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A REVIEW ON APPROACHES TO GOVT. OF ODISHA TOWARDS AGRICULTURE DIVERSIFICATION

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Abstract
This paper aims to analyse the approaches to Govt of Odisha towards agriculture diversification. The economy of Odisha is one of the fastest growing state economies in India. According to 2014-15 economic survey, Odisha's gross state domestic product (GSDP) was expected to grow at q 8.78% in the 2014-15 fiscal year . Odisha has an agro-based economy which is in transition towards an industry and service-based economy. According to Dun and Bradstreet the GSDP is expected to grow at a rate of 1.1% during 2015-2020. Odisha is also one of the top FDI destinations in India. In the fiscal year 2011-12, Odisha received investment proposals worth ₹49,527 crore. According to the RBI Odisha received ₹53,000 crore worth of new FDI commitments in the 2012-13 fiscal.

Keywords: fastest growing state, fiscal year.

Introduction

It is well known that farmers are changing over the years, both as individuals, as well as their contact with the outside world and their information seeking habits. Today, they require extension services unlike two decades ago. As the agricultural sector is gradually segregating into two different segments-commercial and subsistence, the extension system 20 will have to adopt different working models. Extension machinery needs to be strengthened through retraining and retooling of existing extension personnel. Due to the changing face of agriculture, farmers have to make a number of complex decisions.

Agriculture Sector

A. Biju Krushak Kalyan Yojana

Biju Krushak Kalyan Yojana, a path breaking state sponsored health insurance scheme has been introduced by the State Government which addresses the social concerns of the farmers and their dependents by providing them health security. It is an earnest effort to provide them fi nancial support through health and accident insurance as a part of the commitment of the welfare State. About 55 lakh farmers' families have already been enrolled under this Yojana, which promises insurance cover of Rs 1.0 lakh annually to five members of each family.

B. On-line modus operandi for subsidy administration

Applications have been developed with National Informatics Centre (NIC) for online subsidy administration relating to sale of farm machineries, execution of private lift irrigation points in farmer's field and the pump-set tracking system. The State has got accolades from different quarters and some of the States are trying to emulate the Farm Mechanization software. Odisha has got National E-Governance Award for the same. The online modalities have ensured easy and flawless transactions of subsidy in a transparent manner.

C. Promoting line sowing/ line transplanting/ System of Rice Intensification (SRI)

State has given impetus on line sowing, line transplanting and SRI considering the significant higher yield. A separate scheme of line sowing through drum seeders and line transplanting by self-propelled

transplanters have been in operation since 2013-14. The line transplanting/line sowing and SRI achieved in the state during 2011-12 to 2013-14 is given below:

(Area in Ha)

Year	Line transplanting/ line sowing	SRI
2011-12	**46836**	**25002**
2012-13	**242866**	**28055**
2013-14	**230000**	**13937**

D. Enhancing Soil Testing Capacity

It has been envisaged to provide Soil Health Card for each land holding in an interval of 3 years. Thus, it has been decided to analyze 10.54 lakh soil samples in the state during a 14 period of 3 years for macro nutrients, pH, EC, secondary nutrient- Sulphur and micronutrients Zinc and Boron with the following objectives.

i. To address nutrient deficiencies.
ii. To diagnose soil fertility related constraints and design fertilizer recommendations.
iii. To promote soil test based nutrient management to enhance Nutrient Use Efficiency (NUE).

The total number of soil samples tested in the state during 2010-11 to 2013-14 is presented below

Year	No of soil samples tested
2010-11	176638
2011-12	169207
2012-13	219507
2013-14	269285

E. e- pest surveillance

With the objective to have a pest monitoring system in the state for preventing the spread of diseases and pests thereby reducing crop loss, the "e-pest surveillance and pest management" programme is being implemented in coordination with OUAT, CIPMC and NIC since 2010. The endeavour has helped to check pest problem and been able to locate pest endemic pockets by generating pest maps. This programme has created mass awareness amongst the farmers on pest management. It is being implemented in all the districts of the state in both the seasons covering paddy and non-paddy crops.

F. Seed treatment campaign

Seed treatment campaign is being implemented in all the districts since 2011, with a target to protect major crops viz. paddy, pulses & groundnut, from various seed borne diseases. In 2014-15, a total of 477689 beneficiaries have been covered and 4647 nos. of training camps organized. Massive awareness campaign is organized both in kharif and rabi to cover 12 villages in each block.

Animal Resources Development Sector

A. Door step Veterinary Services through Mobile Veterinary Unit.

For effective delivery of various services like treatment, preventive vaccination, de-worming and artificial insemination etc to the livestock of the State, 314 Mobile Veterinary units have been

established in all blocks. These Mobile Units visit 20 days a month, covering at least 40 villages to provide different services at the farmers' doorstep.

