REJUVENATION OF AGRICULTURE

Supplementing the Effort
Bridging the Gap
Exploring the Potential

Recommendations of State Level NITI Aayog Task Force

Department of Agriculture, Odisha
## CONTENTS

<table>
<thead>
<tr>
<th>SL. NO.</th>
<th>SUBJECT</th>
<th>PAGE NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Present Scenario, Status and Trend</td>
<td>1 - 12</td>
</tr>
<tr>
<td>2.</td>
<td>Brief on Innovative and Successful Programme carried out in the State</td>
<td>13 - 17</td>
</tr>
<tr>
<td>3.</td>
<td>Shortcomings/ Gap analysis</td>
<td>18 - 24</td>
</tr>
<tr>
<td>4.</td>
<td>Recommendations/scope to explore the potential</td>
<td>25 - 46</td>
</tr>
<tr>
<td>5.</td>
<td><em>Annexure-I</em>: Constitution of State Level Task Force</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td><em>Annexure-II</em>: Constitution of Sub-Committees and ToR</td>
<td></td>
</tr>
</tbody>
</table>
INTRODUCTION

A State Level Task Force on Agriculture Development & Rejuvenation was constituted under the Chairmanship of Chief Secretary, Odisha by the Agriculture Department, Government of Odisha, as suggested by NITI AAYOG (Annexure-1). The Task Force interacted with line departments and various stakeholders and came up with a set of recommendations, with special reference to Odisha, to reinvigorate and reform agriculture and allied sector. The recommendations, inter alia, include adoption of innovative technologies coupled with managerial & policy level interventions.

To finalise the report, a series of meetings were conducted under the chairmanship of the Chief Secretary, Odisha with the policy makers and resource persons from agriculture and allied sectors. Sub-committees were formed for six broad heads/identified areas which have gone into the intricacies in their respective fields and gave their preliminary report for supplementing the continuing effort, exploring the potential and bridging the link/gaps in extension reforms. The details of the Sub-Committees and their broad ToR are enclosed at (Annexure-II).

1. PRESENT SCENARIO, STATUS AND TREND

The State of Odisha has taken up several initiatives to make agriculture and allied sectors more viable and sustainable for its farmers. To provide the much needed impetus and reforms under agriculture and allied sector, the State has committed itself to an exclusive Agriculture Budget since the year 2013-14, with a steadily increasing financial outlay of Rs. 7162.00 crore, Rs. 9542.00 crore & Rs. 10903.00 crore during 2013-14, 2014-15 and 2015-16, respectively. Further, keeping in view the changing circumstances and recent technological developments in agriculture sector, the State Agriculture Policy, which is being implemented since 1996, has been revised twice in the year 2008 and 2013.

The State is not only striving for increasing farm incomes, but it is also committeed to secure the health & well-being of its farmers. A State Plan scheme “Biju Krushak Kalyan Yojana (BKKY)” was, accordingly launched in the year 2013 to provide health & accident insurance coverage of upto Rupees One Lakh to 55.00 lakh farmer families. While ensuring greater resources are provided to the agriculture sector, the State has also made sure greater transparency & accountability in implementation of schemes & programmes through several e-Governance projects & and web-based monitoring programmes.
1.1. Agriculture Sector

Agriculture sector provides employment and sustenance directly or indirectly to more than 60% of the state’s total workforce and this sector continues to be the mainstay of the state’s economy. The state has a cultivated area of 61.80 lakh hectares and the pattern of operational holdings is highly skewed with more than 91% of these belonging to small and marginal category and the average size of land holding being 1.04 hectare. Per capita availability of land, water and other natural resources in the state continue to decline. Occurrence of various biotic (insect and diseases) and abiotic stresses (flood, drought, cyclone etc.) are on the rise. During 1950-51, agriculture and animal husbandry contributed 56.10 % to the GSDP (at 1999-2000 prices) shared by 70% of the population, whereas, the sector contributed 15.70% to the GSDP shared by nearly 60% of the people (as per advance estimates of 2009-10), indicating a decline of the sector as compared to other sectors of the economy. Moreover, as per advanced estimates of 2014-15, the sector’s share of GSDP has further decreased to15.4%.

Despite all constraints, the state’s ten agro-climatic conditions suitable for growing a wide range of crops together with rich natural endowments and an annual average rainfall of 1452 mm, there lies tremendous potential for enhancing income of the farmers by increasing production, productivity and commercializing agriculture.

Area, Production and Productivity of major crops (2013-14)

(Area in ‘000 ha, Production in ‘000 MT/Bales, Yield in Kg/ha)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Area</th>
<th>Yield</th>
<th>Production</th>
<th>Yield (National)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>4180.22</td>
<td>1821</td>
<td>7613.42</td>
<td>2424</td>
</tr>
<tr>
<td>Total Cereals</td>
<td>4668.20</td>
<td>1837</td>
<td>8574.31</td>
<td></td>
</tr>
<tr>
<td>Pulses</td>
<td>2088.30</td>
<td>507</td>
<td>1058.15</td>
<td>764</td>
</tr>
<tr>
<td>Total Food grains</td>
<td>6756.00</td>
<td>1426</td>
<td>9632.46</td>
<td>2101</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>752.40</td>
<td>928</td>
<td>698.57</td>
<td>1153</td>
</tr>
<tr>
<td>Fibre crops</td>
<td>151.87</td>
<td>576</td>
<td>485.75</td>
<td></td>
</tr>
<tr>
<td>Sugarcane</td>
<td>35.34</td>
<td>71980</td>
<td>2543.79</td>
<td>69838</td>
</tr>
<tr>
<td>Vegetables</td>
<td>677.33</td>
<td>13915</td>
<td>9425.21</td>
<td></td>
</tr>
<tr>
<td>Spices</td>
<td>155.30</td>
<td>3149</td>
<td>489.08</td>
<td></td>
</tr>
</tbody>
</table>
A. Production scenario at a glance (rice & food grain)

![Graph showing rice and food grain production from 2002-03 to 2013-14]

B. Seed Replacement Rate (SRR)

The SRR for most of the crops grown in the State are below national level as well as the desired level of 33%, especially in respect of self pollinated crops. However, the SRR in paddy is constantly on the rise.

![Bar chart showing seed replacement rate from 2010-11 to 2013-14]
C. Additional irrigation potential created through various sources:

Farmers are encouraged to create captive irrigation sources through establishment of shallow tube wells, medium tube wells, bore-wells, dug wells and river lift irrigation projects by providing subsidry assistance under JALANIDHI scheme. Year wise irrigation potential created through JALANIDHI is given below

<table>
<thead>
<tr>
<th>Year</th>
<th>No of Pvt. Lift Irrigation Points (PLIP) installed</th>
<th>Irrigation potential created (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>22035</td>
<td>50085.85</td>
</tr>
<tr>
<td>2011-12</td>
<td>22208</td>
<td>48705.20</td>
</tr>
<tr>
<td>2012-13</td>
<td>14719</td>
<td>29002.40</td>
</tr>
<tr>
<td>2013-14</td>
<td>13300</td>
<td>27790.85</td>
</tr>
</tbody>
</table>

D. Farm mechanisation Status

Farm mechanization has great significance for enabling farmers to take up timely and quality agricultural operations, reduction in cost of production, and improving the productivity, besides reducing the drudgery of labour associated with farm operations. Various farm implements/ equipments are supplied to farmers at subsidized rates. The trends indicate a tremendous rise in the demand for improved farm machineries and equipments thereby enhancing the farm power input in the state.
1.2. Horticulture Sector

The agro-climatic conditions are immensely suitable for perennial fruit crops like mango, litchi, guava, oranges and limes; annual fruit crops like banana, pineapple and papaya; spices like ginger, turmeric and chilly, a variety of roots and tubers and a whole range of vegetables. The low-temperature hilly areas at higher altitude offer ideal conditions for growing off-season vegetables. Of late floriculture is also showing excellent prospects. The State thus enjoys a natural comparative advantage for horticulture with possibilities for growing a diversified basket of fruits, vegetables, spices, tubers and flowers; whose potential has not been fully exploited. Paddy is mainly grown in the Low & Medium land in a consolidated manner. So, there is vast scope to convert the uplands and waste lands of the state for Horticultural crops.
The present crop coverage under horticulture is as follows.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Item</th>
<th>Area (ha.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fruits</td>
<td>325846</td>
</tr>
<tr>
<td>2</td>
<td>Vegetables</td>
<td>677331</td>
</tr>
<tr>
<td>3</td>
<td>Spices</td>
<td>155296</td>
</tr>
<tr>
<td>4</td>
<td>Flowers</td>
<td>7434</td>
</tr>
<tr>
<td>5</td>
<td>Coconut</td>
<td>50778</td>
</tr>
<tr>
<td>6</td>
<td>Cashew</td>
<td>147010</td>
</tr>
</tbody>
</table>

The present gross cropped area under horticulture is 13.61 lakh hectares, which is about 20% of the net shown area. It can safely be increased to 20 lakh hectares during coming ten years. Out of a total of 41 lakh hectares covered under paddy during Kharif season, upland paddy constitutes about 9.58 lakh hectares. Some of these upland paddy areas and some medium land under irrigated ayacuts may be suitably diversified for horticulture plantations and vegetable cultivation.

<table>
<thead>
<tr>
<th>Land Category</th>
<th>Area (lakh ha.)</th>
<th>Kharif Paddy area (lakh ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Land</td>
<td>26.94</td>
<td>9.58</td>
</tr>
<tr>
<td>Medium Land</td>
<td>19.14</td>
<td>16.51</td>
</tr>
<tr>
<td>Low Land</td>
<td>15.57</td>
<td>14.91</td>
</tr>
<tr>
<td>Total</td>
<td>61.65</td>
<td>41.00</td>
</tr>
</tbody>
</table>

Looking to the structure of farming community, it is proposed that the small and marginal farmers can be motivated for vegetable cultivation, as these farmers efficiently manage resources to get higher income from unit area, whereas, medium and large farmers can be motivated for establishment of fruit orchards.

1.3. Fisheries Sector

Odisha is one of the major maritime States, offering vast scope for development of inland, brackish water and marine fisheries. The State’s 480 km long coastline with 24,000 sq. km area within the continental shelf has ample potential for marine fisheries development. Freshwater resources of the State are estimated to be 6.76 lakh ha comprising 1.25 lakh ha of tanks/ponds, 2 lakh ha of reservoirs, 1.80 lakhs ha of lakes, swamps & jheels and 1.71 lakh hectares of rivers and canals. The State’s brackish water resources are of the order of 4.18 lakhs ha with a breakup of 0.79 lakh ha of Chilika Lake, 2.98 lakh ha of estuaries, 32,587 ha of brackish water area and 8,100 ha of backwaters. By judiciously harnessing
these resources, the fish production from capture and culture based capture fisheries could be substantially augmented to meet the domestic market demands, create employment and income generating opportunities for the rural poor and enhance their food, nutritional and livelihood security.

1.4. Animal Resources Development Sector

A. Dairy development

Dairy sub sector plays a vital role in rural economy. The value of output from dairy sectors from milk in Odisha at current price was about Rs. 5583.00 crores during the year 2013-14. This does not include the value out puts derived from fuel, manure, draft power, skin & hides etc. Despite the fluctuating growth rate in agriculture, the growth rate in dairy sector is steady. The steady and sustainable growth has been achieved despite of the fact that the investment in this sector was not substantial compared to agriculture.

