

9.1 CROP HUSBANDRY

I) Agriculture Department

Introduction

Agriculture development is a precondition for overall economic development of a country or state. Rapid growth in agriculture is essential not only to achieve self-reliance at nation/state level but also for household food security and to bring about equity in distribution of income and wealth resulting in rapid reduction in poverty levels. The agricultural sector growth rates in Tamil Nadu were among the highest in India during 80's and in early 90's. **The deceleration in agricultural growth mainly due to severe and consecutive droughts caused increasing concern to policy makers.**

Even though agriculture accounts for only 15.7% of total GSDP, the farm income accounts for about half of house hold income in rural areas. Much of the rural population is poor, and for the poorest rural quintile more than 75% of the income is agriculture based. Some important features and long-term constraints of Tamil Nadu's agriculture are: (a) its dependence on spatial and temporal distribution of the monsoon (b) the fact that 95 per cent of surface water and 70 per cent of ground water has already been exploited (c) the growing pressure on land.

Severe droughts occur in 3 of 10 years, while severely limits the crop cultivation between June and September. Despite low availability of water resources, a combination of canals, wells and tanks increases the reliability and availability of irrigation water. The seasonality and scarce supply limits the cultivation to only one crop in most of the districts. The sector faces increasing competition for water from other major consumers viz. industries and domestic users.

In the light of the fact that Tamil Nadu's agro climatic condition are well suited for diversified agriculture and considering the fact that rapid increase in income and changing pattern of food habits and demand provide strong impetus for diversification, increasing the scope for agricultural diversification and private investments in agriculture for many of the higher value agricultural commodities viz. contract farming are likely to generate new employment opportunities as well as to contribute higher rural income. The less water intensive crops especially maize, pulses, groundnut and cotton which are having tremendous scope in terms of productivity and profit need encouragement for area expansion through contract farming which ultimately helps to increase cropping intensity, increase in production and also will bring prosperity to farmer.

The future source of agricultural growth rate on productivity increase, increased cropping intensity, diversified farming, watershed development based dry land development and commercial agriculture through promotion of efficient use of land and water. The state aims at bring second green revolution in dry land agriculture, while sustaining the tempo of agricultural development in irrigated agriculture.

Seasonal condition and crop prospects

The Agricultural situation in Tamil Nadu largely depends on the quantum of rains received during seasonal rainfall of South West and Northeast monsoon. Comfortable storage in Mettur reservoir coupled with uniform distribution of monsoon rains will bring good crop in delta region. But the State had faced consecutive drought situation for the past 2 years because of low and uneven precipitation.

During 2004-05, the State had experienced a dual situation, whilst it faced severe drought upto June-July 2004; it had torrential rains in the month of October leading to flood damage and submergence in some of the districts. The water from Mettur reservoir was released on 12.8.2004 after a delay of 2 months for Samba cultivation.

The area coverage under major crops showed a dip in coverage in the early part of the year, which however revived in the month of September 2004 onwards.

The massive tidal waves of extreme ferocity caused by the effect of the earthquake off the Indonesian coast hit the coastline of Tamil Nadu on 26.12.2004. The waves caused the fertile lands submerged with seawater.

On 26th December 2004, the Tsunami wave, which is unusual in the India Ocean, attacked Tamil Nadu Coastal line and made fertile lands submerged with seawater.

The crops raised in 4,796.10 Ha. were affected and the extent of area to be reclaimed is assessed as 3,664.24 Ha. and the total extent damaged in agriculture is 8,460.34 Ha. For relief to the crop damage, the Government have already ordered for the financial compensation of Rs.1.80 crores and a sum of Rs.16.96 crores towards the relief work to be taken up for reclamation of Tsunami affected agricultural lands.

The details of rainfall received during 2004 is as follows.

(Unit: in mm)

| Sl. No | Season | Normal Rain-fall | Actual Rainfall | | Deviation (%) w.r.to | |
|--------|--------------------------------------|------------------|-----------------|--------|----------------------|-----------|
| | | | 2003 | 2004 | Normal | Last Year |
| 1 | Winter (January-February) | 37.5 | 8.7 | 12.1 | (-) 67.7 | (+) 39.1 |
| 2 | Summer (March-May) | 127.5 | 124.9 | 283.4 | (+) 122.3 | (+) 126.9 |
| 3 | Southwest Monsoon (June-September) | 324.3 | 329.7 | 459.8 | (+) 41.8 | (+) 39.5 |
| 4 | Northeast monsoon (October-December) | 464.7 | 404.5 | 470.9 | (+) 1.3 | (+) 39.5 |
| | Total | 954.0 | 867.8 | 1226.2 | (+) 28.5 | (+) 41.3 |

Special Initiatives - Rabi 2004-05

In the era of globalization, Indian agriculture will face increasing competition. During initial period of Green Revolution agricultural extension played a crucial role in carrying the messages to the various parts of the State. However, with the increasing complexities in market and society, the extension methodology has to be sensitized to the new dimensions in agriculture. The task of extension is becoming more challenging in the context of globalization, which demands a system of market-linked extension. New approaches like precision farming knowledge management with modern information and communication technology are tools, which have to play crucial roles in strengthening sustainable agriculture of Tamilnadu and prepare it for facing competitive market.

The special initiatives and steps taken by the Government in the Agriculture Department are:

1. Immediately on release of Cauvery water in August, 2004, District Facilitation Centres were opened in the Delta districts and kept opened from 8.00 AM to 8.00 PM from 15.9.2004 and again 9.11.2004 to render all required assistance.
2. Intensive Preseason Campaigns were conducted in all the villages in 3 phases. Totally 22779 campaigns were conducted benefiting 5,47,545 farmers involving line departments like Horticulture, Agricultural Engineering, Animal Husbandry, Credit Institutions and elected bodies.
3. Quality Inputs were made available adequately on war footing to bring maximum area under Agricultural Crops.
4. Intensive training to 13580 farmers on INM and training of 23670 farmers on IPM through 787 farmers field school.
5. Contract farming for cotton with mill to enhance the area. The model developed by the Government of Tamil Nadu was circulated by the Government of India to all State for adoption.
6. Contract faming for Pulses, Maize and Oilseeds linking NAFED to ensure remunerative price to the farmers thereby encouraging farmers to increase the area under the less water intensive crop.
7. Enforcement of strict quality control on vital inputs such as seeds, fertilizer and plant protection chemicals.
8. Soil test recommendations by analyzing 8.10 Lakh Nos of soil samples, distribution of soil health card to 1 lakh farmers and leaf colour chart to 36,200 farmers.
9. Technology training to 87200 Nos of farmers.
10. Distribution of 70 Lakh Nos of Bio fertiliser pockets and 1200 MTs MN mixture.
11. Providing assistance through plan schemes to the tune of 138 crores.
12. Wider publicity, ICT in Agriculture.

