REPORT OF THE
TASK FORCE
FOR
AGRICULTURE
DEVELOPMENT
IN
TRIPURA

Department of Agriculture,
Government of Tripura
Email: krishibhawantripura@gmail.com
Contents:

1. Preface : Page -1
2. Agriculture Sector : Page- 2 to 8
3. Horticulture Sector : Page – 8 to 10
4. Fisheries Sector : Page- 10 to 12
5. Animal Resources Sector : Page – 12 to 14
6. Forest Sector : Page – 14 to 15
7. Annexure
Tripura is a state in North-East India which borders Bangladesh, Mizoram and Assam and surrounded by Bangladesh on its north, south and west. The length of its international border is 856 km (84 per cent of its total border). It shares 53 km long border with Assam and 109 km long border with Mizoram. The state is connected with the rest of India by only one road (NH-44) that runs through the hills to the border of Karimganj District in Assam and then winds through the states of Meghalaya, Assam and North Bengal to Calcutta. Climate of Tripura is sub-tropical plain with an average rainfall of 2200 mm and maximum and minimum temperature variable from 25 to 36°C and 10 to 25°C, respectively. Tripura has got a seasonal variation of climate in 4 distinct seasons such as winter, Pre monsoon, South West Monsoon and North East Monsoon.

The geographical area of Tripura is 10,49,169 ha and out of which only 2,55,485 ha is the net sown area. The average rice productivity is 2.82 MT/ha and the cropping intensity is 186%. The food grain deficit is around 1.11 lakh MT. Area under fruit crops is 60145 ha. And vegetables are 36786 ha. Fertilizer use is still in the lower side (60 kg/ha). The cattle population is 9.50 lakh and mostly non descript type of cow is prevalent in the State. Per capita milk availability is 92 gm/day. Per capita meat and egg availability are 9.2 kg/ha and 54 nos/ annum. Water area under fish culture is 24,704 ha and fish deficit is around 11,886 MT.

To address future development strategies, a state level Task Force on Agricultural Development for Tripura has been constituted under the chairmanship of the Principal Secretary, Agriculture, Government of Tripura. Notification is given at Annexure. The members of the Task Force, met twice on 29-05-2015 and 09-06-2015 for discussion and finalization of issues, sector wise, for putting special thrusts for bringing desired developments during 2016-2022 (Considering with the period of 13th Five Year Plan) in the State. Based on this, a concept note has been prepared, including issues of all the sectors, one by one, in the following paragraphs.
A. AGRICULTURE SECTOR:

Present Scenario: An extended twelve year Perspective Plan (2001-2012) had been pursued for achieving self-sufficiency in food grains, which resulted in the increase of food grains from 5.13 lakh MT in 1999-2000 to 7.68 lakh MT in 2014-15, yet there has been a steady rise in the gap between requirement and production of food grains in the state as tabulated below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (Lakhs)</th>
<th>Requirement (lakh ton)</th>
<th>Production (lakh ton)</th>
<th>Gap (lakh ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>37.8</td>
<td>8.54</td>
<td>7.25</td>
<td>(-) 1.29</td>
</tr>
<tr>
<td>2013-14</td>
<td>38.35</td>
<td>8.66</td>
<td>7.27</td>
<td>(-) 1.39</td>
</tr>
<tr>
<td>2014-15</td>
<td>38.92</td>
<td>8.79</td>
<td>7.68</td>
<td>(-) 1.11</td>
</tr>
</tbody>
</table>

A plan for giving special drive, both in vertical and horizontal lines, for ensuring incremental production of over 1.25 lakh tons of food grains in the state during 2015-16 and 2016-17 and gradually at higher level up to the terminal year of 13th Five Year Plan has been chalked out giving emphasis on promotion of hybrids, SRI technology, ICM practice, soil amelioration, bringing additional areas under cultivation from seasonal rice fallows and RoFR areas for attaining self-sufficiency. The strategies considered for adoption are the following:

1. Increasing production of food-grains:
   - Additional production of over two lakh MT of food grains for the projected population of 43.50 lakhs by the terminal year of 13th Five Year Plan.
   - Bringing one lakh ha of seasonal rice fallows under cultivation of paddy, pulses & oilseeds.
   - Increasing coverage under hybrid paddy to 75000 ha by 2021-22.
   - Area expansion of paddy in 20000 ha low lying RoFR areas.
   - Increasing cultivation of pulses to 50000 ha.
   - Increasing cultivation of oilseeds to 30000 ha.