The State is having very good resource of cattle and buffaloes and it is about 6% of the total cattle and buffaloes found in India. However, the production capacity of these resources is low as compared to other indigenous breeds of the country. Various efforts are being taken up by the department to improve the production and productivity of these populations. Coverage of more number of female adult bovines under organized breeding, follow up for productive and reproductive health care measures, support to genetically improved females born out of AI and others have been emphasized for enhancing the milk production of the State. Odisha has a central Frozen Semen Station for production of quality semen and other breeding inputs for taking p Artificial Insemination activities. The state has performed 15.17 lakh artificial inseminations & 5.46 lakh progeny has been born during the year 2014-15.

The processing & marketing of milk in the State has taken care by Odisha State Cooperative Milk Producers’ Federation Ltd (OMFED). OMFED was established in the year 1980 under Operation Flood – II programme. Since inception OMFED as the Apex Dairy Cooperative of the State is dedicatedly working for the socio-economic development of the dairy farmers and also serving to meet the requirement of the consumers by ensuring the supply of nutritious pasteurized milk and delicious milk products. As on March-2015, 5409 nos. of self governed village level Dairy Cooperative Societies are organized with 2,77,117 farmer members and procuring on an average 5.50 lakh liters of milk per day. The ongoing schemes in dairy sub sector are as follows.

i. Genetic Improvement of bovines through organised breeding like Artificial Insemination and bulls for natural services.

ii. Expansion and strengthening of breeding networks of the State

iii. Scientific production, procurement and distribution of breeding inputs

iv. Conservation & improvement of native breeds.

v. Female Crossbred Calf Rearing programme

vi. Breeding Bull production programme through Field Performance Recording System (FPRS) & Field Progeny Testing Programme.
vii. Involvement of reputed Non-government Organisations to take up livestock breeding activities in an integrated manner

viii. Livestock Insurance Scheme

ix. Reproductive Health Management in dairy animals

x. Refresher training & Skill up-gradation for the Artificial Insemination workers

xi. Promotion of Dairy Entrepreneurship

xii. Interest subvention in long term & short term credit

**Year Wise Milk Production**

<table>
<thead>
<tr>
<th>Year</th>
<th>Production of milk (thousand MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>1282.76</td>
</tr>
<tr>
<td>2005-06</td>
<td>1342.30</td>
</tr>
<tr>
<td>2006-07</td>
<td>1431</td>
</tr>
<tr>
<td>2007-08</td>
<td>1620</td>
</tr>
<tr>
<td>2008-09</td>
<td>1598</td>
</tr>
<tr>
<td>2009-10</td>
<td>1651</td>
</tr>
<tr>
<td>2010-11</td>
<td>1670</td>
</tr>
<tr>
<td>2011-12</td>
<td>1718</td>
</tr>
<tr>
<td>2012-13</td>
<td>1784</td>
</tr>
<tr>
<td>2013-14</td>
<td>1861</td>
</tr>
</tbody>
</table>

Growth % 3.60

**Production of milk (thousand MT)**
B. Sheep & Goat Development

Sheep and Goat sub sector plays crucial role providing substantial income to the marginal & sub-marginal farmers of the State. The value of output from this sub sector during 2013-14 through sale of meat was about Rs. 3241.60 crore at current prices. Despite low input provision, the growth in this sub-sector in last 10 years is steady. The State has recorded a growth of 4.83% in meat production during this period. There are 6 goat breeding, one sheep breeding & one pig breeding farm functioning in the State. Apart from these, the following ongoing schemes have contributed for this growth.

i. Deworming & vaccination of Sheep & Goat

ii. Supply of buck & ram with high genetic potentiality

iii. Livestock Insurance under NLM

iv. Promotion of goat units under NMPS

v. Comprehensive goat development programme in cluster approach under NMPS & through BAIF

vi. Strengthening of State Small Animal Breeding Farms

vii. Promotion of commercial small animal enterprise through State Agricultural Policy

viii. Conservation of Indigenous small animal breeds

Year wise Animal Meat Production in Odisha

<table>
<thead>
<tr>
<th>Year</th>
<th>Production of Animal Meat (In thousand MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>50.52</td>
</tr>
<tr>
<td>2005-06</td>
<td>52.04</td>
</tr>
<tr>
<td>2006-07</td>
<td>55</td>
</tr>
<tr>
<td>2007-08</td>
<td>58</td>
</tr>
<tr>
<td>2008-09</td>
<td>62</td>
</tr>
<tr>
<td>2009-10</td>
<td>69</td>
</tr>
<tr>
<td>2010-11</td>
<td>74</td>
</tr>
<tr>
<td>2011-12</td>
<td>76</td>
</tr>
<tr>
<td>2012-13</td>
<td>76.72</td>
</tr>
<tr>
<td>2013-14</td>
<td>81.04</td>
</tr>
</tbody>
</table>

Growth % 4.83
C. **Poultry Development**

The State has given emphasis for poultry production through commercial farming & backyard farming. The Draft Poultry Policy for further growth of this sector has been finalised. Both egg & meat production in the state is showing an increasing trend. The value of output from this sub sector is through sale of egg & poultry meat was about Rs. 3241.60 crore at current prices during 2013-14. The broiler meat production in the State is 82.35 TMT at present. The initiatives under taken by the State has attracted many private players to invest in poultry sector. The growth rate in poultry sector has been mainly restricted to commercial poultry. Rural backyard poultry contributes nearly 15% to the State egg production which needs special attention. The following ongoing schemes have contributed for this growth.

i. Back yard Poultry Development through supply of low input technology birds

ii. Strengthening of State Poultry Breeding Farms & Hatcherries

iii. Promotion of commercial poultry enterprise through State Agricultural Policy

iv. Exemption of VAT & Entry tax on maize used for poultry feed

v. Agriculture Status to Poultry farming

vi. Concessional electricity tariff for poultry farmers

vii. Use of poultry litter as manure

**Year wise Egg Production in Odisha**

<table>
<thead>
<tr>
<th>Year</th>
<th>Production of Eggs (In Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>1215.96</td>
</tr>
<tr>
<td>2005-06</td>
<td>1278.70</td>
</tr>
<tr>
<td>2006-07</td>
<td>1425</td>
</tr>
<tr>
<td>2007-08</td>
<td>1549</td>
</tr>
<tr>
<td>2008-09</td>
<td>1993</td>
</tr>
<tr>
<td>2009-10</td>
<td>2319</td>
</tr>
<tr>
<td>2010-11</td>
<td>2357</td>
</tr>
<tr>
<td>2011-12</td>
<td>2301</td>
</tr>
<tr>
<td>2012-13</td>
<td>2323</td>
</tr>
<tr>
<td>2013-14</td>
<td>2361</td>
</tr>
</tbody>
</table>

Growth % 7.53

D. **Fodder Development**

Fodder production is a critical input for livestock farming. The State is having 8 fodder seed production farms & 13 fodder farms. Attempts made for promotion of fodder so far by Animal Husbandry Department in isolation is not comprehensive. Hence, fodder production
has not yet been integrated successfully in the livestock farming system. However, the following interventions have been undertaken to support the cause.

i. Fodder seed production Programme
ii. Fodder production & demonstration Programme
iii. Minikit Demonstration Programme
iv. Fodder Seeds Procurement & distribution
v. Utilisation of crop residues
vi. Training & demonstration
vii. Assistance to farmer for integrated fodder production & feeding management
viii. Strengthening of State Fodder Farms

E. Livestock Health & Service Delivery

The State Animal Resources Development Department has the responsibility to provide health care to livestock population along with advisory and support services to the farming community for their sustainable production. The department has 540 Veterinary Hospitals/Dispensaries, 3839 Livestock Aid Centers, 26 District level Disease Diagnostic Laboratories, 4 Clinical Investigation Laboratories to render health care and diagnostic services to livestock farmers. In addition, there is a centrally located production unit for preparing different livestock vaccines to prevent occurrence of contagious diseases. The State level Diseases Diagnostic Institute is responsible for taking up animal disease surveillance and diagnostic activities in the State.

Though the service delivery system seems to be very large, it is inadequate in comparison to the livestock population of the State. Presently, on an average, the State has only one Veterinary Dispensary for every 40000 heads of livestock which is too large as recommended by the National Farmers’ Commission. Moreover, for more than 6200 Gram Panchayats in the State, there are 3839 Livestock Aid Centers with more than one Gram Panchayat being covered by a LAC. As the institutional set up is comparatively low compared to the population, it affects the service delivery mechanism to great extent.

However, during the year 2014-15, 2.46 crore of different vaccinations were made by the field functionaries for prevention and control of animal diseases. In addition, 3190 animal health camps were organised during the year for treatment of reproductive and other disorders. Around 15.0 lakh of animals were treated against worm infestation for maintenance of their production and growth. Mobile Veterinary Units have been set up in every block of the State to provide health care and other supportive services in the villages located away from the VDs & LACs.

F. Human Resources Development

The Department duly acknowledges capacity development of its human resources and therefore, huge investment is being made for laying the foundation of a sustained
development process in the livestock sector. Currently, the training system in the department is fairly organized in comparison to the past. There are seven numbers of training institutes functioning in the department to provide different types of training to different levels of in-service personnel. Moreover, apart from utilizing the existing training institutes and trainers of the Department, there is always a scope to send departmental personnel to different reputed national institutes or farms to undergo training as per the need or for exposure trips.

1.5. Agriculture Finance

The Co-operative Banks have been playing a pivotal role in disbursement of crop loans in the State to the extent of around 70% over the years. The details are given below

<table>
<thead>
<tr>
<th>Year</th>
<th>Commercial Banks</th>
<th>Cooperative Banks</th>
<th>Total</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target</td>
<td>Achievement</td>
<td>Target</td>
<td>Achievement</td>
</tr>
<tr>
<td>2009-10</td>
<td>1912.83</td>
<td>1,432.83</td>
<td>2,269.33</td>
<td>2,682.17</td>
</tr>
<tr>
<td>2010-11</td>
<td>2837.69</td>
<td>1,877.52</td>
<td>3,315.42</td>
<td>3,396.39</td>
</tr>
<tr>
<td>2011-12</td>
<td>4235.12</td>
<td>2,270.31</td>
<td>4,465.71</td>
<td>4,415.89</td>
</tr>
<tr>
<td>2012-13</td>
<td>4566.75</td>
<td>3,175.67</td>
<td>5,258.05</td>
<td>5,426.49</td>
</tr>
<tr>
<td>2013-14</td>
<td>5384.97</td>
<td>3,103.86</td>
<td>6,337.33</td>
<td>7,096.64</td>
</tr>
<tr>
<td>2014-15</td>
<td>8315.12</td>
<td>3823.73</td>
<td>8000.00</td>
<td>8351.11</td>
</tr>
</tbody>
</table>

The term loans advanced for agriculture and allied activities by all the Banks in the State was below 30% of the total crop loans disbursed in the State over the years. The share of STCCS in dispensation of Agriculture Term Loans has been abnormally low at a level below 10% of the crop loans provided over the years. Due to disproportionate advance of term loans for agriculture and allied activities, creation of assets in the agriculture sector has been abnormally low, which has been adversely affecting the productivity.