X plan Target and Performance

The Area and production target earmarked for X plan and the performance so far is as follows:

Area (L. Ha.)

| Crop | 10 th Plan Target | Achievement | | | | 2005-06 Target |
|-------------------|------------------------------|-------------|---------|---------|--------|----------------|
| | | 2002-03 | 2003-04 | 2004-05 | | |
| | | | | Target | Achmt. | |
| Paddy | 22.00 | 15.17 | 13.97 | 20.00 | 19.28 | 20.00 |
| Millet | 11.00 | 7.12 | 9.03 | 11.00 | 12.12 | 11.00 |
| Pulses | 8.00 | 5.63 | 5.37 | 7.50 | 8.46 | 8.00 |
| Total Food grains | 41.00 | 27.92 | 28.37 | 38.50 | 39.86 | 39.00 |
| Cotton | 2.50 | 0.76 | 0.98 | 2.50 | 1.63 | 2.50 |
| Sugarcane | 3.00 | 2.61 | 1.92 | 3.00 | 2.37 | 3.00 |
| Oilseeds | 10.50 | 5.93 | 6.86 | 10.00 | 8.64 | 10.50 |
| Total | 57.00 | 37.22 | 38.13 | 54.00 | 52.50 | 55.00 |

Production (L.M.T.)

| Crop | 10 th Plan Target | Achievement | | | | 2005-06 Target |
|-------------------|------------------------------|-------------|---------|---------|--------|----------------|
| | | 2002-03 | 2003-04 | 2004-05 | | |
| | | | | Target | Achmt. | |
| Paddy | 91.04 | 35.77 | 32.22 | 75.00 | 72.30 | 78.00 |
| Millet | 11.84 | 6.84 | 8.89 | 14.85 | 17.53 | 15.51 |
| Pulses | 3.50 | 2.00 | 2.01 | 3.38 | 3.53 | 3.76 |
| Total Food grains | 106.38 | 44.61 | 43.12 | 93.23 | 93.36 | 97.27 |
| Cotton | 8.60 | 0.84 | 1.23 | 5.62 | 3.67 | 5.85 |
| Sugarcane | 40.59 | 24.16 | 17.66 | 35.00 | 27.66 | 36.40 |
| Oilseeds | 18.08 | 7.60 | 9.63 | 17.00 | 14.53 | 18.59 |

Productivity (Kg/Ha.)

| Crop | 10 th Plan Target | Achievement | | | | 2005-06 Target |
|-------------------|------------------------------|-------------|---------|---------|--------|----------------|
| | | 2002-03 | 2003-04 | 2004-05 | | |
| | | | | Target | Achmt. | |
| Paddy | 4138 | 2359 | 2308 | 3750 | 3750 | 3900 |
| Millet | 1076 | 959 | 984 | 1350 | 1446 | 1410 |
| Pulses | 438 | 356 | 374 | 451 | 417 | 470 |
| Total Food grains | 2595 | 1597 | 1931 | 2422 | 2342 | 2494 |
| Cotton | 585 | 188 | 213 | 382 | 383 | 398 |
| Sugarcane | 13530 | 9244 | 9192 | 11667 | 11671 | 12133 |
| Oilseeds | 1722 | 1282 | 1403 | 1700 | 1682 | 1770 |

Strategies for 2005-06

The strategies to be followed during the 2005-06 are as follows:- maximizing the land use by increase in cropping intensity, adoption of alternative cropping strategies derived for agro-climatic zone based cropping pattern, encouraging cultivation of Jatropha, Sugar beet, and Sweet sorghum, Wasteland Development, speedy transfer of technologies to the farming community through ICT, encouraging

contract farming, Quality seeds – Right quality/ quantity in right time, following Dryland farming, Integrated Soil Nutrient Management, Integrated Pest Management, effective and Speedy Technology transfer.

Action Plan for 2005-06

Reclamation of Agricultural land degraded by Tsunami, Up scaling of Contract Farming, Larger spread of benefits under the Government schemes, Flexibility in Component wise Wasteland Development Programme, Upgrading the skills of extension staff, Mass communication strategy, Rewards to the Agricultural Officers, Weather Insurance, Technical Backstopping, Tamil Nadu Women in Agri Business and Extension (TANWABE), Organising commodity groups, ICT enabled Agriculture, Land resource Inventory and creation of GIS database for farm level planning in Tamil Nadu, Agriculture Stakeholders Form, Jatropha curcas mother seed farms, Quality seed multiplication, Organic farming, Evaluation of competitiveness of major crops in Tamil Nadu, Client satisfaction survey, Mission on rainfed farming, New Citizen Charter and Job charts.

State Schemes

Input Programmes

Seeds

Seed is a vital input that plays a critical role in increasing agricultural productivity. The productivity of crop largely depend on the genetic and physical purity of seeds. The Department of Agriculture has the primary responsibility of producing and distributing good quality certified seeds as per approved seed replacement rate.

The Department of Agriculture has taken special initiative to address the following key areas to revitalize the quality seed production and supply.

- To achieve enhanced SRR (Seed Replacement Ratio) through Public Private partnership
- To achieve National standards of S.M.R.
- Proper utilization of valuable Breeder / Foundation seeds to enhance 'C' seed production.
- Promote seed village concept
- Focus to increase availability of quality seeds of dry land crops for area expansion and productivity increase.
- Strict enforcement of quality parameters for seeds
- Steps to enhance the efficiency of delivery mechanism
- Identification and introduction of High yield potential varieties released by other states / ICAR which are notified and suitable for Tamil Nadu conditions.
- Ensure advance planning on demand and supply by creating linkage with Department, Quasi Govt. Private seed producers.
- Strengthening of infrastructure for quality seed production and storage.

- Ensure all information on the portal such as availability, sale price, seed production / storage technologies, Data base on seed producer, seed dealers.

The following SRR are proposed to be adopted during 2005-2006, for Departmental Seed Multiplication Programme.

| Crop | Seed Replacement Ratio |
|--------------|-------------------------------|
| Paddy | 17% |
| Millet | 7% |
| Pulses | 12.5% |
| Cotton | Rainfed 10% Irrigated 15% |
| Oilseeds | |
| a) Groundnut | 5% |
| b) Gingelly | 15% |
| c) Sunflower | 50% |
| d) Castor | 30% |
| e) Soya | 20% |

The main objective of the Seed Multiplication schemes undertaken by the Department are to produce and distribute Quality seed of Paddy, Millet, Pulses, Oilseeds & Cotton in time at reasonable price. The trading activity by the Department also helps to curb unnecessary price hike by the private seed traders.

The seed production activities are carried out in 3 stages.

- Breeder Seed production by TNAU for State varieties and ICAR Centre for national varieties.
- The foundation seed production in 37 State Seed Farms, 5 State Oil Seed Farms and one pulses farm at Vamban.
- Certified seed production in farmers' holdings. The Department of Seed Certification is involved to ensure quality of seeds.

The Foundation and certified Seeds produced in Government Seed Farms and farmers' holdings respectively are processed in 16 Major 2 Medium and 56 Mini Seed Processing Units in the State with annual capacity of 28500 MT. The entire seeds produced are distributed to the farmers through 880 Agricultural Extension Centres located in the State.

The Quantity Seeds of Paddy, Millet, Pulses, Cotton and Oilseeds procured and distributed upto February 2005 and the target proposed for 2005-06 is as follows:-

(in MT)

| Crop | 2004-2005 | | Programme for 2005-2006 |
|-----------------------|------------------|--------------------|--------------------------------|
| | Target | Achievement | |
| A. Procurement | | | |
| 1. Paddy | 17000 | 15274 | 17000 |
| 2. Millets | 400 | 418 | 400 |
| 3. Pulses | 1900 | 1261 | 1900 |

| | | | |
|------------------------|--------|---------|-------|
| 4. Oilseeds | 8442.3 | 3490.86 | 8708 |
| 5. Cotton | 367 | 154 | 367 |
| B. Distribution | | | |
| 1. Paddy | 17000 | 10738 | 17000 |
| 2. Millets | 400 | 339 | 400 |
| 3. Pulses | 1900 | 1404 | 1900 |
| 4. Oilseeds | 8442.3 | 3260.70 | 8708 |
| 5. Cotton | 367 | 154 | 367 |

Fertilizer

The Department of Agriculture closely monitor the production and supply of fertilisers to ensure timely availability to the farmers. The progress on supply of chemical fertilisers during 2004-05 and programme for 2005-06 are as follows:-

| Nutrient | Target 2004-05 | Achievement upto | (Unit in LMTs) |
|--------------|-------------------|---------------------|--------------------------|
| | | | Programme for 2005-06 |
| Nitrogen | 5.40 | 5.18 | 5.40 |
| Phosphorus | 2.31 | 2.26 | 2.31 |
| Potash | 2.24 | 2.38 | 2.24 |
| Total | 9.95 | 9.82 | 9.95 |

Plant Protection

Pest Surveillance

The Integrated Pest Management Technologies are recommended and adopted extensively by the farmers. The success of the Integrated Pest Management largely depends on constant monitoring of pest and disease situation in the field, defender population, etc. To augment its efforts the pest surveillance are done in 7356 locations every week and forewarning messages are given to the farmers on the possible out break. Because of the continuous surveillance, the serious pests like paddy stemborer, leaf roller, Brown Plant Hopper, groundnut red hairy caterpillar, prodenia, cotton boll worm, etc. which caused severe damages a decade ago were kept under control.

