), Paramparagat Krishi Vikas Yojana (PKVY), Rainfed Area Development (RAD), Pradhan Mantri Krishi Sichai Yojana (PMKSY), Climate Change & Sustainable Agriculture; Monitoring, Modeling and Networking (CCSAMMN) and Sub Mission on Agro Forestry (SMAF). Out of them SHM, Soil Health Card, PKVY & CCSAMMN are implemented by Directorate of Agriculture & Food Production.

3.6.1 Soil Health Management of NMSA (SHM of NMSA)

The SHM component of the Scheme is being implemented in the state since 2014-15 with the objective of up-keeping of soil health through promoting use of soil test based recommendations, organic manures and Integrated Nutrient Management besides capacity building and conducting Front Line Demonstrations for sustainable crop production. A token provision has been proposed under SHM during 2018-19 for continuance of the scheme.



3.6.2. Soil Health Card (SHC)

The component of the Scheme is being implemented in the state with the objective of providing the farmers with soil health cards with recommendations based on soil test results. During 2017-18, a total of ₹752.21 lakh (CS-₹451.33 lakh + SS-₹300.88 lakh) has been spent under Soil Health Card Component of NMSA. During 2018-19, a sum of ₹2000.00 lakh (CS-₹1200.00 lakh + SS-₹800.00 lakh) has been proposed for implementation of the scheme in the State.

3.6.2.1. During 2017-18 (till Feb'2018), a sum of ₹752.21 lakh has been received and 421369 Soil Health Cards have been provided at a cost of ₹752.21 lakh.

3.6.2.2. It is programmed to provide at least 3.36 lakh soil health cards to farmers at a cost of ₹1007.65 lakh during 2018-19.

3.6.2.3. There is a programme to organise 150 Campaigns at an estimated cost of ₹36.00 lakh during 2018-19. Besides, other interventions of like Financial Assistance to Farmers, line staff Training and capacity building of farmers would be taken up in a campaign mode.

3.6.3 Paramparagat Krishi Vikash Yojana (PKVY)

3.6.3.1. The Paramparagat Krishi Vikas Yojana (PKVY) is a central sponsored scheme lunched during 2015-16 in the state to promote organic farming through participatory guarantee system (PGS) and implemented in the State during 2017-18. Organic farming is promoted through adoption of organic village by cluster approach and PGS certification. A sum of ₹1017.66 lakh has been provided for implementation of the scheme during 2017-18.



3.6.3.2. During 2017-18, 320 clusters were identified for adoption of organic farming in 16000 acres to be covered at least acres per cluster in 10 identified districts namely Bargarh, Cuttack, Kalahandi, Kandhamal, Khurdha, Koraput, Nayagarh, Rayagada, Sambalpur and Sundargarh of the State. Resource Centres play vital role in promotion of organic farming in the State. Two Resource Centers namely SAMBHAV, Rohibanka, Nayagarh and Rajendra Desi Chasa Gabesana Kendra, Nariso, Niali, Cuttack has been identified for preparation of training modules, posters, publications, development of print, audio and video communication material

for dissemination of knowledge on organic farming; development of demonstration plots at the resource center; conducting training and exposure visit programs for capacity building of departmental extension functionaries, Lead Resource Persons (LRP); implementation agencies and farmers of the organic farming clusters; conducting research and demonstration on organic practices; maintenance of organic seed bank and seed production, preparation of organic manure and organic fertilizer and organic pesticides; preparation of valued added products on organic materials; imparting training on seed conservation, seed production and seed storage and seed centre management.

3.6.3.3. During 17-18, 15354.56 acres of areas have been covered under organic farming in 312 clusters which includes, 10520.14 acres under paddy, 944.9 acres under pulses, 1385.35 acres under millets and 528.27 acres under vegetables, 411.3 acres under oilseeds, 1037.7 acres under spices and 476.5 acres under other crops covering 250 villages in 33 Blocks in 10 identified districts.

3.6.3.4 Training programmes have been conducted for 130 no. of extension functionaries from 10 identified districts at these two State Resource Centres and 174 no. of cluster members training has been completed on organic farming at different training institutes. In order to provide practical knowledge on the use of organic inputs 16 nos. of Lead Resource Persons (LRP) training programmes have been conducted. Seven hundred eighty (780) Quintals of Dhanicha seeds has been distributed & utilised in different clusters of PKVY. Out of 6447 no. of soil samples 4010 nos. of samples have been collected and the analysis of these soil sample is in progress.

3.6.3.5. It is programmed to take up another 200 clusters in addition to the 320 clusters already taken up at a total cost of ₹3053.44 lakh during 2018-19.

3.6.3.6. During 2017-18 (till Feb'2018), 320 clusters of 50 acres each has been taken up under the programme with the received sum of ₹1017.66 lakh.

3.6.3.7. It is programmed to take up another 200 clusters in addition to the 320 clusters already taken up at a total cost of ₹3053.44 lakh during 2018-19.

3.6.4 Climate Change and Sustainable Agriculture: Monitoring, Modeling and Networking of NMSA

Climate change is expected to impact crop production and food security at large. The scheme launched in the country from 2014-15 with the objective of adapting to and mitigating the impacts of climate change on agriculture. No funds have been received till 2017-18. However, there is an Action Plan of ₹330.00 lakh proposed for implementing different interventions under the scheme during 2018-19.

3.7. National Mission on Agriculture Extension and Technology (NMAET)

The Centrally Sponsored Scheme- **NMAET** is being implemented from 2014-15. This includes four Sub-Missions; Sub Mission on Agriculture Mechanisation (SMAM), Sub-Mission on Agriculture Extension (SMAE) & National e-Governance Plan (NeGP), Sub- Mission on Seed and Planting Material (SMSP) and Sub-Mission on Plant Protection and Quarantine (SMPP). During 2017-18 (till Feb'2018), a sum of ₹4076.32 lakh (CS-₹2467.53 lakh + SS-₹1608.79 lakh) was released excluding SAME and ₹3925.00 lakh (CS-₹2355.00 lakh + SS-₹1570.00 lakh) was spent. During 2018-19 it is envisaged to take up all the interventions with an outlay of ₹35048.00 lakh (CS-₹21028.80 lakh + SS-₹14019.20 lakh).

3.7.1. Sub-Mission on Agriculture Mechanisation (SMAM)

Subsidy assistance for farm mechanization, Establishment of Custom Hiring Centers is being extended under the scheme SMAM.

3.7.1.1. During 2017-18(till Feb'2018), 3743 power tillers, 1419 rotavators, 966 multicrop threshers and 142 seed-cum-fertiliser drills have been popularized with a subsidy cost of ₹3661.00 lakh.



3.7.1.2. There is a programme to popularize 4875 power tillers, 1925 rotavators, 950 multicrop threshers and 1200 seed-cum-fertiliser drills during 2018-19 at a subsidy cost of ₹5003.65 lakh.

3.7.1.3. During 2017-18, assistance worth ₹264.00 lakh has been extended for establishment of 66 nos. of Custom Hiring Centres.

3.7.1.4. During 2017-18, it is programmed to provide assistance worth ₹1720.00 lakh for establishment of 430 nos. of Custom Hiring Centres.

3.7.2. Sub-Mission on Seeds and Planting Material

This Sub-Mission is being implemented from 2014-15 with the objective of ensuring adequate and timely supply of quality seed and planting materials to farmers through strengthening infrastructure and quality seed production. No funds were received from Gol during 2017-18 under the scheme.

3.7.2.1. During 2018-19 three seed farms would be strengthened at a cost of ₹135.00 lakh.

3.7.2.2. It is programmed to construct / strengthen 9 storage godowns and 11 storage structures in govt. seed farms with an estimated cost of ₹539.00 lakh.

3.7.2.3. During 2018-19, it is programme to popularize 21087 quintals of certified seeds among farmers and take up seed production in 6800 hectares at an estimated cost of ₹797.30 Lakh and ₹748.46 lakh respectively.

3.7.3. Sub-Mission on Plant Protection and Quarantine

The Sub-Mission is being implemented from 2014-15 with the objective of strengthening plant protection and quarantine in the state through modernization of pest management approach. During 2017-18, no fund has been received from Gol for the purpose. It is proposed to take up modernization of pest management at an estimated cost of ₹41.40 lakh during 2018-19.

3.7.4. Sub-Mission on Agriculture Extension & National e-Governance Plan

The Sub-Mission is being implemented from 2014-15. The Centrally Sponsored Scheme “Support to State Extension for Extension Reforms” and the Central Plan Scheme “Capacity Building to Increase Competitiveness in Agriculture” and “AGRISNET Project/ National e-Governance Plan for Agriculture (NeGP-A)” have been subsumed under the programme. During 2018-19, a sum of ₹23906.90 lakh has proposed for implementation of the scheme in the State.

3.7.4.1. During 2017-18, funds amounting ₹151.32 lakh has been received under NeGP-A and steps are being taken for procuring necessary hardware, engaging manpower etc.

3.7.4.2. There is a programme to implement various programmes under NeGP-A like previous years with proposed outlay of ₹1000.00 lakh during 2018-19.

3.7.5. Digital Initiative

3.7.5.1. Keeping in view the objectives of Digital India & to improve the service delivery mechanism , steps have been taken for use of Smartphone for capturing of Crop Cutting Experiment Data. The field functionaries of the Department along with that of Directorate of Economics & Statistics and Revenue & DM Department have been provided with an incentive of Rs 2500/- per person for capturing CCE data. This has greatly helped in bringing transparency to the system and early settlement of crop insurance claims. Besides this, the field workers of Directorate of Agriculture & Food Production have been provided with an additional incentive of Rs 1000/- per person and mobile use charges of Rs 100/ per month

for capturing of data related to various field activities including demonstrations. Direct Benefit Transfer for promotion of use of various agri-inputs has also been introduced as a part of this activity, Farmers are being registered through Mobile APP & Portal and attempts are made to develop an unified Farmers data base and linkage of Land records (Bhulekh) to DBT & Crop Insurance Portal. Besides, steps have been taken to capture Rice-Fallow area and use of Rice Crop Manager for effective utilization of land in post Kharif season and fertilizer management for sustainable rice production respectively under IRRRI projects.

3.7.5.1. Similarly, various spatial and non-spatial information are gathered using the android based mobile application developed by NIC through which land data validation is being carried out by ORSAC in contributing to the feasibility assessment of Bore wells/Dug wells under Jalanidhi scheme. Further, the locational information of Soil sample plots under Soil Health Card are captured using GPS at field level and the data are entered directly on the designated web portal.

Other Special Initiatives taken for Development of Agriculture

Crop Production Management

3.8. Input Subsidy

3.8.1. During 2017-18 (till Feb'2018), ₹4231.29 lakh have been utilized as seed subsidy for supplying certified seeds of various field crops. About 4.18 lakh quintals of quality seeds of different field crops have been distributed to the farmers and nearly 2.40 lakh quintals through DBT. For administering input subsidy about 19.0 lakh farmers have been registered and input subsidy has been extended to farmers through DBT.



3.8.2. It has been proposed to utilize ₹4000.00 lakh during 2018-19 for meeting the subsidy cost of popularizing certified seeds of various crops.

3.9. Promotion of Improved Agronomic Package of Practices

3.9.1. The Scheme is implemented in the State in order to demonstrate and popularize improved agronomic packages of various crops with the objective of enhancing production and

productivity. During 2017-18 (till Feb'2018), line sowing and line transplanting was promoted in 35800 hectares, Dhanicha for seed production and green manuring in 12645 hectares with an expenditure of ₹726.67 lakh. Besides, seed treatment campaign likely to cover 3.07 lakh hectares with an expenditure of ₹270.44 lakh.

3.9.2. Under a special package for calamity affected farmers 1, 66, 000 minikits of Pulses and oilseeds were distributed. Also, 91050 minikits were provided under pest management package in addition to 34267 litres of pesticides at a total cost of ₹1537.32 lakh.

3.9.3. During 2018-19, it is programmed to promote Line sowing and Line transplanting in 40000 hectares, Dhanicha for seed production and green manuring in 14000 hectares and organize seed treatment campaign in 3.14 lakh hectares with an estimated total cost of ₹1190.00 lakh.

3.10. Promotion of Integrated Farming

The Scheme is implemented to demonstrate and popularize Integrated Farming. During 2017-18, no fund has been received till February 2018. It is programmed to promote 133 such integrated farms at a subsidy assistance of ₹133.00 lakh during 2018-19.

3.11. Promotion of Integrated Farming in tribal areas

The Scheme is implemented to demonstrate and popularize Integrated Farming in tribal areas from 2016-17. There is a programme to promote such Integrated Farms in Tribal areas at a proposed cost of ₹337.68 lakh during 2018-19.

3.12. Technology Mission on Sugarcane Development

The Scheme is implemented in the State to popularize new cultivars by multiplying breeder and foundation level planting materials. Different interventions "Sustainable Sugarcane Initiative, Ratoon Management demonstration, Creation of seed hubs in sugarcane growing areas, Training of cane growers, Production incentive to cane growers, farmer-scientist-extension functionaries interface etc. were taken up with the aim of enhancing sugarcane production for utilizing the crushing capacity available in the state.

3.12.1. During 2017-18 (till Feb'2018), Sustainable Sugarcane Initiative and



Ratoon Management demonstrations were taken up in 600 hectares with an expenditure of ₹90.00 lakh. Besides, assistance was provided for creation of seed hubs of around 30 hectares in sugarcane growing areas at an subsidy cost of ₹6.00 lakh.

3.12.2. Sustainable Sugarcane Initiative and Ratoon Management demonstrations will be taken up in 978 hectares with an expenditure of ₹144.90 lakh during 2018-19. Besides, assistance will be provided for creation of seed hubs of around 60 hectares in sugarcane growing areas through extending assistance worth ₹12.00 lakh.

3.12.3. Three farmer-scientist-extension functionary interfaces have been organized with a cost of ₹1.92 lakhs during 2017-18. Similar intervention would also be organised during 2018-19.

3.12.4. Production incentives amounting ₹80.00 lakhs is being extended to farmers producing 120 MT or more sugarcane per hectare in around 1000 hectares during 2017-18. In 2018-19, it is programmed to extend such production incentives totaling ₹96.00 lakhs in around 1200 hectares.

3.12.5. Three Onsite training are being organised for sugarcane farmers at an expense of ₹0.27 lakhs during 2017-18. It is programmed to organize three such training s during 2018-19 at a cost of ₹0.27 lakhs.

3.12.6. The programme for 2018-19 will be taken up with an outlay of ₹257.00 lakh.

3.13. Technology Mission on Oilseeds & Pulses

The Scheme was introduced from 2013-14 with an objective to supplement the efforts put in under Central sector Schemes to boost oilseed and Pulse production in the state. However, no funds have been received as yet. A token provision of ₹0.01 lakh has been proposed for 2018-19.



3.14. Technology Mission on Jute & Mesta

The Scheme was implemented from 2013-14. A token provision of ₹0.01 lakh has been made for 2018-19 for continuance of the scheme.

3.15. Management of Soil Health

3.15.1. Soil Health and quality of agri-inputs have been one of the important aspects of crop production. Interventions pertaining to Acid soil Management, Organic farming and Operationalisation of Soil Testing Labs were subsumed under the scheme.

3.15.2. During 2017-18, different Mobile Soil testing labs, Static Soil Testing Labs and Fertilizer Quality Control Labs were operationalised with a cost of ₹300.00 lakh.