1.6. Food Processing Sector

The National Mission on Food Processing (NMFP) Scheme has boosted the food processing sector on all fronts. However, the GoI has discontinued it w.e.f 1.4.2015. During the period 2012-13 to 2014-15, 34 Food Processing Industries were assisted under NMFP with Rs.1, 197.33 lakh, two reefer vehicles were assisted with Rs.41.14 lakhs, one infrastructure project for conducting Diploma Course on Food Processing Technology was assisted with Rs.50.00 lakh and seven Food Processing Training Centers (FPTCs) were assisted with Rs.40.00 lakh. More than 250 Awareness Programmes were organised across the State besides 47 EDPs, many Seminars & Workshops for the benefit of the local entrepreneurs. Participation in international exhibitions was encouraged for exposure of the entrepreneurs.
2. Briefs on Innovative and Successful Programmes Carried Out in the State

2.1. 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 dependants by providing them health security. It is an earnest effort to provide them financial 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 pumpset 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:

<table>
<thead>
<tr>
<th>Year</th>
<th>Line transplanting/ line sowing</th>
<th>SRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>46836</td>
<td>25002</td>
</tr>
<tr>
<td>2012-13</td>
<td>242866</td>
<td>28055</td>
</tr>
<tr>
<td>2013-14</td>
<td>230000</td>
<td>13937</td>
</tr>
</tbody>
</table>

D. Enhancing Soil Testing Capacity (Mobile Soil Testing Laboratories and Mini Soil Testing Laboratories)

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
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

<table>
<thead>
<tr>
<th>Year</th>
<th>No of soil samples tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-11</td>
<td>176638</td>
</tr>
<tr>
<td>2011-12</td>
<td>169207</td>
</tr>
<tr>
<td>2012-13</td>
<td>219507</td>
</tr>
<tr>
<td>2013-14</td>
<td>269285</td>
</tr>
</tbody>
</table>

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.

2.2. Animal Resources Development Sector

A. Door step Veterinary Services through Mobile Veterinary Unit.

For effective delivery of various services like treatment, preventive vaccination, deworming 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 farmers. 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.

F. **Conservation and Improvement of Native Germplasms**

The State is very rich in bio-diversity in terms of domestic animals and birds. There are very good populations of native cattle and buffaloes existing in their respective tracts since long with varied performance in production and conformation. Orissa Livestock Resources Development Society in collaboration with the State Agriculture University has taken up ‘Survey & Characterization of nine such populations (4 cattle, 4 buffaloes & 1 Sheep) for assessment of their potentialities.

Out of eight large animal populations studied, Six (4 cattle – Binjharpuri, Ghumusari, Khariar & Motu and 2 buffaloes- Chilika & Kalahandi) have been registered as indigenous breeds of our country. Conservation and improvement in all these six breeds have been taken up in their native tracts with involvement of the local farming community.
G. Setting up of District Diagnostic Laboratories.

For smooth diagnosis of various livestock diseases, district level laboratories have been set up in the State. These Disease Diagnostic Laboratories are functioning in all districts for providing animal disease diagnostic & other services to livestock farmers.

H. Setting up of BSL-3 Laboratories for diagnostic of animal diseases.

There is a State level Animal Disease Research Institute at Phulnakhara, Cuttack which carries out disease diagnostic and surveillance activities to combat & minimize the occurrence of various diseases in animals. The Institute has been strengthened by setting up BSL-3 Laboratory by which the disease diagnosis and surveillance measures have been taken up effectively.

I. Involvement of reputed NGOs for livestock development.

Nationally reputed Non-government Organizations have been involved to take up livestock development activities in Odisha in an integrated manner. In collaboration with BAIF- Development Research Foundation, Pune, Integrated Livestock Development Programme (ILDP)- ‘KALYANI’ has been taken up in 14 districts of the State since 2010-11. Activities like Cattle Development, Goat Development, Fodder Development & Technology Knowledge Strategic Partnership for Development of Chipilima farm for production of foundation seeds & Field Performance Recording have been taken up.

In collaboration with J. K. Trust Gram Vikash Yojana, Cattle Breed Improvement Programme is being taken up through 64 ILD Centers in Cuttack, Dhenkanal & Nayagarh districts. Moreover, under the assistance of SC & ST Dev. Dept., Gol, the programme is being implemented through 620 ILD Centers in 13 tribal districts.

J. SMS based monitoring system

SMS based monitoring system has been set up for effective monitoring of various activities like disease control and breeding, progressive achievements made in different activities like Artificial Insemination and preventive Vaccinations etc by field institutions is being assessed and accordingly steps are taken through the system.

K. GIS based livestock mapping

Livestock data has been integrated with Geographical Information System for assessing the service delivery status of the department.

L. Training of Veterinarians and Paravets on ‘Small Animal Development’

The State has a very good resource of small animals like sheep, goat and pigs. There are about 65 lakh of goats, 16 lakh of sheeps and more than 2.5 lakh of pigs being reared by most of the marginal and backward class of people of the society. To strengthen the knowledge and skill of the Vets and Paravets for smooth delivery of different services for development of these animals, training has been imparted to field Vets and paravets in collaboration with Gopabandhu Academy of Administration, Odisha.
2.3. Agriculture Extension

i. On farm testing to identify the location specificity of technologies in various farming systems.

ii. Frontline demonstrations to establish production potentials of newly released technologies on the farmer’s field and provide feedback.

iii. Training of farmers, farm women and school drop outs to update their knowledge and skills in modern agricultural technologies.

iv. Training of extension personnel to orient them in the frontier areas of technology development.

v. Work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.

vi. Create awareness about frontier technologies through large number of extension activities like farmers’ fair, field day, strategic campaign, ex-trainees meet, etc.

vii. Production of quality seed and planting materials to make it easily available to the farmers.

viii. Publication of farm literatures for easy understanding of farmers.

ix. Analysis of soil and water samples for precise application of fertilizer.

x. Entrepreneurs’ meet to promote agro-entrepreneurship in rural areas.

xi. Kissan Mobile Advisory Service to provide technical know-how and solutions to farmers’ problem through SMS (short message service).

xii. Providing technical information to farmers at their door step through postal correspondence under Distance education programme.

xiii. Single window delivery system of technologies and agri-inputs through Agricultural Information Technology Centre (ATIC).

2.4. Food Processing

In order to provide impetus to the food processing sector in the State and given the challenges associated with food processing sector, the Govt. of Odisha has brought out a new dedicated Food Processing Policy, 2013 which provides for a host of fiscal incentives like 25% Capital Investment Subsidy, Entry Tax exemption for MSMEs on Raw materials and Plant & M/c, Electricity Duty Exemption, Reimbursement on Quality Certification, VAT reimbursement for units set up in Mega Food Parks, etc.

Incentives are also being disseminated under Industry Policy Resolution, 2007, MSMED Policy, 2009 and State Agriculture Policy, 2013. Efforts are on to dovetail the incentive dissemination process so that the entrepreneur of the State can avail maximum benefits.
3. SHORTCOMINGS/ GAP ANALYSIS

3.1. Agriculture Sector

About 2/3rd of the gross cropped area of the State is rain fed and depends on monsoon. Frequent occurrences of natural calamities like flood, drought, cyclone, etc. with erratic climatic conditions are likely to have an adverse impact on the crop production system. Besides, 70% of the soils are acidic in nature resulting in less crop productivity, especially in legumes. Nearly 4 lakh ha of cultivable land is exposed to saline inundation, 3.54 lakh ha to flood and 0.75 lakh ha in the delta areas to water logging. Per capita availability of cultivated land is 0.15 ha and the average size of operational holdings is 1.04 ha which is too less for profitable agriculture. Out of the 46.67 lakh operational holdings, the marginal and small holdings accounts for 91.8%, medium holdings for 8% and large holdings only for 0.2% in the state (2010-11 statistics). Prevalence of poor economic condition among farmers stands as a stumbling block in the way of modern crop husbandry. That too, exodus of work force from agriculture to non-agriculture activities and problem of absentee landlordism along with sub-optimal use of land for cultivation purposes hinders the process of agriculture development. The existing cropping pattern under irrigated as well as rain fed condition of the whole state is predominantly cereal based. Pests build up due to continuous cloudy weather in the Kharif season and the loss of nutrients from the soil due to leaching, are serious problems encountered in the process of enhancing crop production and productivity. Of the total cultivable land of the state, irrigation potential has been developed for 29.62 lakh ha in Kharif and 14.77 lakh ha in Rabi season.

The problem of inadequate electrification also hampers effective irrigation during the cropping season. In addition to these, there lies plenty of untapped irrigation potential yet to be optimally exploited for crop production process.

A. Seed production & availability

Priority has been given in the state agriculture policy to enhance seed replacement rate of the state by producing more certified seeds. In case of paddy, although the allocation of breeder seeds for the State is adequate, but there is disproportionate between quantity allotted and lifted variety-wise. More quantities of > 10 years old varieties have been allocated compared to < 10 years old varieties. In case of non-paddy, the supply of breeder seeds neither match with the allocation nor with the indented quantity. Less supply of indented variety of breeder seeds affects the seed multiplication chain. Popular cold tolerant varieties of pulses suiting to rice fallow situations are not available. Presumably, there is also inadequate seed distribution network in the state. There are no separate staffs exclusively for seed production in Odisha State Seeds Corporation Ltd. Again, the facilities towards seed storage and processing in the state are inadequate. The states’ current available seed storage capacity is only 2.5 lakh quintals against the requirement of 7 lakh quintals. The problem is further exaggerated by some defunct seed processing plants which need repair, renovation and / or replacement. Besides, the coastal areas of the state have a hot and humid climate which is not conducive for safe for storage of seeds of cereals, oilseeds (groundnut), pulses etc. The state also lacks in adequate dehumidified storage facilities.

The requirement of Breeder, Foundation and Certified Seeds for the next four years for the state is given below. The shortfall/gap in requirement and availability will be met through MOU with NSC and ICRISAT.
Seed Requirement Road Map For Next 4 Years

a. Indent of Breeder Seeds

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paddy</td>
<td>925</td>
<td>962</td>
<td>1123</td>
<td>1125</td>
<td>1130</td>
</tr>
<tr>
<td>2</td>
<td>Arhar</td>
<td>8</td>
<td>8.5</td>
<td>9.5</td>
<td>10</td>
<td>10.5</td>
</tr>
<tr>
<td>3</td>
<td>Green gram</td>
<td>87</td>
<td>88</td>
<td>96</td>
<td>100</td>
<td>102</td>
</tr>
<tr>
<td>4</td>
<td>Blackgram</td>
<td>72</td>
<td>78</td>
<td>81</td>
<td>85</td>
<td>90</td>
</tr>
<tr>
<td>5</td>
<td>Groundnut</td>
<td>1881</td>
<td>1884</td>
<td>1930</td>
<td>1950</td>
<td>1960</td>
</tr>
<tr>
<td>6</td>
<td>Mustard</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>12</td>
<td>12.5</td>
</tr>
<tr>
<td>7</td>
<td>Til</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>7</td>
<td>7.5</td>
</tr>
</tbody>
</table>

b. Requirement of Foundation Seeds

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paddy</td>
<td>19274</td>
<td>19958</td>
<td>20208</td>
<td>20325</td>
<td>20350</td>
</tr>
<tr>
<td>2</td>
<td>Arhar</td>
<td>43</td>
<td>129</td>
<td>133</td>
<td>135</td>
<td>141</td>
</tr>
<tr>
<td>3</td>
<td>Green gram</td>
<td>590.5</td>
<td>662</td>
<td>670</td>
<td>679</td>
<td>735</td>
</tr>
<tr>
<td>4</td>
<td>Blackgram</td>
<td>684</td>
<td>760</td>
<td>766</td>
<td>770</td>
<td>845</td>
</tr>
<tr>
<td>5</td>
<td>Groundnut</td>
<td>6250</td>
<td>6900</td>
<td>7500</td>
<td>8100</td>
<td>875</td>
</tr>
<tr>
<td>6</td>
<td>Mustard</td>
<td>36</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>7</td>
<td>Til</td>
<td>15</td>
<td>32</td>
<td>33</td>
<td>33</td>
<td>34</td>
</tr>
</tbody>
</table>