Crop and Plant Protection Scheme

The Plant Protection measures were programmed to be taken up during 2004-05 to cover an area of 37.5 lakh ha. in food crops, 18.2 lakh ha in non food crops and seed treatment measures in 22.0 lakh ha. and upto February, 2005 an area of 31.760 Lakh ha. were covered in food crops, 15.132 Lakh ha. under non food crop and 22.693 L.Ha. under seed treatment. This will be continued during 2005-06 also.

Under this scheme, Government have sanctioned funds for the procurement of bio-control agents and bio-pesticides for distribution to the farmers at subsidized cost through Centrally sponsored Schemes such as Cereals Development Programme, SUBACS, ICDP Cotton, ISOPOM-Pulses, Oil Seeds and Maize.

Integrated Pest Management (IPM)

The Integrated Pest Management Technology to combat pest and diseases was introduced in Tamilnadu through FAO Programme in late 80's and special

thrust were laid to this concept through Farmers Field School approach. This season long training cum demonstration component involving 30 farmers in each training, created greater awareness among the farmers and being practiced in almost all the villages. Because of the large scale adoption of IPM technologies, the technical grade pesticide consumption which was annually around 10,000 MTs. a decade ago has come down to around 1300 MTs.

Bio-control agents production centre & State IPM Centre

As a part of IPM activities, production of Bio control Agents are resorted by the Department and distributed to the farmers. There are 12 State Bio-Control Agents Production Centres and 51 Parasite Breeding Centres functioning in this State to take the production of the Bio Control Agents.

Foodgrain Crops

Crop Yield Competition

To inculcate healthy and competitive spirit among the farmers for increasing the productivity of crops by adopting the advanced scientific techniques, Crop Yield Competitions are conducted at the State Level as well as at the District level on Paddy, Groundnut, Cholan, Cumbu, Greengram and Blackgram and prizes are awarded.

The prize amounts given are as follows:

(Unit in Rs.)

| Crop | State Level | | District Level | |
|---------------------|-------------|-------|----------------|------|
| | I | II | I | II |
| Paddy and Groundnut | 25000 | 15000 | 8000 | 4000 |
| Other crops | 8000 | 4000 | 4000 | 2000 |

The enrolment fee for Paddy and Groundnut crops at State level is Rs.100 and for other crops Rs.50 /-. Similarly for Paddy and Groundnut crops at District level the enrolment fee is Rs.50/- and for other crops it is Rs.25/-. A sum of Rs.12.63 lakhs has been spent during 2004-2005 and a sum of Rs.15.26 lakhs has been provided in the budget for 2005-2006.

Seeds

Multiplication, procurement and distribution of Paddy & Millet seeds

The seed production is taken up in 3 stages viz. (1) Breeder Seed Production, (by TNAU) (2) Foundation Seed Production (By Agri dept) and (3) Certified Seed Production (by Seed Certification Dept.) . The Breeder Seed Production is taken up by the TNAU and these seeds are supplied to the Department of Agriculture for all agricultural crops. The Breeder Seeds for National varieties are obtained from ICAR Centres, based on the GOI allocation. The Breeder Seeds thus obtained are multiplied as foundation seeds in 37 State Seed Farms. The production of certified seeds utilizing the foundation seeds are done in the farmers' holdings by organizing seed farms and the quality of the seeds is ensured by involving the Seed Certification Agency.

Under Seed Multiplication Scheme quality and viable Certified Paddy, Millet and Pulses seeds are produced and distributed to the farming community through 880 Agricultural Extension Centres at reasonable price in time. The seed production work is looked after by the Agricultural Development Officers at Agricultural Extension Centres under the supervision of Seed Certification Department. Apart from the Department supply the private seed entrepreneurs are also encouraged to produce and distribute certified quality seeds to meet the needs of the farming community.

A sum of Rs.1804.991 lakhs has been spent during 2004-2005 and a sum of Rs.2091.87 lakhs has been provided in the budget for 2005-2006.

Multiplication and Distribution of Pulses seeds

Under this scheme Pulses Certified Seed Multiplication and distribution of 1900 Tonnes to cover 12.5% of the total area under pulses are produced, processed, certified and distributed to the farmers through the Agricultural Extension Centres. The provision made is towards the cost of seeds, gunnies, transport, and fumigation etc., for SCP only. The General head of account allocation for 2004-2005 is operated under Non-plan. A sum of Rs. 117.189 lakhs has been spent during 2004-2005 and a sum of Rs.117.16 lakhs has been provided in the budget for 2005-2006.

Development of Foundation Seed Production Centres for Groundnut

The required quantity of Breeder Seeds of oilseed crops are supplied by TNAU and ICAR Centres and multiplied as Foundation Seeds in 5 State Oilseed Farms located at Musaravakkam (Kancheepuram District), Vellalavidhuthi (Pudukottai District), Agasipalli (Dharmapuri District), Bhavanisagar (Erode district) and Navlock (Vellore District). The expenditure towards working expenses, input cost, wages, transport, etc., for 3 State Oilseed Farms Musaravakkam, Vellalavidhuthi and Agasipalli are met under this Plan Head of account. A sum of Rs.72.379 lakhs has been spent during 2004-2005 and a sum of Rs.90.00 lakhs has been provided in the budget for 2005-2006.

Procurement and distribution of Green Manure seeds

To build up the soil health, micro organism and water holding capacity the Green Manure Seeds are produced and distributed. It also fixes atmospheric nitrogen in the soil through root nodules. During 2004-2005, 125 MTs of Green Manure Seeds will be procured and distributed to the ryots. A sum of Rs.24.906 lakhs has been spent during 2004-2005 and a sum of Rs.25.00 lakhs has been provided in the budget for 2005-2006.

Manures And Fertilisers

Schemes for Composting of Farm Waste through Pleurotus

The scheme is implemented to awaken the process of composting and also to prepare compost scientifically with the help of pleurotus for popularising organic farming through composting of farm waste. The farmers are being supplied with one kg of pluerotus and 5 kgs of urea along with a literature at a cost of Rs.140 per kit. Each kit worth Rs.140/- is being supplied to 2,000 farmers at a cost of Rs.2.80 lakhs. The production of compost by use of this kit will be done under the

technical supervision of the extension staff as a demonstration approach. A sum of Rs.2.80 lakhs has been spent during 2004-2005 and a sum of Rs.2.80 lakhs has been provided in the budget for 2005-2006. This scheme proposed to be included under Macro Management during 2005-06.