2. Production of Seeds: The strong seed production programme, pursued since 2000-01 for achieving optimum seed replacement rates in cereals and pulses, as part of
the Perspective Plan for achieving self sufficiency in food grains- would be strengthened further for coping with the programmes, envisaged for promotion of hybrids, additional pulse and oilseed crops etc. during 2016-2022. To that direction:

- A systematic Action Plan would be prepared by the Agriculture Department for becoming self sufficient with regard to the requirement of all seeds by 2017-18.
- ICAR Tripura Center may take all necessary steps for supplying required nucleus / parent materials for sustained seed production programme.
- Agriculture Department may take up a collaborating programme with ICAR for production of hybrids seeds of paddy.

3. Increasing irrigation potential: Irrigation is the most weak link in the production system in the State. As against availabilities of our 2000 mm annual rainfall, 2.04 lakh ha ground water reserve, the arrangement for extending assured irrigation facilities to the cultivating crops is only about 70,000 ha i.e. 27% of the present net sown area and 15% of the gross cropped area. Thus, for bringing with horizontal and vertical increase in production and productivity of crops, as outlined in the plan for coming years, a corresponding Perspective Plan for developing irrigation potential and delivery during 2016-22 is also necessary, which may include following strategies:

- Increasing irrigation potential for covering 1.78 lakh ha.
- Plan for construction of medium irrigation projects (24 nos), rain water harvesting structures (120 nos), deep tube wells (150 nos), shallow tube wells (3000 nos) and dug & bore wells (100 nos) for next six years.
- Plan for regular surveillance of all existing irrigation projects and delivery lines.
- Extending micro irrigation facilities (drip/sprinkler system from 990 to 5000 ha area in the garden of fruits and plantation crops for increasing water use efficiency.
- Creation of 5000 Nos. Small Water Reservoir with geo membrane lining in hill top plantations, linking with micro irrigation facilities for providing life saving irrigation.
- Exerting thrust for creating Farm Ponds (in 0.08 ha) individual households for growing vegetables/kitchen garden.
- Formation of User Groups at panchayet level.
• Comprehensive awareness programme about proper maintenance of the irrigation projects by the panchayets/User Groups.

4. **Maintaining Soil Health and fertility**: Soil Health Cards with all required information about soil health, crop input management, etc. to be issued to all farmers at the rate of 35000 nos per year, and renew facility after 3 years for sustenance of soil health and productivity. Also necessary amelioration of acidic soils through lime/gypsum etc to be undertaken. The strategies considered for adoption include:

• Increasing soil analyzing capacity by establishing one static & one mobile soil testing unit in each of the districts.
• A systematic plan for covering all 4.65 lakh farm households for issuance of soil health cards by the end of 13th Five Year Plan for suggesting test based fertilizer recommendation to the growers.
• Amelioration of strongly acidic soil of 40,000 ha with lime / gypsum, once in every three years.
• Bio compost production to be popularized and raised to 9.00 lakh MT from the present production level of 25,000 MT per year.
• To facilitate regular availability of chemical fertilizers, all related principal producing farm may be asked for maintaining buffer stock within the state.

5. **Diversification**: One of the important interventions during 13th FYP would be to grow Pulse Crops as intercrop in the horticultural plantations, young orchards. Arhar, Blackgram, Moong, Cowpea Soyabean as Kharif pulse and Pea, Lentil, Gram, Moong, Blackgram as Rabi pulse are proposed to be concentrated. Promotion of Bio-fertilizer use may be encouraged. Soyabean crop is to be introduced for not only as a rich source of dietary protein but also for facilitating ancillary micro industrial possibilities as a remunerative option for marginal farmer group. The strategies proposed to be adopted during 13th FYP are:

• Ensuring supply of suitable HYV seeds on time and as per need of the farmers.
• Awareness generation on foliar application of chemical fertilizers especially in late sown condition both in Kharif & Rabi season.
• Support for applying Bio-fertilizers
• Assistance for IPM/ BIPM/ INM.
• Provision for production bonus and honorarium both for farmers as well as motivators, respectively.
• Productivity enhancement to 1000 kg/ha as against present level of 600 kg/ha.
• Assistance to Commodity Interest Groups (CIG)s for setting up and running of Oil mills at micro-level.
• Local germplasms of pulses and oilseed crops to be earmarked and improvised. Potentiality of hill pulses still remains untapped to its fullest extent.
• Value addition of pulses in the light of new wisdom of Science & Technology is required.
• “Pulses and Oilseed motivator” for increasing production and productivity.
• Bio diversity mapping of all Agri. & Horticultural crops may be made by constituting a suitable committee for making an action plan for conservation & improvisation of the locally differentiated crops with characters.
• Agriculture Department along with the ICAR may prepare action plan for promoting cultivation of selected local crops including food-grains.
• ICAR may also take initiative for geographic indication of the choice crops / varieties of the state and their registration.

6. Farm Mechanization: A plan is necessary to increase the average farm power availability in the state from the present level of 0.96 KW/ha to 1.25 KW/ha in next six years. For this, additive subsidy up to 90% for new machinery like transplanter, harvester, power weeder, drum seeder, power sprayer etc. may be given and existing level of subsidy for power tiller, pump sets may be continued. Group approach for mechanized service provider may be promoted. Micro irrigation including drip system are required to be popularized by way of providing subsidy up to 75% to push up the productivity in Horticultural crops for efficient water use. The broad strategies considered by the task force, include:

• Consideration of a perspective plan has to be prepared for increasing the average farm power availability to 1.25 KW per ha from the present level of 0.96 KW per ha in the state.
• Special thrust has to be given for tilling machines like Mini Tractor, Power Tiller.
• ICAR may take up with National Institute of Agricultural Machineries for identifying/developing farm equipment/machineries, suitable to the conditions of Tripura.
• Buffer stock of sprayers may be maintained in every block head quarters for combating epidemic situations.

7. Developing Marketing and processing facilities: Out of the 554 Primary Rural Markets, there are 84 Wholesale Assembling Markets in the state which includes 21 Regulated Markets guided by Tripura Agricultural Produce Markets Act. 1980. This Act was amended in the light of Model Act 2003 of Govt. of India in April 2007. There is no special emphasis on marketing of perishables in the Amendment; however, there are provisions for Special Commodity Markets considering the quality production of Pineapple, Orange and Jack fruits. Huge quantity of Fish, Meat, Dry fish and Livestock like Poultry, Cows, Pigs, Goats and Sheep are transacted in the Agricultural Markets. However, proper infrastructure including scientific slaughter house, frozen chamber for dressed meat and fish are required to be created. Small cool chambers, refrigerated vans, warehouses in the market yard is also very much needed. Due to the weak financial condition, there is hardly any private investor within the state to come forward in this area. Government of India may support for this purpose during the 13th Five Year Plan period. Assured marketing system to be developed and entire marketing pricing chain has to be revitalized. If necessary, token procurement may be done through LAMPS/PACS/Cooperative Societies to stabilize the market force. Broad strategies discussed for consideration are:
  • Strengthening of the marketing organization of State to proper development and monitoring.
  • A perspective Plan may be prepared for necessary construction/renovation of all 84 nos. wholesale markets (including 21 regulated markets), 570 rural primary markets in the state.
- Amendment in marketing acts may be considered for single entry license, E-marketing, exemption of market fees for fruits, vegetables and single point levy system.
- Proper milling facility for fine and superfine rice, pulses and oilseeds may be developed within next 3 years.
- Arrangements for extraction of rice based edible oil on the post harvest processing and milling units in the state.

8. Credit & Insurance: Financial institutions may take more proactive role for increasing credit flow to Agri. and Allied Sectors for more inclusive growth as the coverage under KCC and average amount of loan provides through KCC in the state is still very very low. Appropriate intervention from Government level may be considered for developing the situation during 13th Five Year Plan period. The strategies considered for this sector are the following:
- Present practice and scale of issuance of KCC and credits, has to be increased to suit to the requirements of all small and marginal farmers in the state.
- Introduction of micro finance institutions may be considered.
- All field crops and vegetables may be covered under Weather Based Crop Insurance Scheme (WBCIS) of the Government of India.