c. Requirement of Certified Seeds

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paddy</td>
<td>770983</td>
<td>798340</td>
<td>808340</td>
<td>813000</td>
<td>814000</td>
</tr>
<tr>
<td>2</td>
<td>Arhar</td>
<td>1082</td>
<td>3100</td>
<td>3200</td>
<td>3250</td>
<td>3400</td>
</tr>
<tr>
<td>3</td>
<td>Green gram</td>
<td>14172</td>
<td>15900</td>
<td>16100</td>
<td>16300</td>
<td>17650</td>
</tr>
<tr>
<td>4</td>
<td>Blackgram</td>
<td>16420</td>
<td>18260</td>
<td>18400</td>
<td>18500</td>
<td>20300</td>
</tr>
<tr>
<td>5</td>
<td>Groundnut</td>
<td>50000</td>
<td>55000</td>
<td>60000</td>
<td>65000</td>
<td>70000</td>
</tr>
<tr>
<td>6</td>
<td>Mustard</td>
<td>3600</td>
<td>3650</td>
<td>3700</td>
<td>3750</td>
<td>3800</td>
</tr>
<tr>
<td>7</td>
<td>Til</td>
<td>1460</td>
<td>3150</td>
<td>3250</td>
<td>3300</td>
<td>3350</td>
</tr>
</tbody>
</table>

B. Making adequate & quality fertilisers in time

There is short supply of fertilisers at the block and GP level, non availability of rail heads in 14 districts of the state, economic condition of small and marginal farmers and non-availability of fertilizer in 5-10 kg bag capacity (small packets) resulting in low fertilizer consumption.

3.2. Agricultural extension

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
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. Some of these are as follows.

i. Strategy to change farming system. (e.g. diversifying from crop production to mixed farming)

ii. Identification of products for which there is good demand in the market.

iii. Taking collective decisions on resource use and marketing.

iv. Quick availability of relevant and reliable information.

**Areas of Improvement And Possible Strategies**

**Gap ‘A’**

i. Degrading Natural Resources.

ii. Inadequate irrigation, mechanisation and infrastructure.

**Possible strategies**

i. More emphasis on resource conservation/regeneration technology in land and water management.

ii. Incentivise development of irrigation, energy, land shaping, mechanisation and other infrastructures like threshing floors, godown, temporary storage houses, value addition units etc.

( in community approach)

**Gap ‘B’**

i. Inadequate extension manpower at grassroots level.

ii. Less focus on material technology/knowledge inputs and more focus on distribution of subsidised inputs.

iii. Poor availability of appropriate technology specific to micro farming situation.

iv. Poor availability of quality inputs at grassroots level in required time.

v. Inadequate capacity of extension system in technology dissemination approach.

vi. Lack of coordination.

**Possible strategies**

i. Develop farmers and farmers’ groups to act as facilitator in technology dissemination.

ii. More focus on use of IT in technology dissemination (Information kiosk, community radio,
development of crop manager packages).

iii. G.P. level technology demo villages showcasing appropriate farm technologies with direct involvement of KVK, SAU and ICAR research institutes.

iv. G.P. level input outlets involving private partners, rural youth and farmer producer groups.

v. Capacity building of all stake holders.

**Gap ‘C’**

i. Poor interface among research units (ICAR, SAU and Private)

ii. Poor interaction with extension and farmer system leading to restricted flow of feedback and technology.

**Possible strategies**

i. Revive/develop mechanism for state level inter-institutional interface of research organisations (ICAR, SAU and private).

ii. Develop mechanism for ensuring farmers participation in technology generation and validation.

iii. Develop technology bank at district level technology segregation for specific micro farming situation.

iv. Strengthen R-E-F linkage and feedback mechanism for development of more appropriate technology.

v. Develop technology capsules in electronic form.
3.3. Animal resources development Sector:

A. Coverage of breedable adult female bovines under organised breeding

Genetic improvement through up-gradation and crossbreeding has been taken up in order to include more breedable cattle and buffalo under organised breeding to create more number of genetically improved calves at the farmers' house. The artificial insemination service is being rendered through a network of 2991 Departmental AI centres at the doorstep of the farmers. During the year 2014-15 as mentioned, 15.17 lakh of Artificial Inseminations were performed. Considering 1.5 inseminations per animal, around 10.00 lakh animals were inseminated. The State is having around 46.0 lakh of adult female bovines, which includes nearly 7.0 lakh of crossbred, 35.0 lakh of indigenous and 4.0 lakh of buffaloes. As per the reproductive performances of these stock, it is expected that 21.00 lakh of adult females will be available for artificial insemination.

Therefore, it is estimated that around 49% of breedable bovines have been covered under Artificial Insemination during the year 2014-15. As it has been targeted to cover 80% of breedable females under organised breeding, several interventions for production, quality control, procurement, post insemination services, distribution of AI inputs and expansion and strengthening of the network system is to be effectively taken up.
B. Feed & Fodder shortage

Estimation on Dry Fodder Availability in the

<table>
<thead>
<tr>
<th>Major Crops</th>
<th>Production in lakh Ton(2012-13)</th>
<th>Conversion rate</th>
<th>Straw in Lakh Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>94.97</td>
<td>1.3</td>
<td>37.0383</td>
</tr>
<tr>
<td>Ragi</td>
<td>0.44</td>
<td>1.8</td>
<td>0.792</td>
</tr>
<tr>
<td>Maize</td>
<td>2.27</td>
<td>2.3</td>
<td>5.221</td>
</tr>
<tr>
<td>Pulses</td>
<td>4.24</td>
<td>1.7</td>
<td>7.208</td>
</tr>
<tr>
<td>CAKES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Nut, Sesamum</td>
<td>1.76</td>
<td>2.1</td>
<td>3.696</td>
</tr>
</tbody>
</table>

Rice: Grain Ratio = 1:1.3 (Ramachandra et al., 2007)
Non Feed Use = 60% of Paddy straw, Other Cereal and Pulses Straw fully available

Estimation on Green Fodder Availability in the State

<table>
<thead>
<tr>
<th>Greens</th>
<th>Avg Grass production in tons/ Ha</th>
<th>Land Utilization 2013-14 (Agriculture Statistics)</th>
<th>Total Production in Lakh tons (Odisha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest Area</td>
<td>1.5</td>
<td>5813000</td>
<td>87.20</td>
</tr>
<tr>
<td>Fallow lands</td>
<td>1</td>
<td>919000</td>
<td>9.19</td>
</tr>
<tr>
<td>Permanent pastures, grazing area</td>
<td>5</td>
<td>443000</td>
<td>22.15</td>
</tr>
<tr>
<td>Cultivable wastelands, misc. tree tops</td>
<td>1</td>
<td>874000</td>
<td>8.74</td>
</tr>
<tr>
<td>Cultivated fodders</td>
<td>40</td>
<td>5000</td>
<td>2.00</td>
</tr>
<tr>
<td>Fodder Production from other source</td>
<td></td>
<td></td>
<td>0.36</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>129.63</td>
</tr>
</tbody>
</table>

Estimation on Requirement of Feed & Fodder

<table>
<thead>
<tr>
<th>Requirement of fodder annually in Lakh Tons</th>
<th>Concentrate in Lakh Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry</td>
<td>Green</td>
</tr>
<tr>
<td>107.52</td>
<td>286.72</td>
</tr>
</tbody>
</table>
There is a 55% shortage of green fodder in the State. As against the green fodder requirement of 28.7 million ton, availability in the State based on Production Statistics is about 13 million ton, which meets only 45% of total requirement. Similarly, there is a shortfall of 50% in case of dry fodder, and about 80% in case of concentrate feed in the State. As against the concentrate requirement of 57.34 million ton, availability in the State based on Production Statistics is about 11.17 million ton, which meets only 20% of total requirement. Fodder production is a land-based activity, so, the priority of farmers goes to other crops due to their already limited land holdings. Thus, less priority is given to fodder production on their private lands. Inadequate publicity for wide adoption of Standard Package of Practice fodder cultivation and lack of convergence between the line department on available feed resource and utilization for livestock consumption is a major challenge.

C. Inadequate storage and processing capacity of Milk

Presently, 5.5 lakh liters of milk is procured and processed by OMFED daily. The processing capacity of OMFED is only 5.95 lakh litres per day. The chilling capacity is 5.65 lakh litres per day. It is projected to procure 10 lakh litres per day by 2020. Therefore, it is essential to set up additional chilling units along with capacity enhancement of existing plants. A new modern Dairy Plant is to be established to process the milk.

3.4. Food Processing Sector

i. Inadequate policy support in the past;

ii. Non-availability of processable varieties of raw materials over a longer period of time at reasonable prices to the industry;

iii. Inadequate post-harvest handling, processing and storage infrastructure;

iv. Lack of dedicated transport system for perishable produce;

v. Poor transfer of cost effective innovative technologies to producer and process;

vi. Low/no premium for quality, hence producer has no incentive to offer high quality raw produce;

vii. Inadequate forward/backward linkages between the growers and the processor;

viii. High incidence of taxes and duties, particularly state levies, duties on packaging materials etc.;

ix. Poor market intelligence and market support;

x. Majority of Indians continue to prefer fresh food, however, the trend is changing.
4. RECOMMENDATIONS/ SCOPE TO EXPLORE THE POTENTIAL

The sector wise suggested recommendations have been presented below:

4.1. 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 levelling. 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 sheller, maize sheller, cleaner-cum-grader, drier, dal mill and pucca threshing floor through the Primary Agriculture Cooperative Societies (PACS). Besides, Crop specific (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,
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 rainfed 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 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. The quantity to be supplied by NSC and ICRISAT to the OSSC during the above period is given below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Season</th>
<th>Green Gram</th>
<th>Black Gram</th>
<th>Arhar</th>
<th>Groundnut</th>
<th>Sesame</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-16</td>
<td>Kharif</td>
<td>-</td>
<td>-</td>
<td>1500</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Pre-Rabi</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10000</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Rabi</td>
<td>6000</td>
<td>1500</td>
<td>-</td>
<td>10000</td>
<td>-</td>
</tr>
<tr>
<td>2016-17</td>
<td>Kharif</td>
<td>-</td>
<td>-</td>
<td>1500</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Pre-Rabi</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5000</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Rabi</td>
<td>5000</td>
<td>1500</td>
<td>-</td>
<td>5000</td>
<td>-</td>
</tr>
<tr>
<td>2017-18</td>
<td>Pre-Rabi</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5000</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Rabi</td>
<td>4000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

NB: Pre-Rabi Groundnut to be supplied by 30th September.
### ICRISAT

**Year** | **Season** | **Chickpea** | **Arhar** | **Groundnut**
--- | --- | --- | --- | ---
2015-16 | Kharif | - | 1500 | -
 | Rabi | 500 | - | 7500
2016-17 | Kharif | - | 1500 | -
 | Rabi | 700 | - | 7500
2017-18 | Kharif | - | 1500 | -
 | Rabi | 1000 | - | 7500

*(Figure in Quintals)*

(Negotiation with the Hindustan Insecticides Ltd is continuing for production of Groundnut seeds in the State).