3.15.3. During 2018-19, different interventions would be taken up with a proposed cost of ₹330.00 lakh.

3.16. Promotion of need based Plant Protection

This sub-scheme is being implemented from 2014-15 for taking up need based Plant protection measures. Similarly, the sub-scheme shall continue to be implemented during 2018-19 with an estimated cost of ₹111.00 lakh.



3.17. Development of Agriculture in Collaboration with International Institutions

To enhance emphasis on research and to bring the benefit of research results timely to the farmers, State Govt. has made collaborations with various International Research organizations such as International Rice Research Institution, (IRRI), ICARDA, ICRISAT, CIMMYT, AVRDC etc. for the development of agriculture in the State.

3.17.1. Collaboration with IRRI International Rice Research Institute

3.17.1. The International Rice Research Institute has been working in the Odisha for last 8 years to improve the rice productivity of stress prone areas by promoting stress tolerant rice varieties in the state. To increase the productivity of Rice based cropping system and enhance farmers' income in Odisha a MoU was been signed between IRRI and Government of Odisha on 3rd October 2015 for implementation of the project "Development of Agriculture in collaboration with International Institution - IRRI" in the State and to induce system level changes by addressing major gaps that can influence economic decisions to enhance and stabilize rice productivity and to increase farmers' income particularly in stress prone areas and establish sustainable rice based farming systems. The major thrust of the project includes, strengthening of formal and informal seed systems; ensuring local availability of quality seed of high yielding variety of flood, drought or salt tolerant rice; enhancing adoption of new high yielding and stress tolerant rice varieties; characterization and management of rice fallows by promoting other suitable crops particularly pulses; promotion of rice crop manager for more efficient and cost effective management of rice crop; establishment of knowledge bank for State of Odisha; farmers empowerment to choose suitable technology

options; capacity building of development agriculture officials, extension workers, scientists, progressive farmers and students and reducing crop insurance premium by linking it with risk reducing technologies like flood or drought tolerant rice varieties and real time assessment of crop damage to settle claims quickly.

3.17.2. During 2017-18, Twenty eight evidence hubs (EHs), one in each district, including two at NRRI and OSSC (Puri) and two managed by women SHGs were conducted with two sets of drought and submergence tolerant varieties to evaluate their performance in different agro-climatic conditions and select the desirable ones based on stakeholder selection (Extension officials, NGO partners, farmers) and yield. Three classes of genotypes were identified, varieties specific to the submergence prone areas (Swarna Sub1, CR 1009 sub1), drought prone areas (Sahbhagi, DRR 44, BRR1 series) and a few like Binadhan 11 and Bina 17 which had high scores and yield across coastal and inland areas due to their resilience to different growing conditions. About 15000 farmers from 1032 villages /470 GPs of 109 blocks benefited from these interventions which covered more than 5000 ha during the kharif season. DRR 39 and CR 405 were identified as promising salinity tolerant varieties that can replace varieties like MTU 1010 in the rabi season in the coastal zone. Pulse varieties with innovative moisture conservation technologies are being evaluated in 1969 ha in 27 districts in the rice-fallow area. About 50,000 farmers also benefited from the RCM recommendations given to the farmers. The farmers using RCM harvested additional yield of up to 1 t/ha and could save on the use of phosphatic and potash fertilizers. Start of the rice season, block-wise rice area and yield were estimated using satellite based monitoring systems for real time assessment of crop damage. Till Feb'2018, ₹1688.00 lakh had been spent for different interventions. Similarly, the interventions would be taken up during 2018-19 in collaboration with IRRI with an estimated cost of ₹1758.00 lakh.

3.17.2. Collaboration with ICRISAT

International Crop Research Institute for Semi- Arid & Tropics (ICRISAT) has been working in the State for pulse development through implementation of various projects such as Introduction and expansion of improved pigeon pea (Arhar) production technology in rainfed upland ecosystems Odisha”, “Promotion of Improved Chickpea Varieties in Rice-Based Cropping Systems of Smallholder Farmers in Odisha” in collaboration with the State Government. Besides, an MoU was signed with ICRISAT for implementation of collaborative “Bhoochtana” flagship programme that aims at boosting crop production in a sustainable manner especially in rainfed areas through a holistic approach of soil management. The State institutions like, OUAT, ORSAC, NIC etc. are also partner to the programme. The programme is expected to add a new dimension to soil testing and crop management. Under the programme

soil health mapping in all 30 districts of the state by undertaking stratified sampling methods will be undertaken. Soil maps will be prepared and based on soil analysis, nutrient management recommendations will be communicated to the farmers, At the same time, soil test based nutrient management treatment along with farmers practice will be demonstrated to convince the farmers on the economic superiority as well as increased productivity by adopting improved management practices. In addition to soil analysis, other improved management practices like improved cultivars, land and water management practices, building of capacity of the farmers and promoting local seed banks will be the intervention which will benefit the farmers.

3.17.3. Collaboration with AVRDC

World Vegetable Centre (AVRDC) is working in the State for development of suitable biotic and abiotic resistance pules verities especially for mung and urdbean through implementation of collaborative project namely “Improve Mungbean and Urdbean Productivity in Odisha State”. The objectives of the project is to test and popularise of Yellow Mosaic Virus (YMV) and powdery mildew resistant mungbean and urdbean lines using farmer participatory methods, demonstrating improved agronomic practices for cultivation as well as improving landraces by incorporating resistance to YMV and powdery mildew coupled with high yield in the farmers field and assess waterlogging tolerance in mungbean and urdbean crops. Suitable seed multiplication programme on YMV and powdery mildew resistant lines of mungbean and urdbean identified by AVRDC will be undertaken in the farmers’ field in association with farmer groups. The farmer groups will also be involved identification of elite line and management of these cultivars through seed multiplication programme. Demonstration of improved agronomic practices will also be conducted in the farmers’ field though involvement farmer groups. Further, introgression of YMV and powdery mildew resistance from elite AVRDC lines into local landraces of mungbean and urdbean will be undertaken. Besides, screening will be done for assessing the water logging tolerance under controlled conditions. The project will help in release of at least 3-4 varieties of mungbean and urdbeanwith resistance to MYMV and powdery mildew in the State. It will also increase the mungbean and urdbean productivity in project areas by at least 50% as well as enhance capacity of farmer groups to undertake seed production of both mungbean and urdbean in a sustainable manner. The project will be implemented in Bolangir, Khurda, Nayagarh and Ganjam Districts.

Besides, MoU has also been signed with AVRDC for implementation of the project Onion Value Chain Improvements in Odisha State with the objective of improved appreciation of postharvest issues related to onions in Odisha and the development of a strategy to address these challenges, supply of Onion varieties with improved storability characteristics to farmers, conducting demonstration on improved onion postharvest treatment, curing and

storage technologies and evaluate these techniques as compared to existing practices, assisting State Government agencies in scaling up successful innovations to more onion farming areas in the state and mainstream postharvest capabilities within the Government agencies, participating NGOs and private sector through training and technology transfer to facilitate project sustainability.

WorldVeg demonstrated improved pre-harvest plant protection measures for the management of insects and diseases in farmers' fields covering a total area of 27 hectares. In addition, a total of 34 on-farm demonstrations of improved harvesting and curing techniques were performed in all the project districts covering an area of 50 hectares to increase awareness of proper harvesting and curing practices. Furthermore, 34 demonstrations of sorting and grading techniques were conducted in farmers' fields covering a total area of about 50 hectares. Sixteen demonstrations of storage techniques for farmers were done using storage structures upgraded by WorldVeg. Seventeen existing storage structures were fully or partially upgraded by WorldVeg.. One commercial solar drier was installed at Titlagarh, Bolangir. Five open ventilated storage structure was also installed at different project locations.

3.17.4. Collaboration with ICARDA

International Centre for Agricultural Research in Dry Areas(ICARDA) is implementing the project on “Enhancing Pulses Production for nutritional Security and Strengthening Pulse based sustainable” and “Improved Agricultural Production System in Odisha” in collaboration with State Government. The main objectives of the project is to develop and disseminate improved pulse crop varieties and production technologies, prepare village/ GP/ district plans for



'Pulse-based Optimum & Sustainable Agriculture Production Systems' (POSAPS), promote remote VSH (Village Seed Hubs) and Seed Entrepreneurs for multi-location pulse seed production (employment for kisan clubs, women/youth groups); supplement to State Seed system development (to improve pulse crop seed sufficiency of the state) (seed for Contingent Pulse Cropping during post-flood/ end-of-kharif-cyclone periods to ensure a quick crop and

good income for affected farmers; and supplement seed for pyra/ relay pulse cropping in rice field), organize training for capacity development of farmers and other stakeholders and increased benefits to farmers due to higher yield and production of pulses in fallow lands; improve nutrition to human and animal; improve soil fertility. The project is being implemented in Jajpur, Cuttack, Kendrapara, Bhadrakh districts of the State.

3.17.5. Collaboration with CIMMYT

International Maize & Wheat Improvement Centre (**CIMMYT**) is implementing the project on Stress-resilient Maize for Odisha in six districts of the state namely Koraput, Nabarangpur, Keonjhar, Mayurbanj, Nayagarh(Bhubaneswar)and Ganjam districts in three agroclimatic zones in collaboration with the State Government. The objective of the project is to identify high yielding stress-resilient maize cultivars, deploy and scale-out suitable maize cultivars along-with suitable package of practices, strengthen maize seed system by timely availability of quality seed, build capacity of smallholder farmers and self-help groups for a profitable and sustainable maize production with the involvement of Odisha State Seed Corporation (OSSC), Odisha University Agriculture & Technology (OUAT), Odisha-based seed companies – Bio seed company, Farmers and Farmer Self Help Groups (FSHG).

3.18. Grant to State Fertiliser Procurement Agencies

This scheme is implemented from 2016-17 for assisting State fertilizer Procurement Agencies like MARKFED and OAIC to facilitate repositioning and smooth distribution of fertilizer. The sub-scheme would continue to be implemented during 2018-19 with an estimated cost of ₹555.00 lakh.

3.19. Special Programme for promotion of Millets in Tribal Areas

3.19.1. Special programme for promotion of millets in tribal areas has been implemented in the State during 2017-18 in a project mode with the objective of increasing household consumption, improving millet productivity, setting up of decentralised processing units to reduce drudgery and establishing Market Linkages to ensure remunerative prices for farmers. The project initially started in 7 districts of the State namely Kalahandi, Koraput, Kandhamal, Malkangiri, Rayagada, Gajapati and Nuapada in 30 Blocks. Besides, steps have been taken for inclusion of millets in State Nutrition Programmes (ICDS/MDM/ITDA Hostels) and Public Distribution System for better child and household nutrition. This project is implemented by community organisations with support of local NGOs and local farmer resource persons. Technical and management support is given by NCDS and WASSAN at the state level. A total of 27 local NGOs are also empanelled as part of the programme. This is first time in the country

where Government, Academia and Civil society has come together to complement and supplement each other from the day 1. Citing the unique institutional architecture of the programme, Odisha Millets Mission won the silver prize in “**Skoch Transformational Innovation Award**” at **50th Skoch Summit on December 23rd 2017**.

3.19.2. During 2017-18, the project covered 7444 acres under improved package of practices. Normal yield per acre is 3-4 Quintals per acre. Highest yield recorded through the programme intervention is 13.6 quintals per acre. This increase in productivity has led to increase in incomes and enthusiasm among the farmers. Seeing the positive response, programme is now



being extended another 25 blocks. In addition to productivity, More than 150 events were conducted melas and trainings to create awareness among the local population. This has generated huge response. It is expected that more than 1,00,000 people were reached through these initiatives. Millets were also promoted in the urban areas through special millet urban internship programmes. As part of the initiative, millet stalls were set up in adivasi mela and krishi mela. Many cooking events and recipe events were conducted in various locations to create awareness about millets. Besides, a movable canopy stall will also be set up to spread the awareness of millets in 26 locations of Bhubaneswar. In order to ensure better nutrition, a pilot programme of inclusion of millets in 10 AWCs each in Nuapada and Gajapati districts was carried out. This has received a positive response from the different stakeholders.

3.19.3. The programme would continue covering additional areas during 2018-19 with a proposed outlay of ₹3000.00 lakh.

Capital Investment and Farm Mechanisation

3.20. Development of Infrastructure for Post Harvest Management

3.20.1. The scheme is being implemented from 2013-14 with the objective to develop infrastructure for postharvest management in a bid to facilitate value addition for better returns.

3.20.2. During 2017-18, steps have been taken to establish 920 Community Drying Platform-cum- Threshing Floors at a cost of ₹6738.00 lakh. During 2018-19, it is proposed to establish 874 such structures with a proposed cost of of ₹6401.00 lakh.

3.21. Subsidy under Agriculture Policy (Agr.)

This scheme being implemented with the objective of promoting agri-entrepreneurship in the state through extending capital investment subsidy.

3.21.1. Agri-Enterprises

3.21.1.1. Establishment of Commercial Agri-Enterprises has been considered as one of the prime movers for not only self-employment but also for creation of employment opportunities for others. Capital Investment Subsidy @ 40% subject to a maximum limit of ₹50.00 lakhs (50% limited to ₹50.00 lakhs for SC/ST/ Women/ unemployed graduates of agriculture and allied sciences) is provided on a back-ended basis for such ventures. During 2017-18 (till Dec'2017), establishment of 127 nos of commercial agri-enterprises & 118 Agro Service Centres have been promoted and subsidy worth of ₹1619.67 lakh released and rest under process.

3.21.2. During 2018-19, it has been proposed for extending such Capital Investment Subsidy to agri-preneurs for setting up different Commercial Agri-Enterprises to a tune of ₹9184.00 lakh.

3.21.2. Farm Mechanisation

3.21.2.1. Farm mechanization has great significance for enabling farmers to take up timely and quality agricultural operations, reducing costs of production and improving the productivity. Thus, massive farm mechanisation programme is being taken up under “Popularisation of Agriculture Implements, equipments and diesel pumpsets” under State Sector Schemes and RKVY, NFSM and Sub Mission on Agriculture Mechanisation schemes under Central Sector Schemes to popularise modern farm equipments and machineries.

3.21.2.2. During 2017-18, various agril. implements and machineries are being popularized extending subsidy worth ₹34350.00 lakh which includes ₹26500.00 lakh from State Sector Scheme and ₹7850.00 lakh Central Sector Schemes, out of which ₹28863.80 lakh has been utilized (till Feb'2018).