Vermi Composting of Agricultural Waste

To popularise the technology of vermi composting 100 demonstrations are being laid in the State and for each demonstration Rs.1200/- is allotted towards digging of pits (Rs.600/-) filling up with sand silt, Brick, jelly, etc. (Rs.300/-), filling up with farm waste (Rs.250/-) composting of 1000 earth worms (Rs.50/-). Total allocation for demonstration is Rs.1.20 lakhs. 5000 farmers are being trained by giving one day training at 50 farmers per batch and Rs.50/- is paid to the farmers for attending the training at a total cost of Rs.2.50 lakhs. An amount of Rs. 0.15 lakhs is allotted for publicity .The scheme is being implemented in all the districts in the State except Nilgiris.

A sum of Rs.3.786 lakhs has been spent during 2004-2005 and a sum of Rs.3.85 lakhs has been provided in the budget for 2005-2006 and during 2005-06, it is proposed for inclusion under Macro Management Mode schemes

Plant Protection

Crop and plant protection

As per G.O.Ms.No.150, Agriculture (TNADP)/ Department dated 9.3.1993 the Department of Agriculture is not dealing the trade in pesticides throughout the State except when the natural calamities including mass pest infestation occurs. The provision available under this scheme is used for purchase and supply of bio pesticides like neem extract Biocontrol agents, pheromone traps, lures etc. which are recommended under Integrated Pest Management concept and to implement the Government of India schemes. A sum of Rs.112.919 lakhs has been spent during 2004-2005 and a sum of Rs.99.70 lakhs has been provided in the budget for 2005-2006.

Pesticide Testing Laboratories

With a view to enforce the Insecticide Act and rules pesticide samples are drawn from the retail and whole sale trade points and analysed in 9 Pesticides Testing laboratories functioning in the State with an annual analysing capacity of 16,236 Nos. per annum. The expenditure under this scheme is towards maintenance of lab equipments and materials lab chemicals for 9 Pesticide Testing Laboratories. Besides Rs.4.90 lakhs is provided for the purchase of spares for the HPLC under Part II 2004-2005. A sum of Rs.12.24 lakhs has been spent during 2004-2005 and a sum of Rs.9.94 lakhs has been provided in the budget for 2005-2006.

Scheme for Biological control of pest on oilseeds and coconut

Under this scheme, NPV are produced for the Biological control of prodenia on groundnut to cover 480 Ha. and through 4 NPV Production Centres functioning at Kancheepuram, Trichy, Coimbatore and Madurai. Further, for the control of rhynocerous beetle, green muscardine fungus are produced in 2 centres at Virudhunagar and Nagercoil (10000 vial) of these production Centres.

A sum of Rs.10.975 lakhs has been spent during 2004-2005 and a sum of Rs.14.42 lakhs has been provided in the budget for 2005-2006.

Scheme for Production of NPV for the control of Prodenia in Cotton

Cotton crops are predominantly affected by Prodenia and causes severe damage. The spraying of NPV for the control of prodenia is found to be an effective biological control measure. The NPV is being produced in the 3 Parasite Breeding Centres at Gobichettipalayam in Erode district, Melur in Madurai district and Villupuram in Villupuram district. The provision made under this scheme is towards wages and cost of production of NPV to cover an area of 1500 Ha. Annually. A sum of Rs.0.600 lakhs has been spent during 2004-2005 and a sum of Rs. 0.60 lakhs has been provided in the budget for 2005-2006.

Commercial Crops

Sugarcane Development - Release of Parasites

The yield of Sugarcane is greatly reduced when it is affected by Inter Node Borer. The pest is controlled effectively by the release of a parasite named Trichogramma. The parasites are multiplied in 21 Parasites Breeding Centres functioning near sugar mills area. Annually 10500 ha. are covered under this scheme. The provision made is towards the recurring cost of production of parasites. A sum of Rs.3.768 lakhs has been spent during 2004-2005 and a sum of Rs.3.75 lakhs has been provided in the budget for 2005-2006.

Development of Cotton Cultivation

Much thrust is being laid to increase the area of cotton through sustained extension efforts backed with supply of quality seeds. Under this scheme, quality certified cotton seeds are produced as per SRR of 10% for Rainfed cotton area and 15% for irrigated area under cotton. This scheme is being implemented in all the districts except Kancheepuram, Kanniyakumari and Nilgiris and funds are provided towards procurement cost of cotton seeds from the seed farm farmers, packing materials and certification charges, transport, etc. A sum of Rs.77.10 lakhs has been spent during 2004-2005 and a sum of Rs.119.83 lakhs has been provided in the budget for 2005-2006

Integrated Coconut Development

Under this scheme, quality tall coconut seed nuts from the selected mother palms will be procured and seedlings will be raised in the Government coconut nurseries and distributed to the coconut growers through Agricultural Extension Centres at a reasonable price so as to bring more area under coconut plantation and for replacement of unproductive disease affected palms. A sum of Rs.91.083 lakhs has been spent during 2004-2005 and a sum of Rs.138.66 lakhs has been provided in the budget for 2005-2006.

Increasing the production of Oilseeds (IPOS)

The object of the scheme is to procure and supply quality oilseeds to the required quantity as per the SRR (Groundnut 5%, Gingelly 15%, Sunflower 50%, Castor 30%, Soya 20%) and also providing latest technologies to increase the productivity. The main activity is multiplication of certified seeds of groundnut, gingelly, sunflower, castor and soyabean by enforcing the seed certification standards and distributed to oilseeds growers through the Agricultural Extension Centres. In addition, the application of bio-fertilisers, micro nutrient mixtures and micro irrigation are recommended and made available to the oilseed growers. A sum of Rs.740.82 lakhs has been spent during 2004-2005 and a sum of Rs.466.96 lakhs has been provided in the budget for 2005-2006.

Development of Pulses

Pulses village scheme

Pulses Village scheme is under implementation since 2003-04 with the objective to enhance the pulses productivity from 450 kgs./ha. to 750 kgs./ha. This scheme is under implementation during 2004-05, in the 20 districts of Thiruvannamalai, Pudukkottai, Trichy, Perambalur, Karur, Thanjavur, Thiruvarur, Nagapattinam, Salem, Namakkal, Dharmapuri, Dindigul, Theni, Virudhunagar, Thirunelveli, Thoothukudi, Cuddalore, Erode, Vellore and Coimbatore where pulses are grown extensively to cover 280 villages at the rate of 14 villages in each district.

In each village 100 acres (40 Ha.) are being covered under Pulses totaling to 28000 Acres (11200 Ha.) This will serve as a compact block demonstration for the neighbouring farmers to know and adopt the latest technologies. In these demonstration plots, pulses seeds are supplied at 50% subsidy to the maximum of Rs.15/kg. besides the supply of DAP at 4 kgs. per Ac. with a maximum subsidy of Rs.20/Ac. supply of Dhal Processing Units to the maximum subsidy of Rs.10,000 each is also extended. This scheme was implemented at a total cost of Rs.41.20 lakhs during 2004-05.

Extension And Training

Documentary film in Agriculture

Mass media is a powerful media for effective dissemination of messages to farmers and is given much importance. Provision is made for purchase of Video films on crop production and other innovative technologies from TNAU/ Government of India, which will be screened at the village level. A sum of Rs.0.40 lakhs has been spent during 2004-2005 and a sum of Rs.0.40 lakhs has been provided in the budget for 2005-2006.

Agricultural Information Unit.

Posters, pamphlets, booklets, folders, etc., are printed through the press attached to this Directorate and released by utilizing the fund sanctioned under this scheme. These materials will help in dissemination of messages on crop production techniques to the farming community. A sum of Rs.3.210 lakhs has been spent during 2004-2005 and a sum of Rs.2.90 lakhs has been provided in the budget for 2005-2006.