Possibility of involving various corporate houses & established seed multiplication firms for growing seeds as per need of the State is required to be explored. Such firms may be involved in the programme in PPP mode. The contract farming models can also be tried for production & distribution of quality seeds.

There is a requirement for establishment of two new seed processing plants, one at Junagarh and other at Bhawanipatna (to be established in PPP mode) with state of the art technology which will infuse healthy competition amongst the units established in public and private sectors. With renovation and modernization of 7 old processing plants, the existing functional plants would be 177. These are expected to meet the seed processing need in the State.

Seed is a living unit and proper and adequate storage facilities are inevitable to ensure prepositioning of quality seeds. There exists a vast gap between the required seed storage space and the existing storage space. At present, the State has only 66 designated seed godowns (OSSC-45, OAIC-21) and retail storage space with 1125 PACs and 3040 Pvt. dealers. Thus there is an imminent need for establishing 50 nos. of new seed storage godowns, having capacity of storing 2 lakh qtls each at each sub-division level. Besides, low cost storage structures at retail level need to be popularised in addition to introduction of community based storage structures. There is also need for establishing at least three dehumidified godowns in the Southern, Northern and Central zones of the State for safe storing of seeds of cereals, oilseeds (Groundnut) and pulses under controlled conditions.

All (2714 nos.) Primary Agriculture Cooperative Societies (PACS) of the State may be involved for supply of seeds to farmers. Financial support, strengthening of infrastructure and training to the personnel of the PACS involved in input supply are essential. To make available quality seeds at easy reach of the farmers, the dealer network could be created at village level. This would also ensure availability of newly developed, released and notified varieties to farmers within the minimum time period.

Further, promising popular paddy varieties which are more than 10 years old like MTU-7029, MTU-1001, MTU-1010, Pooja, Lalat, Khandagiri needs re-notification by the GOI for the State. Similarly, Moong varieties like TARM-1, SML-668, PDM-139, PDM-54 and Balck gram varieties like PU-35, TU-94-2 needs to be re-notified for the state.
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 specific research stations 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 – suggestions for large scale program implementation.**

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
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, linking of irrigation subsidy with sustainability and social equity concerns

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.

I. Agriculture credit, insurance, finance & agri-marketing

i) Recommendations on Crop Loan

a. The surplus funds of the State Government PSUs and Government Departments should be invested with the Odisha State Cooperative Bank to strengthen their resource base to cope up with the increasing demand of crop loans and restriction on NABARD refinance provided for the purpose.

b. In order to link credit with marketing and to ensure transparent operations in crop loans advanced to Kisan Credit Card holders, the paddy procurement proceeds should be credited to the loan accounts of the farmer members of PACS selling paddy at MSP through Paddy Procurement Operations.

c. The existing “Kisan Credit Cards” needs to be converted to “Smart Cards” with access to ATM and PoS to bring transparency in crop loan advancement mechanism.

d. The Commercial Banks should increase their share in crop loan dispensation to a level of at least 50% of the total loans disbursed in the State.

e. NABARD refinance component should be kept at last year level of 55% of the Grassroots Level Credit dispersion instead of 45% fixed for the year 2015-16.

f. Interest subvention on crop loans should be provided by the Government of India in advance.

g. A monitoring mechanism to ensure end use of credit by the beneficiaries should be put in place.

h. The PACS should be converted as Business Correspondents of the DCCBs to mobilize deposits on their behalf to strengthen their resource base for catering to the credit requirement.
i. Deposits mobilized by the PACS should be covered under the Deposit Insurance and Credit Guarantee Corporation (DICGC) cover to attract more deposits to strengthen the resource base of the STCCS.

j. The existing DICGC coverage of Rs.1.00 lakh should be enhanced to Rs.3.00 lakhs.

ii) **Recommendations on Agriculture Term Loans**

   The term loans advanced by the Banks for agriculture and allied activities by all the Banks in the State is below 30% of the crop loans disbursed in the State over the years. The share of STCCS in dispensation of Agriculture Term Loans has been abnormally low at a level of below 10% of the crop loans provided over the years. Due to disproportionate advance of term loans for agriculture and allied activities, creation of assets in the agriculture sector has been abnormally low, which has been adversely affecting the productivity. The recommendations are as follows:

   a. Since term loans are meant for capital investment in agriculture, loans advanced by the Banks for this purpose should be increased to a level of at least 40% of the crop loans provided.

   b. The Cooperative Banks should increase their share in Agriculture Term Loans to a level of at least 30% of the crop loans provided by them.

   c. The Field Officers of the Agriculture Department should sponsor adequate applications of farmers to the Cooperative Banks for providing Agriculture Term Loans.

   d. The Kisan Credit Card should incorporate requirement of Agriculture Term Loans by the cardholders in addition to the crop loan limits.

   e. NABARD should reduce the interest on Agriculture Term Loans to the level of crop loans i.e. from existing 9% to 10% to around 7%.

   f. State Government may provide interest subvention of around 7% to reduce the interest burden on farmers to a level of 5% in respect of these loans. If these recommendations are accepted, the State Government subvention on Agriculture Term Loans is assessed at Rs.120 crores during 2015-16, Rs.180 crores during 2016-17 on a term loan dispensation of Rs.2500 crores and Rs.3750 crores respectively.

iii) **Recommendations on Crop Insurance**

   **Weather Based Crop Insurance Scheme**

   a. Weather based Crop insurance can works efficiently if unit for implementation has similar crop pattern and smaller unit area. Therefore Blocks should be further identified for successful implementation of the Scheme.

   b. Government of India should finance setting up weather stations either through Government Agencies or Private Players.
Yield Based Crop Insurance Scheme

i. Modified NAIS is not feasible in the present form because the actuarial premium rate becomes high.

ii. A Corpus Fund may be created with contribution from Govt. of India and respective State Govt. to meet the Govt. share for implementation of Crop Insurance Schemes. The fund should be maintained by the concerned State Govt. so that Govt. share can be released smoothly and quickly and claims of the farmers can be settled immediately.

iii. Insurance unit should be reduced to the level of village Panchayat for major crops.

iv. Guaranteed yield should be based on average of the best five out of the preceding seven years, as it is more appropriate and balanced.

v. Indemnity levels should be 80%.

vi. In addition to the risks of hailstorm and landslide, the scheme should also cover damage caused by wild animals (Elephants).

vii. Insurance coverage should be provided to perennial horticulture crops, betel vines and vegetables.

viii. Flood Insurance should be implemented as weather insurance in the flood affected areas.

ix. Farm income based insurance shall be a better option in the present market scenario.

iv) Recommendations for Financing of Joint Liability Groups (JLGs)

In order to empower the landless farmers/ oral lessees/ share croppers and farmers with small land holding to access hassle free credit, Joint Liability Groups are organized and provided agricultural credit by the Banks without insisting on any security. In absence of legalized tenancy rights, the members of JLGs at times are deprived of the benefits like incentives provided by the Agriculture Department, Crop Insurance Indemnity and other benefits admissible to the farmers from time to time. The members of the JLGs are also unable to sell their surplus paddy under the paddy procurement system. The bankers are not willing to organize and provide credit to the JLGs in absence of land records / tenancy rights. The recommendations are as follows:

i. Limited tenancy right may be provided to the sharecroppers/ oral lessees/ tenant farmers at least for a period of 3 years by amending the Act either by way of Ordinance or legislative enactment.

ii. Identity Cards are required to be issued to the sharecroppers/ oral lessees/ tenant farmers with detailed records of the land brought on lease by them from the land owners.

iii. All the identified families having no land holding / having only homestead land be covered under Joint Liability Groups to access institutional credit.
v) **Recommendations on Agriculture Marketing**

Reforms to APMC Act

a. Single license for wholesalers

b. Single levy on produce

c. Allow e-trading

d. Declaring registered warehouses as mandis

e. Strengthen OSAM and DAM with professional, adequate man power and financial outlay.

f. Investment in RKVY on marketing infrastructure to be increased.

g. Encourage private investment through PPP mode and viability gap funding

h. Promote market information and national integrated market – a pilot scheme is being finalized by government of India.

i. RMCs should utilize the services of Aggregators/Dealers/Progressive Farmers in procurement/ Marketing of agricultural produce.

vi) **Recommendations on Warehousing**

a. Construction of Warehouse should be considered as an agricultural activity and exemption for change in land use.

b. Registering of warehousing with the warehousing development/ accrediting organisations.

c. Regulatory authority for issue of negotiable warehouse receipts.

4.2. **Horticulture Sector**

The objectives of the recommendation are:

i. Crop diversification from paddy to non-paddy particularly horticulture crops, minor millets, pulses and oil seeds.

ii. Bringing 6.49 lakh ha of paddy area to horticulture area

iii. Develop suitable farming system models.

iv. Suitable cropping pattern for each physiographic region.

v. Increasing cropping intensity

vi. Increasing nutritional security through horizontal and vertical expansion of Horticultural crops.

The following strategies are required for horticultural development and crop diversification in Agriculture.
i. Region specific interventions such as specific crops i.e. on fruits, vegetables, spices, MAP, flowers & plantation crops or varieties for particular region or agro climatic situation are to be selected.

ii. Adequate R&D support through OUAT, KVKs & other ICAR Institutes.

iii. Vegetable crops should be selected basing on market demand to avoid glut.

iv. Onion & Potato crops should be be taken up in cluster.

v. Different farming system modules may be developed and farmers interested in specific systems may be grouped accordingly.

a. **Rice based system**: Paddy-Potato- Cucurbit/Greens

b. **Vegetable based system (irrigated)**: Vegetable round the year in uplands. Priority to off-season / high value vegetables. Crops of different families to be taken up in sequence.

c. **Pond based System**: Fish / Poultry / Duckery in pond and short term fruits / vegetables on bonds.

d. **Fruit based System**: Fruit crops with suitable inter crops / mixed with short term fruits. Fodder crops can be taken up as inter crop looking to the diary population of the area.

e. **Silvi-horti Systems**: Agro Forestry model intercropped with vegetables / short term fruits / medicinal plants / fodder crops

f. **Integrated Farming Systems**: Pisci Culture / Animal Husbandry & Horticulture / Agriculture

vi. Introduction of new high value crops like strawberry, lettuce, broccoli with traditional fruits & vegetables.

vii. Rejuvenation of old orchards & canopy management. A series of Front line Demonstrations should be conducted on canopy management at farmers level involving OUAT, ICAR Institutes / KVKs.

viii. Popularisation of horticulture tools and implements to reduce drudgery

ix. Involvement of private entrepreneurs for production of vegetable seeds to be encouraged.

x. Mushroom production / Bee keeping / Floriculture / Betel vine may be taken up for livelihood generations.

xi. Plantation crops such as Rubber, Coffee, Tea etc. including Cashew and Coconut are to be encouraged. Clear market linkages should be developed and ancillary industries should be established in the plantation area.

xii. Cultivation through protected structures should be encouraged and emphasis should
be given to low cost bamboo based structures. Efficient low cost models should be developed by PFDC, OUAT.

xiii. Post harvest Management, Value Addition and Marketing linkages with formation of FPOs and federating them for better remuneration

xiv. Contingent Plan to be developed for supply of seedlings / grafts, produced under protected structure to mitigate the loss caused due to flood, drought, cyclone, un-time rain etc.