Sl. No.	Machinery/ Equipment	Subsidy Pattern	Achievement 2017-18	
			Physical	Financial in lakh ₹
1	Tractor	50% of cost limited to ₹90,000/-	917	825.30
2	Power Tiller	50% of cost limited to ₹75,000/-	10917	8187.75
3	Reaper	50% of cost limited to ₹80,000/-	323	258.40
4	Transplanter	75% of cost limited to ₹1,50,000/-	281	421.50
5	Rotavator	75% of cost limited to ₹80,000/-	5532	4425.60
6	Special Power Operated Implements	50-75% of cost limited to ₹60,000/- to ₹2,00,000/-	5614	3929.80
7	Power Operated Implements	50-75% of cost limited to ₹25,000/- to ₹45,000/-	912	410.40
8	Post Harvest Machinery	50% of cost limited to ₹2,00,000/-	1545	1854.00
9	Power Thresher	50% of cost limited to ₹24,000/-	2795	670.80
10	Combine Harvester	50% of cost limited to ₹5,00,000/- to ₹6,00,000/-	857	4713.50
11	Manual/ Bullock Drawn Implements	75% of cost limited to ₹6,000/-	20616	1236.96
12	Pumpsets	50% of cost limited to ₹15,000/-	8024	1203.60
13	Mechanised Line transplanting	@ 50 % limited to ₹3.00 lakh	6639 ha	322.66
14	Custom Hiring Centre	@ limited to ₹4.00 lakh	66	264.00
15	Matching Share for sprayers			139.53
Grand Total				28863.80

3.21.2.3. Taking into the consideration the popular demand, it has been programmed to popularise 1000 no. of tractors, 13983 power tillers, 500 reapers, 1000 transplanters, 6945 rotavators, 2650 power threshers, 480 combine harvesters, 38 laser levelers, 2630 power driven implements, 4980 special power driven implements, 850 post harvest machinery, 17500 pumpsets, 19930 manual/ bullock drawn implements and promoting 430 Farm Machinery Banks and 20000 hectares of mechanized transplanting during 2018-19 extending subsidy worth ₹38295.00 lakh by (SP - ₹29415.00 lakh + CSS- ₹8940.70 lakh). As a result, farm power consumption is estimated to increase to 1.80 kW/ ha during 2018-19 from that of 1.65 kW/ha likely to be achieved during 2017-18.

Training and Capacity Building of Agriculture

3.22. Refresher's Training for Extension Functionaries

The scheme is being implemented from 2007-08 for capacity building of extension functionaries. During 2017-18, different training programmes are being taken up for enhancing

the skill of extension functionaries with an expense of ₹50.00 lakh. Similarly, ₹100.00 lakh has been provisioned for organizing such training programmes during 2018-19.

3.23. Intensive Extension Campaign on Agriculture

The scheme is being implemented from 2013-14 with the aim of creating public awareness among farmers regarding various cutting edge technologies available for farmers and developmental programmes in agriculture sector. Krushak Sampark Melas in each block and District Mahostavs in every district are being organized. Different programmes are being telecast and broadcast through different mass media. Information dissemination and awareness is also being created by running Krishi Rathas across the villages. Extension communication materials are being published and distributed among farmers. Folk art forms are also organized for creating such awareness. During 2017-18, such awareness programmes are being taken up and ₹228.27 lakh has been utilized till February '2018. It is proposed to continue such efforts with a cost of ₹350.00 lakh during 2018-19.

3.24. Certification of Agricultural Programmes

The scheme is proposed to be implemented from 2016-17 with the aim of taking up various skill development interventions in collaboration with Agriculture Skill Council of India for capacity building of unemployed youth. A provision of ₹50.00 lakh has been proposed for 2018-19.

Harnessing of surface and ground water.

3.25. Jananidhi (RIDF)

3.25.1. One of the strategies to increase the productivity is provision of assured irrigation facilities. Keeping this in view, it is envisaged to provide assistance for under RIDF for establishment of Private Lift Irrigation Points (shallow tube wells, deep bore wells, dug wells and river lift projects etc). The installation of the PLIPs is being implemented in two formats from 2014-15 (viz. Jananidhi-I- for establishment of individual PLIPs and Jananidhi-II - for establishment of cluster shallow tube well and Cluster micro river lifts). Jananidhi-II is being implemented by Water Resources Department.



SN.	Type of PLIP	Assistance Pattern
JALANIDHI-I		
1	Shallow Tube Well	50% of the Project cost subject to a limit of ₹20,000/-. In addition, in case of cluster of 10 nos. or more STWs the cost of electrification will be borne by Govt. limited to ₹4.00 lakh.
2	Deep Bore Well	75% of the project cost subject to a limit of ₹50,000/- (excluding cost of electrification). In addition, 75% of Genset/ electrification cost subject to a limit of ₹50,000/- lakh (for energisation).
3	Dug Well	75% of the project cost subject to a limit of ₹75,000/-.
4	River lift/ Surface lift Project	75% of the project cost subject to a limit of ₹60,000/-. Community-based/ Regd. bodies to will get 90% subsidy provided the minimum coverage is 40 ha.
JALANIDHI-II		
1	Cluster Shallow Tube Well	Beneficiary Contribution is ₹20,000/- per project. <i>(For BPL of ST& SC category, the beneficiary contribution is ₹10,000/- per project. To be implemented in a cluster of atleast 5 projects.)</i>
2	Cluster Micro River Lifts	Beneficiary contribution is ₹20,000/- per project. <i>(For BPL of ST & SC category, the beneficiary contribution is ₹10,000/- per project. To be implemented in a cluster of atleast 3 projects.)</i>

3.25.2. During 2017-18 (till Feb'2018), 14061 nos. of such PLIPs (STW- 2199 BW-9949, DW-1913) have been established under Jananidhi-I through extending subsidy of ₹7140.19 lakh bringing 26250 hectares of additional area under assured irrigation. Besides, 518 Cluster STWs and 1636 Cluster MRLPs have been established under Jananidhi-II extending a subsidy of ₹5713.22 lakh bringing another 6200 hectares under assured irrigation.

3.25.3. During 2018-19, there is a proposal for establishment of 15600 nos. of such PLIPs (9900 nos. under Jananidhi-I & 5700 nos. under Jananidhi-II) bringing an additional area of around 32000 hectares under assured irrigation including popularization of 2500 nos. of solar photo voltaic pumpsets with a financial assistance of ₹17800.00 lakh.

3.26. Sustainable Harnessing of Ground Water in Water Deficit Areas (BKVY)

In hard rock and hilly areas of the state, like western Odisha and KBK districts, there is very limited scope for flow irrigation. So due to scanty rainfall and uneven rainfall the chances of irrigation is bleak and in absence of assured irrigation facilities the farmers face difficulty in harvesting a good yield in the Khariff season and there is hardly any scope for raising crops in Rabi season. . Realizing the difficulty, Govt. in the year 2010-11 has incorporated a new scheme namely “BKVY- Deep Bore Well Secha Karyakrama” with an aim to provide assured irrigation to farmers in 17 districts of the state by exploiting ground water resources. Subsequently, this programme was extended to 26 districts covering 256 blocks of the state

excluding Kendrapada, Jagatsinghpur, Puri and Bhadrak districts. In this scheme, bore wells are executed in clusters on the plot of farmers on individual ownership basis for a group of farmers. The bore wells are installed on cluster basis with at least four number of bore wells in one cluster. For each cluster one transformer is installed for power supply to the bore wells. The designed ayacut of each bore well is 2.00 hect in Rabi season with protective irrigation of 5 hect in Khariff season. As per the present norm fixed by Govt, a farmer has to deposit ₹ 20,000/- upfront for the bore well after registering the application online. In case of SC/ST beneficiary under BPL category the beneficiary contribution is ₹ 10,000/- only. After its completion (including energisation) the B/W is handed over to the beneficiary. During 2017-18, 8784 nos. of projects have been completed and 43920 Ha of land have been covered under assured irrigation. The projects are being implemented by OLIC. It has been programmed to implement the BKVY programme during 2018-19 with proposed outlay of ₹54000.00 lakh for the purpose. These projects are being implemented through OLIC.

3.27. Biju Krushak Kalyan Yajana (BKKY)

3.27.1. The Scheme is being implemented from 2013-14 to provide health and accident insurance 5 members of every farm family including the farmer free of cost upto ₹1.00 lakh to safeguard against health hazards.

3.27.2. The BKKY was grounded in November, 2013 with the objective to enrolling all the farm families in the state. Till date, around 57, 64, 359 farm families have been enrolled and an expenditure of ₹2368.65 lakh has been incurred (till Jan' 2018). Under this, a total of 4.75 lakh beneficiaries have been treated and claims worth ₹23335.44 lakh settled.

3.27.3. During 2018-19, it is programmed to support all farm families in the state under health insurance cover free of cost and a sum of ₹9040.04 lakh has been proposed to be spent.



3.28. Information Communication and Education (ICE)

The scheme started to be implemented from 2017-18. Under the scheme, various capacity building and awareness campaign materials are being procured and published for keeping the farmer clientele well informed with a total cost of ₹50.00 lakh. During 2018-19, the activities would continue with an estimated cost of ₹200.00 lakh.

Infrastructure Development (Agriculture Sector)

3.29. Development of Agricultural Farms

The scheme is being implemented with the objective of strengthening Departmental Agricultural farms engaged in quality seed production. During 2017-18 (till Feb'2018), farm developmental works were taken up with an expense of ₹99.00 lakh and various work are under progress. The developmental works would continue during 2018-19 with an estimated cost of ₹555.00 lakh.

3.30. Strengthening and Infrastructure Development for Training/ Research Centre/ Laboratories/ Implement Factory etc.

The scheme being implemented for strengthening and development of infrastructure Training/ Research Centre/ Laboratories/ Implement Factory etc. During 2017-18, ₹186.01 lakh is being utilized for strengthening infrastructure of these institutes. During 2018-19, such interventions are proposed to be taken up at an estimated cost of ₹222.00 lakh.

3.31. Infrastructure Development of Sale Centres

The scheme is being implemented in the State for infrastructure development of input sale centers so that the agri-inputs could be stored well in advance to facilitate timely agricultural operations by the farmers. During 2017-18, the input godowns were strengthened with a cost of ₹ 100.00 lakh. During 2018-19, it is programmed to take up such works at a proposed cost of ₹ 115.00 lakh.



3.32. Construction of New Buildings

3.32.1. The scheme is being implemented in the State for construction of new buildings in order to strengthen Agriculture extension to aid smooth implementation of programmes. During 2017-18, the construction works are being taken up with ₹3460.00 lakh and ₹1347.50 lakh has been utilized till Feb'2018.

3.22.2. During 2018-19, the construction activities of departmental buildings and Krishi Bhawan are proposed be taken up. A sum of ₹.5805.26 lakh is proposed as outlay for the purpose.

3.33. Rashtriya Krishi Vikas Yojana- Remunerative Approaches for Agriculture and Allied sectors Rejuvenation (RKVY-RAFTAAR)

3.33.1. The Rastriya Krishi Vikash Yojana (RKVY) has been introduced in the State since 2007-08 as an Additional Central Assistance to the State. The scheme promotes development of agriculture, horticulture and other allied sectors like animal husbandry, dairy development, fisheries, agriculture research & education, minor/lift Irrigation, command area development and watershed development etc. The RKVY was operationalized in



Odisha during Rabi 2007-08 with 100 % central assistance up to 2014-15,.From the year 2015-16, the fund sharing pattern has been changed as 60:40 (Gol share : State share). The State Agriculture Department is the Nodal Department for implementation of RKVY and SAMETI, i.e, IMAGE is the Nodal Agency. In order to enhance efficiency, efficacy and inclusiveness of the programme, Government of India has revamped the scheme as RKVY – RAFTAAR - Remunerative Approaches for Agriculture and Allied sector Rejuvenation from the financial year 2018-19.

3.33.2. During 2017-18, the State have received ₹17441.23 lakh which include ₹10259.00 lakh under Normal RKVY and ₹ 7181.00 lakh under Bringing Green Revolution in Eastern India (BGREI) & ₹1.23 lakh under CDP (Sub-schemes) with sharing pattern of 60:40 (Central Share-60% and State Share-40%). Accordingly ₹ 31236.95 lakh (including State Share) have been released to the different implementing agencies for implementation of various projects under RKVY. During 2017-18, Bringing Green Revolution to Eastern India (BGREI) is being implemented with an estimated cost of ₹12211.77 lakh. Under the programme, block demonstrations, asset building activities and site specific interventions have been taken up.

3.33.4. During 2018-19, it is proposed to take up various agricultural and allied programmes with an estimated cost of ₹75000.00 lakh.

3.34. Analytics for Decision making & Agricultural Policy Transformation (ADAPT)

3.34.1. Analytics for Decision making and Agricultural Policy Transformation (ADAPT) is executed under a partnership between the Government of Odisha, Bill & Melinda Gates

Foundation (BMGF) on 21.4.2017 to promote inclusive agricultural transformation. The first activity under the MoU is to assist the Department to improve its data management and architectures to more effectively utilize existing and future data in order to make evidence based policy decisions. One agreement has also been signed between Samagra Development Associates Private Limited (SAMARA) and BMGF to work for preparation of dash board for ADAPT. The program commenced in November 2017. ADAPT will enable Odisha to become the leading state in the use of data and technology for agriculture, increasing government effectiveness to create farmer prosperity. The programme “ADAPT” will be executed in the State for a period of 3 years with the objectives to develop a comprehensive data stack of all agriculture related information in Odisha, development of a comprehensive decision support system, including an ADAPT dashboard, to ensure visibility of key agricultural data within the government; and identify levers for high impact and strengthen the review and monitoring mechanisms at all levels including state, district, block levels , and drive changes in government policies, processes and people.

3.34.2. The key areas prioritized for the project includes timely delivery of the optimum quantity and quality of seeds at the right price, optimal utilization of fertilizers and preserving soil fertility, mitigating risk for the farmers through increased coverage under insurance, increase in area under irrigation, improving access to formal financial institution for the small holder farmers, timely dissemination of quality information to the farmers in the field through efficient extension machinery and optimal price realization for the farmers’ produce through effective agriculture market facilities. Additional modules will be added over the next three years based on the program objectives.

3.34.3. ADAPT will work with the State and the District officials to digitise and integrate all forms of agricultural data, and initiate review meetings using the dashboard throughout the agriculture department. ADAPT will provide 24x7 quick access to data with features such as SMS updates, automated generated reports and reminders to update data to all government officials. This will enable officials throughout the agriculture system to work more effectively towards farmer prosperity.

3.35. Precision Agriculture for Development (PAD)

The State Government have signed MoU with Precision Agriculture for Development (PAD), a Global Agri-Tech Enterprise for development of a State of art two way mobile phone based extension system for the farmers of Odisha. During the implementation of the project, it will make use of advance data analysis, human centred design and behavioural

economics to provide customised agricultural advisory to at least a million farmers in Odisha by March, 2021, with an eye toward state wise scale up in the long term. This is the key port of agricultural digitization strategy and it will provide right advisory at the right time to the farmers which would result in measurable increase in yield and income over and period of time. JPAL is also a partner for the project who brings world class experience in conducting research, monitoring and evaluation. In the first phase the project will be launched in 5 districts, but it will gradually expanded to all the districts in the State of Odisha. The project will be implemented in 4 phases.

3.36.1. Phase 1: Initial Set up and Testing of a Pilot Service

- » During this phase, PAD is using its own working capital to independently pilot a service among 7,500 farmers in Puri district. This service is largely conceived based on PAD's experiences and successes in Gujarat, with a focus on tailoring to the local context and learning what modifications are essential to farmers in Odisha.
- » The service is a missed call-enabled, two-way IVR platform with additional features, including but not limited to: a weekly push call with information determined by local agricultural experts and tailored to the local geography, a question and answer service, and peer to peer learning.
- » The information content will be consolidated from existing resources on agricultural practices promoted by the International Rice Research Institute (IRRI) and the state agricultural universities.
- » Before gaining access to the system, farmers are profiled as input into a service tailored to their location and farm management choices (e.g. use of irrigation, week of sowing).
- » Farmers will also be trained – either directly or indirectly – in order to increase their understanding of system functionality.

