AGRICULTURE DEPARTMENT

POLICY NOTE

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2011 - 2012

K.A. Sengottaiyan

Minister for Agriculture

Policy Note 2011-2012
INDEX

INTRODUCTION

The ploughers are the linch-pin of the world; they bear
Them up who other works perform, too weak its toils to share.

- **Thirukural (1032)**

Agriculture is the life line of the National Economy and its growth is very vital for sustainable food security and well being of its citizen. The foremost priority of the Government is to ensure adequate availability of food to all. The food crisis that had occurred in the previous years due to floods and drought had been managed on account of due importance given to Agricultural sector through various interventions made in increasing the area, production and productivity of crops that are used as raw materials for agro based industries such as textiles, sugar and edible oils besides major food crops.

Over the time, contribution of agricultural sector to the national GDP as well as to the State GDP has been steadily declining. The share of agricultural sector in Gross State Domestic Product which was about 42.46% during 1960-61 has come down to 7.5% in 2009-10. Agriculture would continue to be a key sector in the economic development of a State. Agriculture is the major livelihood provider to about 40% of the population of Tamil Nadu especially to the less endowed rural people.

The hiatus in agriculture is mainly due to deteriorating soil health, declining water resources, inadequate investment in rural infrastructure, inadequate Research & Development activities and spiralling prices of inputs etc. To break this hiatus, the Government is actively formulating farmer oriented, crop focused and region specific strategies with adequate investment in developing rural infrastructure supported with comprehensive subsidy schemes to augment agricultural production.

AGRICULTURE SCENARIO IN TAMIL NADU

Tamil Nadu has about 7% of the Nation's population, occupies 4% of the land area and has 3% of the water resources of the Nation. The annual average rainfall of Tamil Nadu is only 930.70 mm as against the national average of 1200 mm. Albeit there is scarcity of water in Tamil Nadu, the land and other natural resources are fully utilized. The average land holding has come down to 0.83 hectares (2005-06 census) from 1.25 ha. during 1976-1977. The average land holding at national level is 1.33 ha. 91% of the total land holdings in Tamil Nadu belong to Small and Marginal farmers.

Of the total geographical area of 130 lakh hectares, around 48.92 lakh hectares is the net cultivated area. The net irrigated area is 28.64 lakh hectares and the balance area of 20.28 lakh hectares is rainfed. Of the 28.64 L.ha. of irrigated area,7.57 lakh hectares (26.4%) is covered by canal, 5.04 lakh hectares (17.6%) by tank,15.94 lakh hectares (55.7%) by well and the balance 0.09 lakh hectares(0.3%) by other sources.

AGRO CLIMATIC ZONES OF TAMIL NADU

Based on the weather, rainfall and soil types, Tamil Nadu has been classified into 7 Agro Climatic Zones as detailed below:-

Sl. No.	Agroclimatic Zones	Districts covered
1	North Eastern Zone	Kancheepuram, Thiruvallur, Cuddalore, Vellore, Villupuram and Tiruvannamalai
2	North Western Zone	Dharmapuri, Krishnagiri, Salem and Namakkal (Part)
3	Western Zone	Erode, Coimbatore, Tiruppur, Theni, Karur (Part), Namakkal (Part), Dindigul, Perambalur and Ariyalur (Part)
4	Cauvery Delta Zone	Thanjavur, Nagapattinam, Tiruvarur, Tiruchirapalli and parts of Karur, Ariyalur, Pudukkottai and Cuddalore
5	Southern Zone	Madurai, Pudukottai, Sivagangai, Ramanathapuram, Virudhunagar, Tirunelveli and Thoothukudi
6	High Rainfall Zone	Kanyakumari
7	Hilly Zone	The Nilgiris and Kodaikanal (Dindigul)

1. AGRICULTURE

1. Introduction

Fostering sustainable agriculture and rural development remain the key national priorities. Agriculture is the key to economic development and poverty alleviation in rural areas. It is the largest private enterprise operated in the state mainly with small-scale investments by the rural masses. The social harmony will suffer serious setback if the food security is not achieved. Though the industries play a pivotal role in the growth of a nation, agriculture continues to play a supportive role to these industries due to the powerful boost given to this sector.

Given the importance of Agriculture in the income of the poor, growth in Agriculture output plays a significant role in reducing the rural poverty of small producers, specifically small and marginal farmers and earn higher real wages for agricultural labourers through higher farm yields.

As Agricultural development increasingly becomes technology propelled, the relative importance of introducing various innovative technologies for achieving higher production and productivity increases. The Government will implement various schemes to increase the food grain production and place agriculture on a high growth trajectory benefitting small and marginal farmers, SC and ST farmers. The State Government has also planned to give more emphasis on rainfed agriculture by adopting various water conservation methods like micro irrigation , creation of farm ponds, etc.

2. Second Green Revolution

By adopting frontier agricultural technologies in a larger extent of various crops cultivated in Tamil Nadu and with complete involvement of farmers and extension officers of the Agriculture Department with due research support, the Government has planned to take up several measures to achieve '**SECOND GREEN REVOLUTION**' which will be a mission of the people.

The major strategies to spur **SECOND GREEN REVOLUTION** will be:

- Crop Specific Strategies and marketing (Production led to market led)
- Adoption of Precision farming and Micro-irrigation for efficient utilization of irrigation water
- Shift in the cropping pattern towards high value crops
- Augmenting timely supply of quality inputs to targeted farmers
- Adopting Extension with renewed vigour
- Capacity building on adoption of technologies

2.1. Crop Specific Strategies and Marketing

- **System of Rice Intensification (SRI) –** To increase the production of rice substantially by promoting SRI in a larger extent and adopting specific technologies over a period of five years.
- **Pulses Procurement Policy -** To meet the protein requirement of people of Tamil Nadu and with an aim of cultivating pulses in an increased area and to get more yield by adopting innovative technologies, a pulses procurement policy (as that of Paddy procurement) through Government Agencies will be evolved.
- **Implementing Sustainable Sugarcane Initiatives** comprising innovative technologies like Precision farming for increasing the production and productivity of sugarcane by bringing 1 lakh ha. under Micro Irrigation in five years period.
- **Augmenting Cotton Production** - To increase the production and productivity of cotton, preference will be given to distribute quality seeds, adoption of precision farming and integrated plant protection measures.
- **Strengthening Market led Agriculture** – Establishment of appropriate godown and marketing facilities to enrich the marketing knowledge of the farmers.

2.2. Adoption of Precision Farming and Micro-Irrigation for effective Utilization of Irrigation Water

Judicious and efficient use of water, deft handling of inputs by reducing the usage of irrigation water will help in enhancing the productivity by a minimum of 50 percent. Further it will help in reducing the cost of cultivation including labour besides increasing fertilizer and water use efficiency. This practice will be popularized for wider adoption.

2.3. Shift in the Cropping Pattern towards high value crops

Cultivation of commercial crops like Cotton, Maize, Sugarcane, Horticulture and Medicinal crops will fetch higher income to the farmers in comparison to cultivating low value crops without affecting the food grain production. Technical guidance, financial support and marketing facilities will be extended to bring more area towards achieving the goal.

2.4. Supply of Quality Inputs

To increase the production of crops, adequate quantity of quality inputs will be made available in time through Government, Quasi Government and Private sale outlets. Government will take efforts for creating additional capacity with modern machineries and strengthening the existing seed processing units. The supply of quality inputs

is ensured by the quality control wing of the Department of Agriculture and Seed Certification Department.

2.5. Extension

The requirement of Agricultural inputs by the farmers will be assessed by conduct of meetings at village Panchayat level and bottom up planning will be given top priority so as to meet the local needs effectively. The Agricultural Extension service of the Department will be given much importance to disseminate and ensure full adoption of technologies.

2.6. Capacity Building

Conduct of seasonal training to extension officials by the experts and pre-season campaigns to farmers by extension officials and exposure visits to States to learn new technology will be accorded due priority to cope up with current requirements in Agriculture.

3. Season

3.1. Rainfall

The season wise rainfall received during 2009 & 2010 is as follows:-

(in mm)

Season	Normal Rainfall	Actual Rainfall		Deviation % w.r.to normal	
		2009	2010	2009	2010
Winter Season (Jan. – Feb.)	36.8	7.8	11.5	(-)79.0	(-)68.7
Summer season (March- May)	129.7	129.2	126.7	(-) 0.4	(-) 2.3
South West Monsoon (June – Sept.)	332.8	315.3	383.7	(-)5.3	(+)15.3
North east Monsoon (Oct. – Dec.)	431.4	482.6	605.2	(+) 11.9	(+)40.3
Total	**930.7**	**934.9**	**1127.1**	**(+)0.5**	**(+)21.1**

Rainfall 2011 (in mm)

Season	Normal Rainfall	Actual Rainfall	Deviation (%)
Winter Season (Jan. – Feb.)	36.8	34.7	(-) 5.7
Summer season (March- May)	129.7	140.0	(+)7.9
South West Monsoon (June–Sept.) (Upto 03.08.2011)	121.3	99.9	(-) 18.0

During 2010-2011, the delayed opening of Mettur Dam on 28th July instead of the scheduled date of 12th June due to insufficient storage in dam resulted in shortfall of Kuruvai paddy cultivation area.

During the current year, the water storage in Mettur Reservoir is quite comfortable. Hence the Government ordered to open the Mettur dam on 06th June,2011, as against the scheduled date of 12th June, which is first time in the history since Independence. This decision of the present Government has enthused the delta farmers in taking up Kuruvai cultivation well in advance as the crop will have fair chance of escaping from North East Monsoon rain during the harvest period and the crop will be harvested well in time to take up Thaladi cultivation in the same area.

3.2. Crop damage due to North East Monsoon rains during 2010-2011

Though the rains were initially favourable for Rabi crops, heavy and scattered rainfall during third and fourth week of November, 2010 resulted in crop inundation in 26 districts. The low depressions formed at frequent intervals wrecked havoc in all the coastal districts of

Tamil Nadu. Due to this, the Samba Paddy crop raised during August, 2010 was severely affected and the yield loss was more than 50% in most of the districts especially in Cauvery delta regions. Other major crops such as Millets, Pulses, Oilseeds, Cotton and Sugarcane were also affected.

4. Area and Production during 2010-2011 and Programme for 2011-12

The estimates for Area & Production during 2010-2011 are as follows:-

Crop	Area (L.Ha.)		Production (L.MT)	
	Target	**Achmt.**	**Target**	**Achmt.**
Rice	21.50	20.16	81.50	62.53
Millets	12.00	8.00	23.00	19.15
Pulses	12.00	8.32	7.50	3.67
Total food grains	**45.50**	**36.48**	**112.00**	**85.35**
Oilseeds	10.00	5.35	18.00	11.30
Cotton (L.Bales)	1.50	1.21	4.00	2.46
Sugarcane	3.50	3.36	472.50	346.28
Total	**60.50**	**46.40**		

Area and Production Programme for 2011-2012

Crop	Area (L.Ha.)	Production (L.MT)
Rice	22.00	85.50
Millets	10.00	23.50
Pulses	10.00	6.00
Total foodgrains	**42.00**	**115.00**
Oilseeds	6.50	14.62
Cotton (L.Bales)	1.50	4.00
Sugarcane	3.50	472.50
Total	**53.50**	

4.1. Strategies to attain the targeted production during 2011-2012

With the objectives of doubling the income of about 75 lakh small and marginal farmers in 5 years, it is proposed to increase the productivity by 50% and above, increase the cropping intensity , increase the irrigation intensity and bring fallow land under cultivation. The Government has taken initiatives to ensure scheme benefits to reach the farmers directly in a transparent manner. As a first step, to ensure sustainable agricultural production, the Department of Agriculture has envisaged farm level interventions through **"Farm level planning"** for 2011-2012, 2012-2013 & 2013-2014.

The following are the thrust areas for assured development in Agriculture

1) **Soil Health Care**
2) **Water Management**
3) **Augmenting Crop Production**
   a. Quality Inputs supply
   b. Increasing productivity
   c. Increasing the use of Machineries in Agriculture
   d. Technical advisories at a faster pace
4) **Strengthening Agricultural Extension to make effective information delivery**
5) **Risk Mitigation**

4.1.1. Soil Health Care

Intensive cropping, indiscriminate use of fertilizers and insufficient usage of organic resources resulted in the deterioration of physical, chemical and biological health of soil. Appropriate soil management technologies to improve the soil health to increase crop yields are;

- ❖ Ensuring balanced fertilizer application through distribution of Soil Health Cards.

- ❖ Emphasizing and encouraging Organic farming.
- ❖ Reclamation of saline and alkaline soils
- ❖ Correcting Micro Nutrient deficiencies

4.1.2. Water Management

In Tamil Nadu, water, a scarce resource for agricultural operations affects Agricultural production to a greater extent. To ensure "more crop per drop of water", special emphasis will be given for the cultivation of ***high value – less water intensive crops*** for effective land use system. To improve the water use efficiency and to enhance the productivity, the following scientific approaches are promoted.

- ❖ Promotion of crop diversification
- ❖ Augmenting adoption of Integrated Farming System
- ❖ Expansion of SRI technology to a larger extent.
- ❖ Promoting Precision farming
- ❖ Adoption of Micro Irrigation
- ❖ Improving the water holding capacity of the sub-basins and bringing more cropped area under irrigated condition.
- ❖ Construction of water harvesting structures such as farm ponds, check dams, percolation ponds besides de-silting of tanks and ponds to create more water resources.
- ❖ Rain water harvesting for recharging ground water

4.1.3. Augmenting Crop Production

Due to burgeoning population and industrialization, there is increased pressure on land for various uses resulting in reduction in area under cultivation. To stabilize the area under cultivation and to bridge the productivity gap, slew of measures are being taken by the Government.

4.1.3.1. Quality inputs.

Efforts will be taken to make available prime inputs like seeds, fertilizers, micro nutrients, biofertilizers, Plant Protection chemicals, credit, etc., to the farmers at vantage points to enable them to take up various cultivation activities in the appropriate seasons without hassles.

- ❖ Supply of region specific varietal seeds
- ❖ Ensuring adequate stocking and timely supply of quality seeds to farmers
- ❖ Sensitizing the farmers on production and usage of certified seeds.
- ❖ Encouraging the private entrepreneurs in quality seed production.
- ❖ Involving farmers, women self help groups and NGOs in seed processing activities
- ❖ Improving the infrastructure facilities for seed production, processing and storage
- ❖ Enhancing Seed Replacement Rate
- ❖ Ensuring availability of quality fertilizers and pesticides to farmers besides creating awareness on judicious use of inputs.
- ❖ Promoting usage of bio-fertilizers and micro nutrients
- ❖ Providing sufficient credit in time.

4.1.3.2. Increasing Productivity

- ❖ **Expansion of Area under foodgrains**
  - o Adoption of two pronged approach in districts having larger extent but lesser productivity and districts having higher productivity and lesser extent.

- Identification of constraints and formulation of zonewise / region specific strategies and production technologies.
- Programme to increase the area under paddy from 21.50 L.ha. to 22.00 L.ha so as to increase the area sown more than once.
- Extending the System of Rice Intensification technology from 8.50 L.ha. to 9.00 lakh hectares.
- Promoting pulses as pure crop by identifying additional areas in potential districts.
- Nutritional Security through Nutri Cereals Promotion Programme.

❖ **Increasing the area under irrigation**

- Encouraging Precision farming and fertigation in cotton, maize, oilseeds and sugarcane to cover more area and production improvement besides better quality of agricultural produce.
- Expanding the area under Micro Irrigation to conserve water by providing Micro irrigation equipments at subsidized cost.
- Identification of current fallows and motivating farmers to cultivate less water intensive and more remunerative crops.

4.1.3.3. Mechanization

To ensure timely and efficient farm operations without missing the season, increased usage of machineries for agricultural operations is inevitable.

❖ Distribution of farm machineries such as paddy transplanter, rotavator, power weeder, lazer land leveller, power tiller, combined harvester, weeder, marker, etc., at subsidized rates to minimize drudgery.

❖ Hiring tray nursery, tractor, rotavator, power tiller, lazer land leveller, harvester at Government fixed nominal rate.

❖ Training on operation and repairing of agricultural machineries and implements.

4.1.3.4. Technical guidance

❖ Conduct of demonstrations at large scale and method demonstrations on
- System of Rice Intensification technology
- Hybrid rice, Pulses (pure crop), Millets, Oilseeds cultivation
- Application of Micro Nutrients in oilseeds
- Organic Farming

❖ Training to farmers on
- Seed Production Technology
- Water Management
- Integrated Nutrient Management
- Integrated Pest Management, Farmers Field Schools
- Precision Farming
- Crop diversification

4.1.4. Strengthening Extension for effective delivery

❖ **Extension**
- Single window system to provide quality inputs, best services, information, transfer of technology to farmers in time at block level, by integration of all sister departments and synergising the activities of Agriculture and allied departments to improve the status of farmers.
- Implementing Agricultural Technology Management Agency (ATMA) to
  - Encourage a new approach in transfer of technologies by providing vital link between the extension functionaries and farmers at village level

- promote group based approach
- involve farmers in planning and execution of schemes to suit their needs
- encourage public private partnership
- provide man power and technical support at various levels
- recruit Farmer's Friend to mobilize Farmer's Groups and facilitate dissemination of information to farming community.

❖ **Extensive Use of Information and Communication Technology**

➢ Providing hand held Personal Digital Assistants (PDA) to extension functionaries on pilot basis to
  - implement farm level interventions thereby bridging the yield gap
  - enable them to plan farm level activities in advance
  - ensure availability of inputs in time
  - record bio-metric observations of the crops
  - identify and control out-break of pests and diseases
  - implement improved cultivation technologies and
  - develop a frame work required for individual based crop insurance settlement

➢ Provision of Touch Screen Kiosks at sub-block level on pilot basis to empower the farmers to have an access to
  - farm level plan
  - availability of inputs
  - information about various schemes of the department

  - medium range weather forecast
  - information on market intelligence and
  - connectivity with the department and scientists

❖ Facilitating technology transfer, quality inputs distribution and testing of soil samples through Agri clinics established at block level.

❖ Forecasting for timely planning of farm operations through Automatic Weather Stations.

❖ Training on innovative technologies for involving Farmers Interest Groups, Farm Women Groups and NGOs in extension.

4.1.5. Risk Mitigation

❖ Providing insurance coverage and financial support to protect the livelihood of the farmers in the event of crop failure due to natural calamities and crop damages due to pest and diseases besides protecting their interest in Agriculture.

❖ Encouraging farmers to challenge risks in agriculture for adopting scientific cultivation technologies & practices and usage of high value inputs.

5. Schemes

With an objective to provide food and nutritional security to the growing population , Government is planning and implementing various schemes to enhance the productivity of agricultural crops, increase the income of the farmers, increase the production of raw materials required for industries and remove regional imbalances in farm productivity by adopting location specific strategies and make agriculture a profitable venture.

Government has envisaged four types of plan schemes taking cognizance of the welfare of the farming community.

- State Schemes
- Centre-State Shared Schemes
- Centrally Sponsored Schemes
- Externally Aided Projects

5.1. State Schemes

Government of Tamil Nadu is implementing various schemes with an aim to uplift the status of farmers and sustain their livelihood. The schemes are fully sponsored by the State Government and the main focus is on soil health management, procurement and distribution of quality seeds, plant protection, crop insurance, crop yield competition, etc., to increase the area and productivity.

5.1.1. Soil survey and land use organization

The detailed soil survey is conducted through four Soil Survey Units at Coimbatore, Thanjavur, Vellore and Tirunelveli and inventory on soil resources including nature of soils is prepared. The morphological, physical and chemical characteristics of the soils are assessed through field studies, laboratory analysis and soils are classified according to internationally recognized system. The extent of soil is mapped on standard topographic base maps and finally interpreted for various uses. The Detailed Soil Survey will be conducted in an area of 0.99 Lakh ha. during 2011-2012.

5.1.2. Reclamation of saline and alkaline lands

This scheme is implemented to reclaim problematic soils in an area of 1600 hectares at 200 hectares per district in Nagapattinam, Tiruvarur, Kancheepuram, Thiruvallur,

Vellore, Tiruvannamalai, Salem and Namakkal districts. This scheme will be continued during 2011-2012.

5.1.3. Soil Health

To ensure need based Macro and Micro Nutrient application, Soil Health Cards are distributed to all farm holdings in Tamil Nadu. The Central Control Laboratory is the Apex Organization located at Kudumianmalai, which provides technical competence through training to the laboratory personnel and ensures the precision and accuracy of analysis in the laboratories. 30 Soil Testing Laboratories and 16 Mobile Soil Testing Laboratories are functioning in the state with total annual analytical capacity of 11.33 lakh Nos. of soil samples. The farmers have also been provided access to test the soil samples at the block level through Agri clinic, besides quality input distribution and providing technical assistance. About 31.93 lakh Soil Health Cards have been distributed so far, against 81.93 lakh farm holdings. The scheme will be continued in 2011-2012.

5.1.4. Organic Farming

The organic matter content in the soil has gone down from 1.20% in 1971 to 0.68% in 2008 in Tamil Nadu due to intensive cropping, indiscriminate use of chemical fertilizers and inadequate availability of organic manures. The decline in organic matter content has brought undesirable changes in soil which affects soil fertility and productivity. Therefore Government is promoting balanced use of organic and inorganic fertilizers in the cropping system. In order to increase the productivity, Composting of Farm Wastes using Pleurotus, Vermicomposting, application of Bio-fertilizers, Green Manures are being popularized during 2011-2012 to motivate the farmers in a massive scale.