9. Agricultural Education & Research: Considering difference in agril. soil, climate, crops and adoption pattern in the state, regular agricultural education, research and extension up to grass roots is essential for proper sustenance and increase in production and productivity. To that direction, following strategies have been proposed for consideration:
- Establishment of farmers training center with hostel facility in each districts.
- Strengthening of the research institutions of the department, like State Agricultural Research Station (SARS), AD Nagar and Horticulture Research Centre (HRC), Nagicherra.
- Strengthening of all the existing KVKs and opening of new KVKs, early in each of the 4 new districts.
• Establishment of a National Research Centre for Jackfruit in the State (Considering highest production and productivity of Jackfruit in the State compare to all other states).
• Establishment of a Central Agril. University with the existing Agril. and Veterinary College to begin with.

10. Successful programmes in the state: Few sectors/practices where there have been significant achievements in last few years included the following:

• Rapid increase in use of chemical fertilizers, from 25 kg/ha to 60 kg/ha within 6(six) years.
• Production of seeds of high yielding varieties of paddy. The state has become self-sufficient. Surplus quantity is, being marketed through NSC.
• Adoption of SRI technology for increasing average yield of paddy by 30%.
• Production of bio-fertilizers in the laboratories at public sector.
• Production of bio-pesticides in the laboratories at public sector.

B. HORTICULTURE SECTOR

The good agro climatic conditions, deep fertile soils, subtropical humid climate with abundance of rainfall offer tremendous scope for development of Horticulture sector in the state. Present requirement of fruits in the state is 2.70 lakh MT and availability is 7.86 lakh MT. Similarly requirement of Vegetables is 4.05 lakh MT and availability of different Vegetables is 6.21 lakh MT. Thus state is surplus in fruits and vegetables sector.

Although the State is surplus in fruit and vegetable production, still there is scope for putting emphasis on expanding more area under cultivation for giving commercial shape which may cater to the needs of other North Eastern States. Recent developments in Indo-Bangla relationship has also opened a new vista in terms of export potentiality. Keeping the above in view an additional production of horticultural produce over 7.00 lakh ton is targeted by the terminal year of the 13th Five Year Plan. The broad strategies, considered by the group are listed below:
a) **Fruits:**

- Block plantation of Fruits like Mango, Pineapple, Jackfruit, Orange, Mosambi etc. will be taken up in a commercial way for tapping the benefit of high rainfall in the State.
- Captive plantation of Arecaanut & Coconut will be created for local consumption and markets in the neighbouring states.
- Promotion of the Nursery-Industry, for sale in the neighbouring states and also targeting the markets in Bangladesh, through transport-corridor, expected to become smoother and transit friendly.

b) **Vegetables:**

- Coverage of additional 30,000 ha including 2,000 ha high value vegetables like Tomato, Capsicum & Cucumber, over the existing 40,000 ha.
- To produce all the certified and OP seeds of vegetables, as per requirements, within the state for reducing dependence on outside procurements.
- Creation of adequate storage & transport facilities for vegetables at Block level.

c) **Potato:**

- Increasing production of potato from present level of 1.6 lakh tons to 3.00 lakh tons bringing additional 6000 ha within next 6 years to reduce dependence on outside supply.
- Creation of a 2nd TPS production centre to cater to the needs of TPS seed and TPS tuberlets of the North Eastern States.
- Establishment of a mechanized tuberlet production centre is also proposed for production of seedling tubers for use in the state and marketing in the neighbouring states.

d) **Spices & Flowers:**

- Spices especially, Ginger is grown as inter crop, mainly in the North district needs to be explored. Promotion of organic cultivation of high yielding, less fibre varieties of Ginger in 5000 ha area is envisaged with the objective for value addition.
- The climate of Tripura is most conducive for growing exotic flowers like Gerbera, Anthurium, Orchid etc. It is proposed to bring additional 50 ha area under cultivation of exotic flowers for catching up with the demands in Bangladesh market.

- Modern packaging unit for flowers & marketing chain may be developed to suit to the local requirements.