3.36.2. Phase 2: Deepen Engagement with AFE

- » During this phase, J-PAL SA, PAD and AFE will deepen their engagement by finding ways to incorporate existing government resources to support the system, including data and human resources, while building on the lessons learned from the Phase 1 pilot. The service will also be expanded to an estimated 50,000 farmers across 3 districts, determined based on priority needs of AFE.

- » The profiling activities will be consolidated with the existing government profiling process and methodology, and AFE staff will be trained in new optimized profiling techniques.
- » A range of training methods will be tested, using AFE field extension agents, with cost effectiveness and impact as goals, before deciding which options to scale further.
- » Perform tests and experiments with a small set of existing AFE data resources to further customize the content offerings, including soil data and geo-referenced cadastral maps.

3.36.3. Phase 3: Further Customize System Using AFE Resources

- » During this phase, the lessons learned from testing the effectiveness of incorporating AFE data into the system will be intensified by further integrating these technology offerings with the system to increase content customization for farmers at scale. The service will also be expanded to an estimated 500,000 farmers.
- » Some of the customization that would be possible at this point for all farmers on the system will include: fertilizer recommendations tailored to local soil tests and three-day weather forecasts customized by location. Where possible, PAD will rely on machine learning and big data techniques to inform this customization process.

3.36.4. Phase 4: Continue adding precision elements at scale

- » During this phase, the service will be expanded to an estimated 1,000,000 farmers across all districts while simultaneously continuing to increase precision.
- » The service would be further customized using granular satellite images and related analysis, in line with AFE's plans with ISRO. This data would allow advisory messages to be sent to particular geographies, including in the event of pest and disease outbreaks.
- » Content would also be developed for other crops, including potentially for horticulture, at the discretion of AFE.

The ultimate goal for AFE, PAD and J-PAL SA is to gradually transfer the operational and fiscal responsibility of running the mobile-based service to AFE at the end of the project, at which point PAD and J-PAL SA will not be involved in the regular activities, but would be available to provide guidance and support, whenever required.

4. DIRECTORATE OF HORTICULTURE

The Directorate of Horticulture carries out a range of activities promoting horticultural crops like fruits, vegetable, spices & flowers mostly under National Horticulture Mission and also under State Sectors schemes in the non-mission districts. Besides, Coconut Development Board (CDB) sponsored programmes for coconut development, National Mission on Oil Seed and Oil Palm NMOOP (Oil palm) are also being implemented in the State. Similarly Drip and Sprinkler irrigation is being promoted under Pradhana Mantri Krishi Sinchayee Yojana (PMKSY) in the State. The physical and financial achievement during 2017-18 and programme for 2018-19 under various schemes are indicated below.

4.1. Mission on Integrated Development in Horticulture (MIDH)

After restructuring Centrally Sponsored Scheme, National Horticulture Mission (NHM) is a component of Mission on Integrated Development in Horticulture (MIDH). Besides schemes of Coconut Development Board (CDB) and Director of Cashew and Coco Development Board (DCCD) have been merged with MIDH.

4.2. National Horticulture Mission (NHM)

4.2.1 National Horticulture Mission (NHM) is in operation in the State since 2005-06 and some activities have been extended to 30 districts with the objectives of increasing production of selected fruits in the State for enhancing the economic status of the farmers, promotion of export oriented agro based industries, training and development of market infrastructure etc.



The scheme was implemented under Central Sponsored Plan with 100% GOI funding in 2005-06 & 2006-07. From 2007-08, it has been included under CSP scheme with a funding pattern of 85:15 between GOI and the State till 2014-15. From 2015-16 the funding pattern is 60:40 between GOI and the State. A sum of ₹10336.22 lakh has been proposed for implementation of the programme during 2018-19.

4.2.2. 24 districts of the State namely Cuttack, Puri, Nayagarh, Khurda, Balasore, Mayurbhanj, Gajapati, Keonjhar, Kalahandi, Koraput, Nawarangpur, Malkangiri, Rayagada, Nuapada, Bolangir, Subarnapur, Phulbani, Ganjam, Dhenkanal, Sundargarh, Sambalpur, Angul, Bargarh & Deogarh were identified in 4 clusters for development of 9 major horticultural crops under National Horticulture Mission. The crops shortlisted are:- mango, citrus, litchi and banana in fruits, cashew in plantation crops, ginger & turmeric in spices, and rose, marigold, gladioli in floriculture.

Sl. No	Name of the District	Crop Selected
1.	Cuttack	Mango, Banana, Cashew, Citrus, Pineapple, Flower, Betel Vine
2.	Puri	Mango, Banana, Cashew, Flower, Betel Vine
3.	Nayagarh	Mango, Banana, Cashew, Citrus, Flower
4.	Khurda	Mango, Banana, Cashew, Citrus, Flower, Betel Vine
5.	Balasore	Mango, Banana, Cashew, Flower, Betel Vine
6.	Mayurbhanj	Mango, Banana, Cashew, Citrus, Litchi, Flower
7.	Keonjhar	Mango, Banana, Cashew, Citrus, Flower
8.	Gajapati	Mango, Banana, Cashew, Citrus, Litchi, Pineapple, Flower
9.	Ganjam	Mango, Banana, Cashew, Citrus, Flower, Betel Vine
10.	Koraput	Mango, Banana, Cashew, Citrus, Litchi, Flower
11.	Malkangiri	Mango, Banana, Flower
12.	Nawarangpur	Mango, Banana, Flower
13.	Rayagada	Mango, Banana, Cashew, Litchi, Flower
14.	Kalahandi	Mango, Banana, Cashew, Citrus, Flower
15.	Nuapara	Mango, Banana, Cashew, Citrus, Flower
16.	Bolangir	Mango, Banana, Papaya, Citrus, Pineapple, Flower
17.	Subarnapur	Mango, Banana, Citrus, Flower
18.	Dhenkanal	Mango, Banana, Papaya, Cashew, Flower
19.	Kandhmal	Mango, Banana, Citrus, Litchi, Ginger, Turmeric Flower,
20.	Sambalpur	Mango, Cashew, Citrus, Banana, Litchi, Pomegranate, Custard apple, Pine apple, Flower
21.	Bargarh	Mango, Cashew, Citrus, Banana, Litchi, Pomegranate, Guava, Custard apple, Pineapple, Flower
22.	Deogarh	Mango, Cashew, Citrus, Banana, Litchi, Pomegranate, Guava, Custard apple, Pine apple, Flower
23.	Sundargarh	Mango, Cashew, Citrus, Banana, Litchi, Pomegranate, Flower
24.	Angul	Mango, Cashew, Citrus, Banana, Litchi, Papaya, Flower

4.2.3. As per the guidelines of Govt. of India, Odisha Horticulture Development Society under the Chairmanship of Minister, Department of Agriculture and Farmers' Empowerment has been constituted for implementation of Mission activities. One Executive Committee under Principal Secretary, Department of Agriculture and Farmers' Empowerment and District Management Committees under Collectors have been formed for implementation of activities.

4.2.4. Fruit Orchard Development

4.2.4.1. For encouraging farmers to establish fruit orchard on their private holdings, assistance up to 40-50% of cost of cultivation is provided to the farmers @ ₹12,750/- per ha for mango, ₹35,000/- per ha for pineapple, ₹40,985/- per ha for Tissue Culture Banana, ₹30,000/- per ha for papaya, ₹24,000/- per ha. for pomegranate, ₹17,675/- per ha for litchi, ₹19,170/- per ha for guava, ₹20,004 per ha for citrus, ₹16400 per ha for high density mango and ₹20,660/- per ha for high density guava plantation under NHM. New fruit orchards covering 3015 ha. of mango, 115 ha of papaya, 91 ha of Tissue culture Banana have been achieved during 2017-18. The expenditure of ₹72.5 lakh has been made till December, 2017 for establishment of New Garden against the ₹ 105.69 lakh as per Action Plan.



4.2.4.2. During 2018-19, in the Annual Action Plan of NHM, thrust has been diverted to protected cultivation, mechanisation and activities under post harvest management. There is a programme for 2018-19 to cover 60 ha of pineapple, 400 ha. of tissue culture banana, 150 ha. banana sucker, 500 ha of papaya, 100 ha. of litchi, 100 ha of pomegranate, 5340 ha of mango, 20 ha of guava, 40 ha. of citrus in the farmers field with the proposed financial outlay of ₹ 733.94 lakh for the purpose.

4.2.5. Development of Floriculture

There is an increasing demand for flowers like rose, gladioli, marigold and tuberose in and around the urban centres of the State. With a view to encourage farmers of the State to increase their farm income and to create employment opportunities through floriculture, emphasis has been laid on this programme. Under the programme small and marginal



farmers will be provided assistance up to 40% and other farmers up to 25% of cost of cultivation ranging from ₹10,000/- per ha. to ₹60,000/- per ha for taking up commercial cultivation of flowers in their fields. During 2017-18(till December, 2017), flower cultivation over an area of 160.00 ha was taken up under NHM programme with a financial expenditure of ₹ 20.50 lakh against the outlay of ₹64.65 lakh. There is a programme for 2018-19 to cover 260 ha. under floriculture with a financial outlay of ₹44.85 lakh.



4.2.6. Human Resource Development

During 2017-18, HRD activities were taken up for 4750 farmers within the State and 450 outside the State to build confidence among farmers through cross learning. Besides, 2 nos. of Gardeners training has been organised and 375 farmers have been sent for exposure visit to outside the state for skill up-gradation. Similarly, it has been programmed for 2018-19 to send 15000 farmers for training within the states, 1500 nos. of farmer for outside the State. Besides 1000 Nos. of farmers will be sent to outside state for exposure visit for skill up-gradation. The financial achievement till December, 2017 is ₹127.25 lakh against Action Plan of ₹278.44 lakh during 2017-18. During 2018-19, Action Plan has been prepared with the proposed outlay of ₹ 353.20 lakh for implementation of the programme.

4.2.7. Vegetable Cultivation

During 2017-18, achievement has been made for 680.00 ha under hybrid vegetable till December, 2017 against the programme of 2500.00 ha. Besides, emphasis has also given on Seed Production Programme. The expenditure for 2017-18 is ₹136.00 lakh till December, 2017 against target of ₹500.00 lakh. During 2018-19, a sum of ₹600.00 lakh has been proposed under the component with a target of covering 3000 ha under the programme.



4.2.8. Protected Cultivation

During 2017-18, 200 ha under plastic mulching, 1.02 ha Tubular Structure, and 0.90 ha. under shade net house have been achieved. Similarly programmes have been made for 1500 ha. Plastic mulching, 8 ha of shade net houses, 0.5 ha of plastic tunnels, 0.5 ha of walk in tunnels, 1.1 ha anti bird / anti hail nets, 17.2 ha. for Naturally ventilated system, 16 ha of different flowers & high value



vegetables to be grown under poly house in the year 2018-19. During 2017-18 the financial achievement is ₹ 108.34 Lakh against the target of ₹1523.33 Lakh till December, 2017 in the component. A sum of ₹1571.33 lakh has been proposed for 2018-19 for implementation of the programme.

4.2.9. Horticulture Mechanisation

Farm mechanization plays a significant role in enabling the farmers to take up timely horticultural operations, reduce cost of production thereby increase the productivity of the crops. During 2017-18, subsidy has been provided for 10 nos. of tractor upto 20 PTO HP, 16 nos. of power tiller (Below 8 BHP), 65 nos. of self-propelled Horticulture Machinery. It has been programmed for 2018-19 to provide subsidy to the farmers for popularization of 85 nos.of tractor (up to 20 PTO HP), 80 power tiller (below 8 BHP), 75 nos. self- propelled horticulture machinery. The financial achievement of ₹24.90 lakh has been achieved during 2017-18(till December, 2017) against the target of ₹168.55 lakh. The financial outlay of ₹182 lakh has been proposed for 2018-19 for implementation of the programme.

4.2.10. Integrated Post Harvest Management

In order to reduce post-harvest losses in horticultural crops, there is a programme to provide assistance to the farmers under Post Harvest Management. During 2017-18, 120 nos. of pack houses, 1 nos. of pre-cooling units, 5 nos. of cold room, 100 nos. of preservation unit (low cost) ,165 nos. of low cost onion storage structures, 205 nos. of pusa zero energy cool chamber, 2nos. of cold storage, 40 nos. of evaporative / low energy cool chamber have been achieved. During 2018-19 it has been proposed for establishment of 250 nos. of pack house, 2 nos. of integrated pack house, 20 nos. of pre-cooling units, 17 nos.of cold rooms, 2 nos. of primary mobile processing units, 10 nos of cold store , 5 nos. of technology induction and

modernisation of cold chain ,5 nos. of refrigerated transport vehicles, 5 nos. primary mobile / minimal processing unit, 2 nos. of ripening chamber, 120 nos of evaporative low energy cool chamber, 15 nos of preservation unit (New unit), 5 nos of preservation unit (upgraded), 1300 nos. of low cost onion storage structure, 1500 nos of pusa zero energy under the programme. The financial achievement for year 2017-18 is ₹643.08 lakh till December, 2017 against the target of ₹2650.10 Lakh. Similarly the financial outlay of ₹3972.95 Lakh has been proposed for 2018-19 for implementation of the programme.

4.2.11. Establishment of Marketing Infrastructure for Horticultural Produce

Due to inadequate marketing infrastructure, the producers are not getting remunerative price for their produce at the time of harvest. Keeping in view, it has been proposed for 6 nos. of establishment of rural market / apnimandi / direct market, 6 nos. of retail market / outlet, 20 nos. of static / mobile vending cart / platform with cool chamber and 5 nos. of functional infrastructure for collection, sorting / grading during 2018-19 with an proposed outlay of ₹124.50 lakh.

4.3. Coconut Development Board (CDB)

4.3.1. Integrated farming in Coconut holding for productivity improvement

Assistance is being provided to the farmers @ ₹ 35000/- per ha in two year in equal instalments under the sub head “Laying out of demonstration plot”. 25 ha. is to be maintained during 2017-18 and a sum of Rs 4.375 lakh was received from CDB for the purpose. A sum of ₹ 17.5 lakh has been proposed for 2018-19 as Central share to maintained 100 ha. of coconut plantation for the 1st year.



4.3.2. Establishment of Regional Coconut Nursery

The scheme envisages raising of coconut seedling in Govt. Farm & Nurseries and seedlings are sold to the farmers at subsidized rate for area expansion on coconut in the State. During 2017-18, for production of 50,000 coconut seedlings ₹ 16 lakh (CS - 8 lakh and SS-8 lakh) was released for implementation of the programme.

4.3.3. Coconut Palm Insurance Scheme

The Coconut Palm Insurance Scheme intends to provide Insurance coverage to coconut crop. Under the scheme all healthy nut bearing palms in the age group from 4 years to 60 years are eligible to get insurance coverage against natural perils leading to death loss of palm becoming unproductive. 50% of the premium is borne by the Board and balance is shared between the State Govt and Farmers @ 25% each. The premium for the category of palms belonging to the age group of 4-15 is ₹9 and that for 16-60 is ₹14/-. The insured amount for the corresponding categories is ₹ 900 and ₹1750 respectively. It has been proposed to keep the budget provision of ₹ 2.25 lakh (CDB ₹ 1.5 lakh + S.S ₹ 0.75 lakh) for the year 2018-19 to cover 21500 palms.