B. Female Cross Bred Calf Rearing scheme

It has been observed that a number of female crossbred calves born out of Artificial Insemination show delay in sexual maturity due to provision of inadequate concentrate feed by the famers. Under Rashtriya Krishi Vikash Yojana (RKVY), the farmers of the State have been assisted with subsidized calf feed, health care and insurance for the female calves. Since inception, more than 57000 female calves have been booked under the scheme and the programme is being taken up in collaboration with OMFED.

C. Animal Infertility Treatment Camps at GP level

Reproductive health care measures have been taken up for the dairy animals in 1700 dairy intensive Gram Panchayats of the State to maintain their sexual health for better production. Interventions are being made through different hormones and supportive medicines for treatment of infertility and other disorders. Two infertility camps are being organized in each dairy intensive GP every year under the assistance of RKVY.

D. Integrated Fodder Production scheme

Production of green fodder has been emphasized in the State through different clusters to reduce the production & maintenance cost upon the farmers. The activity has been taken up under RKVY in cluster approach involving the farming community. Lead farmers have been identified to facilitate the activity in sensitizing other farmers for fodder production. Support in terms of provision of seed and planting materials, fertilizers, chaff cutters and feeding troughs are some of the interventions being taken up for enhancing green fodder production.

E. Use of Sexed Semen in cattle

This is a new initiative being taken up by the department from the year 2014-15 under RKVY. Sexed Exotic bull semen will be used upon elite cows in some selected pockets to produce more number of female calves with high genetic potentialities. During this year, 5000 doses of sexed semen will be used for the purpose. Moreover, the programme will also help for production of high quality male calves as future breeding bulls, if born.

Recommendations/ Scope to Explore the Potential

Agriculture Sector

A. Exodus from agriculture to non-agriculture, optimal land use for cultivation purpose

This is a chronic problem that mostly affects the resource poor small & marginal farmers. To prevent this, there has to be impetus on skill up-gradation so as to make the farming operation viable. Reforms need to be brought in the land policy so that non cultivated and barren land can be brought under cultivation. In addition to these, farm mechanisation especially for small operational holdings are required to be promoted in a bigger way with main thrust on creation of custom hiring facilities to make agriculture viable by reducing drudgery of labour and cost of cultivation. Appropriate multi-enterprise planning should be formulated to insure these farmers from crop failure.

B. Mechanisation Feasibility of zero–tillage, un-puddled transplanting, use of post harvest machineries

Despite substantial increase in the farm power consumption owing to a higher dose of subsidy, the farm power input is yet to achieve the national level of 1.78 kw/ha. One of the grey areas which need to be tapped under farm mechanisation is Zero tillage, a form of conservation agriculture. Zero tillage not only preserves soil moisture but also helps carbon sequestration process. Besides, Zero tillage allows farmers to advance planting by 15 days than usual utilising the available moisture and reduces the cost of production to the tune of Rs.2500/-/ha by doing away with the tillage operation. Soil is less disturbed & incidence of weeds decreases. However, productivity will more or less remain same. To harness the benefits, Zero till drills should be manufactured in large scale by the local manufacturers and supplied to the farmers with higher dose of subsidy. All Agro-Service Centres i.e Custom Hiring Centres should be provided with Zero till drill. Similarly, progressive farmers can make use of un-puddled transplanting after laser leveling. It reduces cost of production to the tune of Rs.1700/-/ ha. Thrust may be given for manufacturing & popularisation of low cost & more efficient agricultural implements for making the farm operations viable. Not only farm operations but also post-harvest management plays an important role in ensuring better farm returns. This necessitates large scale promotion of modern post-harvest machines in villages and mandies viz. rice mill with rubber seller, maize seller, cleaner-cumgrader, drier, dal mill and pucca threshing fl oor through the Primary Agriculture Cooperative Societies (PACS). Besides, Crop specifi c (pulses and oilseeds) processing units should be set up at production catchment as a village cooperative programme. Oil mill along with refining and packaging units are needed to be established. In addition to these, renovation of cleaning, 26 automatic weighing and bagging systems already set up in Regulated Market Committee (RMC) to get Fair Average Quality (FAQ) grade Paddy would facilitate better marketing of the agricultural produces at remunerative prices.

C. Production & productivity increase in rain-fed areas

The major scope of enhancing production and productivity lies in rain fed areas. There is an urgent need to switch over from Cereal based cropping system to oil seeds (Groundnut, Sesamum) based/ pulse (Arhar, Moong, Urd) based cropping system, cropping system and vegetable based cropping system. But the rain fed region also harbours harsh areas (Rainfed uplands & infertile soils), where more hardy crops like Finger Millet and other small millets could be taken up. Finger millet being a common food of tribals and resource poor farmers of the State, needs to be given due importance. Also the millets are hardy crops, which can well adopt to changing climatic situations. Emphasis needs to be given on mixed or intercropping to get protection against climatic aberrations. Crop diversification from Paddy to Non-Paddy Crops (Pulses, Oilseeds, Vegetables, Maize & Cotton) in interior districts during Kharif and taking up low- duty crops such as pulses, oilseeds, small millets instead of Paddy under residual soil moisture in rabi, scientific watershed management and adoption of agri-horti system of cropping in rain fed areas, development of agri-entrepreneurship like dairy, bee keeping, mushroom cultivation, etc. utilising the waste land area are some other steps which could be taken up for enhancing production and productivity.