- To produce **compost from farm waste using Pleurotus,** every year kits containing 1 Kg of Pleurotus, 5 Kg of Urea with Pamphlet are distributed to the farmers at free of cost. The demonstrations will be conducted at 5000 locations at a cost of ` 7 lakhs.

- To encourage the farmers to produce the required organic manure in their own lands, efforts will be taken to implement the scheme **Vermicomposting of agricultural waste** wherein 300 demonstrations and training to benefit 15000 farmers will be conducted at a cost of ` 11.55 lakhs.

- **Bio-fertilizer**, an important component in Integrated Nutrient Management, is an eco friendly and cost effective input produced in six Bio-fertilizer Production Units functioning at Cuddalore, Ramanathapuram, Salem, Kudumianmalai, Sakkottai and Tiruchirapalli with an annual production capacity of 1600 MT (80 lakh packets of 200 gm each). The quality of bio-fertilizers produced in these six units is monitored through Bio-fertilizer quality control laboratory functioning at Tiruchirapalli. It is programmed to produce and supply 3850 MT (192.50 lakh packets) through nine more Bio Fertilizer Production Units that have been established at Kattankulathur (Kancheepuram), Polur (Tiruvannamalai), Palacode, (Dharmapuri), Avinasi (Tiruppur), Bhavani(Erode), Needamangalam (Tiruvarur), Uthamapalayam (Theni), Tenkasi (Tirunelveli) and Thoothukudi (Thoothukudi)

- **The Blue Green Algae and Azolla** fix atmospheric Nitrogen and make it available to the rice crop. It has been programmed to produce 525 MT of Blue Green Algae and 500 MT of Azolla.

- **Green manure crops** like Sunhemp, Daincha, Kolinji and Sesbania are capable of fixing atmospheric nitrogen and improve the soil health. Daincha and Kolinji are also capable of removing salinity and acidity of the soil. To encourage the usage of Green Manures, annually 250 MT of green manure seeds are procured and distributed at a total cost of ` 50 lakhs with 25% subsidy.

5.1.5. Macro Nutrients

Inorganic fertilizer, one of the integral components of Integrated Nutrient Management, when applied based on soil fertility and requirement of the crops ensures increased productivity. For this purpose, based on the seasonal crop coverage, district wise, season wise and month wise fertilizer requirements are arrived. Government is taking concerted efforts for allocation of fertilizers from Government of India and a supply plan is prepared to ensure adequate availability of fertilizers in time through fertilizer firms.

Fertilizer distribution during 2010-2011 and requirement for 2011-2012 are furnished below:-

(L.MT)

Fertilizer	Distribution 2010-2011	Requirement 2011-2012
Urea	10.15	11.12
MOP	4.72	4.80
DAP	3.15	3.66
Complex	6.53	6.52

Anticipating short supply of DAP, this Government soon after assuming the charge has taken action well in advance to make it available as per requirement.

5.1.5.1 Quality Control

Fertilizer Control Order, 1985 is enforced to ensure distribution of quality fertilizers and legal action is taken against the distributors who sell spurious fertilizers. 14 notified Fertilizer Control Laboratories are functioning in the State with annual analyzing capacity of 17,500 samples. During 2010-2011, 18,011 samples have been tested in which 702 samples were found non-standard and suitable departmental and legal action taken up against the defaulters. This programme will be continued in 2011-2012.

5.1.6. Micro Nutrients

The Micro Nutrient deficiency in the soil is analysed using Atomic Absorption Spectro Photometer installed in 19 Soil Testing Laboratories and 9 Mobile Soil Testing Laboratories. Annually 1400 MT of 14 types of notified Micro Nutrient Mixtures are produced at Micro Nutrient Mixture Production Centre, Kudumianmalai, tested for quality at six Fertilizer Control Laboratories and are distributed to the farmers through the Agricultural Extension Centres. It is programmed to produce and distribute 1400 MT of Micro Nutrient Mixtures during 2011-2012 for the benefit of farming community.

5.1.7. Seeds

It is imperative that region / location specific quality seeds, with high yielding potential suitable for different seasons, are to be made available to the farmers at affordable price adequately.

The recommended Seed Replacement Rate is 33% for self pollinated crops such as Paddy, Ragi, Pulses and Groundnut, 50% for cross pollinated crops such as Cholam, Cumbu and Cotton and 100% for hybrids.

The SRR for paddy, millets and cotton are achieved without any shortfall, except for pulses and oilseeds. Hence necessary thrust is given to increase SRR for pulses and oilseeds by increasing the area under seed farms, enhancing production and distribution of quality seeds through various subsidy schemes involving private seed producers, farm women groups and NGOs. Albeit, the private seed producers are producing low volume, high value hybrid seeds of Maize, Sunflower and Cotton in larger quantities and distribute through 5313 private seed sale outlets. The seed quality is ensured by the Department of Seed Certification at various stages.

During 2011-2012, it is programmed to distribute 18,000 MT of paddy seeds, 450 MT of millet seeds, 4,500 MT of pulses seeds, 6,376 MT of oilseeds and 100 MT of cotton seeds through the Agricultural Extension Centres. The breeder seeds are obtained from Tamil Nadu Agricultural University and Indian Council for Agricultural Research and multiplied as foundation seeds through 41 State Seed Farms. These foundation seeds are further multiplied as certified seeds in the seed farms of selected progressive farmers.

The seeds thus produced are processed in the 16 major, 2 medium and 63 mini Seed Processing Units with an annual processing capacity of 29,600 MT. In order to strengthen the seed distribution, Government is encouraging private seed agencies. So far, 83 private Seed Processing Units have been established each with an annual capacity of 1000 MT.

The details of quality seed distribution and the seed replacement rate programmed for 2011-2012 are as follows:-

Crop	Seed distribution Plan for 2011-2012 (in Metric tonnes)			
	Total Require-ment	Department Certified Seeds	Private Certified / Truthfully labeled Seeds	Seed Replacement Rate
Paddy	110000	18000	57250	68
Millets	12153	450	6243	55
Pulses	24000	4500	300	20
Oilseeds	80612	6376	5716	15
Cotton	555	100	455	100

5.1.8. Plant Protection

5.1.8.1. Pest / Disease Surveillance

The occurrence of pest and diseases is intensively monitored by conducting roving survey and fixed plot surveys at weekly intervals besides forewarning on pest and diseases attack and need based control measures are recommended to the farmers through radio, television and other local media. Awareness training on Integrated Pest Management imparted to farmers from seed to harvest to encourage the use of bio pesticides and bio control agents instead of chemical pesticides. Also, seed treatment is popularized among farmers to prevent the incidence of seed borne disease at the early stage of the crops. Thus forewarning and Integrated Pest Management helps to reduce the cost of cultivation of crops besides preventing environmental pollution and pesticide residues in agricultural produce due to indiscriminate use of pesticides.

5.1.8.2. Integrated Pest Management

Farmers' Field Schools are exclusively conducted to inculcate on incidence of pests and diseases during different stages of crop from sowing to storage. In this training, farmers are educated on nature of pests / diseases, symptoms of attack, natural defenders, weather parameters, etc. Effective implementation of this programme has helped to reduce the consumption of technical grade pesticides from 10926 MT in 1984-1985 to 2360 MT in 2010-2011, thus preventing pest resurgence and reducing the ill effects of pesticide residues in crops. This scheme will be continued in 2011-2012.

5.1.8.3. Production of Bio-control agents and Bio fungicides in Bio-control Labs and Integrated Pest Management Centres.

Increasing demand for organic produce and high returns made the farmers lean towards organic farming in which the usage of Bio-fungicides and Bio-control agents are essential. Hence, to ensure adequate availability of bio-control inputs, Government has established 10 Bio-control labs and 2 Integrated Pest Management Centres for production and distribution to the farmers at subsidized cost through Agriculture Extension Centres.

Trichogramma chilonis, an egg parasitoid to control Sugarcane Internode borer is reared in 21 centres. During 2011-2012, the egg parasitoid will be released in an area of 11000 ha. of Sugarcane Crop.

Bethylid, Braconid and Eulophid parasites of Coconut Crop are reared in 20 centres. During 2011-2012, these parasites are to be released in an area of 10500 ha of Coconut.

To control coconut Rhinoceros beetle, 2 bio-centres are producing Green Muscardine fungus, 4 centres are producing NPV to control Groundnut Red hairy caterpillar,

Prodenia and cotton boll worm. Further, 12 centres are producing Bio pesticides, Pseudomonas, Trichoderma viridi to control diseases in cotton, pulses and paddy.

5.1.8.4. Pesticide Testing Laboratories

Quality Plant Protection Chemicals are manufactured through 138 Pesticide Manufacturing Units and distributed to the farmers through 12,936 private sale outlets. Insecticide Act 1968 and Insecticide Rules 1971 are enforced to ensure supply of quality Plant Protection chemicals to the farmers. The pesticide samples drawn from the manufacturing units and private sale outlets are analysed in the 15 notified Pesticide Testing Laboratories functioning at Kancheepuram, Cuddalore, Salem, Coimbatore, Erode, Thanjavur, Tiruchirapalli, Madurai, Thoothukudi, Vellore, Dharmapuri, Nagapattinam, Theni, Sivagangai and Tirunelveli districts with the total annual analysing capacity of 21850 samples.

It is programmed to analyse 21850 pesticide samples during 2011-2012.

5.1.9. Strengthening Extension for Effective Delivery

- Inputs and integrated extension services are provided in time to facilitate the farmers to avail the benefits of all the schemes implemented by Departments of Agriculture, Horticulture and Plantation crops, Agricultural Marketing and Agri Business, Seed Certification and Organic Certification.
- Inputs such as quality seeds, Micro Nutrients, bio fertilizers etc. are distributed through 379 Main Agricultural Extension Centres and 506 Sub-Agricultural Extension Centres of this Department.
- Information on availability of inputs required for speedy implementation of schemes is provided to the farmers

through Computers installed at all Agricultural Extension Centres.

- Automatic Weather Stations established in 224 blocks and linked with Tamil Nadu Agricultural University website, provide medium range weather forecast to carry out agriculture related activities by the farmers in time.
- Farmers Training Centres and State Agricultural Extension Management Institute conduct trainings to the farmers, Farm Women Groups and Farmers Interest Groups.
- Scientific workers conference organized at State level every year provides solutions to agriculture related problems.
- Monthly zonal workshops conducted in co-ordination with University scientists at district level find solutions for the field level problems encountered by the extension workers and also finalize the agricultural activities to be carried out for succeeding month.

5.1.9.1. Farmers Training Centre

Village based training, Convenors training, Method demonstration and sensitization trainings are conducted through 22 Farmers Training Centres functioning in the State. These centres impart training on management practices and technologies such as Quality Seed Production, Crop diversification, Precision Farming, Integrated Pest and Disease Management, Integrated Nutrient Management, System of Rice Intensification, value addition etc.

5.1.9.2. Water Management Training Centre

The Water Management Training Centre at Vinayagapuram, Madurai district functioning from 1985, imparts integrated training programmes to field functionaries and farmers on irrigation technologies to increase the crop production efficiency.

5.1.9.3. State Agricultural Extension Management Institute (STAMIN)

This pioneer training institute in Tamilnadu functioning since 1975 at Kudumianmalai in Pudukottai district conducts training on office administration, office management cum computer training to the extension officers and officers of non-governmental organizations. The technical competence and management capacity of the officers are being ensured through these trainings. The details of training to be given in 2011-2012 are furnished below.

Sl. No	Details of training	No. of officers to be trained
1	Office Management training	150
2	Computer training	24
	Total	**174**
	Finance (Rupees in lakhs)	**1.496**

5.1.10. Crop Yield Competition

With an objective to motivate the farmers to adopt best cultivation practices to obtain the highest productivity and production in crops such as Paddy, Groundnut, Cholam, Cumbu, Maize, Greengram and Blackgram, crop yield competitions at State and District levels are conducted every year.

An enrolment fee of `100/- for Paddy and Groundnut and ` 50/- for other crops for State Level entry and ` 50/- for

Paddy and Groundnut and ` 25/- for other crops for district level entry is collected. The following prize amount is awarded to the farmers who get the highest productivity at State and District levels.

(in Rs)

Crop	State Level		District Level	
	1st Prize	2nd Prize	1st Prize	2nd Prize
Paddy and Groundnut	25000	15000	15000	10000
Other crops	15000	10000	10000	5000

The scheme will be continued during 2011-2012.

5.2. CENTRE - STATE SHARED SCHEMES

5.2.1. Integrated Scheme for Oilseeds, Pulses, Oilpalm and Maize (ISOPOM)

This scheme is implemented from 2004-2005 with an objective to increase the productivity of Oilseeds, Pulses, Oilpalm and Maize by formulating region specific strategies. The expenditure is shared between Government of India and State on 75:25 basis. From 2010-2011, the scheme for pulses was integrated with NFSM pulses and ISOPOM scheme is implemented only for Oilseeds, Oilpalm and Maize.

5.2.1.1. Oil Seeds

The demand for oilseeds is steadily increasing due to increased consumption. There is an urgent need to increase the productivity of oilseeds crops to meet the demand. Hence activities like production of Foundation and Certified seeds, distribution of certified seeds, demonstration in Groundnut, Gingelly, Sunflower crops, demonstration on

IPM, distribution of Gypsum, Bio-fertilizers, weedicides, Bio-pesticides, Nuclear Polyhedrosis virus, Hand and Power operated Sprayers, and pipelines to supply water from source to field are carried out besides training farmers on latest technologies.

5.2.1.2. Oilpalm

Oilpalm cultivation fetches high income to the farmers besides meeting out the domestic requirement of cooking oil. With an objective to increase the oil production through expansion of area under Oilpalm cultivation, this scheme is under implementation in 11 districts. M/s. Cauvery Oil Palm Ltd (Tiruchirapalli, Thanjavur, Tiruvarur, Nagapattinam, Karur, Perambalur, Cuddalore, Villupuram) M/s. Godrej Agrovet Ltd (Tirunelveli), M/s. Vaidegi properties private Ltd (Vellore) and M/s. Ruchi Soya industries Ltd (Theni), have signed Memorandum of Understanding with the Government to expand the area under Oilpalm, set up extraction units and also generate employment opportunities.

5.2.1.3. Maize

Maize constitutes 25% of human food. Due to increasing demand of maize grains for poultry (49%) and animal feed industries (12%), area under Maize is increasing. To increase the productivity of maize, components like production and distribution of certified seeds, demonstrations, Integrated Pest Management, training to farmers and distribution of pipelines to carry water from the source are being implemented under this scheme.

The financial allocation under ISOPOM during 2011-2012 is as follows:-

Crop	Approved Outlay (Rs. in lakhs)
Oilseeds	1615.030
Oilpalm	160.755
Maize	96.312
Total	**1872.097**

5.2.2. Technology Mission on Cotton – Mini Mission-II

Technology Mission on Cotton is being implemented from the year 2000-2001 with the financial assistance extended by the central and state Government in the ratio of 75:25 in all the districts of Tamil Nadu except Kancheepuram, Thiruvallur, Kanyakumari and The Nilgiris with the objectives to increase the production of cotton through distribution of quality inputs and conduct of training.

The scheme will be continued with an outlay of ` 61.50 lakhs during 2011-2012.

5.2.3. Macro Management Scheme for Agriculture

Macro Management of Agriculture is under implementation since 2000 and the expenditure is shared between Government of India and State Governments in the ratio of 90:10. This scheme is implemented with an aim to increase the yield and improve the economic status of farmers by formulating various schemes based on the States' needs.

5.2.3.1. Cereals Development Programme

This programme is implemented in all the districts except Chennai and Nilgiris, and NFSM – Rice operating districts of Pudukottai, Tiruvarur, Nagapattinam, Ramanathapuram and Sivagangai. It has been programmed

to distribute quality seeds to increase the rice production. This scheme will be implemented during 2011-2012 with an outlay of ` 657.50 lakhs.

5.2.4. Support to State Extension Programme for Extension Reforms (ATMA)

The purpose of Extension Reforms Scheme is to strengthen the existing extension system through a new institutional arrangement namely Agricultural Technology Management Agency (ATMA). The key concepts of the scheme is to decentralize the decision making to the district level, to increase the farmer input into programme planning and resource allocation, especially at block level and to increase accountability to stakeholders and converging the programmes of all line departments. It is operating on gap filling mode by formulating Strategic Research and Extension Plan (SREP) and Annual Work Plans. The other objectives of the scheme are encouraging Public Private Extension Services, ensuring an integrated, broad-based extension delivery mechanism consistent with farming system approach, adopting group approach for extension and addressing gender concerns by mobilizing farm women into groups and providing training to them.

Extension Reforms Scheme is being implemented since 2005-2006 and now it is operational in all the districts except The Nilgiris and Chennai covering 381 Blocks. The funding pattern is 90:10 sharing basis by Government of India and State Government. It is implemented in all the districts through TAWDEVA (Tamil Nadu Watershed Development Agency) which is the State Nodal agency. State Agricultural management Extension Training Institute (SAMETI) is catering to the training and HRD needs of extension functionaries.

At district level, Agricultural Technology Management Agency (ATMA), an autonomous institution is responsible for all the technology dissemination activities. It has linkages with all the line departments, research organizations, non-governmental organizations and agencies associated with agricultural development in the district. ATMA Governing Board (GB) under the chairmanship of district collector provides overall policy direction and ATMA Management Committee (MC) headed by Project Director will execute the implementation of the scheme. District Farmers Advisory Committee provides farmer's feedback for district level planning and implementation.

At block level, two bodies viz., Block Technology Team (BTT), a team comprising of block level officers of agriculture and all line departments and Block Farmers Advisory Committee (BFAC), a group exclusively of farmers of the block will execute the implementation of the scheme.

The revised scheme 2010 also provides specialist and functionary support to strengthen the extension system at different levels viz., State Coordinator and faculty and supporting staff for SAMETI at state level, Project Director, Deputy Project Directors and supporting staff for management of Agricultural Extension activities at the district level, Block Technology Manager and subject matter specialist at the block level to co-ordinate ATMA related activities and Farmer Friend at village level to facilitate dissemination of information to farmers.

ATMA is fulfilling the needs of training, demonstration, mobilizing farmers' interest group through capacity building and providing revolving fund for entrepreneurial activities, inter-State and inter-District

exposure visits besides giving awards to best performing farmer and farmer groups at block, district and state Level.

This scheme will be continued in 2011-2012.

5.2.5. Coconut Development Board Schemes

Coconut Development Board Schemes aim at improving productivity of coconut and also promoting coconut based industries in Tamil Nadu through area expansion and adoption of scientific technologies to sustain coconut farming. Keeping this in view, quality 'Tall x Dwarf ' and 'Dwarf X Tall' coconut seedlings are produced in the Navlock coconut nursery, Vellore district and distributed to the farmers besides carrying out activities such as strengthening of Regional Coconut Nurseries and conducting demonstrations to popularize scientific management techniques. The financial assistance for the above activities are equally shared both by central and state Government except for conduct of demonstrations, which is 100% fully funded by Coconut Development Board. Every year 3.50 lakh coconut seedlings are produced and distributed.

5.2.6. Agricultural Insurance

5.2.6.1. National Agricultural Insurance Scheme

National Agricultural Insurance Scheme is implemented in Tamil Nadu from Kharif 2000 onwards, to provide insurance coverage to the farmers for the notified crops, financial support to the farmers in the event of failure of crops as a result of natural calamities, encourage the farmers to adopt progressive farming practices and high value inputs and help them to stabilize their farm income, particularly in disaster years.

All food crops, oilseeds, cotton, sugarcane, annual / commercial crops are insured under the scheme. All loanee

farmers growing notified crops are enrolled compulsorily, while non-loanee farmers are enrolled on voluntary basis.

Farmers can insure the amount equivalent to the value of threshold yield of the crops insured. Farmers can insure their crop beyond the value of threshold yield level upto 150% of average yield of notified area on payment of premium at commercial rates.

The present premium subsidy pattern is as follows:-

(percentage)

Details of Beneficiaries		Government of India Subsidy	Government of Tamil Nadu subsidy	Total subsidy
Loanee farmers	Small & Marginal Farmers	5	45	50
	Other Farmers	--	50	50
Non-Loanee Farmers	Small & Marginal Farmers	5	50	55
	Other Farmers	--	50	50

The scheme is operated on the basis of " Area Approach" (i.e) defined areas for each notified crop for widespread calamities. The defined area for crops such as paddy, maize, cotton, sugarcane, groundnut, potato, chillies, onion, turmeric, etc., is at firka and for other crops is at block level.

This scheme will be continued during 2011-2012.

5.2.6.1.1. Compensation under National Agricultural Insurance Scheme

In the event of crop loss due to natural calamities, Agricultural Insurance Company pays compensation upto 100% for food and oilseed crops and 150% for annual and commercial crops, if the claim is less than the premium collected. If the claim exceeds the premium amount, then the amount is equally shared between Central and State Government.

5.2.6.2. Modified National Agricultural Insurance Scheme

Modified National Agricultural Insurance scheme will be implemented on pilot basis in the districts of Cuddalore, Sivagangai and Namakkal from Kharif 2011. The additional benefits under this scheme are as follows**:**

- Accuracy in crop loss
- Interim compensation to farmers
- Loss assessment based on weather and yield parameters
- Reducing the insurance unit from firka / block to village Panchayat level
- Indemnity also payable for standing crop (sowing to harvesting), prevented sowing and failed sowing/ planting risk, post harvest losses
- On account payment upto 25% of likely claim for immediate relief
- Calculation of threshold yield i.e., average yield of last 7 years excluding 2 years of declared natural calamities
- Minimum indemnity level of 70% instead of 60% as in NAIS.