4.3.4. Re-Planting and Rejuvenation of Old Coconut Garden

The main objective of the scheme is to enhance the productivity and production of coconut by removal of disease advanced, unproductive, old and senile palms and rejuvenating the remaining palms. The scheme is implemented on project basis based on state specific problems.

Financial assistance is extended for

- i. Cutting and removal of all old, senile, unproductive and disease advanced palms; A subsidy @ ₹ 1000 per palm, subject to a maximum of ₹ 32000/ha. is provided for cutting and removal of old, senile, unproductive and disease advanced palms.
- ii. Rejuvenation of the existing coconut palms by Integrated Management: For adoption of Integrated Management practices a subsidy of ₹ 17500/ha. is provided in two instalments of ₹ 8750/- each.
- iii. Assistance for replanting : For replanting, as subsidy of ₹ 40/- per seedling subject to a maximum of ₹ 4,000/-ha is extended.

A sum of ₹ 71 lakh has been proposed for the year 2018-19 for rejuvenation and replanting over 100ha and 2nd year maintenance for 300 ha of coconut plantations.

4.3.5. Area Expansion

Till 2017-18 Area Expansion programme is being taken up under State Plan in Crop Specific Scheme Coconut But. as per Govt. approval vide letter no- 15261 Dt.- 26.09.17 the Area Expansion will be taken up in convergence of State Plan and CDB from the year 2018-19.

Assistance up to ₹24000 will be provided for one ha. in two years. The details break up is as below;

Break Up

Variety	1 st Yr.			2 nd Yr.			Grand Total
	CDB	SP	Total	CDB	SP	Total	
Tall	3250	13550	16800	3250	3950	7200	24000
Hybrid	3375	13425	16800	3375	3825	7200	24000
Dwarf	3750	13050	16800	3750	3450	7200	24000

It has been proposed keep 32.5 lakh as CDB share to achieve 1000 ha. during 2018-19

4.3.6. Horticulture Programme in Non- Mission Districts

A provision of Rs100.00 lakh has been proposed in the State budget during 2018-19 for Area Expansion Programme as per NHM guideline for 6 districts namely Bhadrak, Boudh, Kendrapara, Jagatsinghpur, Jajpur and Jharsuguda as the area expansion programme has not been taken up under National Horticulture Mission. During 2017-18 253.64 ha. has been achieved under fruit crop, 50 ha. in hybrid vegetable cultivation and 55.8 ha. in Floriculture. During 2018-19, the tentative major interventions will be 325ha. for Fruit plantation , 72 ha. in floriculture and 90 ha in Hybrid vegetable.

4.3.7. Strengthening of School of Horticulture

There are three training institutes namely School of Horticulture at Khurdha, Horticulture Training Institute, Kalinga in Kandhamal and Horticulture Training Institute, Nildungri in Sambalpur districts under the Directorate of Horticulture for imparting training to the departmental staff as well as rural youth for self-employment. To preserve the heritage building available at School of Horticulture Khordha the budget provision ₹ 500.00 lakh has been kept during 2017-18. A sum of ₹ 500 lakh has been proposed for 2018-19 for the purpose.

4.3.8. Establishment & revival of Block level nurseries

In order to provide quality planting materials for public sale as well as utilization in Govt. programmes, it has been programmed to establish / revive at least one nursery in each Block for production and stocking of quality planting materials of fruit, vegetable & flowers. As such, 4 nos. of Block level nurseries has been revived / established with an expenditure of ₹ 10 lakh during 2017-18. A token provision of ₹0.03 lakh has been proposed for 2018-19.

4.3.9. Development of Potato, Spices & Vegetable

In order to encourage farmers to take up cultivation of Onion and other vegetables, quality seed materials has been sold to the farmers at subsidized rate. During 2017-18, 512.5qtl of Onion Seeds during Rabi, 30 qtl. Onion seeds during Kharif have been supplied to the farmers at a subsidised rate. An expenditure of ₹38.5 lakh has been made till 29.01.18 against sanction of ₹71 lakh.



A sum of ₹200 lakh has been proposed in the budget during 2018-19 for the purpose.

4.3.10. Input Subsidy

Development of horticulture is dependent on supply and use of quality inputs 4.09lakh Nos. of Quality planting materials of different plants like, K.lime Seedling, Coconut Seedling, Mango graft, Cashew graft, Litchi Gottee, Sopota graft, Papaya seedling and Drumstick seedling have been supplied to the farmers for backyard plantation at subsidized rate during 2017-18. Besides 945 nos. single line trellis have been established in the vine growing areas. An expenditure of ₹94.24 lakh has been made for the purpose against total provision of ₹ 150 lakh till 29.01.18. Subsidised sale of quality planting material will be taken up for 2018-19 with the financial outlay of ₹75. lakh.

4.3.11. Special Crop Specific Scheme – Coconut

The scheme was introduced in the State during 2013-14. The objective of the scheme is to increase area and production of Coconut, as the existing provision made under the Coconut Development Board (CDB) schemes are not sufficient to meet the demand of the State. An area of 1031.7 ha has been achieved during the year 2017-18 and a sum of ₹197.45 lakh has been utilized till 29.01.18. During 2018-19, this scheme will be implemented in the state in convergence with CDB and an outlay of ₹ 135.50 lakh has been proposed for taking up area expansion in 1000 ha under the scheme during 2018-19.

4.3.12. Special Crop Specific Scheme Betel Vine

The scheme is being implemented in the State since 2013-14 to increase the production, productivity of Betel leaf. The farmers are incurring huge expenditure during its initial period for establishment of betel vine, hence it is proposed to provide assistance to the tune of 50% of the cost of establishment for 1st year under the scheme “Special Crop Specific



Scheme- Betel vine”. 117 nos. new Boroj have been established during 2017-18. A sum of ₹48 lakh has been utilized till 29.01.18 against the target of ₹100 lakh during 2017-18. An amount of ₹ 100.00 lakh has been proposed during 2018-19 to establish 250 nos. of New Boraj under the scheme.



4.3.13. State Potato Mission

State Potato Mission has been implemented during 2015-16. The aim and objective of the mission is to make the state self-sufficient in Potato Production as well as availability. Accordingly emphasis has been provided to increase area, production of Table Potato, Production of Seed Potato and establishment of cold storage. The budget outlay for the year 2017-18 is ₹ 2000 Lakh. A sum of ₹ 215 lakh has been proposed for 2018-19 for implementation of the programme in the State.



4.3.14. Horticulture Mission Plus

Emphasis has been given in protected cultivation, Post-Harvest Management, Establishment of Cold Storage and Farm Mechanization in Agriculture Policy 2013. State Govt. is providing top up subsidy for the purpose. During 2017-18, ₹1000 lakh have been provided for providing top up subsidy to the farmers. A sum of ₹ 1653.87 lakh has been proposed for 2018-19 for the purpose.

4.3.15. Establishment of Floriculture Marketing

To develop a modern market building at Bhubaneswar for sale of Fruits Vegetables and Flowers an amount of ₹ 1000 lakh has been provided during 2017-18 for the purpose. A token provision of ₹0.01 lakh has been proposed for 2018-19.

4.3.16. State Incentive for Micro Irrigation

Micro Irrigation plays an important role for optimum use of irrigation water. Besides economic utilization of irrigation water, it plays an important role in fertilizer application, weed control and to get an optimum growth and yield of the crop. At present the subsidy is being provided to the beneficiary under Pradhan Mantri Krishi Sinchayee Yojana. The farmers are not attracted to implement micro irrigation with such subsidy. In order to popularization of

micro irrigation among the farmers of the State, additional subsidy is being provided to the farmers over and above the subsidy provided under the PMKSY. During the year 2017-18, ₹ 540 lakh has been expended against the budget provision of ₹ 995 lakh. A sum of ₹ 1194 lakh has been proposed for providing incentive to the farmers' popularization of micro irrigation during 2018-19.



4.3.17. National Mission on Oil Seed and Oil Palm Plantation (NMOOP)

Oil Palm is an important commercial crop being promoted in the State. The scheme envisages for area expansion under Oil Palm including promotional components like drip irrigation, Intercropping, Bore well, diesel pump set, machinery tools etc. To increase Area, Production and Productivity of Oil Palm an amount of ₹ 384.09 lakh has been utilized during 2017-18 for planting 1005 Ha under Oil Palm crop. A sum of ₹700.00 lakh has been proposed for 2018-19 for planting 1500 ha under Oil Palm.



4.3.18. Pradhanamantri Krishi Sinchayee Yojana: Micro Irrigation

The centrally sponsored scheme of Micro Irrigation is implemented under “Per Drop More Crop of Pradhana Mantri Krishi Sinchayee Yojana. Micro Irrigation ensures access to water in more areas and is an efficient method of water use. It is generally used to provide assured protective irrigation for less water intensive crops in rain-fed regions. It is very useful for horticulture crops. For encouraging use of drip irrigation and sprinkler irrigation, suitable for fruit crops, vegetables, medicinal crops and floriculture crops, subsidy to the extent of 45 to 55% (For Small Farmer & Marginal Farmer 55%, for General Farmer 45%) of the cost, is being provided to the farmers. It has been targeted to cover 13917 ha. under Micro Irrigation during 2017-18 with a financial outlay of ₹ 24.11 crore. Out of which 51 ha. has been achieved with an financial expenditure of ₹ 62.07 lakh. During 2018-19, it is proposed to cover 21304ha. with financial outlay of Rs.3000 lakh under micro irrigation.

5. DIRECTORATE OF SOIL CONSERVATION AND WATERSHED DEVELOPMENT

Government of Odisha has given priority to the development of rain fed areas in the State during the 12th five year plan. Odisha Watershed Development Mission (OWDM) was established during the year 2000 under the Agriculture Department, as a dedicated agency with the mandate to plan, coordinate, streamline and supervise watershed implementation in the state of Odisha in a Mission Mode. OWDM has also been designated as the State Level Nodal Agency (SLNA) for implementation of the flagship programme, Integrated Watershed Management Programme (IWMP).

5.1. Integrated Watershed Management Programme

IWMP was launched by the Department of Land Resources, Government of India, during the year 2009. The main objectives of IWMP are to restore ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The outcome expected are prevention of soil run-off, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table. This enables multi-cropping and the introduction of diverse agro-based activities, which in turn help to provide sustainable livelihoods to the people residing in the watershed areas. IWMP projects are taken up in clusters covering an area of 5000-6000 hectares for realizing visible impacts. IWMP is in operation in the 26 districts except Puri, Kendrapada, Bhadrak and Jagatsinghpur. Currently six batches of projects in 310 clusters have been sanctioned covering an area of 17.02 lakh hectares with a project outlay of ₹ 2191.52 crores. Out of 310 projects, 243 projects are under



implementation in 18 IAP districts covering an area of 13.28 lakh ha with a project outlay of ₹1746.38 crores. The cost norm is Rs 12,000/- per hectare in non-IAP and Rs 15,000/- per hectare for IAP districts with a cost sharing of 90:10 (central share: state share). The project cycle of each IWMP project is 4-7 years. It is spread over three phases' namely preparatory phase, works phase and consolidation & withdrawal phase. IWMP is implemented through Community Participation, Community mobilization, Entry Point Activities, Institution and Capacity Building, preparation of Detailed Project Report with active participation of community are taken up during the preparatory phase. Soil and moisture conservation measures, water harvesting structures, dry land horticulture, plantations etc. are taken up in the works phase of the project.

IWMP has been an integral component of PMKSY i.e. PMKSY – Watershed Development from 2015-16. An amount of Rs 13285 lakh has been spent during 2017-18 (upto January 2018) under PMKSY – WD & OI and an amount of Rs 25000 lakh has been planned to be spent for 2018-19. However, an initial budget provision of ₹15520.00 lakh has been proposed for 2018-19 for the implementation of the scheme.

5.1.1. Institution and Capacity Building

Promotion of community based organizations is an important activity under IWMP. CBOs such as Self Help Groups (SHGs), Users Groups (UGs), Watershed Committees (WC), etc. are organized, strengthened for planning and implementation of different watershed interventions.

5.1.2. Watershed Committee

The Watershed Association i.e. the general body constitutes the Watershed Committee (WC) to implement the Watershed project with the technical support of the Watershed Management Team (WMT) in the village. The Watershed Committee (WC) is registered under the Society Registration Act, 1860. The Watershed Committee (WC) consists of at least 10 members, half of the members are representatives of SHGs and User Groups, SC/ST community, women and landless persons in the village. One member of the WMT is represented in the Watershed Committee (WC). There exists a Watershed Committee in each micro-watershed covering an area of 500-1000 hectares.



5.1.3. Self Help Groups (SHGs)

The Watershed Committee constitute SHGs in the watershed area with the help of Watershed Management Team (WMT) from amongst poor, small and marginal farmer households, landless/asset less poor agricultural laborers, women and SC/ST persons. These groups are homogenous groups having common type of identity and interest who are dependent on the watershed area for their livelihood. SHGs are engaged in micro-finance and micro-enterprise activities. 122 SHGs have been formed, adapted and strengthened with 1464 members during 2017-18 so far. An amount of Rs 5.58 lakh has been mobilized as savings by these SHG members. It has been programmed for 2018-19 to promote 500 SHGs under the scheme.

5.1.4. Users Groups (UGs)

The Watershed Committee (WC) also constitutes User Groups in the watershed area with the help of WMT. These are homogenous groups of persons consisting of those who are likely to derive direct benefits from a particular watershed work or activity. The User Groups are responsible for the operation and maintenance of all the assets created under the project. During 2017-18, 1047 User Groups (UGs) have been formed to take up land based activities with 5276 members. An amount of Rs 94.14 lakh have been mobilized as WDF contribution from the watershed activities. It is projected to form 1000 UGs for 2018-19.

5.1.5. Capacity building

Capacity building has been given importance considering the fact that IWMP is being implemented through CBOs and this plays a major role in effective delivery of the programme. Accordingly focus has been given to train the primary stakeholder such as watershed committee, SHG, UG, Community Interest Group (CIG) members. During the year 2017-18, 10,200 farmers, SHGs, UGs and CIG members have been trained on different themes such as Watershed Guidelines, Agriculture, Horticulture, Fisheries, Mushroom Cultivation, Dairies etc. Skill training on mobile repairing, fitter, driving etc. has been imparted for self-employment. About 560 farmers have been taken on exposure to visit different successful watershed and livelihood projects within and outside the state. It is projected for 2018-19 to train of 18,000 farmers and take 1000 farmers on exposure visit under the programme.

5.1.6. Watershed Development Works

Watershed Development component is the soul of IWMP. Around 56 percent of the budget is spent for implementing different soil & moisture conservation, water harvesting, plantation and ground water recharge activities. The activities are implemented following the ridge to valley approach. All activities contribute towards restoration of the health of the

catchment area by reducing the volume and velocity of surface run-off, including regeneration of vegetative cover in forest and common land. Drainage line treatment with a combination of vegetative and engineering structures, such as earthen checks, brushwood checks, gully plugs, loose boulder checks, gabion structures are constructed for water harvesting and water management. During 2017-18, 2.10 lakh hectares have been treated with different land and water management interventions. 13,450 hectares of cultivable wastelands have been brought under cultivation due to implementation of watershed activities. It is proposed to treat 2.08 lakh hectares during 2018-19.