Farm Ponds / Community Tank / Micro Irrigation to be popularized

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>District</th>
<th>Mango</th>
<th>Cashew</th>
<th>Banana</th>
<th>Ginger</th>
<th>Turmeric</th>
<th>Flower</th>
<th>Other Fruits</th>
<th>Vegetable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mayurbhanj</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Keonjhar</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Balasore</td>
<td>√</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cuttack</td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Khurda</td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Puri</td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
<td>√</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Nayagarh</td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Naupara</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Bolangir</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Gajapati</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Rayagada</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>12</td>
<td>Kalahandi</td>
<td>√</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Koraput</td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Malkangiri</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Dhenkanal</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Kandhamal</td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Ganjam</td>
<td>√</td>
<td></td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Angul</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Deogarh</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>20</td>
<td>Bargarh</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>Sl. No.</td>
<td>District</td>
<td>Mango</td>
<td>Cashew</td>
<td>Banana</td>
<td>Ginger</td>
<td>Turmeric</td>
<td>Flower</td>
<td>Other Fruits</td>
<td>Vegetable</td>
</tr>
<tr>
<td>--------</td>
<td>----------------</td>
<td>-------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>----------</td>
<td>--------</td>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>21</td>
<td>Sambalpur</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Sundargarh</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Sonepur</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Nawarangpur</td>
<td>√</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Jagatsinghpur</td>
<td></td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Jajpur</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Boudh</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Bhadrak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Kendrapara</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Jharsuguda</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Matrix specific Interventions**

i. Looking at the district crop matrix, backward and forward linkages to be established.

ii. Irrigation schedule of the major and medium projects are to be decided looking to the crop matrix and in consultation with Pani panchayat.

iii. Emphasis should be given to private irrigation points like bore wells / dug wells / LI points.

iv. Convergence with other ongoing EAPs, Missions etc.

v. Massive capacity building programmes with should be organised.

vi. Progressive farmers of the area, Seed or Pesticide Dealers may be involved in technology dissemination.

vii. One subject matter Specialist of Horticulture may be kept at district level like SMS in Agronomy & Plant Protection to facilitate in planning and formulation of horticulture based projects.

viii. Horticultural activities should be done in clusters.

ix. Looking to the crop combinations / farming systems scale of finance should be decided by a committee headed by NABARD.

x. The cropping details including horticulture / fodder cultivation should be decided at the Kharif strategy meeting.
Some Remunerative crop combinations as per the experimental findings are to be popularised as below.

<table>
<thead>
<tr>
<th>Centre</th>
<th>Best Combination Base + Filler + Intercrop</th>
<th>Net income Rs./ha.</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUAT, Semiliguda</td>
<td>Mango + Guava + Cowpea</td>
<td>36230</td>
</tr>
<tr>
<td></td>
<td>Mango + Guava + French bean</td>
<td>34420</td>
</tr>
<tr>
<td></td>
<td>Mango + Guava + Turmeric</td>
<td>36290</td>
</tr>
<tr>
<td>JNKVV, Jabalpur</td>
<td>Mango + Pomegranate + Ginger</td>
<td>73456</td>
</tr>
<tr>
<td></td>
<td>Guava + Pomegranate + Ginger</td>
<td>46800</td>
</tr>
<tr>
<td>BAU, Daltonganj</td>
<td>Mango + Guava + Black gram</td>
<td>34443</td>
</tr>
<tr>
<td></td>
<td>Guava + Pomegranate + Black gram</td>
<td>24698</td>
</tr>
<tr>
<td>HARP, Ranchi</td>
<td>Mango + Guava + French Bean</td>
<td>32257</td>
</tr>
<tr>
<td></td>
<td>Mango + Guava + Turmeric</td>
<td>42933</td>
</tr>
<tr>
<td>IGKVV, Ambikapur</td>
<td>Mango + Papaya + Cowpea</td>
<td>34605</td>
</tr>
<tr>
<td></td>
<td>Mango + Papaya + Ginger</td>
<td>40510</td>
</tr>
</tbody>
</table>

### 4.3. Fisheries Sector

A. **Strategies**

i. Enhancing the productivity and production of fish from the inland, brackish water and marine resources and doubling the fish production

ii. Tripling the export of marine, brackish & fresh water fin and shellfishes & other aquatic species from Odisha

iii. Generating employment & higher income in the fisheries sector.

iv. Improving the socio-economic conditions of traditional fisher folk & fish farmers

v. To acquire self-sufficiency in Inland Sector

vi. Conservation of aquatic resources & genetic diversity

vii. Ensuring availability of quality seed production in inland sector.

viii. Alleviating the incidence of poverty among fishers by offering them alternative/ supplementary employment opportunities and quality education to children and youth.

ix. Conservation of aquatic resources & genetic diversity

xi. Up-gradation of infrastructure facilities like Fishing Harbours (FH), Fish Landing Centre (FLCs), cold chain, communication, etc. for hygienic handling and post harvest management.

xii. Encouraging public-private partnership investment across the sector.

**B. Measures to be taken**

i) **Aquaculture in tanks and ponds**
   b. Creation additional water area for intensive culture in private sector with Government incentives.
   c. Priority will be given for composite pisciculture with Horticulture/ Dairy/ Poultry/ Duckery etc.
   d. Demonstration of Better Management Practices will be taken up to popularize the latest and advanced fish culture to enhance productivity from 2.5 MT/Ha to 5.00 MT/Ha.
   e. Long-term lease of surplus waste lands/ waterlogged areas/ Tampara (Ganjam district)/ dead rivers to the entrepreneurs for fish farming.
   f. Cluster approach (Aquaculture Estates) & Commercial aquaculture shall be encouraged.
   g. Organic farming to be promoted for attracting niche market.
   h. Aqua-clinics/ Aqua-shops/ Aqua-business centres will be set up at selected locations in the State
   i. Uniform leasing of all Government water bodies for at least 7 years.

ii) **Capture fisheries**
   a. Appropriate measures for conservation and management of riverine and other open water fisheries through river ranching.
   b. Involvement of local community in co-management of the resources in a cohesive manner.
   c. Reactivation of Fishermen Co-op Societies for better management and open waters for their livelihoods.

iii) **Reservoirs fisheries**
   a. Creation of live storage in reservoir by developing tanks in between the areas of Full Reservoir level (FRL) and Dead storage level (DSL) for fish culture.
   b. Clearance of dead tree stumps and other submerged substrates from the reservoir bed through Water Resources Department.
   c. Enhancing fish productivity and production of reservoirs through fingerling stocking regularly in reservoirs.
iv) Fish Seed Production
   a. Fish seed hatchery registration will be implemented in the State based on the Govt.
      of India’s guidelines issued during 2010.
   b. The existing IMC fish seed hatcheries in the Government and public sector will be
      upgraded into multi-species fish seed hatcheries.
   c. Seasonal ponds will be used for advanced fingerling production.
   d. Establishment of commercial scampi hatcheries with public-private partnerships
      (PPP) will be encouraged.
   e. Quarantine measures will be enforced for trans-boundary import of any fish/ shrimp
      species.

v) Ornamental fish culture
   a. Ornamental fisheries should be popularized as a cottage industry among the
      rural community and SHGs.

vi) Sustainable coastal aquaculture
   a. Promoting Long Term Lease of brackish water areas in Government sector for a
      minimum period of 15 years for commercial aquaculture.
   b. Development of coastal aquaculture clusters with basic infrastructure in PPP mode
      will be promoted.
   c. Strict enforcement of the Coastal Aquaculture Authority Act and Rules 2005 for
      sustainability.
   d. Encouraging establishment of more hatcheries and feed mills in private sector with
      Government incentives.
   e. Aqua-clinics at district level in the Government sector and Aqua-shops in each
      cluster by the private sector will be set up at selected locations.

vii) Marine Fisheries
   a. Data base on marine fisheries will be strengthened.
   b. Resource specific fishing in the offshore areas will be promoted with suitable
      incentives.
   c. Provisions of OMFRA will be strictly enforced.
   d. The restriction of fishing effort in the territorial waters of Odisha will be done to
      reduce over-exploitation of fishery resources.
   e. Developing Monitoring, Control and Surveillance system (MCS) to check violation
      of the provisions of OMFRA.
   f. Improve conservation measures through establishment of Artificial reef in
      consultation with fisher community.
viii) Post-harvest Infrastructure support & marketing

Fish Quality and related infrastructure
a. Value addition and marketing systems will be encouraged.

Fishery Harbours and fish landing centres
a. Efforts will be made for providing basic infrastructure facilities and dredging the entrance of 73 FH/FLCs.
b. A dedicated engineering cell will be established for development and maintenance of FH/FLCs.

Fish marketing and trade
a. Measures will be taken to achieve sustainable increase in the domestic consumption and export.

OPDC / FISHFED will be strengthened to cater to the needs for fish preservation, transportation, distribution & marketing.

FLCs to be developed

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>District</th>
<th>Fish Landing Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Puri</td>
<td>Up gradation and Renovation of Astaranga FH</td>
</tr>
<tr>
<td>2</td>
<td>Ganjam</td>
<td>Rameyapatna</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New Buxipalli</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kantiagada</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prayagi</td>
</tr>
<tr>
<td>3</td>
<td>Puri (Chilika)</td>
<td>Arakhakuda</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Khirisahi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sahana</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kaliakana</td>
</tr>
<tr>
<td>4</td>
<td>Kendrapada</td>
<td>Gopalpur</td>
</tr>
<tr>
<td>5</td>
<td>Bhadrak</td>
<td>Chandinipal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kasia</td>
</tr>
<tr>
<td>6</td>
<td>Balasore</td>
<td>Jamka</td>
</tr>
</tbody>
</table>

Dredging of river mouth, approach channel & quay front of fishing harbour and fish landing centers
### Establishment of Pre-Processing Centers

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>District</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jagatsingpur</td>
<td>Paradeep</td>
</tr>
<tr>
<td>2</td>
<td>Balasore</td>
<td>Bahabalpur</td>
</tr>
<tr>
<td>3</td>
<td>Balasore</td>
<td>Balaramgadi</td>
</tr>
</tbody>
</table>

### ix) Other key issues

a. Environment and fisheries

b. ‘Social fishery’ will be encouraged in small sized seasonal or perennial ponds in a farmer friendly policy.

c. Public-private investment partnerships (PPP) will be promoted.

d. Planning and Governance

e. The gender concerns will be integrated in fisheries planning, decision making to ensure sustainable social and economic development.

f. Importance shall be given on training and capacity building of the women fishers and fish farmers.

g. Organizational aspects

h. Adequate technical and engineering personnel shall be engaged for successful implementation of fisheries activities.

i. Adequate funding shall be ensured by State Government as well as by GoI to the fisheries sector.
4.4. Animal Resources Development Sector

A. Dairy Development

i. Selective Breeding programme in recognized bovine breed – Binjharpuri, Ghumusari, Khariar and Motu in cattle and Chilika & Kalahandi in Buffaloes.

ii. Establishment of Kamdhenu Breeding Centre to rear 1000 elite cows of 50 recognised bovine breeds of our country including the native breeds of Odisha with 20 animals per breed.

iii. Establishment of Institute on Animal Genomics & Semenology to undertake genomic research in livestock and develop centre of excellence on animal genomics, semenology and competent human resource.