**C. FISHERY SECTOR:**

The state is having only Inland Fisheries resource without any Marine or Brackish water resources. More than 95% of Tribal and Non Tribal population of the state are fish eater, either in fresh form or dry form, which create a huge demand of fish in the state. The state Fisheries department had adopted perspective plan in the year 2003-04 to make the state self sufficient in fish production by 2012 with a target to produce 13 kg/head/year and could achieve this target by 2010-11 increasing from the basic level of 5.9 kg/head/year in the year 2003-04. Afterwards, the perspective plan target was increased to 20 kg/head/year by the end of 12\(^{th}\) five year plan i.e. 2016-17. To that direction, the states’ Fish production in 2014-15 is approximately 65,000 MT against demand of 75,000 MT and the fish availability is 17.5 kg/head/year. Thus, the state could produce 86% fish requirements and the rest 14% are coming from Andhra and Bangladesh.

The state present available water resource is 26,000 hectar owned by 1.86 lakh Fish farmers and average fish productivity is 2620 kg/ha/year. The state is surplus in Fish seed production with a production of 350 million. Fisheries department is conducting Fisheries survey every year and updating Fish farme wise data and recently started identification of Geo location of water bodies. The states’ fish demand will be 79,968 MT by the end of 12\(^{th}\) Five year Plan (2016-17) and this demand will reach to 96,279 MT by the end of 13\(^{th}\) Five year plan (2021-22). To fulfil this demand, following strategies have been considered:-

- Increase local Fish production and make fish availability to the people.
- Reduction in Fish import saving drainage of fund to outside the State.
• Increase per capita fish availability to the extent of 21 kg for the expected populace of 2021-22 resulting better food & nutritional security.
• Rural employment generation.
• Productivity enhancement in culture fisheries particularly in seasonal water body.
• Creation of water body both for irrigation and fisheries.
• Paddy cum fish culture in some low lying areas.
• Production of quality fingerlings for supply to the farmers.
• Introduction of small indigenous with Indian Major carps, medium carp species.
• Low cost cage culture in water body above 2 ha.
• Fish –Pig – Tuber crops farming system.
• Fish Health Management.
• Reclaiming of Water bodies-NREGA- 5000 ha.
• Demonstration and popularization of High tech fish culture-1000ha.
• Pisciculture support to low productivity water bodies-3000 ha.
• Prawn culture with IMC- 900 ha.
• Introduction of Mono Sex Tilapia 500 Ha.
• Production of quality Fish seed.
• Chinese eco hatcheries.
• Replacement of traditional happa by FRP.
• Magur and Prawn hatchery.
• Training on Scientific Fish culture technology.
• Use of aerators.
• Mobile soil and water analysis laboratory Van.
• Fish market.
• Mini Ice plant.
• Testing of soil & water.
• Manufacture of Fish feed with locally available ingredients.
• Development of Post Harvesting Facilities like establishment of Fish market and mini Ice plant.
• Welfare of Fisher men Co operative Societies.
D. ANIMAL RESOURCES SECTOR:

Animal Husbandry sector is one of the major thrust areas which need to be developed. There is a great demand for pig rearing, poultry farming and fish cultivation. The people in Tripura rear pigs, goat, poultry, cow and buffaloes etc. However pig rearing and poultry farming stands out in terms of self-inclination of the farmers towards choosing these activities as one of their main occupations. The pig rearing can be especially boosted in the Tripura Tribal Area Autonomous District Council (TTAADC) areas as they are culturally related with it. The other activities like that of cattle rearing can be scaled up in the Non-ADC areas of the state. Goat rearing in the state has been in practice since long. The world’s best breed of goat i.e. Black Bengal is predominant in the state and this sector can be improved by providing infrastructure facilities for creating the employment opportunity in the rural areas, improving the grazing land and in turn can help the farmers to improve their economic conditions. In the animal & bird, poultry has highest population with 48% followed by cattle with 18%, duck 15% goat 12% & pig 7%. To fulfill the states’ requirements, following strategies have been considered:

1. Milk sector:

- Genetic improvement: Intensification of AI for increasing the number of cross bred population.
- Induction of exotic and Indigenous high yielding varieties of cattle and buffalo.
- Setting up of Semen production station/Bull mother farm.
- Supply of Calf Growth Meal at 50% subsidy.
- Developing & promoting infrastructure for collection, processing and marketing of milk & milk products.
- Fertility camps for improving conception rate.
- Training of professionals, A.I workers and Private AI workers.
- Castration of Bull in areas covered under AI programme.
- Supply of breeding bull in ADC block for natural service.
- Conducting Milk yield competitions, calf rallies.
- Construction of cattle shelters under MGNREGS.
- Development of perennial and seasonal fodder plots & community pasture land.
- Popularization of Azolla cultivation.
- Mass de-worming programme and supply of mineral mixture.
- Organization of Awareness camp on vaccination and de-worming.
- Prevention and control of cattle & Buffaloes diseases through massive vaccination, disease control strategies.

2. **Meat Sector:**

- Strengthening of Govt. Pig breeding farms for production & supply of improved pig germplasm.
- Setting up of Beneficiary oriented piggery Demo unit for multiplication.
- Promotion of rearing Black Bengal goats.
- Development of small ruminants for improved productivity.
- Establishment of meat processing units with marketing facilities.
- Increasing Tapioca cultivation to reduce feed cost in pig farming.
- Prevention and control of pig, goat diseases.
- Construction of poultry and goat shelter houses under MGNREGS.
- Technical support for skill development & value addition to broiler poultry farmers.
- Production, propagation & popularization of broiler variety duck for meat production.

3. **Egg Sector:**

- Establishment of new poultry/duck farms for production and supply of improved germplasm and DOCs.
- Promotion of rural Backyard poultry rearing and Establishment of new Block Level Brooder Houses.
- Strengthening of existing BLBHs.
- Prevention and control of poultry diseases.

4. **Infrastructure development:**

- Up-gradation of Vety. Dispensaries (VD) and Sub-centres into Hospitals and New VDs. Respectively.
- Setting up of New Vety. Sub-centres and Modern feed mixing plant.
- Ambulatory Service to rural areas.
• Strengthening of departmental livestock farms.
• Infrastructure development of Veterinary College and district offices.

5. **Manpower Development:**
• Introduction of Post graduation studies, research & extension projects in C.V.Sc & A.H for technical manpower development.
• Strengthening of Veterinary Training Institute for training of par veterinary manpower/ DSAI workers.

**F. FOREST SECTOR:**

The forests in the state are mainly tropical evergreen, semi evergreen, and moist deciduous. Sizeable area is covered with bamboo brakes which virtually form a “Sub climax” resulting from shifting cultivation from time immemorial. Total Forest Area in the state is 6292.681Km² which is 59.98% of the total geographical area of the State. Blessed with high rainfall, humidity and nutrient rich soils, the forests of the State are in very high productivity zones. Excellent silvicultural conditions prevail for forest production. There is a large gap between potential and actual productivity, and generally poor actual productivity in natural forests is due to anthropogenic stress and this is a matter of concern because, rising demand and poor productivity lead to the vicious cycle of low productivity to resource degradation of more area to further lower productivity.

Tripura has diverse ecosystems ranging from forests and grasslands to freshwater wetlands. There are six types of 408 wetlands, of which, water logged (seasonal) are most numerous followed by oxbow lakes and lakes/ponds. Watershed/Catchments Areas: The State has 10 major rivers running over a total length of 903 km across the State. All these rivers have watershed/catchments areas of over 9400 ha covering 6 major hill ranges. So far Forest Deptt has constructed more than 4,200 such water structure which can help the moisture improvement of almost 10,000 ha of adjacent agricultural land. To fulfill the states’ requirements, following strategies have been considered:
• Tripura has one of the oldest, richest & most diverse cultural traditions associated with use of medical plants. The herbal medicines used by rural people including tribal need to be documented.
• Compiling an exhaustive inventory of medicinal plants in the State is the need of the hour.

• Bamboo plays a very vital role in the economy of the State as it serves the artisan & non-artisan users of the state. A total of 19 species of bamboo are reported in the state. Detail action plan for conserving bamboo plantations need to be ascertained.

• Increase of soil moisture by impounding the rain water by way of making small check dams / water structure can be positive contribution by Forest Deptt.

• Strengthening of River Valley Projects in the state.

• Generally a target of about 600 to 700 water bodies (less than 1 ha each) are created every year. This target can be increased if financial support is available.