5.1.7. Livelihoods, production System and micro-enterprise promotion

An amount of Rs 3256 lakh has been spent during 2017-18 under “Livelihoods for the Asset less and Production System & Micro Enterprise” components. The initiatives revolve around few select activities such as goatery, pisciculture, vegetable production and cash crops etc. and are intended to Improve livelihoods, and incomes through forward linkages. A programme “Provision of Women Friendly Farm Tools” has been taken up in collaboration with ICAR – Central Institute for Women in Agriculture. The programme provides carefully sequenced support to 500 Self Help Groups and intends to address drudgeries of farm women.

5.2. National Mission for Sustainable Agriculture (NMSA)

The aim of NMSA is to make Agriculture more productive, remunerative, sustainable and climate resilient by promoting location specific integrated / composite farming system and conserve natural resources through appropriate soil and moisture conservation measures. NMSA promotes integrated farming system covering crops, livestock, fishery, plantation and pasture based farming system for enhancing livelihood opportunities and ensuring of food security by minimising the risk on crop failure. In our country 40% of total crop production is derived from 60% of Rainfed area. That means there will be uncertainty in crop production in the event of adverse climatic condition. Hence the objective of National Mission for Sustainable Agriculture (NMSA) is to make agriculture more productive, sustainable, remunerative climate resilient by adoption of appropriate integrated farming system and value addition measures. RAD, Sub Mission on Agro Forestry are the components under NMSA which adapts a cluster based approach for development and conservation of natural resources along with integrated farming practices.

5.2.1. Rain fed Area Development (RAD)

5.2.1.1. Rainfed Area Development (RAD) is one of the four components of National Mission for Sustainable Agriculture (NMSA) which adopts an area based approach for development and

conservation of Natural resources along with appropriate integrated farming system. It explores potential utilization of natural assets created / available through Watershed Development and Soil conservation activities under MGNREGS/NWDPRA / RVP /RKVY /IWMP etc.

5.2.1.2. RAD aims at promoting Integrated Farming System (IFS) with emphasis on multi cropping, rotational cropping, inter cropping, mix cropping practices and allied activities of Horticulture, Livestock, Fishery, Forestry, Apiculture, Mushroom etc. which enable the farmers in not only maximizing farm production for sustainable livelihood, but also to mitigate the impact of drought, flood and other extreme weather events. Under this programme location specific crops, fruits, vegetables, medicinal plants etc. are supported and natural resource strengthening activities are either converged or supplemented

5.2.1.3. 52 clusters with an Integrated Farming System in 8012 hectares are proposed for treatment during 2017-18 under this programme with an approved outlay of Rs 2662.91 lakhs. Integrated Farming system along with interventions under Value addition and Natural resource development works are under progress. 60 clusters with an integrated farming system of 11795 hectares are programmed for treatment during 2018-19 with a cost of Rs 3680 lakhs.

5.2.2. Sub Mission on Agroforestry

5.2.2.1. Frequent occurrence of weather extreme in many parts of the State coupled with several issues relating to weather scarcity, land degradation etc., often make the life of a farmer miserable. Sub-Mission on Agroforestry under National Mission for Sustainable Agriculture (NMSA) is focused to achieve quantifiable benefits such as increase green cover to enhance carbon sequestration, enrichment of soil organic matter, availability of quality planting material, improvement in livelihood, productivity enhancement of crop and cropping systems, development of an information system etc. The Sub-Mission has following broad interventions: Nursery Development for quality planting material (NDQPM), Peripheral and Boundary Plantation (PBP), High Density Block Plantation (HDBP), Capacity Building & Trainings and Demonstration of Agroforestry Models are the broad interventions to be taken up under the programme.

5.2.2.2. Directorate of Soil Conservation & Watershed Development and Directorate of Horticulture have jointly prepared an action plan involving an admissible cost of 1334.00 lakh rupees during 2017-18. SMAF is being implemented on a prevailing funding pattern of 60% Central Share and 40 % State Share. Accordingly, against an approved action plan of Rs 1334.00 lakh, ₹400 lakh and a matching share of ₹266.67 lakh have been released by Gol and GoO respectively. In the first year, nursery works as detailed below have been initiated under the programme.

Agency	Small Nursery	Big Nursery	Hi Tech Nursery
Directorate of Soil Conservation & Watershed Development	26	10	1
Directorate of Horticulture, Odisha	5	3	2
Total	31	13	3

5.2.2.3. Other interventions such as Peripheral and Boundary Plantation (PBP), High Density Block Plantation (HDBP), Capacity Building & Trainings and Demonstration of Agroforestry Models etc. will be taken up subsequently. A sum of ₹ 518.94 lakh has been proposed for 2018-19 for implementation of the scheme.

5.2.3. Enabling small holders to produce and consume more nutritious food through agroforestry systems in Odisha

In order to enable the small holder to produce and consume more nutritious food through agroforestry system in the State a project has been taken up under RKVY programme namely “Enabling smallholders in Odisha to produce and consume more nutritious food through Agroforestry Systems” by involving World Agroforestry Centre (ICRAF). A Memorandum of Agreement has been signed with World Agroforestry Center (ICRAF) to mutually work together for this agroforestry project. An estimated project cost of ₹1918.95 lakhs will be utilized under Rastriya Krishi Vikash Yoyana (RKVY) over a period of three years. The project will be implemented in an area of about 5000 hectares in Nuapada and Bolangir districts covering 180 villages in 30 Gram Panchayats. The project will benefit about 9000 resource-poor smallholder farming families in both the districts through initiatives aimed at enhanced food and nutritional security, and improved livelihood. Rs 424.19 lakh has been released to ICRAF as first installment for implementation of the project in the State.

5.3. PMKSY: Pradhan Mantri Krishi Sinchai Yojana

5.3.1. The Pradhan Mantri Krishi Sinchai Yojana (PMKSY) has been launched during 2015-16 by Ministry of Agriculture and Farmers Welfare, GoI. The overarching vision of Pradhan Mantri Krishi Sinchai Yojana (PMKSY) will be to ensure access to some means of protective irrigation to all agricultural farms in the country, to produce ‘per drop more crop’, thus bringing much desired rural prosperity. PMKSY will strategize by focusing on end-to end solution in irrigation supply chain, viz. water sources, distribution network, efficient farm level applications, extension services on new technologies & information etc. PMKSY has four programme components: 1. Accelerated Irrigation Benefit Programme 2. Har Khet Ko Pani 3. Per Drop More Crop 4. Watershed Development. A sum of ₹25000.00 lakh has been proposed for 2018-19 for implementation of PMKSY programme in the State.



5.3.2. The State has taken initiatives in implementation of PMKSY by establishing necessary institutions as per the operational guidelines of PMKSY. The State Level Sanctioning Committee (SLSC) and Inter Department Working Group (IDWG) have been constituted and Odisha Watershed Development Mission (OWDM) has been designated as State Nodal Agency for PMKSY at State.

5.3.3. Preparation of District Irrigation Plan (DIP) is mandatory for implementation of PMKSY and approval by SLSC. All the DIPs placed in the Gol website. Total budget for five years 2016-17 to 2020-21 is ₹5146398 lakhs.

5.4. The World Bank assisted National Watershed Management Project – Neeranchal

5.4.1. The World Bank assisted National Watershed Management Project – Neeranchal has been approved by Government of India to support the watershed development component of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). Neeranchal aims to improve incremental conservation outcomes and agricultural yields for communities in selected sites, and adoption of new processes and technologies into the broader programme. Neeranchal is being implemented at national level and nine project states. Odisha has been identified as one of the nine focus States in the country for implementation of the Neeranchal Project.

5.4.2. An amount of Rs 294 lakh has been sanctioned under Neeranchal to take up preparatory activities. Five projects in each district have been identified in Mayurbhanj and Kandhamal for implementation of Neeranchal. An sum of ₹5000 lakh has been proposed for 2018-19 for implementation of Neeranchal project in the State.

6. ODISHA UNIVERSITY OF AGRICULTURE & TECHNOLOGY (OUAT)

The Orissa University of Agriculture and Technology, established in the year 1962 as the second oldest Agricultural University of the Country, has contributed immensely for the cause of agricultural development through its triple mandates of teaching, research and extension education. The University imparts education on Agriculture, Horticulture, Forestry, Veterinary Science & Animal Husbandry, Agricultural Engineering, Community Science, Fishery Science, Basic Science, Bio-informatics, Computer Application and Agri-Business Management through 10 constituent colleges, one Centre for Post Graduate Studies (CPGS) and ten Agro Polytechnic Centres.

During 2017-18, a sum of ₹ 2473.42 lakh has been released to OUAT under State Sector Scheme which includes ₹ 1029.30 lakh for Grant-in-aid to OUAT towards salary, ₹ 250 lakh for infrastructure development of Veterinary Colleges and other colleges of OUAT, ₹50.00 lakh for renovation of Hostels and ₹200.00 lakh for establishment of Agro Polytechnics. A sum of ₹ 2700.00 lakh has been proposed for 2018-19 which includes ₹ 1100.00 lakh for Grants to OUAT towards salary, ₹790 for infrastructure development of College of Veterinary Science & other colleges and ₹ 810.00 lakh for Grants to OUAT towards non salary.

The University has several laurels to its credit in academics, research and extension activities during last five years.



6.1. Academic and Extracurricular Achievements

The students and faculty of the University have exhibited par-excellence in the field of academics encompassing curricular, co-curricular and extra-curricular activities as stated below.

- » OUAT was adjudged as the **best Agricultural University in the East & North Eastern India and placed at 11th position** among all the Agricultural Universities of the country as per ICAR ranking 2016-17 for the quality teaching, research and technology extension and **1st among State Agricultural University** in East & North Eastern India by ICAR and **91st by NIRF of MHRD**. and ranked **137th** among all (4200+) educational institutes, **3rd among all Odisha Universities** and **1st among all Odisha Public University** as per National Institutional Ranking Framework(NIRF) of Ministry of Human Resources Development, GoI 2018.
- » OUAT ranked **9th among SAU for number of students qualifying NET 2017** and the **State ranked 7th position**.
- » Out of four categories in all India **JRF-2017** examination held for Masters admission, OUAT secured **2nd position under Agricultural Sciences** and **2nd position under Engineering and Technology Category**.
- » **Four students of CAET, Bhubaneswar** participated in the event entitled “**Ag Hack**” organized by Confederation of Indian Industries at Chandigarh during 19th – 22nd November, 2016. **Two of them won cash prize of ₹1.00 lakh** for developing an **App. on “Agricultural Insurance”**.
- » **KVK Bargarh** received 2nd Prize on *Swachhta Pakhwada Award* of ICAR 2017.
- » **KVK, Bhadrak** ranked 1st in ICAR-ATARI Kolkata Zone and received **Pandit Deen Dayal Upadhyay Krishi Vigyan Protsahan Puraskar 2017**.

6.2. Achievements in Research Front

The Orissa University of Agriculture and Technology undertakes fundamental, applied and adaptive research at its headquarters and in all the 10 Agro-climatic zones of the state with an objective of generating location specific technologies for higher production and productivity in agriculture and allied sectors. The research activities are carried out in 8

Regional Research and Technology Transfer Stations (RRTTS), 4 Regional Research and Technology Transfer Substations (RRTTSS) and 7 Commodity Research Centers. In addition to this, 52 All India Co-ordinated Research Projects are in operation.

Besides, the University has signed MoU with Overseas Institutions like University of Hawaii, USA; IRRI, Philippines; CIMMYT, Mexico; RIHN, Japan and National Institutes/Organizations viz. National Remote Sensing Centre, Hyderabad; BPCL; Petroleum Conservation Research Association etc. for furthering education and research activities of the University.

6.2.1. Salient Research Findings

- » The university has so far released **152** high yielding crop varieties.
- » Six crop varieties were released from OUAT during 2016-17 viz., two in Paddy (Pratibha and Pradeep) and one each in Finger Millet (Arjun), Blackgram (Sashi), Sugarcane (Charchika) & Ginger (Subhada).
- » OUAT has developed 20 new cultivars of different crops which are awaiting release by State Variety Release Committee.
- » Profitable cropping systems for different Agro-climatic zones have been identified both for irrigated and rainfed areas of coastal and inland districts of the state. Adoption of such remunerative cropping systems will benefit the farmers and will help them to realize higher farm income.
- » Looking at the gradual decline in the native status of secondary and micro nutrients in the soil, management practices have been standardized for rice, maize, sesame, frenchbean crops.
- » Integrated nutrient management practices for individual crops and cropping systems have been developed. Integrated pest management modules for rice, pulses, sugarcane, brinjal, cole crops, turmeric, mustard, banana and cotton have been developed.
- » Organic packages for rice-based high value cropping systems have been standardized. Adoption of these practices will help the farmers to produce safe and healthy food.

- » Integrated disease pest and weed control measures in rice, blackgram, groundnut, jute, cotton, cashew and linseed have been developed
- » Potato varieties such as *Kufri Khyati* (209.1 q/ha) & *Kufri Ashoka* (192.9 q/ha) of 60 days duration and *Kufri Puskar* (262.3 q/ha) of 75 days duration are recommended for higher yield under Odisha situation.
- » The native cattle breeds viz. Binjharपुरi, Ghumusari, Motu & Khariar; buffalo breeds Chilika & Kalahandi and the sheep breed Kendrapada Sheep have been registered with NBAGR, ICAR by the Animal breeders of OUAT.
- » Mastitis is a serious problem in the dairy cattle of the state. The Veterinarians of OUAT have recommended teat dipping with 5% (W/V) *Haldi* solution (*Curcuma longa*) for five minutes after each milking and oral administration of dicalcium phosphate powder 25 g/day for 90 days to prevent subclinical mastitis.
- » The Agricultural Engineers of the University have developed and / tested various farm machineries viz. tractor operated maize dehusker cum sheller, tractor operated multi-row rotary weeder for sugarcane, power operated weeder, power operated maize sheller, self propelled 8 row germinated rice seeder, tractor operated laser guided land leveler, three row rice transplanter for farm women etc.
- » Method of scientific beekeeping of *Apis cerena indica* has been standardized for Odisha by scientists of OUAT

6.3. Achievements in Extension Front

- » The Directorate of Extension Education is transferring technologies to the farmers' field through functioning of 31 Krishi Vigyan Kendras, Information and Communication section, University Extension Block Programme, Distance Education programme, Video Project, Agriculture Technology Information Centre and Odisha Gender Resource Centre. There are 31 Krishi Vigyan Kendras under the University, operating in 28 districts.
- » During 2016-17, the KVKs took up various extension programs like on-farm testing (443 nos.), frontline demonstrations (448 nos.), training to farmers and farm women (1034 no of trainings with 26,022 beneficiaries), rural youth (223 no of trainings with 3424 beneficiaries) & extension functionary; farmers' fair, field day, exhibition, *kissan*

mobile advisory service, diagnostic visit *Kissan Gosthi*, farmers' club meetings, ex-trainees *sammelan*, Scientific Advisory Committee meetings etc. for refining and transfer of technologies relating to agriculture and allied areas.

- » During 2016-17, 11293 nos. of soil samples have been analyzed by different KVKs and 22004 nos. of soil health cards have been distributed to farmers. Publication of different farm literatures, bimonthly Odia magazines, KVK newsletter and popular articles are regular activities of the Directorate of Extension Education of the University. Single window delivery system for supply of agricultural inputs, technology and information to farmers has been effective through Agricultural Technology Information Centre (ATIC). The farmers are being immensely benefited through ATIC.