5.2.6.3. Weather Based Crop Insurance Scheme

Weather Based Crop Insurance Scheme is implemented on pilot basis from Kharif 2008 onwards in 8 districts to mitigate the hardship of the insured farmers

against the likelihood of financial loss on account of anticipated crop loss due to adverse weather conditions. The critical stages of a crop such as sowing, vegetative, flowering and harvest stages are insured for weather parameters like excess / deficit rainfall, temperature, relative humidity, consecutive dry days, wind speed, etc.

During 2011–2012, the scheme will be continued in the districts of Theni, Tirunelveli, Tiruppur, Salem, Dharmapuri, Virudhunagar, Perambalur, Ariyalur, Villupuram, Dindigul and Coimbatore.

The scheme is applicable to both loanee and non-loanee farmers and all crops in the identified districts are insured under this scheme. This scheme is implemented by AIC, ICICI-Lombard GIC, IFFCO-TOKIO GIC, Cholamandalam GIC, HDFC Ergo GIC.

5.2.6.4. Coconut Palm Insurance Scheme

Coconut Palm Insurance Scheme is proposed to be implemented in 11 districts viz., Vellore, Krishnagiri, Salem, Erode, Coimbatore, Thanjavur, Theni, Dindigul, Tirupur, Tirunelveli and Kanyakumari during 2011-2012. The objectives are as follows:

- To provide insurance coverage to coconut palms against natural and other perils.
- To provide relief against income loss, minimize risks and encourage replanting
- Healthy nut bearing coconut palms grown as mono or intercrop, on bunds or homestead and all varieties of coconut (tall, dwarf and hybrids) are insured
- Tall varieties – eligible for coverage from 7 to 60 years
- Dwarf and Hybrids – eligible for coverage 4 to 60 years
- Individual farmers / growers cultivating atleast 10 healthy, nut bearing palms eligible for enrollment.
- 25% premium to be paid by the farmers.

Sum Insured and Premium

Coconut Palm age in years	Sum Insured Per Palm (Rs.)	Premium Per Palm Per Year (Rs.)
4 to 15	600	4.25
16 to 60	1150	5.75

The Subsidy pattern followed is as follows

Coconut Development Board (%)	State Govt. (%).	Farmer (%)
50	25	25

5.3. Centrally Sponsored Schemes

5.3.1 National Agricultural Development Programme (Rashtriya Krishi Vikas Yojana)

Agriculture is a holistic approach which includes Horticulture, Animal Husbandry, Dairy, Fisheries and also Minor Irrigation. To integrate the activities of these sectors, a special additional Central Assistance Scheme namely **National Agricultural Development Programme** is implemented with 100% Government of India assistance, wherein greater flexibility and autonomy are given to the states to develop and implement projects on the basis of priorities by formulating district and state agricultural plans to achieve 4% growth in Agriculture.

Objectives

- To increase public investment in agriculture
- To reduce yield gap in key crops through focused interventions
- To maximize returns to the farmers
- Bringing quantifiable changes in the production and productivity of agriculture and allied sectors.

Government of India has sanctioned ` 314.89 Crores to implement National Agricultural Development Programme in 2011-2012 for Agriculture and allied Departments.

The Schemes to be implemented by Agriculture Department during 2011-2012 are as follows.

Sl. No.	Projects proposed	Amount (Rs. in lakhs)
1	Precision farming in Agricultural crops	1043.00
2	DAP Foliar spray in Pulses	625.00
3	Intensification of Redgram cultivation through demonstration	524.00
4	Application of Gypsum to Groundnut	753.00
5	Development of infrastructure facilities in State Seed farms	500.00
6	Promoting SRI through Demonstration	3000.00
7	Application of Zinc Sulphate in rice growing areas	439.00
8	Farmers Hub/ Kisan Bhavan (Uzhavar Maiyam)	1500.00
9	Modernization of Micro Nutrient Mixture Unit at CCL, Kudumiyanmalai	60.00
10	Oilpalm Area Expansion	1171.40
11	Integrated Development of Pulses Villages	732.00
12	Initiatives for Nutritional security through Intensive Millets Promotion (INSIMP)	1051.00
13	Rainfed Area Development Programme	1385.03
14	Distribution of Power Rotary Weeder to Sugarcane growers	35.00
.15	Distribution of Maize Sheller	12.50
16	Distribution of Coconut seedlings	112.50
17	Reclamation of Saline and Alkaline soils	399.20
18	Construction of MN Mixture godown	130.00
19	Construction of Lignite storage godown for Bio-fertilizer Production units	300.00
20	TANWABE	157.50
	TOTAL	**13930.13**

5.3.2. National Food Security Mission

National Food Security Mission aims to ensure food and nutritional security for all. This scheme was introduced in the year 2007-2008 with an objective to increase the production and productivity of Rice and Pulses. Government of Tamil Nadu has adopted a two pronged approach wherein districts having larger extent but lesser productivity and districts having higher productivity and lesser extent have been selected for implementation of the scheme.

National Food Security Mission for Rice is implemented in 5 districts viz., Pudukottai, Tiruvarur, Nagapattinam, Ramanathapuram and Sivagangai, while it is implemented for pulses in all the districts (except Chennai and The Nilgiris).

Under National Food Security Mission – Rice, activities viz., demonstrations on SRI and Hybrid Rice Technology, subsidized distribution of quality seeds of High Yielding varieties & hybrids, distribution of seed minikits, micro nutrients, weeders / other implements, Plant Protection Chemicals and bio inputs, distribution of pumpsets, rotavators, sprayers, power weeders, lazer land leveller and power tiller at 50% subsidy and farmers training will be taken up at project cost of ` 2144.19 lakhs in 2011-2012.

Under National Food Security Mission – Pulses, activities such as production of Foundation Seed, production and distribution of Certified Seeds, distribution of Gypsum, Micro nutrient mixtures, Rhizobium, Plant Protection Chemicals, Plant Protection Equipments, Sprinklers, Rotavators, laser land levellers, pipes and power tillers are proposed to be distributed in 2011-2012 at an outlay of ` 1006.138 lakhs.

5.3.3. Accelerated Pulses Production Programme (A3P)

Accelerated Pulses Production Programme is implemented in Tamil Nadu to promote pulses as pure crop and increase the production and productivity of major pulses, blackgram & redgram with the objectives to:

- ✓ demonstrate plant nutrient and plant protection centric improved technologies
- ✓ demonstrate Management practices in compact blocks covering larger area
- ✓ Participating farmers to motivate other farmers in the adjoining areas to adopt these technologies.

This scheme will be implemented in a compact area of 1000 hectares per unit in 5 blocks under NADP and 7 blocks under NFSM- Pulses. Under NADP, A3P scheme will be implemented in Vellore, Krishnagiri, Tiruvannamalai, Dharmapuri and Thoothukudi districts with one unit in each district with the financial outlay of ` 252.00 lakhs. Under NFSM, A3P scheme will be implemented in Vellore, Krishnagiri, Nagapattinam, Tiruvannamalai, Pudukottai, Thoothukudi, and Villupuram districts with one unit in each district with the financial outlay of ` 348.00 lakhs. A sum of ` 5400/- towards Redgram and ` 4800/- towards Blackgram is being extended as 100% subsidy for distribution of Integrated Nutrient Management (INM), Integrated Pest Management(IPM), inputs, minikits and e-pest surveillance for an area of one hectare.

5.3.4. Seed Village

Seed is a critical input that decides the productivity of crops. Government and private seed companies contribute substantially to quality seed production and timely distribution. To meet the growing demand of quality seeds,

especially pulses and oilseeds, farmers are trained under Seed Village scheme from 2006-2007 onwards, on scientific methods of quality seed production to produce quality seeds to meet their own seed requirement and increase their farm income. Under this Scheme, Foundation/Certified seeds of Paddy, Millets, Oilseeds, Pulses are also distributed to the farmers at 50% subsidy per acre.

This scheme will be continued during 2011-2012.

5.3.5. Tamil Nadu Agricultural Information Service Network (TN-AGRISNET)

AGRISNET is a work flow automation process of the Department of Agriculture, Government of Tamil Nadu. The objective of the Web portal is to provide updated information to the end users i.e., farmers on availability of all the inputs at any point of time and at any place.

The Government of India has approved a total sum of ` 831.40 lakhs to implement AGRISNET project in Tamil Nadu. Of which a sum of ` 302.40 lakhs was released as first instalment during 2007-08. This project envisages provision of computers and related accessories to all the offices upto Block level (385 block offices and 31 District level offices) and broad band connectivity service for online updation of data. In recognition of successful implementation of "AGRISNET Project" in Tamil Nadu, Government of India awarded a **Specific Sectoral Award – GOLD** for e-governance initiatives.

The main focus is given on Soil Health Card, Village level Fertility index, information on Market trend of commodities, Rainfall forecast, contact details of Agriculture department, etc., This web portal also helps the farmers to update their knowledge on the availability of inputs like Seeds, Fertilisers etc., and also the details on welfare

schemes and beneficiaries since the details are showcased in a transparent manner. Efforts are being taken to automate the sale of fertilizers at the retail points through introduction of Hand Held Billing Machine which is a mandatory requirement for the retailer to comply with the provisions of the Fertilizer Control Order, 1985.

The basic data of about 24 lakh farmers have been registered in the website so far. The farmers' data base is utilised for identification of beneficiaries for various schemes and also to display the beneficiary list to maintain transparency. Efforts are taken concomitantly to enhance the communication to farmers through Short Message Service (SMS) after completion of database.

5.4. Externally Aided Projects

5.4.1. TN IAMWARM PROJECT – Irrigated Agriculture Modernization and Water Bodies Restoration and Management (IAMWARM) Project

This project is a six year project (from 2007-2008 to 2012-2013) implemented with the assistance of World Bank to improve water resources in 60 selected sub basins integrating the activities of the departments of Agriculture, Horticulture, Agricultural Engineering, Agriculture Marketing & Agri Business, Animal Husbandry, Fisheries and Tamil Nadu Agricultural University.

Objectives

- More income per drop of water.
- Enhancing irrigation efficiency by improving modern water saving technologies like micro irrigation and Agricultural practices.
- Agricultural intensification and diversification.
- Enhancing marketing access and Agri Business opportunities.
- Strengthening water users association and its function.

Under this scheme, Agriculture department is in the process of increasing the productivity by effective management of land and water resources in 60 sub basins in an area of 6.17 lakh hectares with an assistance of ` 98 crores.

The scheme activities are as follows:

1. Conducting demonstrations on cultivation of various crops and organic farming.
2. Distribution of important Agricultural inputs such as Bio-fertilizers, Micro nutrient mixtures, Gypsum and Blue Green algae.
3. Distribution of farm implements such as Hand sprayers and Power operated sprayers.
4. Information, Education, Communication and Capacity Building activities like publicity, Exposure visits.

The details of scheme implementation are as follows.

Rupees in Crores.

Year	Sub-basins	Allocation	Expenditure
Phase – I (2007-2011)	**9 Sub-Basins -** Varaganathi (Villupuram / Tiruvannamalai), Uppervellar (Salem), Palar (Coimbatore/Erode), Aliyar (Coimbatore), Southvellar (Pudukottai / Tiruchirapalli), Pambar (Pudukottai / Sivagangai), Kottakaraiyaru (Sivagangai / Ramanathapuram), Manimuthar (Sivagangai / Ramanathapuram / Madurai) and Arjunanadhi (Virudhunagar)	16.21	15.53

Year	Sub-basins	Allocation	Expenditure
Phase II (2008-2011)	**16 Sub Basins -** Poiney (Vellore), Koundinyanadi (Vellore), Ponnaiyar upto Krishnagiri (Krishnagiri), Swethanadhi (Salem, Namakkal and Perambalur), Anaivari Odai (Perambalur), Chinnar (Perambalur), Agniar (Thanjavur and Pudukottai) Ambuliyar (Thanjavur and Pudukottai) (Upper Vaigai (Theni), Varattar - Nagalar (Theni), Nisabanadhi (Tirunelveli), Kalinagalar (Tirunelveli), Sindapalli-Uppodai (Virudhunagar), Sinkottaiyar (Virudhunagar), Upper Gundar (Madurai) and Therkaru (Madurai)	6.64	6.60
Phase III (2010-2011)	**30 Sub-Basins –** Deviar (Tirunelveli & Virudhunagar), Gomukinadhi (Villupuram & Cuddalore), Hanumanadhi - Nambiyar(Tirunelveli & Kanyakumari), Kanal odai (Virudhunagar, Sivagangai & Madurai), Lower Gundar (Ramnad & Virudhunagar), Palar (Ramnad), Pambanar, Varattar (Tiruvannamalai), Thurinjalar (Tiruvannamalai), Uthirakosamangai (Ramnad), Araniar (Thiruvallur), Gadilam (Cuddalore & Villupuram), Kambainallur (Dharmapuri), Korampallam Aru (Thoothukudi), Kosasthalaiyar (Tiruvallur & Vellore), Kovilar (Dharmapuri), Markandanadhi (Krishnagiri),	9.06	8.82

Year	Sub-basins	Alloca-tion	Expen-diture
	Nagarier (Virudhunagar), Nallavur (Villupuram), Ongur (Kancheepuram, Villupuram & Tiruvannamalai), Girdhamal (Sivagangai, Madurai, Virudhunagar & Ramanathapuram), Karumeniyar (Tirunelveli & Thoothukudi), Pambar to Tirukoilur (Villupuram & Tiruvannamalai), Salikulamaru (Thoothukudi), Sevalaperiyar (Virudhunagar), Theniar (Theni), Uppathurar (Thoothukudi & Virudhunagar), Uppodai (Tirunelveli & Thoothukudi), Vaippar (Main River) (Thoothukudi & Virudhunagar), Vallampatti (Virudhunagar, Tirunelveli & Thoothukudi), Vembar (Thoothukudi, Ramnad & Virudhunagar)		
	TOTAL (55 sub-basins)	**31.91**	**30.95**

The Administrative Sanction has been received so far for a sum of ` 31.91 crores. Further the World Bank has now approved a sum of ` 12.05 crores to implement the IAMWARM Project in Phase IV in 5 more sub basins namely Coovam (Kancheepuram, Thiruvallur, Vellore), Cheyyar – Kiliyar (Kancheepuram, Tiruvannamalai), Paralayar (Sivagangai, Ramanathapuram, Virudhunagar), Kayalkuzhiyar (Virudhunagar), Adyar (Thiruvallur & Kancheepuram) and ` 20.37 crores to implement Additional activities in Phase I, II & III sub basins.

2. SUGAR DEPARTMENT

Sugar Mills in Tamil Nadu play a vital role in rural development. The important cash crop, sugarcane is a raw material for more than 25 agro based industries. Sugar, Jaggery, Alcohol, Electricity, Paper and Cattle feed are all produced from sugarcane. It is highly essential to increase the production of not only cereals, but also sugar considering the demand of the growing population.

In our State, about 3.50 lakh farmers are cultivating sugarcane every year. Around 3.50 lakh hectares of cane is cultivated in our State which is 5% of the total cultivable area. About 385 lakh MT of sugarcane is produced from the above area. In order to improve the sugarcane productivity and to reduce the cost of cultivation, the State Government is implementing various schemes like drip fertigation, precision farming, tissue culture etc.

There are 47 Sugar Mills in Tamil Nadu comprising of 16 Sugar Mills in Co-operative Sector, 3 Sugar Mills in Public Sector and 28 Sugar Mills in Private Sector. Of these presently 44 Sugar Mills are functioning, while 2 Sugar mills are not functioning, viz., Madura Sugars (Public Sector) from 2002-2003 crushing season onwards and the private sugar mills viz. Arunachalam Sugar Mills, Malappampadi, Tiruvannamalai District from 2003-2004 crushing season onwards. A new sugar mill viz. Sri Ambiga sugars limited unit – III Manjini is under implementation.

The area cultivated, registered, cane crushed, Sugar produced and recovery percentage for the past five years and estimate for 2010-2011 in Tamil Nadu are given below:

Crushing season (Oct. – Sep.)	Cane area cultivated (lakh acres)	Cane area registered (lakh acres)	Cane crushed (lakh MT)	Sugar Production (lakh MT)	Recovery %
2005-06	8.37	6.40	231.46	21.38	9.24
2006-07	9.77	7.42	274.49	25.39	9.25
2007-08	8.85	6.81	229.68	21.41	9.32
2008-09	7.85	5.65	165.72	15.95	9.70
2009-10	7.63	5.00	142.99	12.70	8.88
2010-11 (Estimate)	8.75	5.95	178.59	16.39	9.18

The Government of India have issued an Ordinance amending the Essential Commodities Act, 1955 and Sugarcane (Control) Order, 1966 and issued Sugarcane (Control) Amendment Order by introducing a new concept of "Fair and Remunerative Price" (FRP) for sugarcane on All India basis by deleting the existing provisions for payment of Statutory Minimum Price and 5A Price. Accordingly, the Government of India have fixed the Fair and Remunerative Price of ` 1391.20 per MT for the sugar season 2010-11 linked to 9.5% recovery with an incentive of ` 14.60 per MT for increase of every 0.1% recovery. The Government of Tamil Nadu have announced the State Advised Price of ` 2000/- inclusive of transport subsidy for the 2010-2011 crushing season and the cane payment is being made as per the orders of the Government .

To increase the per hectare cane yield by 35% to 45% and to save the irrigation water upto 40%, paired row planting along with drip fertigation are being adopted in sugarcane cultivation. In order to motive the sugarcane farmers to adopt drip fertigation, the Government have

increased the subsidy to 100% for small and marginal farmers and 75% for other farmers under drip irrigation.

Through Bio-composting, the physical properties of the soil are improved along with Integrated Nutrient Management and utilisation of organic resources as organic manure, the Sugarcane productivity is increased. The press mud obtained from the mills is converted as value added vermi compost and distributed to the farmers for increasing sugarcane productivity. Effective steps are taken to produce vermi compost, bio inputs and organic manure at village level.

The Sugar Mills along with Tamil Nadu Agricultural University and other Sugarcane Research Stations have introduced promising high yielding, drought and pest resistance varieties like CoC 24, Co 99004, Co 99006, Co 94012 etc to improve production and productivity of sugarcane.

Considering the higher cane cutting charges and scarcity of cane harvesting labourers, the Government of Tamil Nadu have decided to purchase 34 Sugarcane Harvesters for 17 Co-operative and Public Sector Sugar Mills with their own resources @ two Harvesters per mill, and the administrative approval was accorded by the Government. A Committee has been constituted to prepare technical specification to purchase sugarcane harvester which are suitable for Tamil Nadu. After preparation of technical specification, the tender will be invited to purchase sugarcane harvesters subject to financial viability and availability of sugarcane wider row spacing.

3. HORTICULTURE

1. Preface

Horticulture contributes much for the growth of Agriculture, the primary sector of the State. The growth of horticulture has expanded rural employment opportunities, increased income and enabled better livelihoods to farmers. The agro-climatic diversity of the State supports a wide variety of tropical, sub-tropical and temperate horticultural crops. Horticulture crops are cultivated in an area of about **10.26 lakh Ha** (2009-2010) with a total production of **174.01 lakh MT**.

Much focus will be on expanding the area under horticulture crops and increasing their productivity by using hybrids, pedigree planting materials and advanced crop cultivation technologies. Intensive and focused extension will be taken up to enable farmers to adopt these advanced technologies. Area under horticulture crops will be increased by converting current and permanent fallows. Productivity of identified focus crops will be increased by leveraging advanced and proven technologies. Precision farming and promotion of integrated crop management practices will be encouraged.

2. Policy Focus

- Technology will be leveraged to bring in a second green revolution as a people's movement.
- Horticulture will be promoted as a profitable and viable activity by leveraging technology to improve productivity. The policy aims at increasing the income levels of farmers and assuring them an improved quality life.
- Efficient and effective utilization of water resources for cultivation will be ensured by giving thrust to Micro irrigation. This will be followed for bringing more area under assured irrigation with existing water resources and improving productivity.
- Precision farming will be popularised by providing all necessary incentives to universalize efficient utilisation of inputs.
- Farmers will be mobilized to form clusters and synergistically access forward and backward linkages that will be created.
- Hybrid seeds, pedigree planting materials and quality inputs will be identified and recommended for specific crops. These inputs will be provided at subsidized cost to the farmers.
- Infrastructure will be created to minimise post-harvest losses. Entrepreneurs will be encouraged to provide post harvest management facilities by providing them capital subsidy.

3. Strategies

1. Area expansion
2. Productivity enhancement
3. Use of Hybrids and pedigree planting material
4. Micro-Irrigation with Fertigation
5. High density planting
6. Rejuvenation of old orchards with Canopy management
7. Thrust on Integrated Crop Management
8. Strengthening the production of pedigree planting materials.
9. Effective Transfer of Technology through development of technology demonstration centres in State Horticulture Farms.
10. Rejuvenation of extension machinery with adequate capacity building.
11. Post Harvest Management and reduction of post harvest losses.