Part II Schemes 2005-06**Integration of Information Technology with RASI for creation of Web Based Portal.**

The Information Technology for Agricultural Extension has received high priority in the Policy frame work by the Government and the extensive use of modern technology has to be promoted for communication between research / extension workers and their farmers clients for transfer of technologies and information most effectively. Information technology should be made available particularly to those with specific enquiries to guide them in adapting the more knowledge intensive forms of agriculture. To educate the farming community in front year advancements in Agriculture sector, a computer based agricultural extension system and web based interactive knowledge net work system is required. Information regarding technologies required for crops, livestock, weather, market etc., can be delivered by Extension officers through Agriculture Web Portal.

To cope up with the changing trend to monitor the activities, in addition to the existing infrastructure, Rs.5 lakhs has been provided in the B.E. 2005-06 to create a Web Portal exclusively for agriculture by integrating the information technology with RASI project.

Study and Consultancy for Agricultural Export Potential.

It is imperative that detailed study and consultancy services is essential on crop competitiveness both domestically and internationally on Export Potential and also the constraints in both forward and backward linkages to device modalities / strategies for proper implementation.

Under Ministry of Commerce, Government of India, a Market Access Initiative (MAI) scheme is in operation wherein assistance are extended to supplement the State Government in carrying out export potential surveys of the States for identified product groups to evolve market related strategy for promoting exports of the identified product groups from the State. The organization of the State Government would be the coordinating agency for the survey. This study will be taken up on sharing basis at a cost of Rs.20.00 lakhs. 50% of the cost of survey will be met from MAI scheme by GOI. 50% state share has been provided for 2005-2006 ie.Rs.10.00 lakhs.

Opening new Farmers' Training Centres

Considering the importance in training the farmers on latest technologies and to create opportunities for the farmers of all districts to get training benefits, the Hon'ble Chief Minister has ordered to establish new Farmers Training Centres in 10 districts of Thiruvannamalai, Namakkal, Karur, Perambalur, Dindigul, Theni, Sivaganga, Virudhunagar, Thoothukudi and Krishnagiri during 2005-06 where the Farmers Training Centres belongs to the Department and Krishi Vigyan Kendras belongs to Tamilnadu Agricultural University are not functioning now. An amount of Rs.102.11 lakhs has been provided in B.E. 2005-06 to establish ten new Farmers Training Centres during 2005-06.

III. Centrally Sponsored Schemes with 100% Assistance.

Integrated farming in coconut holding for productivity improvement

This is a centrally sponsored scheme and the entire expenditure is borne by Government of India, through the Coconut Development Board. Removal of senile and diseased trees, lay out of demonstration plots and organic manure pit have been taken up under this programme in order to improve the productivity of coconut.

A sum of Rs.86.738 lakhs has been spent during 2004-2005 and a sum of Rs.150.00 lakhs has been provided in the budget for 2005-2006.

IV. Centrally Sponsored Scheme Shared Equally Between Centre And State Macro Management Mode Schemes (90:10)

Cereals Development programme

The Integrated Cereals Development Programme-Rice has been modified as Cereals Development Programme under Macro Mode Management programme from 2000-2001.

Under this scheme the inputs like certified paddy/ millet seeds and hybrid seeds, Biofertiliser, BGA, MN Mixture, Zinc Sulphate, SRI, INM training, creation of rice grid in 30 blocks of delta districts trainings/ demonstrations are also proposed for IPM, Hybrid Rice and Vermi composting which are essential for boosting productivity, are supplied at subsidized cost to the farmers.

A sum of Rs.306.540 lakhs has been spent during 2004-2005 and a sum of Rs.391.83 lakhs has been provided in the budget for 2005-2006.

Sugarcane Development (SUBACS)

Government of India has approved inclusion of the SUBACS (Sustainable Development of Sugarcane Based Cropping System) under Macro Management Mode (Work Plan) from 2000-2001. This scheme includes release of parasites for internode borer, farmers training, state level training for department officials, field demonstration and also subsidy for drip irrigation. A sum of Rs.5.50 lakhs has been spent during 2004-2005 and a sum of Rs.6.06 lakhs has been provided in the budget for 2005-2006.

Balanced & Integrated Use of Fertilisers:

Under this scheme Orientation Training Programme will be given to research wing personnel at a cost of Rs.1.20 lakh besides distribution of Leaf Colour Chart and Soil Health Card and also for printing Soil Atlas. A sum of Rs.22.370 lakhs has been spent during 2004-2005 and a sum of Rs. 1.20 lakhs has been provided in the budget for 2005-2006.

Integrated Scheme for Oilseeds, Pulses, Oilpalm and Maize (ISOPOM)(75:25)

ISOPOM - OILSEEDS

To achieve self-sufficiency under oilseeds, Oilseeds Production Programme has been taken up under ISOPOM and the expenditure under this scheme is shared

between Government of India and State Government on 75:25 basis. This scheme encourages oilseed growers to adopt latest production technologies by providing essential inputs like seeds, pp equipments, biofertilisers, gypsum, sprinkler and MN mixture and Block demonstration at subsidised cost. During 2005-06, as a special initiative Integrated Oilseed Development activities will be carried out in selected 3 watersheds of 500 Ha. each. This scheme is implemented in all the districts except Kanniyakumari and Nilgiris districts.

A sum of Rs.620.07 lakhs has been spent during 2004-2005 and a sum of Rs.603.06 lakhs has been provided in the budget for 2005-2006.

ISOPOM - Pulses

Pulses require major priority on nutritional grounds, since pulses are a cheap source of proteins for poor people. There is vast scope for increasing the productivity of pulses in Tamil Nadu. It is a short duration crop that requires less water and is highly suitable for cultivation in areas where there is limited availability of water.

In view of the above, thrust is given to increase the productivity of pulses by providing essential inputs at subsidised cost under NPDP. The Project was originally launched during 1986-87, with the Objective of increasing the production and productivity of pulses. Two separate Centrally Sponsored Schemes viz. SFPP (Pulses) and Plant Protection Umbrella were also under implementation till 1992-93. These two schemes merged with NPDP during 1994-95 and from 2004-05, this scheme is merged under ISOPOM - Pulses.

The activities are seed subsidy, demonstration, farmers training, gypsum distribution, dhal processor, sprinkler, PP equipments etc. for 2005-06. As special initiative 4 watersheds will be selected to take up integrated pulses development activities.

This scheme is implemented in all districts except Nilgiris and the expenditure under this scheme is shared by Govt. of India and the State Government on 75:25 basis. A sum of Rs.131.477 lakhs has been spent during 2004-2005 and a sum of Rs.120.18 lakhs has been provided in the budget for 2005-2006

ISOPOM - Oilpalm

This is a centrally sponsored scheme and the cost of the scheme is shared between Government of India and State Government on 75:25 basis and the scheme was launched from 1992-93. This scheme is under implementation in 6 districts viz., Trichirappalli, Thanjavur, Thiruvarur, Nagapattinam, Karur and Perambalur to encourage the cultivation of oil palm so as to meet the edible oil demand of the State. Under the area expansion component, 150 seedlings/ha. are supplied at subsidized cost. The cost provided is for the procurement of Oil palm sprouts, raising of seedlings provision of Drip Irrigation and training of farmers under the Oil palm development Programme. A sum of Rs.212.66 lakhs has been spent during 2004-2005 and a sum of Rs.223.73 lakhs has been provided in the budget for 2005-2006

ISOPOM - Maize

In the recent years the demand for maize is increasing due to large scale use of maize in the poultry industries as feed and as processed product for human

consumption. Farmers receive better realization from maize cultivation in the major maize growing districts. The objective of the scheme is to increase the production and productivity of maize crop in the potential districts of Coimbatore, Dindigul, Erode, Dharmapuri and Theni. The expenditure under this scheme is met by Government of India and the State government on 75:25 basis except seed minikit component wherein 100 per cent expenditure is borne by Government of India. Under this scheme it is proposed to distribute seeds, biofertilisers, micro nutrient Mixtures, farm implements, plant protection equipments and water saving devices at subsidized rates. Production subsidy for seeds is also contemplated.