6.4. Special Programmes

- » An area of 3797 ha have been covered under cluster demonstration on pulses and oilseeds by the KVKs. Pulses seed hubs are operating to enhance production of pulse seeds. Under ARYA project, KVK, Nayagarh has undertaken activities like mushroom production, backyard poultry rearing and stunted fingerlings production with involvement of 75, 75 and 50 rural youths, respectively. Eight no. of skill development trainings have been conducted under ARYA. KVK, Keonjhar had taken up horticultural activities under Centre of Excellence.
- » During *kharif*, 2016-17, 1716 no. of Head to Head trials of stress tolerant IRRI rice varieties like Swarna sub-1, Sahabgaidhan, Bina-11, DRR-42 and DRR-44 covering an area of 343.2 ha were undertaken in 20 districts by the respective KVKs.
- » National Innovations on Climate Resilient Agriculture (NICRA) activities have been taken up in five KVKs viz. Kendrapara, Kalahandi, Jharsuguda, Ganjam-I and Sonepur to enhance the resilience of agricultural production system to variability of climate. The activities of the project are focused on six modules like Natural Resource Management(NRM), Crop Production(CP), Livestock and Fisheries Production, Institutional Interventions, Capacity building and Extension activities.
- » Under PPV and FRA programme, training–cum-awareness on protection of plant varieties and farmers' right have been conducted in 11 KVKs.

6.5. Action Plan for 2018-19

- » 6.5.1. OUAT is envisioned to be a globally recognized and locally relevant Premier Farm University in India providing leading-edge education, research, extension and outreach in agriculture and allied sciences that are life-enhancing, socially sensitive, environmentally responsible and economically beneficial in the current and emerging scenario of socio-economic-climatic-technological changes. It will serve the state for providing template of sustainable agricultural development that would transform agriculture sector into the engine of growth of Odisha's economy and provide livelihood security of farming community. The following action plans have been proposed for 2018-19 to strengthen the functioning of the academic, research and extension system of the University:
- » Implementation of e-governance programs during the coming years. Introduction of e-examination and Academic automation has been planned for implementation.
- » Establishment of Agri-business Incubation (ABTI) Centre for entrepreneurship development
- » Development of facilities for Pulses Breeder Seed Processing and Storage
- » Collection, Screening, Purification and Improvement of Green gram and Black gram Land Races of Odisha.
- » State of Art Referral Lab at College of Veterinary Science and AH
- » Establishment of bio-fertilizer and bio-control agent production units
- » Common Service Centre for Processing of samples for Diagnosis and Prescription
- » Development of sports complex
- » Establishment of Model Teaching Complex at College of Agriculture, Bhubaneswar
- » Wi-Fi Connectivity at OUAT headquarters
- » Establishment of Digital OUAT
- » Strengthening of collaboration and linkage with national and international organisations

7. INSTITUTE ON MANAGEMENT OF AGRICULTURAL EXTENSION (IMAGE)

IMAGE inherited its infrastructure from the Erstwhile Gram Sevak Talim Kendra, Bhubaneswar and is declared as a State Level Agriculture Management & Extension Training Institute (SAMETI) under the NATP with effect from 2nd October, 1997. With the introduction of the Agricultural Reforms Scheme under the NATP, the Institute was declared as an Autonomous Society registered under the Societies Act with effect from



1.3.1999. The mandate of the Institute is training, consultancy, facilitation, networking and documentation. The Institute is Governed by a small Committee of Executive Council under the Chairmanship of Commissioner-cum- Secretary/ Principal Secretary to Government, Agriculture Department. In addition to training IMAGE also has a mandate to manage the funding of the following schemes.

7.1. Extension Reforms

7.1.1 The Centrally Sponsored Plan scheme “Support to State Extension Programme for Extension Reform” with 90:10 funding pattern was extended to all Districts from 2007-08. During 2014-15, the scheme has been brought under the Sub Mission on Agriculture Extension (SMAE) under National Mission on Agriculture Extension and Technology (NMAET). Institute on Management of Agricultural Extension (IMAGE) as a State Agricultural Management and Extension Training Institute (SAMETI) caters to the HRD needs of ATMAs in districts by facilitating preparation of Strategic Research and Extension Plan (SREP), conducting Techno Managerial Training at district level and other trainings, disseminating farm information by organising district level exhibitions and distribution of printed leaflets and such other activities. During 2015-16, Government of India has revised the funding pattern to 60:40 between Central Government: State Government. With a view to encourage exchange ideas among the farmers and to facilitate farmer- scientist interaction, popularisation of new technology among the farmers, District Level Fairs have been organised in all districts of the State. Further, one, State Level Krishi Mahotsava (Krushi Odisha) was also organised in the State during 2017-18. Besides, different trainings had been conducted and participants were trained. Apart from this, funds have been utilized to carry out various extension reforms activities in all the 30 ATMA districts with an expenditure of ₹4477.27 lakh.

7.1.2. During 2018-19, the interventions will be taken up under “Sub-Mission on Agriculture Extension with the proposed outlay of ₹22845.90 lakh.

7.2. Training of Input Dealers

IMAGE has been exploring the possibility of creating an effective Alternate Extension Model in the State. The Diploma in Agriculture Extension Service for Input Dealers (DAESI) Programme run by MANAGE are being conducting at IMAGE. During 2017-18. 13 numbers of DAESI centers have been started in Odisha for providing training to 720 nos. of trainees of Kendrapada, Deogarh, Balasore, Puri, Bhadrak, Jagatsinghpur, Sundargarh, Nabarangapur, Dhenkanal & Angul, Cuttack, Berhampur, Kalahandi, Nayagarh, Phulbani under RKVY and Govt. of India assistance.

7.3. PGDAEM

The Post Graduate Diploma in Agricultural Extension Management (PGDAEM) offered by MANAGE Hyderabad is organized by IMAGE as the State Resources Centre and Examination centre. During 2017-18, 134 candidates have enrolled under the programme.

7.4. Green Agriculture Project

GEF 6 assisted Green Agriculture Project is going to be implemented in specific project area being centred around the Similipal National Park of Mayurbhanj district over a period of 7 years in coordination with different departments. The focal areas of the Project would be biodiversity, land degradation, climate change mitigation and sustainable forest management with the objective of catalyzing transformative change for India’s Agriculture sector to support achievement of national and global environmental benefits and conserve critical biodiversity and forest landscapes. Team of Experts, nominated and facilitated by Food & Agriculture Organisation, after the exhaustive Field Mission are in the process of developing Full Scale Proposal for the project.

7.5. ICT enabled Community Video

It was felt that there is need to develop a mechanism for the farmer participatory and farmer mediated learning based extension platform in order to maximize the penetration of recent knowledge & technology for various interventions related to enhancement of food security through Agriculture and allied activities. For this purpose, capacity building of grass root agriculture extension functionaries is necessary through handholding and back stopping support. Considering the Digital Green ICT enabled community video approach a better alternative for empowering the poor households to adopt better agricultural practices, MoU has

been signed with Digital Green Trust, New Delhi for documenting and recording the adoption and involvement of farmers as well as progress made in all kinds of interventions under different existing ongoing schemes like BGREI, NFSM etc. It is going to be implemented shortly on pilot basis in four districts of our state i.e, Keonjhar, Mayurbhanj, Angul and Deogarh.

7.6. Skill Development Training Programme

IMAGE is authorized for conducting skill based training under Chief Minister's Employment Generation programme, various skill on paddy farmers, pulses cultivators, Harvesting Machine operator, Micro Irrigation Technician and quality seed grower in association with Agriculture Skill Council of India (ASCI),. ToT programmes on domain skill have been conducted at IMAGE from 19.01.17 to 21.01.17 on Harvesting machine Operator, Quality Seed Grower, Small Poultry Farmer, Dairy Farmer, Boiler Poultry Worker etc. ASCI has assessed the performance of the trainers and 50 trainers have been certified. In addition 1006 no of youths have completed skill training out of which 468 are self employed in the field of Agriculture. Four courses and 12 nos of Skill Trainings for Rural Youths (STRY) sponsored by Gol. are also in progress of conducting through Regional Institute of Training and Extension(RITEs).

7.7. Community Radio Stations

The 13 nos. of Community Radio Stations at different locations have been funded from the Extension Reforms Scheme, out of which 4 are performing successfully at Athantara,(Balianta, Khordha), Kherasha (Jagatsinghpur), Phulbani(Kandhamal), Konarka (Puri) and others Biribati (Cuttack), Khariar (Nuapada), Parlakhemundi(Gajapati), Haridaspur (Jajpur), Dasapalla (Nayagarh), Jharsuguda, Baliapal(Balasore), Ghatagaon(Keonjhar) and Bhadrakh are in progress.

7.8. Documentation in Electronic Media

Various package of practices for different agricultural crops SRI method of Rice Cultivation, Rice Production Technology, Seed Treatment Campaign. Bringing Green Revaluation to Eastern India (BGREI), Kharif /Rabi, Hybrid Sunflower and Maize, Groundnut Seed Treatment Campaign, Line Transplanting of Paddy, Mustard Cultivation, Fully Mechanized Rice Cultivation, Accelerated Pulse Production , Soybean Cultivation, Scented Rice Cultivation , Success of colour bird (Poultry) rearing in Odisha, Success of Goat Rearing , Organic Crop Cultivation , White Seasamum Cultivation , Onion Cultivation , Summer Mung Programme, DAESI Programme, Groundnut Cultivation, Integrated Farming Models, Pest Surveillance, Control of Yellow Mossaic Virus, Hybrid Sunflower , Introduction of Neem coated urea , Introduction of sweet corn etc. have been documented

8. ODISHA STATE SEED & ORGANIC PRODUCTS CERTIFICATION AGENCY (OSSOPCA)

8.1. As per the Govt. of India guidelines and recommendations of the Seed Review Team, a separate Seed Certification Wing started functioning in the State in the year 1974. Orissa State Seed Certification Agency (OSSCA) started working as an autonomous body with effect from 01.09.1978. Later OSSCA was renamed as Orissa State Seed & Organic Products Certification Agency (OSSOPCA) from 30.05.2008. Within OSSOPCA, a separate Agency named Orissa State Organic Certification Agency (OSOCA) has been carved out to perform the Organic Certification activities. OSOCA has been accredited as 5th Public Sector Organic Certification Body from the APEDA, Ministry of Commerce, GOI On 01.06.2012 vide APEDA's letter no ODAK-2012-13-01718 dated 26.06.2012 and allotted with the accreditation no. NPOP/NAB/0025._

8.2. As per the Seeds Act, 1966 and Seeds Rule, 1968 OSSOPCA performs its defined activities within six broad phases of certification. It verifies the **Genetical Identity** of different **Crop Varieties**, high degree of **Physical Purity & Germinability**, free from **Other Crop Seeds**, **Weed Seeds** and all designated **Seed Borne Diseases** thereby qualifying the minimum prescribed standards both under laboratory & field conditions. From Kharif-2014, the entire process of seed certification has been made online & implemented throughout the state of Odisha. Besides bringing more transparency in seed certification activities, it has benefited all stake holders and farmers, because of time saving, risk free and benevolent nature.



8.3. OSOCA provides an institutional mechanism for Organic Inspection and Certification in the State of Odisha in particular and outside areas in general to ensure better quality organic products to the consumers. At present, there is an area of 4267.63 ha under Organic Certification. The Crops registered are mostly Orchard Crops like-Mango, Cashew, Banana, Litchi & other crops-Paddy, Ginger, Turmeric, Red chilly and Vegetables covering Mayurbhanj, Sambalpur, Deogarh, Jajpur, Keonjhar, Sundargarh, Gajapati & Rayagada districts.

8.4. During the year 2017-18, the total area under registration as on 31.12.2017 is 19127.56 ha, out of which 18361.41 ha has been registered during Kharif-2017 and 766.15 ha during Rabi 2016-17, which is under progress. Similarly, the area certified so far during Kharif-2017 is 16991.11 ha, out of which quantity certified is 18,215.74 qtls and it is under progress. In the broader perspective, OSSOPCA is committed towards Quality Seed Certification & Production as well as to make available desired quality seeds of different Crop Varieties to the farmers of Odisha during 2018-19 & coming years.

8.5. Online Crop Registration System of OSSOPCA

Odisha State Seed Certification Agency has introduced online crop registration system and other certification application in the State from Kharif 2014 with the objective of timely completion of all seed certification activities, elimination of manipulation in the certification system, minimization of human error in seed certification, achieving the outcome by utilising the minimum work force, improving the certification monitoring system, generation of real time data & report at ease, time-tested traceability mechanism in seed certification and user-friendly Online system. The Software technology has been used to design the citizen centric portal in **responsive** mode for supporting all devices like PC, mobile and tablet. **SMS gateway** has also been used effectively to provide real time information to seed growers as well as officials to take necessary steps at right time. An innovative **Online and Offline Synchronization module** is being in operation for filling up the inspection report through **Mobile App** to get rid of the problem of network connectivity. The **Online Payment System & Bank's Easy Pay System** has been put in place to carry out the payment at ease. Further, **GPS coordinate** has been integrated in the mobile app for field inspection. The Online certification system has also been linked with Seed DBT, State Seed Corporation & other flagship Govt. online system for proper coordination. It helps the farmers to register multiple crops using a single application form. It also helps to track the status of his certification process on real time using the website. Besides, the farmers can get their documents as well as TAGs verified at their nearest ASCO office instead of going to SCO office. Application is very much useful for enhanced Interoperability as a result of which this has been integrated with <http://odishaseedsportal.nic.in>, which is an information warehouse about seeds by the Department.

9. AGRICULTURAL PROMOTION AND INVESTMENT CORPORATION OF ODISHA LIMITED (APICOL)

The Agricultural Promotion and Investment Corporation of Odisha Limited (APICOL), established during the year 1996 as a promotional organization is engaged in promotion of commercial agri-enterprises including agro based and food processing industries in the State. The Corporation has been implementing various programmes through the agricultural extension network of the Department to encourage mechanization, investment in the field of agriculture and other allied activities including investment in creation of captive irrigation source in farmers' fields through establishing Shallow Tube Wells (STWs), Bore Well (BWs), Dug Wells (DW) and River Lift Irrigation Projects (RLIP). The corporation acts as the channelizing agency for release of subsidy under various schemes of State Agriculture Policy 2008 as well as New Agriculture Policy 2013 including farm mechanization under various central and State Plan schemes including RKVY scheme & State Plan schemes. It also provides escort services to Houses engaged in Agri-business.

9.1. Commercial Agri-Enterprises (CAE) / Agro Service Centres (ASC)

9.1.1. Establishment of Commercial Agri-Enterprises has been considered as one of the prime movers for not only self-employment but also for creation of indirect employment opportunities. Capital Investment Subsidy @ 40% subject to a maximum limit of ₹ 50.00 lakh (50% limited to ₹50.00 lakhs for SC/ST/Women/ graduates of agriculture and allied sciences) is provided on a back-ended basis for such ventures. 144 Commercial



Agri-Enterprises along with 592 nos. of Agro Service Centers have been established during 2016-17 against which Capital Investment Subsidy amounting to ₹ 4020.83 lakh have been released to the entrepreneurs.

9.1.2. During 2017-18, activities were intensified for setting up of Commercial Agri-Enterprises and Agro Service Centers in large numbers with a subsidy provision of ₹8273.92 lakh under State Agriculture Policy. During 2017-18, 127nos. of Commercial Agri-Enterprises and 118 nos. of Agro Service Centers have been established (till end of December, 2017). Capital Investment Subsidy amounting to Rs1619.67 lakh have been released for these projects.