4. Area, Production and productivity of Horticultural crops

The Area, Production and Productivity of Horticultural crops are as under:

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

Crops	2009-10			2010-11 (Estimated)			2011-2012 (Projected)		
	Area	Prod	Pvty.	Area	Prod	Pvty.	Area	Prod	Pvty.
Fruits	3.07	73.74	24.02	3.20	79.65	24.89	3.32	85.35	25.71
Vegetables	2.63	77.65	29.52	2.73	83.87	30.72	2.84	90.52	31.87
Spices & Condiments	1.60	8.70	5.44	1.66	9.39	5.65	1.73	10.87	6.28
Plantation Crops	2.56	10.63	4.16	2.65	11.47	4.32	2.75	11.99	4.36
Flowers	0.30	2.78	9.25	0.31	3.00	9.68	0.32	3.23	10.09
Medicinal & Aromatic Plant	0.10	0.51	5.13	0.11	0.61	5.55	0.12	0.68	5.67
Total	**10.26**	**174.01**		**10.66**	**187.99**		**11.08**	**202.64**	

Hi-Tech cultivation is vital to improve the productivity of Horticultural crops. Use of quality planting materials, high yielding / hybrid varieties, precision farming, protected cultivation, micro irrigation with fertigation, high density planting, rejuvenation of senile orchards, pollination support etc.,will be adopted for maximizing the yield of various Horticultural crops.

5. Horticulture Schemes - State Plan

5.1. Integrated Horticulture Development Scheme

Integrated Horticulture Development Scheme is being implemented in 31 districts of Tamil Nadu except Chennai. Area expansion under Horticultural crops with improved varieties is proposed to be taken up. Modern cultivation practices will be disseminated to farmers to enhance productivity. To increase the area under cultivation of vegetables and stabilize their prices, vegetable cultivation will be promoted with elite planting materials, high yielding / hybrid seeds of vegetables and flowers which are proposed to be distributed to farmers at 50% subsidised cost. It is proposed to cover an area of 50,000 ha. with an outlay of ` 1925.00 lakhs during 2011-2012.

5.2. Horticulture Training Centers

Horticulture Training Centers are functioning at Kudumianmalai, Madhavaram, Thally and Ooty. Hi-Tech cultivation is the key to enhance productivity of various horticultural crops. It is proposed to impart training to field functionaries on precision farming, high density planting, canopy management, protected cultivation, micro irrigation & fertigation, etc. with the aim of improving their skills.

During 2011-2012, it is proposed to train 6400 farmers / field level functionaries with an outlay of ` 6.97 lakhs.

5.3. Integrated Tribal Development Programme

Tribal farmers are encouraged to diversify to high value crops to derive regular income under Integrated Tribal Development Programme. Individual fruit orchards are established in tribal holdings with crops like mango, guava, sapota, banana, pepper etc. Short term cultivation of vegetables with high yielding/hybrid varieties will be taken up.

It is proposed to distribute planting materials like Mango, Pepper, Coffee, Tissue culture Banana etc. to the tribal farmers at 75% subsidy and vegetable seeds at 90% subsidized cost. Oil engines and plant protection equipments are proposed to be distributed at 75% subsidy and installation of drip irrigation systems at 100 % subsidy dovetailing with National Mission on Micro Irrigation. Training and exposure visits will be organized to educate the tribal farmers on improved technologies of cultivation.

It is proposed to implement this programme in the tribal areas of Salem, Namakkal, Dharmapuri, Tiruvannamalai, Vellore, Trichy and Villupuram districts. During, 2011-2012 it has been proposed to implement this programme with an outlay of ` 40 lakhs.

5. 4. Western Ghat Development Programme

It is proposed to distribute high yielding / hybrid vegetable seeds and planting materials at 50% subsidy cost to the farmers in Western Ghat Districts. Training on latest technologies will be given to the farmers. During 2011-2012, it has been proposed to implement this scheme with an outlay of ` 171 lakhs.

5.5. Hill Area Development Programme

Crop diversification from perennial crops to annual vegetable crops, value addition and mechanization of harvesting are the objectives of the programme. High yielding / hybrid vegetable seeds, oil engines, agricultural machineries/ implements like sprayer, power tiller, mini tractor etc. are proposed to be distributed under this scheme with a subsidy of 25-50%.

During, 2011-2012 it has been proposed to implement the scheme with an outlay of ` 358.15 lakhs.

5.6. City Vegetable Development Scheme

Establishment of home and kitchen gardens will be promoted in Chennai and other cities. It is proposed to distribute planting materials, seeds, fertilizers and plant protection chemicals at full cost to establish home and kitchen gardens. Training and technical advice will be provided to the residents to maintain their home and kitchen gardens. During 2011-2012 it is proposed to implement this scheme with an outlay of ` 3.50 lakhs.

5.7 National Agriculture Development Programme

With the objective to increase productivity of important crops through focussed interventions and maximising returns to farmers, the National Agricultural Development Programme is being implemented with 100% Central assistance during 11th Five-year Plan. During 2011-2012 it is proposed to implement the scheme including Precision farming component with an outlay of ` 10814.75 lakhs.

5.7.1. Precision Farming

Increase in productivity by 30 to 50%, uniformly high quality produce and extended harvest periods are the special attributes of this technology. Precision farming techniques include chisel plouging, use of seedlings raised in protrays under shade net, soil and water analysis, micro irrigation with fertigation and adoption of scientific crop cultivation practices. It is proposed to provide high yielding/ hybrid seed materials and inputs to farmers under this scheme.

It is proposed to implement this scheme with an outlay of ` 1050.00 lakhs to cover an area of 5000 ha. during the year 2011-2012.

5.8. National Agriculture Insurance Scheme

National Agriculture Insurance Scheme provides insurance coverage to notified Horticultural crops Viz. Banana, Onion, Potato, Tapioca, Pineapple and Ginger etc for the Kharif and Rabi seasons.

The major feature of the scheme is to provide insurance coverage and financial support to farmers in the event of natural calamities, pest and diseases adversely affecting the notified Horticultural crops and to help farmers stabilize their farm income during disaster years.

Both loanee and non-loanee farmers are covered under this scheme. 50% premium subsidy is extended to the farmers. During the year 2011-2012, it has been proposed to implement this scheme with an outlay of ` 950 lakhs to cover 24000 acres.

5.9. Weather Based Crop Insurance Scheme (WBCIS)

The objective of the scheme is to mitigate the hardships faced by farmers due to financial loss on account of adverse weather conditions especially deficit and excess rainfall, high levels of relative humidity that enhance pest and diseases attack. This is implemented on a pilot basis in eleven districts of Tamil Nadu for loanee farmers. The non loanee farmers can either opt for National Agriculture Insurance Scheme or WBCIS. During 2011-2012 it has been proposed to implement this scheme with an outlay of ` 52.50 lakhs to cover 4200 acres.

Scheme Performance during 2010-2011 and Proposals for the year 2011-2012.

The financial allocation and the expenditure incurred for the year 2010-2011 and the proposed outlay for the year 2011-2012 for the State Plan Schemes are furnished below.

State Plan Schemes

Financial: Rs. in lakhs

Name of the Scheme	Unit	2010-2011				2011-2012 (Proposed)	
		Physical		Financial		Phy.	Fin.
		Tar.	Achmt	Tar.	Achmt.	Tar.	Tar.
Integrated Horticulture Development Scheme - Area Expansion	Ha.	22584	22642	266.88	266.88	50000	1925.00
Horticulture Training Centre	Nos.	6400	6400	6.97	6.97	6400	6.97
City Vegetable Development Scheme	Ha.	200	200	3.50	3.50	200	3.50
Integrated Tribal Development Programme	Ha.	904	904	40.00	40.00	904	40.00
Western Ghat Development Programme		3 No	3 No	91.55	91.55		
						4200 Ha.	171.00
Hill Area Development Programme	Ha.	4000	4000	126.25	126.25	4000	358.15
National Agriculture Development Programme	Ha.	14570	8081	4075.13	1461.86	29733	10814.75
National Agricultural Insurance Scheme	Acre	24008	24008	950.00	452.25	24000	950.00
Weather-Based Crop Insurance Scheme	Acre	4132	4132	50.00	43.28	4200	52.50
Total				**5610.28**	**2492.54**		**14321.87**

4. TAMIL NADU HORTICULTURE DEVELOPMENT AGENCY (TANHODA)

Tamil Nadu Horticulture Development Agency was formed in 2004 as a registered society and is functioning as a special purpose vehicle for receiving funds from the Government of India for implementing various Horticulture schemes. The schemes which are implemented through TANHODA are as below.

Sl. No	Name of the Scheme	Financial Assistance	
		GOI Share	GOTN Share
1	National Horticulture Mission	85%	15%
2	National Mission on Micro-Irrigation Small and Marginal Farmers Others	 50% 40%	 50% 35%
3	National Bamboo Mission	100%	--
4	National Mission on Medicinal Plants	100%	--
5	State Horticulture Farms	--	100%
6	TN-IAMWARM (World Bank Funded)	---	100%

1. Schemes shared between Central and State Governments

1.1 National Horticulture Mission

National Horticulture Mission Scheme is being implemented to bring about holistic growth in the horticulture sector with focus on expansion of area under high income generating Horticulture crops. It is implemented on a mission mode from 2005-2006 onwards in 22 districts viz. Cuddalore, Dharmapuri, Dindigul, Erode, Coimbatore, Kanyakumari, Krishnagiri, Madurai, Perambalur, Pudukottai, Tiruppur, Ramanathapuram, Salem, Sivagangai, Thanjavur, The Nilgiris, Theni, Tirunelveli, Tiruchirapalli, Vellore, Villupuram and Ariyalur.

Components like area expansion of high value Horticulture crops, production of planting materials, rejuvenation of old orchards, canopy management, protected cultivation, organic farming, mechanisation, human resource development, post harvest management and creation of marketing infrastructure are proposed to be implemented during 2011-2012. It is proposed to cover an area of 47,100 ha. in 2011-2012.

Green house cultivation yields higher income in lesser area to the farmers. High value crops like capsicum, hybrid tomato, gerbera etc. are grown in green houses. During 2011-2012 it is proposed to establish poly house in an area of 4 lakh sq.mt. Crops like papaya, acid lime, mandarin orange, ginger; big onion, coriander and clove have been included as new crops in the programme and an area of 4800 ha. will be covered with these crops. High density planting in mango with a population of 400 plants per ha will be taken up in an area of 5000 ha. Tissue culture banana cultivation will be taken up in an area of 2000 ha. During 2011-2012, this programme will be implemented with a financial outlay of ` 14,500 lakhs.

1.2 National Mission on Micro Irrigation

Water is essential for cultivation. Water use efficiency in conventional methods of irrigation is low. Micro Irrigation systems like drip and sprinkler irrigation ensures efficient use of surface and ground water resources. Coupled with fertigation it results in increased productivity and improved quality of the produce.

With the objective of increasing area under irrigation, enhancing water use efficiency and increasing productivity of crops, the National Mission on Micro Irrigation is being implemented in Tamil Nadu. An area of 30,000 ha. will be brought under micro irrigation with a financial outlay of ` 12,200 lakhs during 2011-2012. It is proposed to provide training to 4650 field functionaries on micro irrigation under the capacity building component during 2011-2012.

2. Schemes fully funded by Government of India

2.1 National Bamboo Mission

Bamboo is a much preferred material in sectors like pulpwood, paper industries, housing, arts, crafts etc. Bamboo has more than 1500 uses. To increase the area under Bamboo and enhance its productivity, the National Bamboo Mission scheme is being implemented with 100% assistance from Government of India. For the year 2011-2012, it has been proposed to cover an area of 400 ha. with a financial out lay of ` 65.92 lakhs.

2.2 National Mission on Medicinal Plants

With the objective of meeting the increasing demand for herbal products, the National Mission on Medicinal Plants is being implemented. This scheme is sponsored by the National Medicinal Plants Board, Department of AYUSH, Ministry of Health & Family Welfare,

Government of India. The scheme envisages coverage of an area of 18,292 ha under medicinal crops during 11th Five Year Plan period. Depending upon the availability of species (Rare, Endangered and Prioritized species in high demand) subsidy ranging from 20% to 75% is provided to 93 species of medicinal plants.

For the year 2011-2012, it has been proposed to cover an area of 5243 ha with a financial outlay of ` 1378.54 lakhs.

3. State Horticulture Farms

There are 49 State Horticulture Farms in the State. The main objective of the farms is to produce pedigree quality planting materials of Horticulture crops such as fruits, flowers, spices, tree kinds, etc. The farms also produce vegetable seeds. The planting materials produced in the farms are distributed to the farmers directly and also through various Horticulture schemes implemented by the department. They serve as model demonstration centers for latest technologies like high density planting in mango and cashew, canopy management, top working of senile trees etc. Soft wood grafting in Mango is adopted for quick propagation of Mango grafts.

During 2011-2012, it is proposed to produce 170.45 lakh planting materials and 699 MT of vegetable seeds with an outlay of ` 1380.93 lakhs. Owing to the increasing demand of planting material, it is proposed to upgrade the nurseries during 2011-2012.

The orchards are maintained regularly for increasing the productivity and thereby enhancing farm receipts. It is proposed to adopt scientific crop management practices for maintaining and improving the productivity of orchards.

4. Parks and Gardens

The department maintains 8 parks and gardens. The gardens attract large number of visitors and have emerged as major tourist destinations in the State. They also serve as demonstration centres for ornamental gardening and floriculture.

Sl. No	Garden/park	Extent (in Ha.)	No. of visitors (2010-11)
1	Government Botanical garden, Ooty	22.00	20,77,610
2	Government Rose garden, Ooty	14.40	6,54,751
3	Arboretum, Ooty	1.58	5000
4	Sim's Park, Coonoor.	12.14	5,14,509
5	Park at State Horticulture Farm, Kattery	18.96	Opened on 20/5/2011
6	Bryant Park & Chettiyar Park, Kodaikanal	8.42	5,91,397
7	Anna Park & Lake Park, Yercaud	10.00	1,83,653
8	Semmozhi Poonga, Chennai	3.17	3,89,705
	Total		**44,11,625**

A new ornamental and demo garden at State Horticulture Farm, Madhavaram is being established at a cost of ` 593 lakhs. A new Eco park is being developed in the State Horticulture Farm at Coutrallam at a cost of ` 592 lakhs. At Yercaud, a Botanical Garden is being established at a cost of ` 745 lakhs. Development and improvement works are under progress at Bryant Park, Anna Park and Chettiyar Park at a cost of ` 159 lakhs. Horticulture Management Institute at Madhavaram and Horticulture Training Centre at Thally, Krishnagiri are being upgraded at a cost of ` 745 lakhs.

5. Externally Aided Project- Tamil Nadu Irrigated Agriculture Modernization and Water Bodies Restoration and Management Project (TN-IAMWARM)

Tamil Nadu IAMWARM project is an externally aided project funded by World Bank implemented in Tamil Nadu. The main objective of the project is to promote crop diversification and area expansion of high value Horticultural crops in 60 river sub basins of Tamil Nadu. This Project was started in 2007-2008 and it will be completed in 2012-2013. The total outlay earmarked for Horticulture Department is ` 7276.50 lakhs. Till now 55 sub- basins have been covered under this project. An area of 28,253 ha. has been covered under horticulture crops through this programme.

For 2011-2012, it is proposed to cover an area of 8182 ha. under horticultural crops with an outlay of ` 1340.70 lakhs.

Scheme Performance-2010-11 and Proposals for the year 2011-2012

The following is the abstract of performance for the year 2010-2011 and the proposals for the year 2011-2012.

(Fin.Rs. in lakhs)

Name of the Scheme	Unit	2010-11				2011-2012	
		Physical		Financial		Phy	Fin
		Tar	Achmt	Tar	Achmt	Tar	Tar
National Horticulture Mission	**Ha.**	42261	43210	10229.00	10103.53	47100	14500.00
National Mission on Micro Irrigation	**Ha.**	28600	26153	9144.00	8364.00	30,000	12200.00
National Mission on Medicinal Plants	**Ha.**	4112	4112	834.70	834.70	5243	1378.54
National Bamboo Mission	**Ha.**	250	250	40.00	40.00	400	65.92
State Horticultural Farms	**Lakh Nos**	153.68	168.73	1328.67	1142.50	170.45	1380.93
Tamil Nadu IAMWARM	**Ha.**	9377	8152	1710.67	1283.27	8182	1340.70
Total				**23287.04**	**21768.00**		**30866.09**

5. TAMIL NADU HORTICULTURAL PRODUCERS CO-OPERATIVE ENTERPRISES LIMITED (TANHOPE)

Tamil Nadu Horticultural Producers Co-operative Enterprises Limited was registered as a primary Horticultural Co-operative Society under Tamil Nadu Co-operative Societies Act to benefit the small and marginal Horticultural farmers. The Commissioner of Horticulture and Plantation Crops is the Special Officer and Joint Director of Horticulture is the Managing Director. So far 3904 Horticultural farmers have been enrolled in the society with a membership fee of ` 100 per farmer.

Objectives

1. To promote and encourage the development of Horticulture crops.
2. To organize marketing of fruits and vegetables on modern lines by means of grading, sorting and packaging.
3. Marketing on Co-operative basis, marketing through retail outlets & branches and to undertake export of fresh and processed produces.

As per G.O (Ms.) No.444 Agri(H1) Dept, dated 30.10.2007, the TANHOPE in the Department of Horticulture and Plantation Crops function as the procurement Agency to procure inputs and distribute to Horticulture department. TANHOPE supplies planting materials and other inputs required for various horticultural schemes implemented by the Department of Horticulture and Plantation Crops. The inputs are distributed to the farmers through Horticulture department.

6. TAMIL NADU COCONUT FARMERS WELFARE BOARD

Tamil Nadu Coconut Farmers Welfare Board has been formed as per the orders issued by the Government vide G.O.Ms.No. 184, Agriculture (OS) Department, dated 27.08.2010. Government has sanctioned a sum of ` 100 lakhs for the activities of the Board. Coconut farmers are being enrolled as members in the Board. Pass books are being issued to the enrolled members through field staff.

A news letter regarding the latest technologies on coconut cultivation is being published once in every two months for the benefit of coconut farmers. Schemes like area expansion of coconut, distribution of coconut nutrients, establishment of mini solar drier are being implemented through the Coconut Farmers Welfare Board.

7. AGRICULTURAL ENGINEERING

1. Introduction

To achieve the vision of increasing the Agricultural Production, the land and water resources of the State are to be conserved and developed effectively. Programmes for Water Management, Soil and Water Conservation are being implemented by the Agricultural Engineering Department to ensure sustainable increase in agricultural production. Agricultural mechanisation programmes are being implemented in a big way to increase the agricultural production and to popularise the agricultural machinery among the farmers. Custom hiring of agricultural machinery to farmers at nominal hire charges are also being carried out by this Department.

2. Soil and Water Conservation Programmes

Effective soil and water conservation improves productivity in agriculture. Soil and water conservation prevent soil erosion and improves soil moisture for sustainability in agriculture. Agricultural production can also be increased through construction of rain water harvesting structures in dry lands.

2.1. Rain Water Harvesting and Run off Management Programme

Rain water harvesting and runoff management works such as checkdams, percolation ponds, farm ponds, new village tanks, ooranies and recharge shafts are taken up to improve the moisture regime of the watershed for increased land use. Under this programme, the beneficiaries are required to contribute 10% of the cost of works executed in community lands (it is 5% in case of SC/ST) in cash which will be deposited in the name of the Village Development Association ***/*** Watershed Association and the accrued

interest will be utilised for the maintenance of assets created in community lands. Works in patta lands are taken up with 90% grant and the remaining 10% is collected as beneficiary share (it is 5% in case of SC/ST) in the form of Cash / labour / material. During 2011-2012, it is programmed to construct 2097 rainwater harvesting structures at an outlay of ` 1885.50 lakhs.

2.2. Scheme for Artificial Recharge of Ground Water

Artificial ground water recharge structures such as check dams, new village tanks, ooranies, percolation ponds with recharge shaft are constructed to harvest rain water to augment the ground water aquifer for improving the ground water table. The programme is taken up with 100% assistance from the Government. During 2011-2012, it is programmed to construct 2459 recharge structures at a cost of ` 4000 lakhs.

2.3. Soil and Water Conservation in Tribal Areas under Integrated Tribal Development Programme

Development of tribal agricultural lands by adopting suitable soil and water conservation measures is the objective of this programme. The programme is implemented in the tribal areas of Jawadhu hills (Vellore and Tiruvannamalai district), Kalrayan hills (Salem and Villupuram districts), Shervaroy hills and Arunuthu hills (Salem District), Sitheri hills (Dharmapuri district), Kolli hills (Namakkal district) and Pachamalai (Salem and Tiruchirapalli district). Soil and water conservation measures such as land shaping, pipe laying, construction of contour rubble bunds, contour stone walls and check dams are taken up by the department in the lands of the tribal farmers with 100% assistance from the Government. During 2011-2012, it is proposed to take up soil and water conservation works in an area of 1393 hectares of tribal lands at a cost of ` 344.73 lakhs.

2.4. Western Ghats Development Programme

Western Ghats Development Programme is being implemented to ensure eco-restoration, eco-development and eco-protection in western ghats areas of Coimbatore, Tiruppur, Dindigul, Theni, Madurai, Virudhunagar, Tirunelveli and Kanyakumari districts. Soil and water conservation measures such as contour rubble bunds, gabion structures, check dams, drainage line treatment works, water harvesting structures, farm ponds, percolation ponds, village ponds, land shaping are taken up under this programme. The beneficiaries contribution is 10% of the cost of works if taken up in their patta lands and it is 5% in case of SC/ST beneficiaries. For community works, 5% of the cost of works is collected as beneficiary contribution. During 2011-2012, it is programmed to take up Soil and Water Conservation works in an area of 1227 hectares at a cost of ` 976.06 lakhs.