A sum of Rs.25.084 lakhs has been spent during 2004-2005 and a sum of Rs.12.35 lakhs has been provided in the budget for 2005-2006

Technology Mission on Cotton Mini Mission II

It aims to increase the production of cotton by providing key inputs like seeds and through technology demonstration, and training and plant protection. This programme is implemented in all the districts except Kancheepuram, Tirunelveli, Kanniyakumari and Nilgiris. The expenditure under this scheme is shared on 75:25 basis by Govt. of India and by the State Government.

A sum of Rs.309.71 lakhs has been spent during 2004-2005 and a sum of Rs.308.75 lakhs has been provided in the budget for 2005-2006

Production and Distribution of T X D Hybrid Coconut Seedlings at Navlock.

The amount provided is for the production of T x D Hybrid coconut seedlings. The provision is made towards production cost and working expenses and the staff cost at Navlock coconut nursery at Vellore district. The cost of this scheme is shared between Coconut Development Board and State Government on 50 : 50 basis. A sum of Rs. 22.370 lakhs has been spent during 2004-2005 and a sum of Rs.21.62 lakhs has been provided in the budget for 2005-2006

Scheme for distribution of Coconut Seedlings free of cost to female infants

The Hon'ble Chief Minister on the World Coconut Day the 2nd September 2004 has announced a scheme to distribute 2 coconut seedlings each at free of cost to female infants born between 2.9.2004 to 31.3.2005 (both days inclusive) in rural areas. When the child attains school going age, the coconut will start bearing and give assured income which will help to meet the educational expenditure. Under this scheme, all the female infants born during the above period were supplied with 2 coconut seedlings free of cost at a cost of Rs.63.385 lakhs. The expenditure under this scheme will be shared equally by Coconut Development Board and State Government. This scheme is expected to be a most effective way of empowering women by assuring their education. This scheme will be continued during 2005-06

II) Horticulture

Introduction

Tamil Nadu is one of the leading horticulture States in India contributing 7.7 per cent to the National Horticultural production with 5.7 per cent of the national

level area. Tamil Nadu has been blessed with diversified agro-climatic conditions, suitable for a wide range of horticulture crops like fruits, vegetables, spices, plantation crops, flowers and medicinal plants.

A large extent of wastelands and under-utilized lands are available in the State for horticulture development. Tamil Nadu has a long coastal belt of 1000 km. suitable for crops like cashew, coconut, tropical orchids etc. The southern part of Tamil Nadu has the potential for growing off-season mangoes and grapes.

A lot of awareness has been created among the farmers of Tamil Nadu about cultivation of high value horticulture crops. It is aimed to achieve 8 per cent annual growth rate during X Five-Year Plan in the horticultural sector.

Due to consecutive drought for the last two years the area under horticultural crops has declined in 2003-2004, considerable reduction was noticed in crops like tapioca, turmeric, banana, chillies and onion. The area coverage in 2003-04 was 8.24 lakh hectares, a little less than the normal area of 8.52 lakh hectares. During 2004-05, despite the failure of the monsoon, the area coverage would still be around 8.91 lakh hectares. In the year 2005-06, an area of 9.73 lakh hectares is expected to be covered. The details of area, production, productivity of various horticultural crops for the years 2003-04, 2004-05, 2005-06 are furnished below.

(Area: Lakh Ha., Production: Lakh MT., Productivity: MT/Ha.)

| Sl. No. | Crops | 2003-2004 | | | 2004-2005 (Provisional) | | | 2005-2006 (Estimated) | | |
|---------|--------------------------|-----------|-------|-------|-------------------------|--------|-------|-----------------------|--------|-------|
| | | Area | Prdn. | Pdy. | Area | Prdn. | Pdy. | Area | Prdn. | Pdy. |
| 1 | Fruits | 2.21 | 36.09 | 16.33 | 2.39 | 39.08 | 16.37 | 2.58 | 42.31 | 16.41 |
| 2 | Vegetable | 1.91 | 46.73 | 26.47 | 2.06 | 50.59 | 24.53 | 2.23 | 54.78 | 24.59 |
| 3 | Spices | 1.54 | 6.93 | 4.49 | 1.67 | 7.50 | 4.50 | 1.80 | 8.12 | 4.51 |
| 4 | Plantation Crops | 2.34 | 8.02 | 3.43 | 2.53 | 8.68 | 3.44 | 2.73 | 9.40 | 3.44 |
| 5 | Flowers | 0.20 | 1.62 | 7.97 | 0.22 | 1.75 | 7.99 | 0.34 | 1.89 | 8.01 |
| 6 | Medicinal Plants | 0.04 | 0.08 | 1.90 | 0.04 | 0.08 | 1.90 | 0.05 | 0.09 | 1.90 |
| | Total (All crops) | 8.24 | 99.47 | 12.06 | 8.91 | 107.68 | 12.09 | 9.73 | 116.59 | 12.12 |

Policy Focus of the Horticulture Department for 2005-06 are:-

- Thrust on Hi-Tech Horticulture and precision farming.
- Expansion of area under micro-irrigation and fertigation.
- Stabilizing the area of water loving crops and expanding the area under dry land crops with a focus on effective water management.
- Area expansion of horticulture crops through various Waste Land Development programmes.
- Strengthening the system of production of pedigree and hybrid planting materials in both public and private sectors.

- Promotion of Organic farming with focus on export market.
- Promotion of Agri Export Zones (AEZ) for specified crops.
- Building up of Public and Private Partnership.
- Promotion of Contract / Corporate farming.
- Empowerment of farmers with special focus on farm women.
- Effective transfer of technologies by tour-cum-training to farmers.
- E-Governance and Human Resources Development through effective training for extension officers.
- Linkage with Agro Processing Industries with New Anna Marumalarchi Thittam (NAMT).
- Post harvest management and reduction of post harvest losses.

Tamil Nadu Horticulture Development Mission

The Government have set up a Mission for Horticulture development in Tamil Nadu with a mandate to give impetus to production, processing for value addition and marketing of Vegetables, Fruits, Flowers and Medicinal Plants. Tamil Nadu is the first State in India to set up a separate Mission for development of Horticulture in the year 2003. It is aimed to double the production of horticulture crops by the year 2011-12 in Tamil Nadu.

Objectives of the Mission.

- Improving production through balanced nutrition management.
- Evolving suitable mechanism for regulating the production of quality planting materials and giving impetus to need based research.
- Establishing adequate infrastructure for post harvest management especially preservation and marketing.
- Encouraging active involvement of farmers associations in adoption of modern technological practices.

A Governing Body has been constituted to monitor the effective implementation of the mission under the Chairmanship of the Honourable Minister for Agriculture with the Vice- Chancellor of Tamil Nadu Agricultural University, Secretaries to Government and Senior officers of various departments and Nominees of Central Government agencies like National Horticulture Board, APEDA (Agricultural and Processed Food Products Export Development Authority) as members. The Chief Secretary to Government is the Vice-Chairperson of the Governing body.

Mango Development Mission.