iv. Focused attention on cross breeding in the intensive and potential dairy zones with maximum exotic blood level preferably up to 62.5% by ensuring integrated services.

v. Establishment of a buffalo breeding farm with Murrah buffalo by converting one of the departmental Livestock Breeding Farm exclusively for buffaloes.

vi. A special programme on buffalo development is to be taken up particularly in districts popular for buffalo rearing.

vii. Establishment of dairy units with native bovine breeds is to be promoted. The interested farmers in the respective native tracts are to be assisted to establish these units with desired assistance for management and their propagation.

viii. Production of breeding bulls & making available good quality semen in the field through Field Performance Recording Scheme and Field Progeny Testing Programme. Adoption of Modern breeding techniques Viz. Embryo Transfer Technology (ETT), Multiple Ovulation & Embryo Transfer (MOET).

ix. Involvement of Nationally reputed NGOs in Bovine Breeding & Integrated Livestock Development Programmes.

x. Use of sexed semen for creation of more number of quality productive animals.

xi. A concessional and liberalized credit scheme for the small farmers to enable them to take up dairy farming.

xii. Effective manure management to mitigate the adverse impact of methane gas on environment.

xiii. Representation of Veterinarians in each ULB for quality control of livestock products.

xiv. Restocking of indigenous animals (cows, female calves) as animal population has decreased.

xv. To ensure the supply of balance cattle feed a new Cattle Feed Plant of 200MT/day need to be established at Sambalpur.
xvi. Special assistance for 2 lakh elite farmers and Social Security Scheme for farmers.

xvii. Over the period 250 nos. of BMC (2000 LPD cap) will be installed to accommodate the milk at society level. 4 nos. of 50000 LPD Chilling Plants will be established to accommodate the flow of milk from BMCs. 75 nos. of different capacities Road Milk Tankers will be required for the transportation of milk from BMC to nearest Chilling Plant/ Dairy.

xviii. Installation of 5 Lakh LLP Modern Dairy plant with state of art technology shall be established in Cuttack district.

xix. Indigenous milk product, UHT processing Plant & 10 MT Milk Powder plant shall be commissioned at Bolangir to handle 1.5 LLPD milk procurement to be procured from Sambalpur, BKN & KMNR Milk Unions.

xx. UHT processing plant of 1 lakh LPD capacity shall be established at Cuttack and one 50000 LPD Dairy Plant will be established at Itamati, Nayagrah to meet the processing requirements.

xxi. Renovation and automation of existing Dairy Plants

xxii. Introduction of ISO & HACCP Certification

xxiii. Establishment of market research wing

B. Small Animal Development

i. Adoption of Selective breeding in three sheep breeds (Ganjam, Bolangir & Kendrapada) and four goat breeds (Ganjam, Black Bengal, Ghumusari & Raighar) of Odisha for improvement of characters.

ii. Breeding buck & ram rearing, procuring & exchanging among sheep & goat farmers of the respective breeding tracts is to be encouraged for selective breeding.

iii. Strengthening & Expansion of Small Animal Breeding farms.

iv. Promotion of “Goat Corridors” in the State.

v. Establishment of “Odisha Small Animal Development Federation” (OSADF) to promote production & marketing of meat & meat products in the State.

vi. Cross breeding of local pigs with Large White Yorkshire and use of cross bred boars for grading up. In well endowed areas progressive grading up with the exotic breeds will be taken up.


viii. Setting up of one Pig Farm at Malkangiri/ Mayurbhanj

C. Poultry Development

Commercial Layer & Broiler Production

a. Establishment & Expansion of commercial layer/ broiler Farms with private investment through intervention of Govt. support.
b. Strengthening of Apex Poultry Federation (OPOLFED).
c. Establishment of modernized ‘Chicken sale Centers’ on PPP mode.

**Backyard Poultry Production**

i. Running of Poultry hatcheries on PPP mode on lease basis & establishment of Parent Stock Units for production of Day Old Chicks.

ii. Establishment of small scale broiler units with low input technology birds through integration mode.

iii. Conservation and improvement of local breeds.

iv. Promotion of other poultry birds in Odisha.

v. Vaccination coverage of duck population with duck plague & duck cholera.

vi. Setting up of one Duck Breeding Farm in Kalahandi and one in Koraput

vii. Dual purpose breeds may be promoted aggressively in coastal districts not in native tracts.

viii. Fish meal as animal and poultry feed may be encouraged through suitable outlets at weekly markets

**D. Fodder Development**

i. Introducing the forage based production system in the state for all categories of livestock species.

ii. Including fodder crops in district agricultural cropping Plan for enhancing production and bringing more area under fodder crops.

iii. Supply of fodder produced in forest areas through cut and carry method by forest department.

iv. Involving Vana Surakshya Samitis for taking up fodder cultivation in fringe areas of forest. Introduction of Silvi-pasture in coordination with forest department and

v. Horti-pasture in coordination with Horticulture department for enhancing fodder production and area under fodder.

vi. Introducing Fodder production in the State as an Income generating activity (IGA) for enterprising farmers.

vii. Under Seasonal Fodder Cultivation Situation specific/ farming system specific minikits will be distributed

viii. Dual purpose crops for food and fodder shall be introduced on regular basis in consultation with OUAT.

ix. Establishment of desired Pasture in the cultivable wastes for fodder.
x. Azolla Cultivation shall be promoted for all categories of livestock farmers

xi. District wise inventory of Crop Residue shall be taken up for enrichment Promotion of Feed block
   a. Through Automated Machine preparation
   b. Through Backyard feed block at farmers level

xii. Strengthening of departmental fodder farms

xiii. Promote seed growers and insurance coverage for their seed crops

xiv. Training & Demonstration

 xv. Promoting ensilage of the seasonal excess of locally available green fodder

xvi. Leasing provision of community land for fodder production such as canal bund, forest floor.

xvii. Popularisation of fodder tree crop around the perennial plots as hedge rows.

E. Veterinary Service Delivery & Health Care

i. Establishment of New Veterinary Dispensaries/ Hospitals for every 10000 livestock population.

ii. Establishment of new LACs in each GP.

iii. Set up Modern Viral vaccine production unit for PPR & Goat Pox vaccine.

iv. Ensuring optimum vaccination coverage & Cold chain for retaining efficacy of vaccines and biological

v. Strengthening of State Referral Lab., DDLs for timely diagnosis of diseases

vi. Establishment & support to existing Goshalas

vii. Setting of Kennels in each ULB of the State for ABC & rabies control.

viii. Provision of water Vat at tube well points, Veterinary Institutions & livestock market yards for supply of clean drinking water to animals.

ix. Ensuring provision of animal health care services at the farmers’ door step by further streamlining Mobile Veterinary Units.

x. Provision of safety net to the farmers through risk management programme of livestock in an extensive way.


xii. Cold chain strengthening in the State upto village level for vaccine storage

xiii. New vaccines to be introduced i.e., Duck plague, Duck cholera, Classical swine fever

xiv. Community Animal Health Workers may be introduced in all villages. Some Village Youths/ Progressive farmers/ Bharat Nirman Volunteers may be trained for the purpose.
F. **Human Resources Development**

i. Establishment of a new Veterinary College in the State to meet the professional resource requirement.

ii. Establishment of Veterinary University to carry forward researches in the field of Veterinary Science


iv. Strengthening of Veterinary Officers' Training Institute (VOTI), SMILE.

v. Establishment of a new Dairy Science College and Wild Life Institute

vi. Expansion of facilities at Livestock Inspector Training Institute & establishment of new 18 Dist. Training Centers for skill development

vii. Assist formation of State Livestock Farmers’ Association (inclusion of Progressive farmers of different entrepreneurs) to contribute in extension and training for other farmers.

viii. Representation of Veterinarians in each KVKs of the state

ix. Each district to have a dedicated wing exclusively for extension and training with mobility and other logistics facility

x. Skill Development Training to Capacitate and equip the rural poor to use livestock production as the instrument to enhance household income, supplement family nutrition and to protect rural livelihood systems, giving special emphasis to women.

xi. Training of Trainers (ToT) programme will be organized to build the capacity among Farmer’s Organisation/ NGOs for imparting training to farmers.

xii. Training Need Assessment (TNA) of the farmers (livestock owners) will be taken up to organize relevant skill upgradation training.

xiii. Suitable education and communication materials will be developed for dissemination of useful information to the primary stakeholders.

**4.5. Post Harvest & Food Processing Sector**

**Recommendations**

i. Existing State Level Empowered Committee on National Mission on Food Processing under the Chief Secretary may continue to monitor the food processing schemes and programmes of the State Govt.

ii. Setting up of autonomous organisation for promotion food processing industries

iii. Setting up of a dedicated “Food Processing Cell” in Directorate of Industries & DICs

iv. APMC & RMC are to be associated for creating awareness & sensitization and letter be issued to all APMCs / RMCs under joint signature of Principal Secretary, Cooperation Department and Secretary, MSME Department.

v. Entrepreneurship Development and Skill Development in Food Processing Sector.

vi. Periodic Mapping of processing capacity of industries vis-a-vis relevant crop
vii. Establishment of Food Processing Training Centres at strategic locations in the State

viii. Establishment of Food Processing Incubation Centres in reputed institutions like OUAT, KIIT, NIT

ix. Organisation of Farmers Group for organising of PPC / CPC

x. Updation of policies & schemes

xi. Setting up of Mega Food Parks

xii. Development of Clusters in Food Processing

xiii. Development of Common Facility Centres

xiv. Implementation of the detailed action plan for market-driven high-value agriculture and allied sectors developed in the short term

xv. Promoting increase in area under focus crops amenable to value addition and processing through a systematic approach of introduction of new crops and varieties.

xvi. Systematic introduction of new high value crops with high scope for value addition

xvii. Development of basic infrastructure including road connectivity and power to clusters of Food processing Industries.

xviii. Existing R&D facilities available at OUAT and CRRI are to be strengthened.

xix. Promote product specific agro processing centres at strategic locations with Govt. support.

xx. Improvement in market linkages

xxi. Revival and modernization of supply chain infrastructure: APMC Markets and On-Farm/Farm proximate aggregation and value addition infrastructure.

xxii. Undertaking R&D with the assistance of CFTRI and other national agencies of repute for developing value added products out of local produce.

xxiii. To facilitate credit to entrepreneurs

xxiv. Establishment of certification and quality control infrastructure

xxv. APMC & RMC may establish Primary Processing Centre & Collection Centre of Agricultural produces at village level organizing the farmers. Market levy may be waived and notification to this effect may be moved by Cooperation Department.
In order to coordinate and recommend strategies to reinvigorate and reform agriculture with innovations and technology, the State Government have been pleased to constitute a State Level Task Force on Agriculture Development as follows:

1. **The Composition of Task Force:**
   1. Chief Secretary .. Chairman
   2. DC-cum-ACS .. Member
   3. Principal Secretary to Govt. Agriculture Department .. Member
   4. Principal Secretary to Govt. Water Resources Department .. Member
   5. Principal Secretary to Govt. Cooperation Department .. Member
   6. Commissioner-cum-Secretary to Govt. Fisheries & ARD Department .. Member
   7. Commissioner-cum-Secretary to Govt. MSME Department .. Member
   8. Vice Chancellor, OUAT .. Member
   9. Director, CRRI, Cuttack .. Member
   10. Dr. P. K. Mahapatra, Former Dean, College of Agriculture .. Member
   11. Dr. S. K. Panda, Professor & Head, Department of Entomology CA, BBSR .. Member
   12. Dr. Sabyasachi Rath, Former Professor & Head Department of Fruit Science .. Member
   13. Dr. S. K. Swain, Associate Professor, Department of Farm Machinery & Power CAET, OUAT, BBSR .. Member
   14. Dr. P. K. Dehury, Former Dean, College of Veterinary Science & Animal Husbandry .. Member
   15. Dr. R. K. Rath, Former Director, College of Fisheries, Rangelunda, Berhampur .. Member
   16. Commissioner-cum-DA&FP, Odisha .. Member-Convenor
2. The terms of reference of the Task Force shall be as follows:-

a) To coordinate and develop synergy with Central Ministries and State Government Departments.

b) To recommend strategies for reinvigorating agriculture in all its aspects.

c) To formulate strategies for reform, innovation and technology diffusion.

d) To identify successful experiments and programmes.

e) Any other measures.