2.5. Hill Area Development Programme

Hill Area Development Programme is implemented with the aim of restoring and maintaining the ecology of the Nilgiris District. Soil and water conservation works such as stream training works, bench terracing, drainage line treatment works, collection wells, water harvesting structures, terrace support works, silt detention tanks and landslide preventive measures are being taken up in The Nilgiris district. The beneficiaries contribution is 10% of the cost of works if taken up in their patta lands and it is 5% in case of SC/ST beneficiaries. For community works, 5% of the cost of works is collected as beneficiary contribution. The landslide treatment measures are executed with 100% grant. During 2011-2012, it is programmed to take up soil and water conservation works and landslide preventive measures at a cost of ` 501.44 lakhs.

2.6. Soil and Water Conservation in River Valley Project Catchments

The River Valley Project is being implemented in the interstate river valley catchments of Tamil Nadu with the objectives viz., prevention of soil loss to reduce siltation of multipurpose reservoirs, prevention of land degradation, improvement of land capability, improvement of soil moisture regime and promotion of land use to match land capability. Soil and water conservation measures such as silt detention structures, contour bunding, farm ponds, water harvesting structures, drainage line treatments, horticultural plantations, agro forestry are taken up in the catchment area approved by the Soil and Land Use Survey of India (SLUSI) and approved by Government of India. This scheme is implemented under Macro Management of Agriculture with the financial assistance from the Centre and State Governments on 90:10 basis. Under this programme, soil and water conservation measures are taken up with 100% grant. However, works to individual farmer such as land levelling, farm ponds etc., are executed with 25% farmer's contribution. During 2011-2012, it is programmed to take up soil and water conservation works in South Pennaiyar and Mettur river valley catchments of Dharmapuri, Krishnagiri and Villupuram districts in an area of 13400 hectares at a cost of ` 1242.42 lakhs.

3. Water Management Programmes

Water Management Programmes are taken up to optimise water use efficiency in Command Areas, to create new irrigation facilities by harnessing ground water for sustainable irrigation and to promote drip and sprinkler irrigation systems to increase area under irrigated agriculture.

3.1. Command Area Development and Water Management Programme

To improve water use efficiency in canal irrigated areas, On-farm development works are taken up under this programme with farmers participation. The programme is implemented with the financial assistance from the Centre and State Governments on 50:50 basis. On-farm development works such as construction of field channels, rotational water supply and construction of field drains are taken up in the command areas. One time functional grant at the rate of ` 1000/- (State share of ` 450/-, Central share of ` 450/- and Farmers share of ` 100/-) per hectare is given to farmers council for the maintenance of the works. During 2011-2012, the scheme will be implemented in Wellington Reservoir Project (Cuddalore district), Thirukoilur Anicut Project (Villupuram district), Kodiveri Anicut Project (Erode district), Gundar Chittar Karuppanadhi Project (Tirunelveli district), Vaigai Command area (Sivagangai, Ramanathapuram and Madurai districts) and Kudaganar Reservoir Project (Dindigul and Karur districts) in a total area of 27000 hectares with the total outlay of ` 7361 lakhs.

3.2. World Bank Aided Tamil Nadu IAMWARM Project

The World Bank aided Tamil Nadu Irrigated Agriculture Modernization and Waterbodies Restoration and Management (TN IAMWARM) Project is being implemented in Tamil Nadu to increase productivity in irrigated agriculture by promoting micro irrigation scheme. The project is phased over a period of six years from 2007-2008 to 2012-2013. The outlay earmarked for Agricultural Engineering Department under this project is ` 159.58 crores. It is programmed to implement various programmes such as micro irrigation, farm ponds, water harvesting structures, farm mechanisation, improved water conveyance through pipes for command areas, information, education,

communication and capacity building programmes in 60 sub-basins of Tamil Nadu. During 2011-2012, it is programmed to implement the programmes in 50 sub-basins at a total cost of ` 9179.06 lakhs.

4. Agricultural Mechanisation Programme

The Agricultural Mechanisation Programme is being implemented in the State with an aim of popularising the agricultural machinery among the farmers in order to overcome the difficulties that arise due to the shortage of agricultural labourers, to supplement the available farm power, to ensure timeliness in carrying out various farm operations and to increase agricultural production.

4.1. Agricultural Mechanisation Programme under National Agriculture Development Programme (NADP)

The Agricultural Mechanisation Programme under NADP is implemented with the aim of popularising agricultural machinery / implements among the farmers in the state. Subsidy assistance is provided to the farmers for purchasing agricultural machinery / implement as detailed below:-

- Providing 50% subsidy assistance to farmers for the purchase of agricultural machinery / implements subject to the ceiling limit prescribed for each implement.
- providing 50% subsidy assistance subject to a maximum ceiling limit of ` 4 lakhs to farmers for the purchase of High Cost Farm Machinery.
- providing 50% subsidy assistance to farmers for the purchase of Gender friendly equipments limited to ` 5000/- for each implement.

During 2011-2012 this programme will be implemented at an outlay of ` 7230 lakhs.

4.2. Demonstration of Newly Developed Agricultural Equipments and Machinery

Demonstration of newly developed agricultural equipments and machinery is taken up in the farmers fields with 100% financial assistance from Central Government. It is programmed to conduct 450 demonstrations at an outlay of ` 34 lakhs during 2011-2012.

4.3. Training Programme to Farmers in the Field of Agricultural Mechanisation.

Training programmes on new technology in the field of agricultural mechanisation are conducted to farmers with 100% financial assistance from the Central Government. During 2011-2012, it is proposed to conduct 120 training programmes to farmers with an outlay of ` 36.60 lakhs.

5. Machinery Hiring Programmes to Farmers

5.1. Minor Irrigation Machinery

The department is having a fleet of minor irrigation machinery viz., 26 Rotary Drills, 13 Percussion Drills, 21 Mini Drills, 79 Hand Boring Sets, 7 Long Hole Equipments and 37 Rock Blasting Units for hiring out to the farmers for minor irrigation activities such as sinking of new Borewells / Tubewells and revitalisation of dried up wells. Also, the services of 18 A.C.Resistivity Meters and 3 Electrical Loggers are provided to farmers for locating well sites and aquifers.

5.2. Land Development Machinery

Land Development Machinery viz. 94 Bull Dozers, 165 Tractors, 31 Combine Harvesters and 2 Hydraulic Excavators are available in the Agricultural Engineering Department for hiring out to farmers at nominal hire charges for taking up works such as land levelling, land shaping, ploughing and paddy harvesting. The machinery are also used for relief work at the time of flood and natural calamities.

8. TAMILNADU WATERSHED DEVELOPMENT AGENCY (TAWDEVA)

Introduction

Tamil Nadu Watershed Development Agency (TAWDEVA) was established in 2002 and registered under Society Registration Act 1975 with Head quarters at Chennai. This agency is functioning under the administrative control of Government in Agriculture Department and an independent and autonomous authority vested with full executive and financial powers. The primary objective is to develop the wasteland and subsequently the watershed development programmes like National Watershed Development Project for Rainfed Areas (NWDPRA), Watershed Development Fund (WDF) and Integrated Watershed Management Programme (IWMP) funded by various Ministries. National Agriculture Development Programme (NADP) is also implemented by this agency. In addition, from 2010-2011 onwards, Western Ghats Development Programme (WGDP) is implemented in 3 districts viz., Theni, Dindigul and Madurai on Watershed approach basis.

TAWDEVA is the Nodal Agency for various State / Central schemes such as National Agriculture Development Programme (NADP), National Food Security Mission (NFSM), Agriculture Technology Management Agency (ATMA), AGRISNET and National Project on Management of Soil Health & Fertility.

1. Distribution of Government Wasteland to Landless Poor Agricultural Labour Families:

The Government announced this scheme during 2006-2007. The scheme is implemented in all districts

except Chennai and Nilgiris. The lands covered under this scheme are categorized into 3 types:

Category I	:	Government wastelands without any encroachment
Category II	:	Government wastelands under encroachment by small and marginal farmers
Category III	:	Private patta waste lands of small and marginal farmers

Objectives of the Scheme:

i. Identification of wastelands and developing these lands by undertaking land development wherever required and issue of patta to landless poor agricultural labourer families.
ii. Wherever contiguous blocks of 10 acre and above of category I and II lands exist with sufficient ground water, efforts are taken to develop them.
iii. Wherever the private patta wastelands along with punjai lands are available in a cluster of 50 acre and above with sufficient ground water, such lands are taken up for cluster development.

In case, the ground water is not available, depending upon the preference Bio-mass tree species and fodder crops are planted and given to the farmers.

Project Implementation

a. Land Development:

After the identification of wasteland by the Revenue Department, wherever the land development is required, it is undertaken by Agricultural Engineering Department. So far, 33,287 farmers have been benefited through 53,818 acres land development. Under this programme, 16,471 farm ponds have been formed.

b. Development of land parcels of 10 acre and above:

Under the development of land parcels of 10 acre and above in category I and II, 120 clusters with an extent of 2253.78 acres (out of 143 over an extent of 2656.92 acres) with an outlay of ` 609.72 lakhs have been developed by planting of Horticulture crops.

c. Development of Horticulture crops in private patta wastelands along with punjai lands in a cluster of 50 acre and above.

The Government have sanctioned the scheme to develop in the patta wasteland and dry lands of 50 acres and above lands of small and marginal farmers in clusters. So far 47 clusters benefiting 1620 farmers covering an extent of 2627.23 acres have been taken up for development by planting horticulture / bio-mass crops with ` 623.97 lakhs. Out of this, 10 clusters covering an extent of 552.20 acres have been developed.

d. Development of Agriculture crops in private patta wastelands along with punjai lands in a cluster of 50 acre and above.

This scheme is being implemented from 2009-2010 onwards for the development of agriculture crops in patta wasteland and dry lands in an extent of 50 ac. and above lands of small and marginal farmers. So far, 10 clusters covering an extent of 563.03 acres have been taken up for development by planting agricultural crops with ` 275.19 lakhs.

An expenditure of ` 2716.64 lakhs has been incurred towards the development of wastelands.

2. National Watershed Development Project for Rainfed Areas (NWDPRA):

National Watershed Development Project for Rainfed Areas (NWDPRA) Programme is being implemented in Tamilnadu from VIII Five Year Plan (1990 – 1991) onwards. The project is shared between Centre and State on 90:10 basis.

Objectives:

- ❖ Conservation, development and sustainable management of natural resources including their use.
- ❖ Enhancement of Agricultural productivity and production in a sustainable manner.
- ❖ Restoration of ecological balance in the degraded and fragile rainfed eco-systems by greening these areas through appropriate mix of trees, shrubs and grasses.
- ❖ Reduction in regional disparity between irrigated and rainfed areas.
- ❖ Creation of sustained employment opportunities for the rural community including the landless.

The scheme is implemented under the Chairmanship of the District Collector through DWDA at District level and through Watershed committees/Associations at Village level. Under NWDPRA during X plan, an area of 2,90,338 ha was developed with an outlay of ` 130.65 crores covering 755 watersheds in 23 districts.

During XI Plan, it is proposed to treat an area of 1,15,600 ha. covering 200 watersheds in 18 districts at an estimated cost of ` 69.36 crores.

During 2011-2012, it is proposed to treat 20,583 ha with an outlay of ` 12.35 crores.

3. Watershed Development Fund assisted by NABARD:

Watershed Development Fund in Tamilnadu has been created to treat 100 watershed projects at a cost of ` 60 Crores with the assistance of National Bank for Agriculture and Rural Development (NABARD). The scheme is in operation since 2004-2005.

Objective of the scheme:

1. To spread the message of Participatory Watershed Development.
2. Involvement of Government, NGOs/Voluntary organization in implementation.
3. Constitution of Watershed Associations & Watershed Committees to develop the watersheds, based on the local needs.

Components of Watershed Development Fund:

As per new Guidelines made operational since 21.11.2007

1. Capacity Building Phase of Watershed Development Fund is 100% grant component being released by National Bank for Agriculture and Rural Development (NABARD).
2. For the development of watersheds during Full implementation phase funds are provided by NABARD to the State Government on 50% loan and the rest on grant basis. Hence the number of projects has been increased from 100 to 154.
3. Interest rate is 4.5%
4. Repayment period 9 years (3 years after availing Loan)

Project period:

1.	Capacity Building Phase (50 to 100 Ha. to be covered)	18 months.
2.	Preparation of feasibility study report.	6 months.
3.	Full implementation Phase	3 years
	Total period	**5 years.**

Area of Implementation:

At present the programme is being implemented in 24 Districts viz Coimbatore, Cuddalore, Dharmapuri, Dindigul, Kancheepuram, Karur, Krishnagiri, Madurai, Namakkal, Perambalur, Ariyalur, Pudukottai, Ramanathapuram, Salem, Sivaganga, Theni, Thoothukudi, Tirunelveli, Thiruvallur, Tiruvannamalai, Tiruchirapalli, Vellore, Villupuram and Virudhunagar.

Apart from the regular watersheds that are being approved by the State Steering Committee, there are 11 PPID projects (Pilot Project for Integrated Development of Backward Blocks) in 5 Districts namely Ramnathapuram, Dindigul, Thoothukudi, Tiruchirapalli and Nagapattinam which is fully funded by NABARD.

Allotment of fund for different component which would be effective for new Full Implementation projects from 2009-2010.

Unit cost per Ha.		` 12,000
Physical treatment	70 %	` 8,400
Administrative overheads	10%	` 1,200
Livelihood support for Landless Farmer & Women	7.5%	` 900
Community Organisation &Training programme	12.5%	` 1,500

Project Implementation:

In the first 2 years period of the project, Capacity Building is done during the first 18 months and Feasibility Study is done in the next 6 months with the assistance from NABARD.

From the third year the project is handed over to TAWDEVA by NABARD to carry out works in the Full Implementation Phase.

Presently, with NABARD Grant assistance, the number of projects taken up is 154 of which 79 projects are in full implementation stage.

In total so far an area of 20000 hectares has been treated at a cost of ` 1334.78 lakhs. During 2011-2012, treatment works would be taken up in the current 44 full implementation projects handed over to TAWDEVA by NABARD.

4. National Agriculture Development Programme

The National Agriculture Development Programme has been launched to achieve 4% annual growth rate in agricultural sector.

Objective:

- To promote participation of farmers in cluster mode in agriculture.
- Reducing yield gap in key crops through focused interventions.
- Maximize returns to the farmers.
- Bringing quantifiable changes in the production and productivity of agriculture and allied sectors.

The pattern of funding is 100% grant by the Government of India. Under the programme, schemes of Agriculture, Horticulture, Agricultural Engineering, Tamilnadu Agricultural University, Seed Certification, Agricultural Marketing, Animal Husbandry, Dairy Development & Milk Production, Fisheries, Tamilnadu Veterinary & Animal Sciences University, Public Works Department (Irrigation) and Tamilnadu Civil Supplies Corporation are being implemented. Tamilnadu Watershed

Development Agency (TAWDEVA) is the Nodal Agency for National Agriculture Development Programme (NADP).

5. Integrated Watershed Management Programme (IWMP)

The IWMP is being implemented in 1149 watersheds of 24 districts from 2009-2010 onwards. The share of the Central and State funding pattern is 90:10. The Government of India have sanctioned to treat an area of 5.71 lakh Hectares with a project cost of ` 685.25 crores over a project period of 7 years. So far ` 84.18 crores have been released by the Centre and State and an expenditure of ` 19.53 crores has been incurred towards preliminary activities. It is proposed to treat an area of 2.71 lakh Ha in 7 years with a project outlay of ` 325.20 crores for the year 2011-2012.

Objectives:

- Balanced use of Natural Resources and Livelihood by Watershed approach and efficient watershed management by mobilizing social capital.
- Restoring ecological balance by harnessing, conserving and developing national resources.
- Resource development usage will be planned to promote farming and allied activities, to promote local livelihood, to ensure resource conservation and regeneration.
- Creating sustainable water resources and to have sustainable source of income for the rural community by conserving water in watershed areas by following multi tier approach.
- Utilizing the information technology and remote sensing inputs in planning, monitoring and evaluation of programme.
- Promoting overall development in rural areas.

State Level Data Cell (SLDC) in TAWDEVA and Watershed Cell cum Data Centre (WCDC) at district level in DWDA have been established.

For the implementation of the IWMP 2009-2010 projects over a period of 4 -7 years, 20% share amount of Government of India and State amounting ` 61.789 crores has been released so far and under this project, the preparatory phase activities like Base Line Survey, Participatory Rural Appraisal, Entry Point Activities and Detailed Project Report preparation were completed and the project works are under progress. For the year 2010-2011, 62 projects were sanctioned by Government of India and 6% of Government of India and State share of ` 22.391 crores was released by GOI and State Government to carry out preliminary activities.

6. Drought Prone Areas Programme (DPAP):

Major part of Tamil Nadu falls under semi-arid tropical zone with erratic rainfall. To minimize the adverse effects of drought on the production of Crops, Productivity of land, water and human resources, the Drought Prone Areas Programme is being implemented in some districts of Tamil Nadu from 1972-1973 and presently in 80 notified blocks of 17 districts identified by the Government of India as drought prone areas. Efforts are on to mitigate the adverse effects of drought conditions in these areas.

List of blocks wherein the programme is under implementation

Sl.No.	Districts	Blocks
1	Coimbatore	Annur, Avinashi, Palladam, Tirupur, Sulur
2	Dharmapuri	Morapur, Nallampalli, Dharmapuri, Palacode, Pennagaram, Karimangalam
3	Dindigul	Athoor, Natham, Kodaikanal,
4	Karur	Aravakurichi, K. Paramathi
5	Krishnagiri	Bargur, Hosur, Kelamangalam, Shoolagiri, Thalli, Uthangarai, Veppanapalli, Mathur
6	Namakkal	Mallachamudram, Elachipalayam, Puduchathiram
7	Perambalur	Andimadam, Ariyalur, Sendurai, Veppur, Alathur, Jayamkondan
8	Pudukkottai	Gandarvakottai, Karambakudi, Pudukottai, Thiruvarankulam
9	Ramanathapuram	Bogalur, Kadaladi, Kamuthi, Mandapam, Mudukulathur, Paramakudi, Thirupullani
10	Salem	Nangavalli, Mecheri, Konganapuram, M.D. Choultry, Kadayampatti
11	Sivagangai	Devakottai, Ilayangudi, Kalayarkoil, Kallal, Kannangudi, Singampuneri, S.Pudur
12	Thoothukudi	Kayathar, Kovilpatti, Ottapidaram, Pudur, Sathankulam, Thoothukudi, Udangudi, Vilathikulam
13	Tiruchirappalli	Thuraiyur
14	Tirunelveli	Kuruvikulam
15	Tiruvannamalai	Cheyyar
16	Vellore	Vellore, Kaniyambadi, Thimiri, Katpadi, Alangayam, Kanthili
17	Virudhunagar	Kariapatti, Narikudi, Sattur, Sivakasi, Vembakottai, Virudhunagar, Aruppukottai

Over the years, the objectives of the programme and the mode of implementation have undergone modifications from infrastructure creation and employment generation to rainwater harvesting and concentration on overall economic development through water-based activities. On the operational side, implementation has shifted from line departments to Village Panchayats wherein the user groups have identified the works and execute the works through village panchayats as per Hariyali Guidelines. Watershed approach with peoples' participation is given importance to tackle the problems of desertification. The Government of India and State Government share the expenditure for a watershed project with 500 hectares in the ratio of 75:25. The duration of the project is five years from the year it was sanctioned and the unit cost per hectare is ` 6000/-. The cost of the works undertaken under this programme is entirely met from project fund. However 10% contributions are collected from beneficiaries. In respect of community works and SC/ST, the contribution amount is 5% of the value of the work. These funds are deposited in a separate account maintained in the watershed and it will be utilized for the maintenance of the assets created under these programme after exit.

The following activities are taken up under the Drought Prone Areas Programme:-

Land Development	:	Land Levelling, Contour Bunding, Silt Application, Stone Bunding, Retaining Wall, Summer Ploughing, Vegetative Bunding and Continuous trenching.
Water Resources Development	:	Cattle Pond, Farm Pond, Formation of Oorani, Desilting of Tanks, Formation of Supply Channel and desilting, Check Dams, Percolation Pond and Development of Drinking Water Resources.

Plantation Activities	:	Agro Forestry, Horticulture Plantation, Fodder Development, Crop Demonstration, Community Nursery, Social Forestry and Homestead Garden.

Under Drought Prone Areas Programme, watersheds are sanctioned by Government of India in batches. From 1999-2000 to 2006-2007 the Government of India have sanctioned 1,222 watersheds in 7 batches at a total project cost of ` 33,670 lakhs, for treating a total area of 6,14,142 Ha. The Government of India and State Government have released ` 29,604.64 lakhs. Of which ` 27,748.71 lakhs have been spent by the District Rural Development Agency of 17 districts and a total area of 5,12,199 Ha have been treated. The details of ongoing 1,222 watersheds are given below.

(Rs. in Lakhs)

No. of Ongoing Watersheds	1,222
Projects cost	33,670.00
Government of India	25,252.50
Government of Tamil Nadu	8,417.50
Amount Released (upto March 2011)	29,604.64
Government of India	22,258.29
Government of Tamil Nadu	7,346.35
Expenditure (upto March 2011)	27,748.71 (94%)
Area Treated (Hect) (upto March 2011)	5,12,199 (83%)

During the financial year of 2010-2011, the Government of India have released ` 1,618.195 lakhs and the State Government have released its share of ` 505.162 lakhs under DPAP and the programme is being implemented.