9.2. Private Lift Irrigation Projects (PLIPs)

9.2.1. Subsidy amounting to ₹4992.54 lakh have been disbursed during 2016-17 against establishment of 9081 nos. PLIPs in the State.

9.2.2. Subsidy amounting to ₹ 6698.51 lakh have been disbursed during 2017-18 (till December, 2017) against establishment of 12865 nos. PLIPs in the State.

9.2.3. It has been programmed to establish 11540 nos. of PLIPs and 450 of commercial agri enterprises/agro service Centre during 2018-19.

9.3. Creation of Common infrastructure facility for Development of Post Harvest Management (PHM) facilities for Export Promotion.

9.3.1. APICOL is acting as the Virtual Office of Agricultural and Processed Food products Export Development Authority (APEDA), under the Ministry of Commerce and Industry, Government of India. The goal of APEDA is to maximize foreign exchange earnings through increased agro exports, to provide better income to the farmers through higher unit value realization and to create employment opportunities in rural areas by encouraging value added exports of farm produce.

9.3.2. Under the scheme of Infrastructure Development, APEDA has sanctioned financial assistance to a tune of ₹528.3549 lakh for setting up of an integrated post harvest pack house as common facility for fresh fruits and vegetables at Titilagarh in Bolangir District of Odisha. The farmers/FPOs/Trader have already started shorting Onion, Mango and Tamarind on the said Integrated Pack House.

9.3.3. A Walk-in-type cold room of size 10'x10'x10' was also set up at Bijupatnaik International Airport, Bhubaneswar under the financial assistance of APEDA, Government of India to facilitate export of agri-horti products from the State. The exporters of agricultural and horticultural products of the State may utilize the facility as air cargo facility is now available at Bhubaneswar Airport.

9.4. Assistance from Small Farmers' Agri-Business consortium (SFAC)

APICOL is also acting as the State Agency for Small Farmers' Agri-Business consortium (SFAC) under Ministry of Agriculture, Government of India. SFAC provides Venture Capital Assistance (VCA) to promote investments in agri-business projects by way of Soft Loan to supplement the financial gap worked out by the sanctioning authority of Term Loan under means of finance with respect to cost of project. Venture Capital for agri-projects is

being provided either @ 26% of the promoter's equity or ₹50.00 lakh whichever is lower. For projects located in North Eastern Region, Hilly States and in all cases in any part of the country where the project is promoted by a registered Farmer Producer Organization (FPO), the quantum of Venture Capital Assistance will be the lowest of either (i) 40% of the promoter's equity or (ii) ₹50.00 lakh. Qualifying projects under venture capital are of agriculture and allied sector such as horticulture, floriculture, medicinal and aromatic plants, minor forest produce, apiculture, fisheries, dairy and poultry etc. The cost of proposed agribusiness project would have to be ₹15.00 lakh and above subject to a maximum of ₹500.00 lakh.

9.5. Small Farmers' Agri-business Consortium (SFAC) with an objective to empower Farmers Producer Companies (FPC) has announced the roll out of a new scheme called the Equity Grants and Credit Guarantee Fund Scheme(EGCGFS). The scheme has been developed with two major initiatives: one to support FPCs through matching grants and second to set up a fund to cover banks which advance loans to FPOs.

9.6. Entrepreneurship Development Programme (EDP)

APICOL is conducting training on Entrepreneurship Development Programme of 3 days duration with a focus on promotion of enterprises in agriculture and allied sectors. So far during the year 2017-18, 80 numbers of prospective entrepreneurs have been trained on ARD& Fisheries Sector with special thrust on integrated farming.

9.7. Ease of Doing Business

For ease of doing agribusiness under State Agriculture Policy 2013 and to attract more number of entrepreneurs to take up commercially viable agrienterprises in the state by making the execution process simple,online, transparent & timebound. User friendly new business web portal apicol.nic.in & mobile app is being developed by NIC for efficient service delivery through online application by promoters. This will help the promoter for on line submission of application form along with supporting documents. After completion of the project the promoter can submit the subsidy application form and upload all relevant documents to District Nodal Officers' site after due verification. The DNOs will verify and submit all relevant documents online along with Subsidy Release Certificate (SRC)to APICOL to make the subsidy release process faster Further, a special Single Window Clearance Committee will be formed under the Chairmanship of Secretary, Agriculture & FE department to accord approval for Agro & Food Processing industries with support from IPICOL. Besides, an agribusiness facilitation cell will be established at APICOL with dedicated manpower to facilitate agripreneurship, handholding & aftercare support.

10. ODISHA STATE SEEDS CORPORATION (OSSC)

10.1. The Odisha State Seeds Corporation Ltd. (OSSC) has been designated as the Nodal Agency for production, procurement, processing and supply of quality seeds to the farmers of the State. The Odisha State Seed and Organic Products Certification Agency (OSSOPCA) is responsible for certification of the seeds produced in the State under the Seeds Act.

10.2. The OSSC has been implementing the “Seed Village Programme” as “Mo Bihana Yojana” for production of certified paddy and non-paddy seeds through seed growers. Incentives at various rates are given to the seed growers under various schemes for taking up production of certified seeds. The seed produced in farmers fields are processed by the OSSC/Government Processing Plants and through designated private processors and are procured by the OSSC Ltd after certification by the OSSOPCA. During 2016 Kharif 9,209 hectares of paddy area was certified and the expected certified seed production would be around 3.5 lakh quintals and the procurement is in progress. Out of 420 ha registered area of Kharif Groundnut 386 hectares was certified and altogether 2951 quintals of various categories of certified seeds have been procured. During Rabi-2017-18 production season, 1059 ha of paddy coverage has been achieved against the target of 1100 hectares. The targeted area of 290 ha of Mustard and 1004 ha of Groundnut have been achieved. Coverage under Moong and Biri seed is under progress.

10.3. Besides procuring seeds from the farmers under the Seed Village Programme, the OSSC procures certified seeds from OUAT, MOU farms, the National Seeds Corporation and other National/State level Seeds Corporations for meeting farmers need for quality seeds. During 2017-18, 3,40,581.41 quintals of seeds of different crops as detailed below were made available by OSSC.

Quantity of seed supplied during 2017-18

Sl No	Name of seeds	Total Quantity supplied(in quintals)
1	Paddy(Early)	17458
	Paddy(Medium)	94761
	Paddy(Long)	175523
	Total (Paddy)	2,87,742
2	Maize	411
3	Ragi	334
4	Moong	21180
5	Arhar	1300
6	Field Pea	130
7	Blackgram	7340
8	Bengalgram	597

SI No	Name of seeds	Total Quantity supplied(in quintals)
9	Groundnut	16091
10	Mustard	605
11	Sunflower	33
12	Niger	33
13	Til	249
14	Jute	49
15	Dhanicha	4490
	Total(Non-Paddy)	52842
		3,40,584

10.4. The OSSC achieved a turnover of Rs140.00 crore and profit of ₹1.42 crore (provisional) during 2017-18

10.5. During 2018-19, there is a target to supply 4,20,387 quintals of different kinds of quality seeds as detailed below

Programme for Supply of seeds for 2018-19

SI No	Name of the Seed	Total Qty to be supplied (in Qtls)
1	Paddy & Cereals(Wheat, Maize,Ragi)	3,96,100
2	Pulses(Moong, Biri, Arhar, Gram, Field Pea etc)	8,659
	Oil seeds (Groundnut, Mustard, Niger, Til)	15,628
	Total	4,20,387

10.6. The Certified seeds of different varieties of paddy, pulses and oil seeds etc, are sold to the farmers of the State through authorized Private dealers of OSSC and PACS/LAMPS on DBT mode. To ensure quality of the seeds and to prevent sale of spurious seeds, seed samples were drawn for analysis by the Quality Control Inspectors.

Seed Rolling Plan For 2018-19 To 2020-21

Sl.No.	Crop	Quantity of Certified seeds to be produced by OSSC in Qtl.		
		2018-19	2019-20	2020-21
1	Paddy	531000	570000	600000
2	Ragi	200	300	400
3	Arhar	800	1000	1200
4	Moong	5000	6000	7000
5	Biri	3000	4000	5000
6	Gram	500	600	700
7	Groundnut	20000	25000	30000
8	Mustard	800	900	1000
9	Til	200	250	300
10	Niger	100	150	200

Sl.No.	Crop	Requirement of Foundation seeds		
		2018-19	2019-20	2020-21
1	Paddy	10620	11400	12000
2	Ragi	4	6	8
3	Arhar	32	40	48
4	Moong	200	240	280
5	Biri	120	160	200
6	Gram	20	24	28
7	Groundnut	4000	5000	6000
8	Mustard	16	18	20
9	Til	4	5	6
10	Niger	2	3	4

Sl.No.	Crop	Requirement of Breeder seeds		
		2018-19	2019-20	2020-21
1	Paddy	228	240	264
2	Ragi	0.8	0.96	1.05
3	Arhar	1.6	1.92	2.5
4	Moong	9.6	11.2	15
5	Biri	6.4	8	10
6	Gram	0.96	1.12	1.2
7	Groundnut	1000	1200	1400
8	Mustard	0.36	0.4	0.5
9	Til	0.1	0.12	0.15
10	Niger	0.06	0.08	0.1

Collaboration of NSC

The State has become self-sufficient in seed production in paddy crop. OSSC produces paddy and non-paddy seeds for the farmers of the State. State is unable to meet the entire non-paddy seed requirement of the State and hence it depends on National Seeds Corporation (NSC) and other State agencies for supply of non-paddy seeds to the farmers of the State. Steps have been taken to produce required quantity of non-paddy seeds inside the State with the involvement of NSC. Accordingly, a tripartite MOU has been signed among Department of Agriculture & Farmers' Empowerment, Govt. of Odisha, OSSC Ltd, Bhubaneswar and NSC Ltd on 23.07.2016 for providing long term lease to Sukinda Govt. Farm to NSC Ltd for a period of 15 years to produce non-paddy seeds. This will help the State in meeting the seed requirement for non-paddy seeds.

11. ODISHA AGRO INDUSTRIES CORPORATION (OAIC)

11.1. The Odisha Agro Industries Corporation Limited (OAIC) is functioning in the State since 1974. It is engaged in marketing of various Agricultural Inputs including agricultural machinery/equipments/ implements through its network. Besides, the Corporation also executes Shallow Tube wells, Bore wells and River Lift Irrigation Projects for the farming community. It also provides other inputs such as fertilizers, pesticides and cattle/poultry feed to the farmers. During 2016-17, the Corporation has made a turnover of ₹407.68 Crore against annual target of ₹552.83 Crore. During the said year, it has sold 202 no. of tractors, 165 power tillers, 1197 power reapers/thresher, 531 storage bins, 51168 sprayers and 11164 diesel pump sets. Besides, it has energized 15 Bore wells, 15 Shallow Tube wells and has also executed 2376 direct lift projects. It has also sold 90766 M.T. of fertilizer and 4579 M.T. of Seeds. The Corporation has also produced 964 M.T. of Cattle feed during 2016-17.

11.2. As against target of ₹446.15 Crore for the FY 2017-18, the Corporation has already made a turnover of ₹170.39 Crore up to November, 2017. During the said period, it has sold 531 nos. of Tractor, 196 Power Tillers, 262 Power Reaper/Threshers, 66 Storage Bins, 4676 Sprayers and 147 Diesel Pump sets. Besides, it has also executed 1086 Direct Lift Projects. It has also sold 57101 M.T. of Fertilizer. The Corporation has also produced 372 M.T. of Cattle Feed up to November, 2017.



11.3. Besides above, the Corporation has a programme to achieve annual turnover of ₹468.28 Crore with an estimated profit of ₹ 10.00 Crore for the ensuing financial year 2018-19. During 2018-19, it has programmed to sale 2100 nos. of tractor, 787 nos. of power tiller, 2415 nos. of power reaper/thresher/ weeder, ₹1575 worth of agriculture



implements, 52500 nos of sprayers, energisation of 3284 no. of micro river lift projects, 552 nos. of director lift projects, sale of 9450 nos. of pumpsets, 77385.00 M.T. of fertilizers, production of 1050.00 M.T. cattle feed.

11.4. Suravi

To facilitate easy availability of inputs to the farmers at the Block Level, the OAIC is extending its network in partnership with private entrepreneurs for opening of authorized sales outlets in each Block in the name of 'Suravi'. Such Suravi sale outlets are being functioning as an extension of OAIC in distributing Agriculture Machineries/ Implements/ Equipments (inclusive of Electric & Diesel Pump) & agro inputs such as fertilizers, bio-fertilizers, Pesticides, Fungicides, Herbicides, Micronutrient, Plant Protection Equipments, and Cattle / Poultry Feed, etc. to the institutions/beneficiary farmers as per the price fixed by OAIC / Govt. from time to time.

Presently, 272 nos. of Blocks have been covered under Suravi outlets out in the State. Out of 272 selected SURAVI dealers, 75 SURAVIs are doing business with OAIC and business of approximately ₹53.80 lakhs has already been done through the SURAVI outlets with effect from September 2017. At present quality inputs like P.P. Chemicals, P.P. equipments, Pumpsets, HDPE Pipe, Power tillers, Fertilisers of reputed companies are being supplied to the farmers through SURAVI outlets, Further, more than 60 SUARVI dealers have registered themselves as dealers in Agrisnet and are supplying Pumpsets/ farm machinery to the farmers under DBT.

12. ODISHA STATE CASHEW DEVELOPMENT CORPORATION (OSDC)

The OSCDC Ltd. was established in the year 1979 with main objectives to develop land, raise cashew plantation and other suitable species, render technical guidance and assistance to cashew growers and make available good planting materials. In 1993, the OSCDC Ltd was declared as “Nodal Agency” for development of cashew in the State. Now the OSCDC Ltd. has 572 numbers



of cashew plantations over an area of 27954.55 ha. spread over 20 districts of which 284 number of plantations over an area of 12,337 ha. are old and senile. OSCDC dispose all the plantations through auction on annual as well as 3 years on leasing basis. The OSCDC is now taking up replanting work in existing plantations by removing old and senile cashew trees with high yielding varieties of cashew grafts. Since, the year 1999-2000 till 2017-18 nearly 7545.71 ha. of replantation has been undertaken with part assistance from Directorate to Cashew and Cocoa Development and RKVY Scheme.

The annual turnover of OSCDC was ₹1691 lakh for the FY 2015-16 and ₹1793 lakh (provisional for the FY 2016-17. The projected turn over for 2017-18 is ₹2000 lakh. The OSCDC Ltd. has been running in profit for quite some time became a debt free organization since 1995-96 and has an accumulated profit of ₹26.31 crore at the end of 2016-17. The Odisha State Cashew Development Corporation Ltd. has paid dividend to the Government amounting to ₹3,95,33,200/- (Rupees three core ninetyfive lakh thirtythree thousand two hundred) only up to 2015-16 out of its net profits for the said years against paid up equity share capital of ₹1,55,04,000.00.

The OSCDC Ltd. has established 19 numbers of cashew clonal nurseries and 29.22 lakh grafts have been produced during 2016-17.

The OSCDC Ltd. has programmed to produce 31.00 lakh of cashew grafts during 2017-18.



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