3. General

a) The Chairman of the Task Force may co-opt any other official / non-official expert / representative of any organisation as member to assist the Task Force.

b) The expenditure on TA / DA in connection with the meeting in respect of a member or any co-opted official will be borne by the respective Government organisation. However, in case of a member or any co-opted non-official person, he will be entitled for TA / DA as admissible to Grade –I officials of the Government of Odisha limited to economy class in case of air journey where applicable and the expenditure in this regard would be met by the Directorate of Agriculture and Food Production, Odisha.

c) The Task Force will be serviced by the Directorate of Agriculture and Food Production, Odisha.

d) The Task Force will submit its report to the State Government by 7th June, 2015.

By order of Governor

Principal Secretary to Govt.

Memo No. 7010 / Ag Dt. 07-05-15

Copy forwarded to the P.S. to Hon’ble Chief Minister, Odisha/ P.S. to Hon’ble Minister, Agriculture, Fisheries & ARD/P.S. to Chief Secretary, Odisha/ P.S. to DC-cum-ACS/ P.S. to Principal Secretary to Govt., Agriculture /P.S. to Principal Secretary to Govt., Water Resources Department/P.S. to Principal Secretary to Govt., Cooperation Department/ P.S. to Commissioner-cum-Secretary, Fisheries & ARD Department / P.S. to Commissioner-cum-Secretary to Govt., MSME Department / P.S. to, Vice Chancellor, OUAT for kind information of Hon’ble Chief Minister, Odisha / Hon’ble Minister, Agriculture, Fisheries & ARD/ Chief Secretary, Odisha/ DC-cum-ACS/ Principal Secretary to Govt., Agriculture / Principal Secretary to Govt., Water Resources Department / Principal Secretary to Govt, Cooperation Department/ Commissioner-cum-Secretary, Fisheries & ARD Department / Commissioner-cum-Secretary to Govt., MSME Department / Vice Chancellor, OUAT.

Joint Secretary to Govt.
Memo No. **7011**  
Dt. 07.05.15

Copy forwarded to Director, CRRI, Cuttack/Dr. P.K. Mohapatra, Former Dean, College of Agriculture/ Dr. S.K. Panda, Professor & Head, Department of Entomology CA, BBSR/Dr. Sabyasachi Rath, Former Professor & Head, Department of Fruit Science/ Dr. S.K. Swain, Associate Professor, Department of Farm Machinery & Power CAET, OUAT, BBSR/ Dr. P.K. Dehury, Former Dean, College of Veterinary Science & Animal Husbandry/ Dr. R.K. Rath, Former Director, College of Fisheries, Rangelunda, Berhampur for information and necessary action.

Memo No. **7012**  
Dt. 07.05.15

Copy forwarded to the Commissioner-cum Director, Agriculture and Food Production, Odisha for information and necessary action.

Memo No. **7013**  
Dt. 07.05.15

Copy forwarded to the Advisor, NITI Aayog, Govt. of India, New Delhi for information and necessary action.

Memo No. **7014**  
Dt. 07.05.15

Copy forwarded to all Departments / All Heads of Department / Collector (all) / RDC (all) for information and necessary action.

Joint Secretary to Govt.
Annexure-II

A. **Sub-Committee I: Credit, Insurance, Finance and Agri-Marketing.**

i. Principal Secretary, Co-operation Dept. **Chairman**

ii. Commissioner-cum-Director, Agriculture & Food Production **Member**

iii. CGM, NABARD **Member**

iv. Managing Director, Odisha State Cooperative Bank **Member**

v. Director, Fisheries **Member**

vi. Director, ARD **Member**

vii. Convenor, SLBC, Odisha **Member**

viii. Chief Statistician, Directorate of Agriculture **Member**

ix. Shri D. S. Ravindra Raju, Chairman, CII (Odisha Chapter) **Member**

x. Registrar, Co-operative Societies **Member-Convener**

B. **Sub-Committee II: Technology transfer & Agriculture Extension.**

i. Vice Chancellor, OUAT,, **Chairman**

ii. Commissioner-cum-Director, Agriculture & Food Production **Member**

iii. Director, Fisheries **Member**

iv. Director, ARD **Member**

v. Dean, Research **Member**

vi. Dean, College of Agriculture **Member**

vii. Director, IMAGE **Member**

viii. Additional Director of Agriculture (Extension) **Member**

ix. Dr. S.K. Panda-Prof.& Head, Dept of Entomology, College of Agriculture **Member**

x. Dean, Extension **Member Convener**
C. **Sub-Committee III: Land & Soil Health, Land Record and Consolidation, Water Use efficiency and inputs (Seeds, mechanisation, etc.)**

i. Commissioner-cum-Director, Agriculture & Food Production. **Chairman**

ii. Additional Secretary, WR Dept & M.D,OLIC **Member**

iii. Additional Secretary, Revenue Dept. **Member**

iv. Director, CRRI **Member**

v. Managing Director, OSSC **Member**

vi. Joint Director of Agriculture (Engg.) **Member**

vii. Development Engineer, OFMRDC **Member**

viii. Dr. P.K. Mohapatra, Former Dean, College of Agriculture **Member**

ix. Dy. Director, Extension, Directorate of Agriculture **Member Convener**

D. **Sub-Committee IV: Allied sectors (Animal Husbandry, Dairy, Fisheries etc.)**

i. Commissioner-cum-Secretary, F&ARD Dept. **Chairman**

ii. Director, Fisheries **Member**

iii. Director, CIFA **Member**

iv. Director, Central Poultry Development Organisation, **Member**

v. Eastern region, Bhubaneswar **Member**

vi. Dr. P.K. Dehury, Former Dean, College of Veterinary & Animal Husbandry **Member**

vii. Dr. R.K. Rath, Former Director, College of Fisheries **Member**

viii. Chief Executive, Odisha Livestock resource Development Society **Member**

ix. Director, ARD **Member Convener**

E. **Sub-Committee V: Food Processing & Post Harvest Management**

i. Commissioner-cum-Secretary, MSME Dept. **Chairman**

ii. Commissioner-cum-Director, Agriculture & Food Production **Member**
iii. Dean, College of Agricultural Engineering & Technology  Member
iv. Managing Director, APICOL  Member
v. Joint Director of Agriculture (Engg.)  Member
vi. Dr.S.K.Swain-Associate Prof, CAET,OUAT  Member
vii. Director of Industries  Member Convener

F. Sub-Committee VI: Horticulture & Crop Diversification.
i. Director of Horticulture  Chairman
ii. Director Watershed Mission  Member
iii. Dr.Arun Das-Prof. Horticulture, College of Agriculture, OUAT  Member
iv. Dr.Sabyasachi Rath -Former Prof.& Head, Dept.of fruit science, OUAT  Member
v. Joint Director of Horticulture  Member Convener

Terms of Reference (TOR) for various Sub-Committees

An indicative set of broad terms of reference, has been outlined below for each of the Sub-Committee. However, the Sub-Committee is free to include as many issues and recommendations as they feel appropriate.

A. TOR for Sub-Committee on Credit, Insurance, Finance and Agri-Marketing.
i. Increasing medium term loans.
ii. Financing of Joint Liability Groups
iii. Composite insurance instead of crop insurance
iv. Creation of Marketing infrastructure and marketing of the produce to avoid distress sale
v. Following best practices of other States
vi. Uniform financing norms
vii. Financing for contingent measures and modalities
viii. Exploring the potential for creation of unstructured rural market

ix. Implementation of agricultural marketing reforms and creation of e-market platforms

x. Any other matter in the light of NITI Task Force recommendations as considered appropriate by the Sub-Committee

B. TOR for Sub-Committee on Technology Transfer & Agriculture Extension.

i. Supplementing the extension process, filling up the gap, bridging the link of extension through different nodes.

ii. Percolation of updated information and knowledge about technologies, practices and laboratory knowledge to the field.

iii. Role of SAUs, KVKs & other Agencies for extension related works.

iv. Measures to augment the effectiveness of ICAR institutions, SAUs, and department extension machineries.

v. Measures to bridge the gap in infrastructure & funds to improve capacity of extension machinery.

vi. Any other matter in the light of NITI Task Force recommendations as considered appropriate by the Sub-Committee

C. TOR for Sub-Committee on Land & Soil Health, Land Record and Consolidation, Water Use efficiency and inputs (Seeds, mechanisation, etc.)

i. Tackling problems of exodus of work force from agriculture to non-agriculture occupations and problems of absent landlordism. Optimal land use for cultivation purpose

ii. Reforms required in land policy to achieve economies of scale in agriculture

iii. Development of waste land and cultural waste land through PPP mode

iv. Enhancing water use efficiency and productivity, linking of Irrigation subsidy with sustainability and social equity concerns.

v. Production and productivity increase in rainfed areas
vi. Measures for NARS (National Agricultural Research System) to adopt innovative technologies and measures

vii. Upgrading poor seed infrastructure and adequate availability of certified seeds.

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

ix. Soil testing and Soil health campaign—suggestions for large scale programme implementation

x. Customising fertiliser under a given cropping pattern and season.

xi. Feasibility for zero tillage, un puddle transplanting, use of post harvest machineries

xii. Any other matter in the light of NITI Task Force recommendations as considered appropriate by the Sub-Committee

D. TOR for Sub-Committee on Allied sectors (Animal husbandry, Dairy, Fisheries etc.)

i. Reorientation of livestock management, extensive livestock system depending resources of commons and agriculture residues

ii. Improvements in animal health care, feed, fodder, drinking water, shelter, institutions etc.

iii. Optimal utilisation and marketing of seasonal surplus milk production

iv. Exploring the potential of inland fisheries particularly for rain fed areas.

v. Any other matter in the light of NITI Task Force recommendations as considered appropriate by the Sub-Committee

E. TOR for Sub-Committee on Food Processing & Post Harvest Management

i. Bridging the link between agriculture and industry.

ii. Improvement of secondary agriculture consisting of post harvest activities, food value chain, forward linkage, supply chain etc.

iii. Development of appropriate new technologies combining farmers’ wisdom and traditional knowledge

iv. Giving fillip to the post harvest sector, exploring the untapped potential
v. Any other matter in the light of NITI Task Force recommendations as considered appropriate by the Sub-Committee

F. **TOR for Sub-Committee on Horticulture & Crop Diversification**

i. Popularisation of more remunerating alternating farming systems especially horticultural crops.

ii. Diversified cropping pattern and contingent measures for risk and uncertainty of crop failure.

iii. Any other matter in the light of NITI Task Force recommendations as considered appropriate by the Sub-Committee