7. Integrated Wasteland Development Programme (IWDP):

Integrated Wasteland Development Programme aims at tackling the non-forest wasteland in non-DPAP blocks. The basic theme of the programme is to harvest the rainwater and to bring the degraded lands into productive use. Unlike DPAP programme, flexibility is given to tackle the non-forest wastelands on a project based approach. This programme is being implemented in 96 blocks of 24 districts as detailed below:

List of blocks wherein the programme under implementation

Sl. No.	Districts	Blocks.
1	Coimbatore	Pongalur , Periyanaickenpalayam, Sarkar Samakulam, Pollachi (North), Kinathukidavu (I, II), Madhukarai
2	Cuddalore	Cuddalore, Panruti, Mangalur
3	Dharmapuri	Harur(I, II & III), Pappireddipatti
4	Dindigul	Vedasandhur, Vathalagundu, Vadamadurai, Dindigul, Gujiliamparai
5	Erode	Moovalur, Thalavadi, Anthiyur, Perundurai, Sathyamanglam
6	Kancheepuram	Kancheepuram, Walajahbad, Mathuranthagam
7	Karur	Kadavur, Thogamalai, Krishnarayapuram(I,II)
8	Krishnagiri	Krishnagiri (I & II), Kaveripattinam
9	Madurai	Alanganallur, Melur, Chellampatti, Usilampatti, Kallikudi
10	Namakkal	Sendamangalam, Kolli Hills, Namagiripettai, Pallipalayam, Rasipuram

Sl. No.	Districts	Blocks.
11	Perambalur	Perambalur, Ariyalur, Sendurai, Thirumanur, T. Pazhur, Veppanthettai(I & II)
12	Pudukkottai	Aranthangai, Avudaiyarkoil, Tirumayam
13	Ramanathapuram	Nainarkoil, R.S. Managalam (I & II)
14	Salem	Sangagiri, Veerapandy, Panamaruthupatti, Valapadi, Pedhanaickanpalayam
15	Sivagangai	Sivaganga, Manamadurai , Thiruppuvanam, Sakkottai
16	Theni	Periyakulam, Bodinayakanur
17	Thoothukudi	Srivaikundam, Alwarthirunagar (I & II), Tiruchendur, Karungulam
18	Tiruchirappalli	Thathayangarpettai, Uppiliyapuram, Manachanallur , Musiri, Pullambadi, Marungapuri, Vaiyampatti
19	Tirunelveli	Nanguneri (I & II), Kalakkadu
20	Thiruvallur	Poondi, Pallipattu, R. K. Pet, Tiruvalangadu
21	Tiruvannamalai	Vambakkam, Kalasapakkam, Thandarampattu, Puduppalayam
22	Vellore	Wallajah , Sholinghur, Natrampalli, Jolarpet
23	Villupuram	Vanur, Marakanam, Gingee, Melmalayanur
24	Virudhunagar	Vembakottai, Sivakasi, Virudhunagar, Rajapalayam, Srivilliputhur, Thiruchuli

This programme is under implementation since 1993-1994. From 1st April 1995, the programme has also been brought under the purview of the Common Guidelines like Drought Prone Areas Programme, presently it is

governed by Hariyali Guidelines. As per Hariyali Guidelines the User Groups have identified the works and execute the works through village panchayat. The duration of the project is five years from the year it was sanctioned. The unit cost per hectare is ` 6000/-. The cost of the works undertaken under this programme are entirely met from project fund. However 10% contributions are collected from beneficiaries. In respect of community work and SC/ST, the contribution amount is 5% of the value of the work. These funds are deposited in a separate account maintained in the watershed and it will be utilized for the maintenance of the assets created under these programme after exit. The expenditure is shared between Central and State Government in the ratio of 11:1

The following activities are taken up under the Integrated Wasteland Development Programme:-

Land Development	:	Land Levelling, Contour Bunding, Silt Application, Stone Bunding, Retaining Wall, Summer Ploughing, Vegetative Bunding and Continuous trenching.
Water Resources Development	:	Cattle Pond, Farm Pond, Formation of Oorani, Desilting of Tanks, Formation of Supply Channel and Desilting, Check Dams, Percolation Pond and Development of Drinking Water Resources.
Plantation Activities	:	Agro Forestry, Horticulture Plantation, Fodder Development, Crop Demonstration, Community Nursery, Social Forestry and Home Stead Garden.

Under Integrated Wasteland Development Programme, watersheds are sanctioned by Government of India in projects. From 1999-2000 to 2006-2007 the Government of India have sanctioned 910 watersheds in 80 projects at a total cost of ` 26,220.39 lakhs, for treating a total area of 4,57,596 Ha. The Government of India and State Government have released ` 22,714.53 lakhs. Of which ` 21,042.54 lakhs have been spent by the District Rural Development Agency of 24 districts and a total area of 3,57,104 Ha have been treated. The details of ongoing 80 projects are given below.

(Rs. in Lakhs)

No. of Ongoing Projects	80
Projects cost	26,220.39
Government of India	24,241.43
Government of Tamil Nadu	1,978.96
Amount Released (upto March 2011)	22,714.53
Government of India	21,011.32
Government of Tamil Nadu	1,703.21
Expenditure (upto March 2011)	21,042.54 (93%)
Area Treated (Hect) (upto March 2011)	3,57,104 (78%)

During the financial year of 2010-2011, the Government of India have released ` 1,361.071 lakhs and the State Government have released its share of ` 127.179 lakhs under IWDP and the programme is being implemented.

8. Western Ghats Development Programme

Western Ghats Development Programme (WGDP) is implemented in Tamil Nadu since 1975-1976. This programme is presently implemented in eight districts of which Theni and Kanyakumari Districts are fully covered under Western Ghats Development Programme while the

rest are partially covered. From 2010-2011, implementation of Western Ghats Development Programme for Dindigul, Theni and Madurai is being done through Tamil Nadu Watershed Development Agency (TAWDEVA) on pilot basis.

Objectives

1. To take up all conservation activities on a watershed approach;
2. Maintaining ecological balance;
3. Preservation of genetic diversity;
4. Restoration of ecological system damaged by human interaction and
5. Creation of awareness among people and educating them on the far-reaching implications of ecological degradation and securing their active participation in the eco-development schemes.

Under this programme, the main developmental activities undertaken include Soil and Water Conservation, Horticulture, Forestry, Minor Irrigation, Rural roads, Fisheries, Sericulture, Welfare of Scheduled Castes and Scheduled Tribes, Tourism and Gap filling Infrastructure through the concerned departments.

Through TAWDEVA, in Dindigul, Madurai & Theni districts, developmental works are being implemented in 55 watersheds to the tune of ` 698.21 lakhs from the financial year 2010 - 2011 and the expenditure incurred so far is ` 336 lakhs.

9. AGRICULTURAL EDUCATION, RESEARCH AND EXTENSION

Tamil Nadu Agricultural University undertakes the triple major activities of Teaching, Research and Extension. In India, 40 per cent of the population is engaged in agriculture. The labour scarcity in agriculture, spiraling price, increase in the cost of inputs, unstable income to the farmers for their produce, less proportionate increase in farm gate price for important food commodities like rice, pulses and oilseeds, inspite of a steep rise in consumer prices have created problems and thrown challenges to famers.

Tamil Nadu Agricultural University is spearheading its research to evolve high yielding varieties and develop technologies for reducing the cost of cultivation. Additionally, new machineries and implements were developed to reduce the drudgery of labour and to cover more area within short span of time. The developed technologies were disseminated to the farmers through method demonstrations. Price forecast are also made to enable the farmers to get profitable price for their produce. Tamil Nadu Agricultural University is involved in educating and empowering the students and human resources involved in Agriculture on par with the developed nations by updating the syllabus in the academic curriculum.

1. Agricultural Education

Tamil Nadu Agricultural University has structured the agricultural education to suit to the changes taking into consideration the scientific developments. In the year 2010-2011, the number of students enrolled in Under Graduate programmes were 767 and 346 in Tamil Nadu Agricultural University colleges and affiliated colleges

respectively. During 2011-2012, it is proposed to admit 800 students under single window system. In seven Bachelor of Technology courses 290 students got admitted under self supporting programme.

In the academic year 2010–2011, 370 students are undergoing Postgraduate studies and 216 in Doctoral programme. Dual degree programmes are being offered in collaboration with Cornel University, USA and Integrated post graduate programme is taken up with Mc Gill University, Canada. As a part of the dual Degree programme 8 students were selected during 2010-2011 and are undergoing their studies at Nova Scotia Agricultural College, Canada.

During 2011-2012, Nano technology, Remote Sensing and GIS, Commerce and Intellectual Property Rights were included in the syllabus for Under Graduate programme. As per the Announcement of the Hon'ble Chief Minister, the new Horticultural College and Research Institute for Women has been established, in an area of 50 acres adjoined to the existing Agricultural College and Research Institute at Navalur Kuttapattu, Manikandam Block in Srirangam at Tirchirapalli District at an estimated cost of ` 40 crores. In this college, during the current academic year 2011-2012 itself 39 girl students have been joined in the above institution.

Two year diploma in agriculture is offered in six research stations of the university *viz.,* Oilseeds Research Station, Tindivanam, Agricultural Research Station, Bhavanisagar, Horticultural Research Station, Pechiparai, Rice Research Station, Ambasamudram, Regional Research Station, Aruppukottai and Agricultural Research Station, Kovilpatti and in the five of the affiliated colleges

(Thanthai Rover Agriculture and Rural Development Institute, Perambalur, Ramakrishna Institute of Agriculture, Periyanayakkanpalayam (Coimbatore), Agriculture and Rural Development Institute, Thakkolam, Vanavarayar Agricultural College, Pollachi and Aathi parasakthi Agricultural College, Kalavai). In the academic year 2010-2011, 575 students were admitted for the Diploma in Agriculture. Two year Diploma in Horticulture with a strength of 75 students is offered at Thanthai Rover Agriculture and Rural Development Institute, Perambalur.

It is noteworthy to mention that seven alumni of Tamil Nadu Agricultural University got selected in Indian Administrative Service and six in Indian Forest Service during 2010-2011.

The Open and Distance Learning Directorate has introduced under graduate programme in B.Sc. (Farm Science & Technology) for the farmers, where 229 farmers have enrolled during 2010-2011. This directorate is also offering three Post Graduate degree programmes. Certificate courses of 6 months duration is offered in Tamil on 21 important topics in agriculture and allied sciences; and in English 9 topics exclusively for the benefit of the urban dwellers.

2. Agricultural Research

2.1. Research Findings 2010-2011

In Tamil Nadu Agricultural University, the research activities are carried out by the scientists in all the 11 colleges, 36 research stations and 14 Krishi Vigyan Kendras. The outcome of the research is manifested by the release of 13 new crop varieties namely TNAU Rice Co 50, TNAU Rice TRY 3, TNAU Wheat CoW 2, TNAU Sorghum Co 30, TNAU Blackgram Co 6, TNAU Groundnut Co 6, TNAU Hybrid Sunflower Co 2, TNAU Sugarcane Si 7,

TNAU Coconut ALR 2, TNAU Brinjal VRM 1, TNAU Hybrid Tomato Co 3, TNAU Hybrid Chilly Co 1, TNAU Celery OTY 1 and 2 farm implements namely, Needle type tray seeder for vegetable nursery, Trailer mounted steering for power tiller – trailer system and one Management technology on Sorghum composite biscuit making.

2.2 Research Programme for 2011-2012

- In plant breeding and genetics, evolving high yielding, disease resistant varieties of rice, sorghum and cumbu varieties are in progress. Evolution of nutritionally superior ragi varieties with high Calcium, Zinc and Iron content is under progress. Development of medium duration (130 – 135 days) and long duration (180 days) redgram hybrids based on cytoplasmic genetic male sterile lines; development of high yielding varieties of greengram and blackgram with synchronous maturity and resistance to mungbean yellow mosaic virus are in progress in pulses breeding. In oil seed crops, breeding for high oil and drought tolerant varieties in sunflower and groundnut are in progress.
- To reduce the cost of cultivation of crop and to increase the income, the agronomical technologies will be developed. Through integrated farming system the farm income will be increased. Technologies will be developed to sustain the crop productivity under global warming situation. Technologies to enhance the water holding capacity in rainfed lands and to mitigate the mid season drought will be identified. To overcome the labour scarcity, mechanization will be promoted to reduce the cost of cultivation and increase the profit. Use of biofertilizer to supply various nutrients to the crop, use of microbes in value addition, research on bioenergy will be taken up. Establishment of model seed production demonstration farm will be taken up in

identified districts. Seed production of pulses and oilseeds under farmers' participatory mode will be taken up. Trainings to enhance the efficiency and capacity building for seed entrepreneurs will be imparted.

- Efficient strains of bio fertilizers will be identified. Microbes will be utilised for value addition, vaccines for viral infections, crops suitable for bioenergy exploitation. The moringa strains with high seed oil content will be identified. High yielding and pest resistant vegetables will be screened.
- Mechanization in rainfed farming will be given importance. Machines for land shaping, seed drills, plant protection equipments, harvestors etc., will be popularized among the farmers.
- Development of papaya hybrids with improved fruit quality and resistance to Papaya Ring Spot Virus (PRSV) is in progress. Standardization of high density planting (HDP), Ultra High Density Planting (UHDP) and fertigation practices will continue to assume importance in mango, banana and papaya.
- In onion, integrated nutrient management, weed management are to be recommended to the farmers. In amaranthus, organic farming practices will be standardized. The seed production will be strengthened to produce quality seeds of major vegetable crops. Management of Yellow Vein Mosaic Virus (YVMV) disease in bhendi and Tomato spotted wilt (TOSPO) virus disease management in tomato by Integrated Pest Management (IPM) will be taken up.
- Effort to develop technologies for round the year production of jasmine through physiological interventions will be standardised. Developing export packaging technology with strategy to minimize fragrance loss of jasmine through Modified Atmospheric Packaging

(MAP), Controlled Atmospheric Storage (CAS) and Nanotechnology is to be standardised. Development of varieties with higher yield and concrete recovery in tuberose will be taken up. Standardization of improved production technologies for under exploited loose flowers Nerium, Chrysanthimum, Hibiscus, *Tabernae montana*, Ixora, etc will be continued. Standardization of improved growing systems for achieving higher yield and quality in cut flowers like liliums, carnation and specialty flowers *viz.*, Heliconia, Bird of Paradise, Alpinia, Bromeliads, Alstroemeria will be done. Identification of ornamental plant species to adapt low water conditions (i.e.) Xeriscaping to have lesser demand for water and improved turf establishment and management techniques in the landscaping areas.

- Standardization of technology for rapid multiplication of turmeric seed rhizome will be taken up. Standardization of drip and fertigation technology for cocoa will be continued. Technology for decomposition of cocoa leaf and pod waste in coconut based cropping system, Identifying suitable ginger type for growing under coconut ecosystem, Standardization of nutrient requirement for leafy coriander production will be taken.
- Field evaluation of improved culture of Medicinal coleus and glory lily will be continued. Rapid multiplication techniques using micro tubers in glory lily will be intensified. Crop production techniques in cancer curing medicinal species viz., *Annona muricata* (soursop), *Mappia foetida* will be evolved. Standardization of techniques to grow high value new aromatic oil crops such as tea tree will be taken up.

3. Extension

3.1 Automatic Weather Stations

Automatic Weather Stations were installed in 224 blocks in Tamil Nadu, one in each block. With the funds received from NADP second phase, 73 additional Automatic Weather Stations will be established. In the third phase 88 additional Automatic Weather Stations will be established so as to complete all the 385 blocks in Tamil Nadu.

Training has been imparted to 766 agricultural extension officers. Weather forecasts are used in day-to-day planning and execution of farm operations, saving of inputs viz., fertilizer, plant protection chemicals, irrigation water, efficient labour usage. Yield increase in different crops ranged between 8 - 15 % and farm income by 10 – 18 % by practicing weather based farming. Monitoring extreme weather events such as droughts, floods and cyclones, assessing their impact and planning to manage in an efficient way using real time weather and weather forecast information.

3.2. Precision farming project

Precision farming was demonstrated in an area of 53,885 hectare where, each farmer was allotted a unit functional in one hectare area and 53,885 farm families got benefitted.

Under the World Bank funded, Tamil Nadu - Irrigated Agriculture Modernisation of Water bodies Restoration and Management (TN-IAMWARM) scheme, after seeing the success in Dharmapuri district, the project has been extended to 5000 ha spread over 19 river sub basins. The benefits derived out of the mega scheme include doubling of productivity per hectare in 45 crops and the proportion of marketable produce was more than 90%. Saving of 40 % water and 33 % electricity was recorded. Timely harvest of agricultural produce was done. Farmers developed skill on

the technologies such as community protray nursery, chisel ploughing, crop selection, drip fertigation, sorting and grading.

Crop Gene Bank in the name "Ramaya Gene Bank" was established to store seeds without loosing viability for 5-20 years.

In the Center for Plant Molecular Biology, research has been taken up in major crop varieties for biotic and abiotic stress tolerance and nutritional quality through marker assisted breeding and genetic transformation. Improvement of popular rice varieties of Tamil Nadu, namely, CO43, white Ponni and ADT 43 for salinity tolerance, submergence tolerance and drought tolerance through Marker Assisted Selection are being taken up. Evolving vitamin A and iron enriched rice varieties, micro nutrient rich maize are in the pipe line. In banana, papaya and cassava resistance to viral diseases is being tested under controlled conditions. Molecular diversity studies on major economically important insects are being carried out to devise population specific insect control measures.

The phosphorus deficiency was identified in Tamil Nadu as 40 percent, of which 6 districts was rated low and rest of the districts rated as medium. This deficiency can be overcome by applying 40% acidified rock phosphate application.

Using remote sensing, the changes in fertility status of Tamil Nadu soils mapped using remote sensing.

Nano fertilizers with high fertilizer use efficiency and nano weedicides for effective control of dry land weeds are being tested.

In seed production technology, the quality paddy seed production was carried out under system of rice

intensification. Halopriming of cucumber seeds for long term storage has been standardized. Biopriming of maize seeds has been taken for quality seeds and vigorous seedling production. The sunflower seeds was fortified for increasing the germination efficiency and seedlings vigor.

Split application of fertilizers by applying 100 per cent Recommended Dose of Fertiliser (RDF) (165:52.5:495 g Nitrogen (N) Phosphorus (P) Potassium (K) /plant) in banana cv. Grand Naine and for Neipoovan, RDF dose of 228 : 20 : 372 kg NPK/ha at four critical stages viz.,3rd, 5th, 7th and 9th month after planting to get higher bunch yield standardised. In onion, foliar spray of NPK (20:20:20) @ 0.5% on 30, 45 and 60 days after planting recorded the highest marketable yield of 29.07 t/ha. Organic cultivation of vegetables i.e., continuous application of Farm Yard Manure (FYM) @ 10 t/ha + vermicompost @ 2.5 t/ha was found to increase the yield of bhendi and tomato to the tune of 11.9 and 43.6 t/ha respectively.

Standardized Precision production technology i.e., for marigold (125 per cent RDF (RDF = 90: 90: 75 kg/ha of NPK) + 0.2% humic acid) recorded the highest flower yield (77.0 t/ha). Tuberose varieties viz., 'Prajwal' (single type) and 'Suvasini' (double type) were identified as suitable for cultivation in the flower growing areas of Tamil Nadu. Standardized Export packaging technology for jasmine which involved treating flower buds with 4% Boric acid and packing them in Corrugated fibre board boxes for short distance (Dubai) market and in thermocole boxes for long distance (USA) markets. Standardized fertigation schedule (150:100:300 kg NPK/ha) through water soluble fertilizers to get higher dry seed yield and tuber yield in glory lily (1177 kg/ha of seed and 2149 kg/ha of rhizome).

The invasive papaya mealybug, *Paracoccus marginatus* was a great challenge for the scientists. For the biological control of the papaya mealy bug, *Acerophagus papayae,* a parasitoid was imported, mass multiplied in all the seven college campuses, 36 research stations and 14 Krishi Vigyan Kendras(KVKs) and distributed free of cost to the infested field throughout the state for the field release. So far 6,65,000 parasitoids were produced and distributed. The estimated saving of crop loss due to the release of parasitoid amounts to ` 435 crores besides 122 crores by avoiding pesticide spray as indirect benefit. The nucleus cultures of the egg parasitoid, Trichogramma, *Chrysoperla* and Australian lady bird beetle, *Cryptolaemus montrouzieri* were produced and distributed. Blends of sex pheromone compounds for gram podborer, *Helicoverpa,* brinjal shoot and fruit borer, rice stemborer and leaffolder were formulated and evaluated for their efficacy. Biocontrol agents like *Trichoderma viride, Pseudomonas fluorescens and Beauveria* were produced and distributed to the farmers for the management of pests, diseases and nematodes of various crops. Mass production technology including bioefficacy and toxicology data of *T.viride* and *P.fluorescens* have been issued to 40 entrepreneurs this year.

Tamil Nadu Agricultural University has commercialized the production technology for *Pseudomonas, Trichoderma*, Panchakaviya, equipment to separate eggs of stored pests from grains, ready mix cumbu, herbal insect repellent, weeder for System of Rice Intensification, Solar tunnel drier, cry 2 A gene, beetle trap, preservation of banana pseudostem, parental lines for bhendi hybrid seed production.

3.3. Market intelligence for agricultural produces

The prevailing market price for 13 agricultural commodities, Cumbu, Maize, Cotton, Groundnut, Sunflower, Gingelly, Turmeric, Coriander, Chillies, Blackgram, Bengalgram, Potato and Small onion prior to sowing and during harvest are being disseminated through English and Tamil dailies, radio, television, web portals, hand outs, short message services through mobile phones to 2 lakh farmers. The price forecast made by this cell has achieved a reliability of 95 per cent for all forecasts.