Under Mango Development Mission it has been programmed to layout demonstration plots in the farmer's field to enable them to have a visual impact of various new technologies involved in the cultivation of Mango crop. A sum of Rs.22.55 lakhs has been proposed. National Horticulture Board has agreed to sanction Rs. 10.00 lakhs out of which released a sum of Rs.5.00 lakh for implementation of this scheme. On receipt of Government Order, this scheme will be implemented in the selected Mango growing districts.

Cashew Development Mission.

Under Cashew Development Mission it has been programmed to layout demonstration plots in the farmer field to increase the productivity of cashew with high yielding varieties and hi technologies. A sum of Rs.23.00 lakhs has been proposed for this scheme. National Horticulture Board has agreed to sanction Rs.10.00 lakhs out of which released a sum of Rs. 5.00 lakh for implementation of this scheme. On receipt of Government Order this scheme will be implemented in the selected cashew growing districts.

Horticulture Training Centre.

Apart from the two training centers at Kudumianmalai and Madavaram one more new Horticulture Training Centre at Thali (Krishnagiri district) has been formed with a financial outlay of Rs. 10.16 lakhs for the 2004-05. In this center training to farmers, unemployed graduates of nearby districts are given in various Horticultural Crops.

Training to farmers.

With a view to expose the farmers to various hitech aspects of Horticulture, farmers are taken to various research stations in out of state on tour-cum-training basis. About 10,000 Nos. of farmers are given training during the year 2004-2005. Apart from this farmers given awareness in various horticulture technologies of Medicinal Plants, Flower cultivation, Vegetable Cultivation, through the conduct of District level seminars and Exhibition. The extension officers and field level workers of this department are also given training in the latest technologies of horticulture from the Research Stations situated inside and outside the state.

State Plan Schemes

The following State Plan Schemes have been implemented during 2004-05.

1. Integrated Horticulture Development Scheme (IHDS)-Under this scheme planting material, high-yielding/hybrid vegetables seeds are distributed to horticultural farmers at 50% subsidised cost.
2. Integrated Tribal Development Programme (ITDP)- Under this scheme horticulture inputs are distributed to the Tribal farmers in Salem, Namakkal, Dharmapuri, Thiruvannamalai, Vellore, Trichy and Villupuram district at subsidised cost. Tour-cum-training is also given.
3. Western Ghats Development Programme (WGDP)- Under this scheme horticulture inputs are distributed to the Tribal farmers in Theni, Madurai, Dindigul, Virudhunagar, Coimbatore, Erode, Thirunelveli and Kanyakumari districts at 25% subsidised cost.
4. Hill Area Development Programme (HADP)- Under this scheme horticulture inputs are distributed to the Tribal farmers in Nilgiris District at 25% subsidised cost.

The above Schemes will be continued during the year 2005-06 with focus on : -

- Focus is given for cultivation of high yielding / hybrids and varieties, adoption of efficient water and nutrient management and Integrated Pest Management.
- Adoption of location specific and crop specific technologies is encouraged.
- Mango, Amla, Guava, Sapota and Vanilla are given importance under fruits and spices categories. High yielding / export potential varieties are given priority.
- Under vegetables, focus is given on hybrids / high yielding varieties which fetch good return to the farming community.
- Focus is given on prevention of soil erosion and preserving the Eco-System through appropriate cropping pattern.

Promotion of Alternate Crops in The Nilgiris.

Steps are being taken to popularize multi-tier cropping, viz. cultivation of silver oak, pepper, cardamom, mandarin orange, etc., along with tea plantation. Considering the prevailing agro-climatic condition in The Nilgiris, new kinds of crops like Macadamia and Peacan nuts have been identified for introduction. It is proposed to raise these crops in the State Horticultural Farms at Nanjanad and Colegrain in Nilgiris district on trial basis. Subsequently, efforts would be made to introduce these crops to the farmers in select pockets.

Tamil Nadu Hi-tech Horticulture Precision Farming Project

As announced during last budget session, Government have sanctioned an Innovative Scheme by name "Tamil Nadu Precision Horticulture Project" to be implemented in Dharmapuri District and newly formed Krishnagiri district covering an area of 400 Ha. of farmers' land with Micro Irrigation and Fertigation. This scheme will be implemented with a total cost of Rs.720.60 lakhs over a period of 3 years.

It is programmed to cover an area of 100 Ha. in the first year, 200 Ha. in the second year and 100 Ha. in the third year at financial allocation of Rs.208.59 lakhs, 316.16 lakhs and Rs.195.85 lakhs respectively.

The Tamil Nadu Agricultural University will undertake this project as a Turnkey project and implement it with the co-operation of the Departments of Horticulture, Agricultural Engineering, Agriculture, Agricultural Marketing and Agri. Business and the District Administration. High value like gherkins, hybrid tomatoes, capsicum, paprika, babycorn, white onion, bhendi, cabbage and cauliflower are proposed to be cultivated under the scheme.

Under this project, 100% subsidy will be given on the cost of cultivation of the first crop to the farmers selected during first year. 10% of the cost of cultivation will be collected from the farmers selected during second year. 20% of the cost of cultivation will be collected from the farmers selected during third year.

During the year 2005-06, the above scheme will be implemented in six more districts viz:-Theni, Vellore, Cuddalore, Erode, Tirunelveli and Thanjavur with an financial outlay of Rs.10 crores. An area of 100 ha will be covered in each district.

Schemes shared between State and Centre

The following schemes have been implemented during 2004-05.

- Integrated Programme for Development of Cashew.
- Integrated Programme for Development of Fruits.
- Integrated Programme for Development of Spices.
- Integrated Programme for Development of Vegetables including Root and Tuber.
- Integrated Programme for Development of Medicinal and Aromatic Plants.
- Integrated Programme for Development of Cocoa.
- Development of Commercial Floriculture.
- Development of Mushroom Cultivation.
- Development of Horticulture through Plasticulture Interventions.
- Innovative Programme for Development of Horticulture.

The above schemes will be continued during the year 2005-06 also. Important components of the above programmes are given below:

- Focus would be to expand the area under fruits with high yielding varieties of Mango, Guava, Sapota, Lime, Jack, Aonla etc.,.
- Disseminate technology through farmer's participatory demonstration and training of farmers.
- Good quality hybrid / high yielding varieties of vegetables seeds will be made available.
- Emphasis would be given to increase the area under spices crops through supply of quality seeds and planting materials.
- Area expansion of traditional flowers like Jasmine, Marigold, Chrysanthemum, Tube Rose, Crossandra, Aster etc.,
- Focus would be given to increase the area under export oriented cut flowers like Roses, Carnation, Gerbera, Gladiolus, , Anthurium, Lillium , Orchid etc.,
- To boost up the production and improve the quality of flowers in the state, demonstration and other development activities would be taken up in the farmers field.
- Under Plantation Crops, thrust would be given for area expansion of Cashew with improved varieties of cashew grafts like VRI-II and VRI-III.
- Cocoa cultivation as an intercrop in Coconut plantation areas would be encouraged.
- Demonstration plots will be established in the State Horticulture Farms for promoting the concept of high density plantation with drip irrigation and fertigation.
- Importance would be given for area expansion of potential medicinal and aromatic plants.
- Various plasticulture techniques such as Green house demonstration, Shadenet house, Drip Irrigation, Sprinkler irrigation etc., would be promoted.

- Training would be given on scientific Mushroom Cultivation to women farmers / Self Help Groups.

Innovative Programmes for Development of Horticulture

a) Establishment of Model Horticulture Villages

The main Objective of this programme is to educate growers on the benefits accrued by taking up scientific cultivation, to increase the production and productivity of Horticulture Crops and to create awareness among village folks to take up cultivation of horticulture crops on scientific lines.