D. Upgrading seed infrastructure and adequate availability of certified seeds

Quality seeds play a vital role in boosting crop production. In order to increase seed replacement rate, there needs to be a substantial development in the seed infrastructure (processing and storage) and seed availability. For long term arrangement of internal seed production in the State, MOU has been signed

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with National Seeds Corporation Ltd (NSC) and International Crops Research Institute (ICRISAT) for production and supply of Pulses and Oilseeds in the State for 2015 -16 to 2017-18.

E. Seed treatment in campaign mode.

A healthy seed gives rise to a healthy plant. Seed treatment is easy, safe and the cheapest way for controlling different seed borne diseases thus saving the farmer from the cost to be incurred towards disease and pest incidence in the standing crops. Hence, large scale campaign needs to be undertaken in print and electronic media for creating awareness among the farmers. More emphasis should be given on treatment of farm saved seeds.

F. Maintaining a strong local seed system and linking it to R & D system.

A sustainable quality seed supply system requires maintaining a strong local seed system and linking it to R&D. About 850 nos. of indigenous varieties of Paddy and Non-Paddy crops of the State have been collected, out of which 504 nos. are registered with the PPV & FRA and preserved in the gene bank. This is certainly an appropriate step in this direction. Potential local germplasm of Paddy and Non-Paddy crops are needed to be selected and developed by the CRRI, OUAT and other ICAR institutions, e.g. Kadua Biri of Rayagada, Pejua Biri of Keonjhar, Nayagarh local Moong etc. From the available germplasms, new cold tolerant pulse varieties could be evolved and popularised in rice fallows. Crop specifi c research station of the State e.g. Sugarcane Research Station, Jute Research Station need to be strengthened for conducting R & D activities on the local germplasm. National Seed Reserve could be created and developed as a contingent plan. "Grain Golas' may be revived for creation of local seed banks. ITK technologies should be promoted for seed preservation & long term storage.

G. Soil testing and soil health campaign

Maintenance of soil health is of prime importance for sustainable crop production. Thus it is planned to provide soil health card for each land holding in an interval of three years. It has also been decided to analyse 10.54 lakh samples in the State over a period of three years with the objectives of diagnosing present soil fertility level, identifying nutrient deficiencies & related constraints and making recommendations to promote soil test based integrated nutrient management. At present, the State has 11 Mobile Soil Testing Laboratories (MSTLs) and 27 Static STLs working in different parts of Odisha. Steps are being taken for establishing 3 more static Soil Testing Laboratories & 6nos of MSTLS during 2015-16. In addition to these 34 mini-soil testing laboratories will also be set up at block level. This would greatly enhance the soil testing capacity and mapping the nutrient status of the soils in the State. The soil testing programme can also help in mapping problematic soils of the State and planning suitable ameliorative measures are to be taken up for the purpose. About 70% of Odisha soils are acidic in nature. Application of Lime as Paper Mill Sludge (PMS) is to be promoted by making it available to the farmers at a nominal price so as to overcome nutrient availability constraints. Appropriate cropping plans suitable for high, medium, low acidic and saline soils should be introduced with reference to the soil analysis report. For example- Growing of salt tolerant crops like Safflower, Sunflower, Cotton, Mustard, Tomato, Spinach Basella, Radish, Cabbage and Paddy varieties like Lunishree, Sonamani, Luna 29 Suvarna, Luna Sampad can be encouraged in 2.40 lakh hectares affected with soil salinity. Similarly, in water logged area, rice-fish farming system and submergence tolerant Paddy variety like Swarna Sub-1, Pani Dhan, Durga etc are to be promoted depending on crop situations. In other areas Integrated Nutrient Management (INM) needs to be promoted.

H. Enhancing water use efficiency and productivity

At present, with increasing concerns for dwindling water resources, there is an imminent felt need for enhancing water productivity through increased water use efficiency. Thus promotion of water saving/ less water requiring crop management practices like, crop substitution from paddy to non-paddy, System of Rice Intensification (SRI), Sustainable Sugarcane Initiative (SSI), aerobic rice cultivation etc. Micro-irrigation systems (sprinkler, Drip irrigation etc) need to be popularised. Some other steps in this direction would be to promote consumptive use of surface and ground water, Rain water harvesting and water use optimization in all canal commands of the State. Greater emphasis could be laid on watershed management & water harvesting structures, creation of appropriate drainage facility in water logged areas and promoting integrated uses of water bodies.

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