3.4. Domestic and Export Market Intelligence Cell (DEMIC)

Market Intelligence information on real time price, price forecast are provided to enable the farmers to market their agricultural produces.

During the past five years, Domestic and Export Market Intelligence Cell (DEMIC) had 325 forecasts were disseminated through 7 English and 6 Tamil dailies. The information is published in fortnightly and monthly magazines viz., Uzhavarin Valarum Velanmai, Thozil Ulagam, Pasumai Vikatan and Valarum Vivasiya Tamizhagam. The price forecasts are disseminated through 21 Market Committees and their regulated markets. Domestic and Export Market Intelligence Cell (DEMIC) disseminates price intelligence to 12,000 farmers through Short Message Service (SMS). Besides this, forecast is sent through Voice Short Message Service to 2 lakh farmers in collaboration with Indian Farmers Fertiliser Co-operative Sanchar Ltd., and Dr.M.S.Swaminathan Research Foundation, Chennai. The price of different commodities collected from different markets of India are enlisted based on the categories, in Tamil and English, updated in web site

in www.tnagmark.tn.nic.in. and so far 60,000 farmers have viewed the web site.

3.5. e-Velanmai

Through 'e-Velanmai' - an innovative Information Communication Technology (ICT) based technology transfer model in agriculture had enrolled 1300 farmers as members. So far 3750 scientific advices were sent to the members within a short span of 1-3 hours. During 2011-2012, the 'e-Velanmai' model of technology transfer is expanded and implemented in 19 sub basins of Tamil Nadu. Field Co-coordinators facilitate interaction and technology transfer between the scientist and the farmers using Information Communication Technology tools. Farmers were trained in handling the ICT tools to frame digital photograph of crop status and send the same to the scientist of TNAU to receive technical advices.

3.6. Tamil Nadu Irrigated Agriculture Modernisation of Water bodies Restoration and Management (TN-IAMWARM) scheme

Under Tamil Nadu Irrigated Agriculture Modernisation of Water bodies Restoration and Management (TN-IAMWARM) scheme, rice cultivation under System of Rice Intensification (SRI) showed an increase in yield from 40 to 80 per cent compared to the conventional methods. High yield was recorded in pulses and Bellary onion in Varahanathi and Palar sub basins. Farmers were also trained in large number under this project.

10. SEED CERTIFICATION AND ORGANIC CERTIFICATION

1. Introduction

'As you sow so you reap' goes the old saying. Seed is a vital input to increase the production and productivity of agricultural crops. Using the other technical inputs like irrigation, pesticide and fertilizer, etc in the right proportion will step up agricultural productivity. New high yielding hybrid seeds and quality certified seeds play vital role in increasing agricultural production. The seeds used should not only posses high germination, but also should be genetically pure. Making available adequate quantity of quality seeds at the time of sowing for the right season is vital for increasing agricultural production.

The certified seeds are produced by the Government, Co-operatives and also by Private agencies. The role of private seed producers in the production of certified paddy seeds has increased considerably over the years and paddy seeds have accounted for 92% of the total certified seed production. The private seed producers are encouraged to produce more certified seeds to meet the quality seeds requirement in Tamil Nadu. In order to achieve the above objectives the Department is implementing Seed Certification, Seed Quality Control, Seed Testing, Training and Organic Certification schemes.

2. Seed Certification

This Department carries out the functions of the Seed Certification Agency in accordance with the provisions of The Seeds Act 1966 and The Seeds Rules 1968, to maintain the quality of seeds produced in the State. It is a regulatory process designed to secure, maintain and make

available, the prescribed levels of seed quality namely, germination, physical purity, genetic purity and seed health. During 2010-2011, the quantity of certified seed produced was 93551 M.T, of which 23.94% was contributed by Government, 2.87% by Quasi Government and 73.19% by Private seed producers.

The private sector seed production need to be promoted further to meet the gap between availability and requirement of quality seeds. During the year 2010-2011, 93551 M.T of seeds were certified against the target of 84630 M.T of seeds. It is proposed to certify 95000 M.T of various crop seeds during 2011-2012.

3. Seed Inspection

It is essential to ensure distribution of quality seed material to the farming community. The basic objective of the Seed Legislation is to regulate the quality of seeds sold to farmers. The Seed Inspection wing of this Department is in charge of regulating the quality of seeds sold in accordance with the provisions of The Seeds Act 1966, The Seeds Rules 1968, The Seeds (Control) Order 1983 and The Environment (Protection) Act 1986.

To ensure the quality of seeds distributed to the farmers seed selling points are inspected periodically, seed samples are drawn from seed lots kept for sale and sent for analysis to the notified Seed Testing Laboratories. Based on the results, legal action is being initiated against the defaulters. The Seed Inspection wing is issuing licenses for Seed dealers under the provisions of The Seeds (Control) Order, 1983.

During 2010-2011 as against the target of 67000 seed selling point inspections, 62502 inspections were

made and against the target of 65000 seed samples to be drawn 55016 seed samples were drawn for quality check. There are 9122 licensed seed selling points functioning in the State.

During 2010-2011, 1261 seed lots of 1770.820 M.T worth ` 700 lakhs were found sub standard and stopped from sale to farmers. Based on this 523 cases were filed in the court of law of which 431 cases were decided in favour of the Government. It is proposed to make 67500 seed selling point inspections and to draw 65000 seed samples for quality check during the year 2011-2012.

4. Seed Testing

Seed testing plays a pivotal role in modern agriculture. It is being carried out to analyze factors like germination, physical purity, moisture, seed health and admixture of other distinguishable varieties. Seed testing is carried out in the notified seed testing laboratories. The Seed testing results are very important for the successful implementation of Seed Certification and Seed Law Enforcement programmes. Apart from certified seed samples and samples received from the seed quality control wing, the service samples sent by the farmers, seed dealers and seed producers are also tested in these laboratories.

During the year 2010-2011, a total number of 85334 seed samples were tested as against the target of 75000 seed samples. During the year 2011-2012 it is proposed to analyze 86000 seed samples.

To determine the genetic purity of a given seed lot, the grow out test is conducted at the Grow Out Test Farm situated at Kannampalayam (Coimbatore). Genetic Purity Tests are conducted for the certification of parental, hybrid and foundation one class of cotton seeds and also for the

samples received from the Seed Inspection wing. DNA (Finger Print) Laboratory is functioning at the Directorate of Seed and Organic Certification which enables quick genetic confirmation of crop varieties.

5. Training

To promote quality seed production and distribution the following training programmes are organized by the training wing of this Department.

5.1 Orientation Training

Training is given to the newly recruited technical officers of this Department on Seed Certification procedures, field inspections, identification of crop varieties, processing, sampling, tagging and procedures involved in Seed Testing and Seed Quality Control.

5.2 Refresher Training

The already positioned technical officers of this Department are trained on the latest techniques on seed production and on identification of newly released varieties.

5.3 Training to Seed Producers

The training is given on the seed production to seed producers. The training includes seed growers who are mostly small and marginal farmers.

5.4 Quality control training to Seed Dealers.

Training is given to the seed dealers on quality maintenance in storage, selling of seeds and on the regulatory aspects of seed legislation.

The number of beneficiaries under various training programmes was 41673 during the year 2010-2011 and it is proposed to train 41800 persons during the year 2011-2012.

6. Organic Certification

Organic farming is a production system, which eliminates the use of synthetically compounded fertilizers, pesticides, growth regulators, livestock feed additives and genetically modified organisms. It is the key to the sound development of sustainable environment. It minimizes environmental pollution and maximizes the use of renewable natural resources. Organic farming not only restores soil fertility, but also reestablishes natural balance and thereby conserving bio diversity. Organic farming is also a solution to global warming.

Organic Certification is a certification process for producers of organic agricultural products and generally involves a set of production standards for growing, storage, processing, packaging and shipping for which a written assurance is given by the certification body. The agricultural produce from organic farms are highly nutritive, contains more antioxidants and has no residual toxins of fertilizers, pesticides, antibiotics and hormones. Organic Certification intends to assure quality of organic products and aims at regulating and facilitating the sale of organic products to consumers. It addresses the growing worldwide demand for organic food.

Tamil Nadu Organic Certification Department (TNOCD) was established in the year 2007-2008 to carryout inspection and certification of organic production system in accordance with National Programme for Organic Production (NPOP), which was launched by Government of India in the year 2000 and notified in October 2001 under the Foreign Trade (Development and Regulation) Act 1992. Tamil Nadu Organic Certification Department has been accredited by Agricultural and Processed Food Products Exports Development Authority (APEDA), New Delhi,

Ministry of Commerce and Industry, Government of India. The accreditation number allotted to Tamil Nadu Organic Certification Department is NPOP/ NAB/ 0019. Organic Certification carried out by this Department is on par with the standards of European Union. Tamil Nadu Organic Certification Department also imparts free training to registered organic farmers on National Standards for Organic Production and Tamil Nadu Organic Certification Department Standards.

During the year 2010-2011, 28115 acres of land have been registered under Organic Certification as against the target of 28000 acres. This includes 427 individual farmers possessing 8204 acres of land, 37 groups containing 7945 farmers holding 19488 acres and 27 corporate firms holding 423 acres. During 2011-2012 it is proposed to register an area of 30000 acres of land under Organic Certification.

11. DEPARTMENT OF AGRICULTURAL MARKETING AND AGRI BUSINESS

1. Introduction

Agricultural marketing system is the critical link between farm and non-farm sector. Agricultural marketing adds value to the produce in terms of time, place and farm utilities as it encompasses all the steps involved from the producer to the consumer including various post harvest operations such as assembling, grading, storage, transportation and distribution. Apart from performing physical and facilitating functions of transferring the goods from producers to consumers, the marketing system also performs the function of discovering the prices at different stages of marketing and transmitting the price signals in the marketing chain.

The prime objective of the Department of Agricultural Marketing and Agri Business is to help the farmers in marketing their agricultural produce at a fair price and to ensure remunerative returns to them. The Department of Agricultural Marketing, functioning since 1977 was renamed in the year 2001 as “Department of Agricultural Marketing and Agri Business” to focus on other activities like Agri Export, Post Harvest Management and Food Processing besides regulating the agricultural marketing.

2. Activities of the Department of Agricultural Marketing and Agri Business

i. Ensuring fair price to agricultural produce through Regulated markets and thereby benefitting the farmers.
ii. Creation of marketing infrastructures, formation of commodity groups and market linkage.

iii. Creating awareness on grading, storage and value addition of agricultural produce in Regulated markets by providing training, publicity and propaganda.
iv. Agmark grading of agricultural, animal husbandry and forestry products.
v. Promoting the export of agricultural produce through Agri Export Zones by increasing the area under export quality crops and providing necessary post harvest management support and infrastructure facilities.
vi. Disseminating market price information of Regulated markets and Farmers' market through media and internet on daily basis for the benefit of farmers.
vii. Promoting the establishment of food processing industries to minimize the wastage of agricultural produce and to increase the employment opportunities.
viii. Maintenance of Farmers' market for the benefit of farmers as well as consumers.

3. Market Committees and Regulated Markets

Regulated Markets are established for better regulation of buying and selling of agricultural produce. Regulated Markets act as a common forum to farmers and traders on equal footing for marketing of agricultural produce eliminating middlemen. There are 21 Market Committees under which 277 Regulated Markets are functioning. These Market Committees are functioning with members nominated by the Government and Chairpersons elected by the Members. No fee is collected from farmers for the services rendered. One percent of the sale value of the produce is collected as market fee from traders. Besides, license fee is also collected from traders and weighmen. Facilities like electronic weigh bridges, weighing balances, godowns, immediate payment after auction, daily price information, rest sheds for farmers, drinking water, cattle sheds, free medical aid to farmers and input shops are also provided in the Regulated Markets.

The information on commodity price prevailing in various markets is made available to farmers to get better price by moving their produce at right time to the market. For dissemination of market price information among the farmers, 184 regulated markets and 21 market committees have been provided with computers. During 2010-2011, about 16.89 lakh MT of agricultural produce have been sold by farmers through Regulated markets. Market committees have collected a revenue of ` 72.27 crores as receipts from traders.

3.1. Uniform Notification

Uniform notification nullifies the disparity in the sale price of agricultural produce prevailing in the notified and non notified market areas of Market Committees. Market Committees shall levy market fee for any notified agricultural produce bought or sold in the notified market area. In this context, preliminary notification has been issued for enforcing uniform notification of 40 agricultural commodities throughout Tamil Nadu. Good response and high appreciation is received from the Public for uniform notification. Based on the suggestions and objections received on preliminary notification, confirmation proposal for uniform notification prepared is under scrutiny of the Government.

3.2. Pledge loan

During distress sale in glut season, famers can store their produce in the godowns of the Regulated Markets and avail pledge loan for a period of six months without any charge. Pledge loan is provided upto a maximum of ` 1,00,000. The rate of interest for pledge loan is 5% for farmers and 9% for traders.

3.3. Construction of drying yards in villages

Improper post harvest handling resulted in 5-10 % loss in the total cereals and pulses production. In order to minimize the post harvest losses, agricultural commodities have to be stored at optimum moisture content. For that purpose, drying yards are being constructed since 1997. So far, 1305 drying yards have been constructed at a total cost of ` 26.09 crores for the benefit of farmers.

3.4. Modern godowns in Regulated markets

Most of the small and marginal farmers sell their produce to square off their debts soon after harvesting. Providing access to safe and scientific storage and easy marketing credit are the remedial measures for the above problems. Storage godowns help to stabilize the prices of produce by maintaining a balance between excess production and supply of goods. Modern Godowns with durable scientific storage structures *viz*., weigh bridges, weighing machines, dunnages and fire fighting arrangements are essential to protect goods from loss or damage due to heat, dust, wind, moisture and also from rodents. The pledge loan facilities will also go up as more number of farmers can store their produce. At present modern godowns are not available in the Regulated Markets, hence it is proposed to establish 50 Modern Godowns in Regulated Markets at a total cost of ` 82 crores with financial assistance from NABARD under Rural Infrastructure Development Fund (RIDF).

3.5. Model Act and Rules - 2011

The Government of India had sent its Model Act 2003 and Rules 2007 for adoption. An in-house committee has been appointed to consider the adoption of Model Act amending the existing Tamil Nadu Agricultural Produce Marketing Regulation Act 1987 and Rules 1991.

The committee suggested that, this Model Act emphasizes the establishment of private markets / yards, Direct purchase centers, consumers / farmers' market, promotion of public private partnership, contract farming. Therefore, it is vital to incorporate these provisions in the Act.

Hence a new Tamil Nadu Agricultural Produce Marketing (Development and Regulation) Act 2011 and Rules 2011 are formulated based on the salient features of Model Act. Implementation of this TNAPM (Development and Regulation) Act 2011 and Rules 2011 facilitates emergence of competitive agricultural markets in private and cooperative sectors, creates conducive environment for massive investment in marketing related infrastructures and leads to modernization and strengthening of existing markets.

3.6. Market Complex for paddy

A Market Complex has been established exclusively for paddy at Mattuthavani in Madurai district in an extent of 9.85 acres at a total cost of ` 17.06 crores. In this complex, 314 shops have been allotted for the traders of paddy, agricultural inputs and flowers.

3.7. Velanvilaiporul perangadi (Mega Market)

A Velanvilaiporul perangadi has been established at a total cost of ` 3.08 crores at Oddanchatram of Dindigul District for fruits and vegetables. In this Mega market, 50 shops, 216 floor space rental shops, grading hall and transaction shed facilities are available.

4. Establishment of Terminal Markets

Modern Terminal Markets with all value addition facilities like processing, storage and marketing are to be established in Public Private Partnership (PPP) mode near metro areas of Chennai, Madurai and Coimbatore as per the revised guidelines of the Government of India for fruits and

vegetables. The Industrial and Technical Consultancy Organization of Tamil Nadu Ltd (ITCOT) has been appointed as consultant for the above projects.

For Coimbatore region Terminal Market Complex, 40 acres of land has been selected at SIPCOT Industrial Growth Centre in Perundurai of Erode District. The total project cost is ` 120.63 Crores. M/s.SPAC Tapioca Products (India) Ltd has been selected for establishment of Terminal Market Complex with a subsidy of ` 28.99 Crores sanctioned by the Government of India. Now preparation of master plan for establishment of Terminal Market Complex is in progress. For Chennai Terminal Market Complex, 33 acres of land has been selected at Navalur Village of Sriperumputhur Taluk in Kancheepuram District. Total project cost is ` 113.85 Crores. Global Tender notification has been floated and four bidders have submitted Request for Qualification (RFQ) documents. Similarly for Madurai Terminal Market Complex, 50 acres of land has been selected at Mukkampatti (35 acres) and Thiruvathavur (15 acres). Total project cost is ` 105.05 Crores. Global Tender notification has been floated and three bidders have submitted Request for Qualification (RFQ) documents. Now evaluation of RFQ documents by ITCOT Consultant is in progress for both of the complexes.

5. Agri Export Zones

Agri Export Zones have been established at 4 places by private anchor promoters with modern infrastructure facilities like cold storage, grading and sorting yard, pack house, processing units and reefer vans for the direct export of value added agricultural produce, at the production centres.

An Agri Export Zone for cut-flowers has been established at Hosur in Krishnagiri district by a joint venture company of Tamil Nadu Industrial Development Corporation

Limited (TIDCO) and private promoter M/s.TANFLORA at a cost of ` 24.85 crores. An Agri Export Zone for flowers at Udhagamandalam in the Nilgiris district has been established with the participation by M/s.Nilflora – a private promoter at a project cost of ` 15.89 crores. An Agri Export Zone for Mango at Nilakkotai in Dindigul District has been established by an anchor promoter M/s.Maagrita Export Ltd., at a cost of ` 21 Crores. Similarly, an Agri Export Zone for cashew at Panruti in Cuddalore district has been established by M/s.Sattva Agro Export Pvt. Ltd., at a project cost of ` 16.54 crores.

The anchor promoters of these Agri Export Zones have created modern nursery and necessary processing and storage infrastructures in their respective zones and started commercial production. During 2010-2011, the firm M/s.Tanflora has done a turnover of ` 3.20 crores worth cut-flowers, M/s.Nilflora has done a turnover of ` 1.60 crores worth flowers, M/s. Maagrita Exports Ltd. has done a turnover of ` 1.56 crores worth mango and mango pulp and M/s.Sattva Agro Export Pvt. Ltd., has done a turnover of ` 1.03 crores worth cashew.

6. Specialized Market complexes

Value addition to agricultural produces fetch good price to farmers. This requires infrastructure like storage godowns, grading and sorting yard, pack house, drying yards, transaction sheds, auction halls and cold storage units.

Market complexes with cold storage facility at a cost of ` 1 crore each for Mango at Krishnagiri (Krishnagiri District), for Onion at Pongalur (Coimbatore District), for Grapes at Odaipatti (Theni District) and for Tomato at Palacode (Dharmapuri District) have been established for

the welfare of small and marginal farmers. Facilities created in market complexes are grading and packing hall, electronic weighing balances, input shops, traders shop and cold storage units of 50 MT capacity.

For the benefit of coconut growers in Thanjavur district a coconut market complex has been established at Ponnavarayankottai Ukkadai village in Pattukottai taluk of Thanjavur District at a cost of ` 4 crores. The facilities created in the market complex are transaction shed, godown, drying yard, solar drier for copra, grading and sorting hall, input shops, electronic weighing balances and coconut oil mill unit with automatic oil packing facility.

7. Food Processing Industries

Food processing minimizes the wastage of agricultural produce to a greater extent. Food processing is now gaining momentum as food-processing industries ensure steady and better price to the farming community as well as availability of commodities in processed form to the consumer throughout the year. Farmers will get better returns and also employment opportunity by cultivation of good quality processable agricultural produce. At present, the Department of Agricultural Marketing and Agri Business is the state nodal agency to Ministry of Food Processing Industries, Government of India. The applications received upto 2007 for the establishment of food processing industries were scrutinized, recommended and forwarded by the state nodal agency to Ministry of Food Processing Industries, Government of India. The applications received after the year 2007 are being recommended by Nationalized Banks.

8. Agmark grading

Agmark grading is a symbol, for quality food products. In Tamil Nadu, 30 State Agmark grading laboratories and one Principal Agmark grading laboratory at Chennai are functioning to protect the consumers from harmful effects of adulterated food products and also to ensure quality. Agmark Grading is done for centralized and decentralized commodities. Agmark labels are issued to the authorized packers under direct supervision of the staff to certify the quality and purity of food products. During 2010-2011, 13.71 lakh quintals of food products have been graded by Agmark grading laboratories.

9. Flower Auction Centre

A Flower auction centre at Kavalkinaru in Thirunelveli district has been established for the benefit of flower growers at a cost of ` 163.40 lakhs. During 2010-2011, on an average 753 kg of flowers worth ` 83,256 have been sold by 64 farmers per day.

10. Farmers' markets

Farmers' market functions with the object to ensure the farmers to get fair price for their produce and to enable the consumers to get fresh fruits and vegetables at a lesser price without middlemen. At present, 179 Farmers' markets are functioning in Tamil Nadu. These Farmers' markets are being run at the expenses of the Market Committees.

During 2010-2011, an average of 2428 MT of fruits and vegetables worth ` 3.85 crores have been sold by 9760 farmers and thereby 4.36 lakh consumers were benefitted. Computers have been provided to 25 Farmers' markets. Cold storages with capacity of 2 MT have been established at a cost of ` 133.10 lakhs to prevent deterioration of fruits and vegetables in 22 Farmers' markets.