The Strategies are Growing high yielding / Hybrid varieties, Adoption of High Density Planting, Judicious of irrigation water by adopting Micro-irrigation methods, Adoption of Integrated Pest Management and Integrated Nutrient Management technologies, Use of Growth regulators, and Adoption of post harvest management practices.

At present farmers are not adopting high technologies like using high yielding and hybrid varieties, high density planting, micro irrigation etc. due to lack of awareness. Hence, it is essential to educate the farmers to adopt these technologies to get higher returns per unit area. With this backdrop Model Horticulture Villages are being established with the mandate to increase the production and productivity of horticultural crops viz., adopting scientific technologies.

Under the scheme necessary inputs, micro irrigation systems are provided to the growers. Further, one technical input provider will be posted to educate the growers and also to solve the problems then and there. A sum of Rs.1.00 lakh is provided for each Model Village. Fruit crops like Aonla, Sapota, Mango and Tissue Culture Banana and Vegetables like Bhendi, Brinjal, Onion etc., and flowers like Chrysanthemum, Tuberose are proposed to be grown in Model Villages.

b) Nursery Villages.

Thrust will be given to establish / upgrade the existing private nurseries in the State. The major constraint in the development of horticulture is the inadequate availability of quality planting material. Hence the main objective of the nursery villages will be to provide quality pedigree planting material to the farmers. All Modern Infrastructural facilities such as Poly-green house, Shadenet house, Drip and Mini Sprinkler will be provided.

c) Demonstration of high density planting with drip irrigation and fertigation.

The main objective is to demonstrate the increase in production and productivity by adoption of high density planting with drip irrigation and fertigation. It has been programmed to provide assistance for supply of planting material and creation / improvement of water source etc.

d) Establishment / Improvement of Horticulture Training Centre

It has been programmed to provide an assistance of Rs.5.00 lakhs per Horticulture Training Centre under the control of Horticulture Department(Horticulture

Training Centre, Madhavaram, Central Horticulture Training Centre, Kudumianmalai) and Horticulture College and Research Institute, periyakulam under the control of Tamil Nadu Agricultural University.

e) Establishment of Model Horticulture Garden in Educational Institution.

The main objective of this programme is to promote awareness among the students on horticulture. It is programmed to provide 100% assistance towards establishment of Horticulture Garden not exceeding Rs.5000 /Educational Institution.

f) Extension Service through Information Technology

It is important in the extension works that innovative technologies have to be disseminated to the farmers. Hence, besides laying demonstration plots and giving training, hand books with cultivation practices of horticultural crops are published and distributed to the farmers. Seminars and awareness campaigns are also conducted.

Part II Schemes (New Schemes 2005-06)-Horticulture Department.

The following new schemes will be implemented during the year 2005-06, I) Scheme for provision of infrastructure facilities in 25 State Horticulture Farms(farm equipments like Power Tiller with Accessories and Multipurpose Tanker) Rs.50 lakhs. Ii) Organic farming vegetable cultivation with market linkage in 15 State Horticulture Farms –Rs.10 lakhs.

Tamil Nadu Horticulture Development Agency (TANHODA)

An independent nodal agency *viz.*, The Tamil Nadu Horticulture Development Agency (TANHODA) will be established with the following objectives.

- To promote Hi-Tech Horticulture and Precision Farming.
- To promote Public Private Partnership (PPP) for horticulture development.
- To disseminate knowledge on modern technologies in horticulture to the farming community as well as extension personnel.
- To manage production and distribution of pedigree planting materials through State Horticulture Farms.
- To implement the horticulture development schemes including the schemes under the Tamil Nadu Horticulture Development Mission and the National Horticulture Mission by accessing funds from the agencies concerned.

This agency will serve as a special purpose vehicle (SPV) for the implementation of various horticultural development programmes.

Jatropha.

It has been proposed to take up Jatropha Cultivation in 200 Ha. funded by NOVOD Board during the year 2004-05 in the following 11 State Horticulture Farms.

NOVOD has sanctioned a sum of Rs.75 lakhs to the Tamil Nadu Watershed Development Agency.

III) Co-operation Department

Assistance to small and marginal farmers enrolled under crop Insurance scheme:

The Government of India introduced comprehensive Crop Insurance scheme with effect from 1.4.1985. Government of India and Government of Tamil Nadu have contributed Rs.1/- Crore each to the initial corpus of the Tamil Nadu Crop Insurance Fund in the year 1985-86. The small & marginal farmers covered under this scheme are allowed subsidy at 50% of the premium payable by them.

The Government of India have introduced a new scheme called "National Agricultural Insurance Scheme" (NAIS) for Crop Insurance from Rabi 1999-2000, in the place of comprehensive Crop Insurance Scheme. However in Tamil Nadu, the scheme was implemented only from Khariff 2000. Under the scheme Food Crops like Paddy, Ragi, Cholan, Oil seed crops like Groundnut, Gingelly and Commercial crops like cotton and potato are covered. The sum insured will be upto 100% value of the threshold yield on normal coverage and upto 150% on additional coverage. Moreover, apart from the loanee farmers, non-loanee farmers are also covered under this scheme. The small & marginal farmers insuring their crop are given 50% of premium subsidy under this scheme. The burden of premium subsidy to small farmer / marginal farmer is shared by Government of India and State Government on 1:1 basis. A sum of Rs.25.00 lakhs was incurred under this scheme during 2004-05. An amount of Rs.25.00 lakhs is provided in B.E. 2005 -2006 .

National Agricultural Insurance Scheme - Contribution.

Under National Agricultural Insurance Scheme the claims are approved by the General Insurance Corporation of India. When the claims approved by General Insurance Corporation exceed 100% of the premium collected for food crops, the claims in excess of premium can be settled only on receipt of respective share from the Government of India and the State Government. In other words, if the claims approved by the General Insurance Corporation exceeds the 100% of the premium collected, the Government of India and the state Government have to contribute the excess amount on 50:50 basis.

A sum of Rs.422.18 lakhs was incurred during 2004-05. To meet the State Government's share, a provision of Rs.1000.00 lakhs has been made in the B.E. 2005-2006.

Plan Outlay - Crop Husbandry.

A sum of Rs. 9917.90 lakhs is proposed for the Sector. The component wise outlay for the year 2005-06 is as follows:

| Sl.No. | Component | Total Outlay (Rs. in Lakh) |
|---------------|--|---------------------------------------|
| 1 | Direction and Administration | 24.03 |
| 2 | Food grains Crops | 85.38 |
| 3 | Seeds | 1722.94 |
| 4 | Manures and Fertilisers | 6.66 |
| 5 | Plant Protection | 124.67 |
| 6 | Commercial crops | 917.27 |
| 7 | Extension and Training | 117.09 |
| 8 | Crop Insurance | 1025.00 |
| 9 | Agricultural Economics and Statistics | 15.13 |
| 10 | Development of Pulses | 30.05 |
| 11 | Agricultural Engineering | 2112.21 |
| 12 | Development of Oilseeds | 192.67 |
| 13 | Horticulture & Vegetable Crops | 1918.00 |
| 14 | Special Component Plan | 941.59 |
| 15 | Tribal Area Sub Plan | 42.93 |
| 16 | Other Expenditure | 195.25 |
| 17 | Hill Area Development | 314.94 |
| 18 | Western Ghat Development | 132.09 |
| A | Total -State Schemes | 9917.90 |
| B | Total-Centrally Sponsored Schemes (100%-Centre) | 168.44 |
| C | Total-Autonomous Bodies | 0.00 |
| D | Total-Shared Schemes between Centre and State (Full Cost Shown) | 3977.35 |