11. Tamil Nadu-Irrigated Agriculture Modernization and Water Bodies Restoration and Management (TN-IAMWARM)

The World Bank assisted TN-IAMWARM Project is being implemented in 60 sub basins of Tamil Nadu in phased manner over a period of 6 years from 2007-2008 to 2012-2013 at a total cost of ` 24.84 Crores. An amount of ` 24.39 Crores have been utilized for 3 phases of sub basins upto 2010-2011.

As infrastructure are essential for executing the marketing activities, the Department of Agricultural Marketing and Agri Business has created so far, 258 infrastructures as per the World Bank guidelines *viz*., 19-Agri Business Centers, 87-storage godowns, 138-drying yards, 13-collection centers and one pack house. The supporting equipments such as 52-moisture meters, 118-electronic weighing scales, 522-tarpaulins, 1985-dunnages, 19-computers with internet connection, 575-plastic crates, 8-goods auto and one mini lorry for logistics are provided and they are utilized by Commodity group farmers. Farmers realized additional income for their produce.

Interface workshop is considered to be a platform for linking the farmers directly to the traders with face to face market orientation. In the sub basin area, formation of commodity groups and Memorandum of Understanding between farmers and traders are the major activity for realization of additional income by farmers. So far 1,108 commodity groups have been formed covering 14 major commodities and 677 Memorandum of Understanding have been made between farmers and traders. Under Information, Education, Communication and Capacity Building 670 trainings were conducted

viz., 218-technical trainings, 186-interface workshops and 266 exposure visits (169 exposure visits inside the state and 97-exposure visits outside the state).

During 2011-2012, the project will be implemented in phase III and phase IV sub basins with a financial outlay of ` 459.28 lakhs for creation of various market infrastructure including collection centers, storage sheds, drying yards and dunnages for post harvest and value addition of major agricultural commodities like paddy, maize, chillies, pulses and oilseeds. Capacity Building activities and MoU will be formed between the commodity group farmers and traders to realize additional income by utilizing the above infrastructure.

12. National Agriculture Development Programme (NADP / RKVY)

The National Agriculture Development Programme, a 100% centrally sponsored programme aims at achieving 4% annual growth in agriculture and allied sectors during 11th five year plan period. In this project, Department of Agricultural Marketing and Agri Business is focusing on aspects of Strengthening Market Infrastructure and Marketing development.

12.1. Strengthening of Regulated Markets

Rural Business Hubs (RBH) have been established in ten regulated markets at a cost of ` 150 lakhs. This hub envisages development of opportunities through which farmers have increased access to markets through forward linkages. Rural Business Hub aims to achieve higher income for farmers by aggregating products and helps larger buyers and processors to make direct purchase from farmers. Each RBH will link-up with farmers' groups formed in villages. RBH will provide infrastructure facilities and also serve as a Technical information Centre.

In 2010-2011, 20 Rural godowns and 150 Drying yards were established at a total cost of ` 770 lakhs to enable farmers to store their produce during distress sale period and sell when the price is favourable, avail pledge loan facility and reduce post harvest losses. Further to facilitate easy disposal and correct weighment to farmer's produce, automatic weighing and bagging machines at two places have been installed at a cost of ` 11.25 lakhs. Automization of Regulated Markets in 4 places with facilities like grading and sorting hall, hand held device for data collection, electronic display boards at a cost of ` 163.10 lakhs is being done for the farmers to know the latest technologies, prevailing price trend and export opportunities.

12.2. Strengthening of Farmers' market

In 2010-2011, 25 new Farmers' markets have been opened and existing Farmers' markets were strengthened and provided with Computers and accessories at a total cost of ` 675.60 lakhs.

12.3. Specialized Market Complexes

Tomato cold storage at Mecheri in Salem District with 100 MT capacity has been established at a cost of ` 100 lakhs as tomato is being a highly perishable produce subjected to frequent and large price fluctuations. The facilities provided in the cold storage are pre-cooling room, cold storage room, grading and packing hall. Similarly a Coconut Market Complex at Pethappampatti in Tiruppur District at a cost of ` 100 lakhs has been established. The facilities being provided in the market complex are 3000 MT capacity rural godown, Transaction shed, Copra dryer, Copra cutter and Coconut climber machine.

Besides this, establishment of Ripening Chambers for Banana at Tiruchirapalli, Mohanur, Srivaikundam and Chinnamanur at a cost of ` 200 lakhs, Market Complex with Cold Storage for Hill vegetables at Karamadai Regulated Market in Coimbatore District at a cost of ` 100 lakhs, Cold Storage for Chillies at Paramakudi Regulated Market in Ramanathapuram District at a cost of ` 99.50 lakhs, Market Complex with storage facilities for Onion and other vegetables at Perambalur District at a cost of ` 114.90 lakhs and strengthening of Paddy Market Complex in Madurai by providing additional shops at a cost of ` 36 lakhs are in progress.

13. Tamil Nadu Small Farmers Agri-business Consortium (TNSFAC)

Tamil Nadu Small Farmers Agri-business Consortium is functioning in association with Government, private, co-operative and service sectors with the objective of linking small farmers to technologies and to markets by providing both forward and backward linkages through assured purchase at reasonable price for their produce by making formal / informal arrangement. This scheme is being implemented in coordination with Nationalized Banks, State Bank of India and its subsidiary banks. Agri business development in Tamil Nadu is achieved by sanctioning venture capital assistance of 10% of the project cost or 26% equity and providing project development facilities. So far a venture capital assistance of ` 1326.36 lakhs for 37 Agri-Business projects has been sanctioned by Tamil Nadu Small Farmers Agri-business Consortium.

12. TAMIL NADU STATE AGRICULTURAL MARKETING BOARD

1. Tamil Nadu Farmers Development and Welfare Scheme

Farmers or tenants who sell one or more than one metric ton of agricultural produce every year through Regulated markets are enrolled in this scheme and are eligible for a grant of ` 1,00,000 in case of death/ death due to snake bite. In case the eligible farmer or tenant loses both the hands / legs / eyes due to accident is eligible for a grant of ` 75,000. In case of losing one hand / leg /eye or permanent hip disability due to accident, the farmer or tenant is eligible for a grant of ` 50,000. Farmers need not pay any premium to avail this facility in the scheme. The Market Committee concerned and the Tamil Nadu State Agricultural Marketing Board bear the premium amount of ` 10 per individual per year equally.

2. Training to farmers and staff

The training centre of Tamil Nadu State Agricultural Marketing Board functioning at Salem caters to the capacity building needs of farmers and employees of Department of Agricultural Marketing and Agri Business. Four types of training programmes, *viz*, graders' training, refresher training, farmers' personal contact programme and *kharif* and *rabi* training for the Department staff are being conducted at this Training Centre.

The graders' training is conducted for employees of market committee for 30 days in 2 batches / year, comprising of 40 employees. The refresher training of 20 days programme / year is conducted for 20 staff of market committees. The Personal contact programme is conducted to 100 farmers in 5 batches / year (20 farmers / batch) for 3 days.

To impart skills to the farmers on the techniques of scientific storage and preservation of food grains and to train the farmers on market intelligence, it is proposed to conduct a massive training programme for 30,000 farmers in 2011-2012.

3. Construction works

The Engineering wing of Tamil Nadu State Agricultural Marketing Board executes civil works such as construction of office buildings, rural godowns, auction platform, shopping complex, agricultural input shops, payment counters, rest sheds, water supply, toilet facilities, internal roads, office-cum-godowns, compound walls etc. in Regulated Markets.

(a) Construction of transaction shed in 4 Regulated markets viz., Viruthachalam, Vadipatti, Thiyagadurgam and Sankarapuram at a cost of ` 35 lakhs each is in progress.

(b) Construction of Market complexes with cold storage facility at a project cost of ` 1 crore each for Mango at Krishnagiri (Krishnagiri District), for Onion at Pongalur (Coimbatore District), for Grapes at Odaipatti (Theni District), for Tomato at Palacode (Dharmapuri District) and for coconut at a cost of ` 4 crores in Pattukottai taluk of Thanjavur District have been completed by utilizing the Market Development Fund of Tamil Nadu State Agricultural Marketing Board.

4. Marketing Endowment Chair at Tamil Nadu Agricultural University

Tamil Nadu State Agricultural Marketing Board has created an Endowment Chair at the Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore with a corpus fund of ` 50 lakhs. For the benefit of farmers as well as staff of this Department two research studies and four training programmes have been

conducted in 2010-2011 by utilizing the interest accrued from Corpus Fund deposit.

5. Publicity and Propaganda

Tamil Nadu State Agricultural Marketing Board is carrying out publicity and propaganda work by highlighting the advantages of selling agricultural produce through Regulated Markets through publicity and propaganda wings at Chennai, Madurai, Coimbatore and Tiruchirapalli.

6. Market Development Fund

Tamil Nadu State Agricultural Marketing Board derives its fund resource from the Market Committees. The Market Committees contribute 15% of their receipts to the Board. Fifty percent of this amount is set apart as Market Development Fund, from which expenditure towards developmental activities of market including publicity, propaganda and training are met. The remaining fifty percent of the amount is spent for employee's salary and other expenses.

7. Domestic and Export Market Intelligence and guidance Cell (DEMIC)

Domestic and Export Market Intelligence and guidance Cell has been established in Tamil Nadu Agricultural University at a cost of ` 44 lakhs with financial assistance from Tamil Nadu State Agricultural Marketing Board. The Cell collect prices of major commodities from domestic and international markets, then analyze and forecast future domestic and export prices. The Cell disseminates the forecast prices and price prevailing in other states to farmers and regulated markets through media. This information helps the farmers to plan the cropping pattern and to sell their produce at right time in right market. Further, this cell is networked with Agricultural Production and Marketing Information Centres established in regulated markets, thereby farmers and other stake holders can know the market price.

AGRICULTURE DEPARTMENT
TABLE – 1
Agricultural Extension Centres

District	Main Agricultural Extension Centres	Sub Centres	Total
Kancheepuram	13	16	29
Thiruvallur	14	20	34
Cuddalore	13	17	30
Villupuram	21	27	48
Vellore	20	24	44
Tiruvannamalai	17	24	41
Salem	20	11	31
Namakkal	15	17	32
Dharmapuri	8	8	16
Krishnagiri	10	7	17
Coimbatore	13	11	24
Tiruppur	13	13	26
Erode	14	21	35
Tiruchirappalli	14	11	25
Perambalur	4	3	7
Ariyalur	6	4	10
Karur	8	4	12
Pudukkottai	13	20	33
Thanjavur	14	47	61
Nagapattinam	11	44	55
Tiruvarur	10	32	42
Madurai	13	19	32
Theni	8	13	21
Dindigul	13	15	28
Ramanathapuram	11	6	17
Sivagangai	12	9	21
Virudhunagar	11	5	16
Tirunelveli	19	31	50
Thoothukudi	12	16	28
Kanyakumari	9	11	20
Total	**379**	**506**	**885**

TABLE – 2

State Seed Farms (34)

Sl. No.	Place	District
1	Kancheepuram (Panjupettai)	Kancheepuram
2	Kolandalur	Tiruvallur
3	Vanur	Villupuram
4	Iruvelpattu	
5	Kakkuppam	
6	Vadakanandal	
7	Miralur	Cuddalore
8	Vandurayanpattu	
9	Athiyandal	Tiruvannamalai
10	Vazhavachanur	
11	Mettur Dam	Salem
12	Danishpet	
13	Papparapatti	Dharmapuri
14	Pongalur	Tirupur
15	Pappankulam	
16	Sathyamangalam	Erode
17	Bhavani	
18	Inungur	Karur
19	Neikuppaipudur	Tiruchirappalli
20	Pudurpalayam	
21	Annapannai	Pudukkottai
22	Sakkottai	Thanjavur
23	Devambalpattinam	Tiruvarur
24	Kanchikudikadu	
25	Keeranthi	
26	Nedumbalam	
27	Moongilkudi	
28	Nagamangalam	Nagapattinam
29	Thirukadaiyur	
30	Vinayagapuram	Madurai
31	Keezhakudalur	Theni
32	Devadanam	Virudhunagar
33	Karaiyiruppu	Tirunelveli
34	Thirupathisaram	Kanyakumari

State Oilseed Farms (6)

Sl. No.	Place	District
1	Musaravakkam	Kancheepuram
2	Agasipalli	Krishnagiri
3	Vellalaviduthi	Pudukkottai
4	Navlock	Vellore
5	Bhavanisagar	Erode
6	Neyveli(TANCOF)	Cuddalore

State Pulses Multiplication Farm (1)		
1	Vamban	Pudukkottai

TABLE – 3
SEED PROCESSING UNITS

Sl. No	District	No. of Units			Total
		Major	Medium	Mini	
1	Kancheepuram	1	..	6	7
2	Thiruvallur	1	..	4	5
3	Cuddalore	..	..	3	3
4	Villupuram	2	..	3	5
5	Vellore	..	..	3	3
6	Tiruvannamalai	2	..	5	7
7	Salem	1	..	1	2
8	Namakkal	..	..	2	2
9	Dharmapuri	..	..	2	2
10	Krishnagiri	..	1	1	2
11	Coimbatore	..	..	1	1
12	Tiruppur	..	..	2	2
13	Erode	1	..	1	2
14	Tiruchirapalli	..	..	3	3
15	Perambalur	..	..	1	1
16	Ariyalur	..	..	1	1
17	Karur	1	..	..	1
18	Pudukkottai	1	..	1	2
19	Thanjavur	2	..	..	2
20	Nagapattinam	..	..	3	3
21	Tiruvarur	1	..	5	6
22	Madurai	1	..	1	2
23	Theni	..	..	2	2
24	Dindigul	1	..	..	1
25	Ramanathapuram	..	1	1	2
26	Sivagangai	..	..	2	2
27	Virudhunagar	..	..	4	4
28	Tirunelveli	..	..	3	3
29	Thoothukudi	1	..	1	2
30	Kanyakumari	…	…	1	1
TOTAL		**16**	**2**	**63**	**81**

TABLE – 4
Analytical Laborites and Production Centers

Sl. No	District	Fertiliser Testing Laboratory		Mobile Soil Testing Laboratory		Soil Testing Laboratory	
1	Kancheepuram	1	Kancheepuram			1	Kancheepuram
2	Thiruvallur			1	Tiruvallur	2	Tiruvallur
3	Cuddalore					3	Cuddalore
4	Villupuram	2	Villupuram	2	Villupuram	4	Villupuram
5	Vellore					5	Melalathur
6	Tiruvannamalai			3	Tiruvannamalai	6	Tiruvannamalai
7	Salem	3	Salem			7	Salem
8	Namakkal			4	Tiruchengode	8	Namakkal
9	Dharmapuri	4	Dharmapuri			9	Dharmapuri
10	Krishnagiri			5	Krishnagiri	10	Krishnagiri
11	Coimbatore	5	Coimbatore			11	Coimbatore
12	Tirupur			6	Tirupur		
13	Erode			7	Erode	12	Erode
14	Tiruchirappalli	6	Tiruchirappalli			13	Tiruchirappalli
15	Perambalur			8	Perambalur	14	Perambalur
16	Ariyalur					15	Ariyalur
17	Karur			9	Karur	16	Karur
18	Pudukkottai					17	Kudumiyanmalai
19	Thanjavur	7	Kumbakonam			18	Aduthurai
20	Nagapattinam			10	Nagapattinam	19	Nagapattinam
21	Tiruvarur	8	Tiruvarur	11	Tiruvarur	20	Tiruvarur
22	Madurai	9	Madurai	12	Madurai	21	Madurai
23	Theni					22	Theni
24	Dindigul	10	Dindigul			23	Dindigul
25	Ramanathapuram	11	Paramakudi	13	Paramakudi	24	Paramakudi
26	Sivagangai					25	Sivagangai
27	Virudhunagar			14	Aruppukkottai	26	Virudhunagar
28	Tirunelveli					27	Tirunelveli
29	Thoothukudi	12	Kovilpatti	15	Kovilpatti	28	Kovilpatti
30	Kanyakumari	13	Nagercoil	16	Nagercoil	29	Nagercoil
31	The Nilgris	14	Ooty			30	Ooty

TABLE – 4 Cont…
Analytical Laborites and Production Center

Sl. No	District	Pesticide Testing Laboratory		Bio Fertiliser Production Centre		Bio Control Laboratory / IPM Centre		Micro Nutrient Mixture Production Centre	
1	Kanchee-puram	1	Kanchee-puram	1	Chengleput	1	Panjupettai (IPM)		
2	Cuddalore	2	Cuddalore	2	Cuddalore				
3	Villupuram					2	Villupuram		
4	Tiruvanna-malai			3	Polur				
5	Vellore	3	Vellore						
6	Salem	4	Salem	4	Salem	3	Seela-naickanpatti		
7	Namakkal					4	Namakkal		
8	Dharmapuri	5	Dharmapuri	5	Palacode	5	Papparapatti		
9	Coimbatore	6	Coimbatore			6	Coimbatore		
10	Tiruppur			6	Avinashi				
11	Erode	7	Erode	7	Bhavani	7	Bhavani		
12	Tiruchirapalli	8	Tiruchirapalli	8	Tiruchirapalli	8	Tiruchirapalli		
13	Pudukkottai			9	Kudumian-malai			1	Kudumian-malai
14	Thanjavur	9	Aduthurai	10	Sakkottai	9	Kattuthottam		
15	Tiruvarur			11	Needa-mangalam				
16	Nagapattinam	10	Nagapattinam						
17	Madurai	11	Madurai			10 11	Vinayaga-puram Vinayaga-puram (IPM)		
18	Theni	12	Vaigai Dam	12	Uthama-palayam				
19	Ramanatha-puram			13	Ramanatha puram				
20	Sivagangai	13	Sivagangai						
21	Tirunelveli	14	Tirunelveli	14	Tenkasi	12	Palayamkottai		
22	Thoothukudi	15	Kovilpatti	15	Thoothukudi				

TABLE – 5
Farmers Training Centre & Coconut nursery

Sl. No	District	Farmers Training Centre		Coconut Nursery	
1	Kancheepuram	1	Kancheepuram	1	Pichiwakkam
2	Thiruvallur			2	Madhavaram
3	Cuddalore			3	Cuddalore
4	Villupuram	2	Tindivanam		
5	Vellore	3	Vellore	4	Navlock
6	Tiruvannamalai	4	Tiruvannamalai	5	Vazhavachanur
7	Salem	5	Salem	6	Danishpet
8	Namakkal	6	Namakkal		
9	Dharmapuri	7	Dharmapuri		
10	Krishnagiri	8	Krishnagiri	7	P.G. Pudur
11	Coimbatore			8	Aliyarnagar
12	Erode	9	Erode	9	Bhavani sagar
13	Tiruchirapalli	10	Tiruchirapalli	10	Srirangam
14	Perambalur	11	Perambalur		
15	Karur	12	Karur		
16	Pudukkottai	13	Kudumianmalai	11	Vellala vidudhi
17	Thanjavur	14	Sakkottai	12	Pattukkottai
18	Nagapattinam			13	Malliam
19	Tiruvarur				
20	Madurai				
21	Theni	15	Theni	14	Vaigai Dam
22	Dindigul	16	Dindigul		
23	Ramanathapuram	17	Paramakudi	15 16	Uchipuli Devi pattinam
24	Sivagangai	18	Sivagangai	17	Chadurveda mangalam
25	Virudhunagar	19	Virudhunagar	18	Devadhanam
26	Tirunelveli	20	Palayamkottai	19 20	Senkottai Vadakarai
27	Thoothukudi	21	Thoothukudi	21	Killikulam
28	Kanyakumari	22	Nagercoil	22	Puthalam

TABLE – 6
Parasite Breeding Centre

Sl. No	District	Parasite Breeding Centre - Sugarcane		Parasite Breeding Centre - Coconut	
1	Kancheepuram	1	Maduranthagam	1	Chengalpattu
2	Thiruvallur			2	Putlur
3	Cuddalore	2	Virudhachalam	3	Cuddalore
4	Villupuram	3 4 5	Villupuram Kallakurichi Tindivanam		
5	Vellore	6 7 8	Ambur Gudiyatham Thiruppathur	4 5 6	Melalathur Vaniyambadi Natrampalli (Thiruppathur)
6	Tiruvannamalai	9	Tiruvannmalai		
7	Salem			7	Sukkampatti
8	Namakkal	10	Mohanur	8	Paramathivellore
9	Dharmapuri	11	Papparapatti	9	Dharmapuri
10	Krishnagiri				
11	Coimbatore			10	Pollachi
12	Tiruppur	12	Udumalaipettai		
13	Erode	13	Gobi	11	Gobi
14	Tiruchirapalli	14	Lalgudi	12	Tiruchirapalli
15	Perambalur	15	Perambalur		
16	Karur	16 17	Karur Kulithalai		
17	Pudukkottai				
18	Thanjavur	18	Thanjavur	13	Thanjavur
19	Nagapattinam	19	Mayiladuthurai		
20	Tiruvarur				
21	Madurai	20	Melur	14	Melur
22	Theni				
23	Dindigul	21	Nilakottai		
24	Ramanathapuram			15	Uchipuli
25	Sivagangai			16	S.V.Mangalam
26	Virudhunagar			17	Devadhanam
27	Tirunelveli			18	Senkottai
28	Thoothukudi			19	Udhankudi
29	Kanyakumari			20	Boodhapandi

TAMIL NADU HORTICULTURAL DEVELOPMENT AGENCY

Table-7

List of State Horticulture Farms in Tamil Nadu

S. No	**District /** Farm	**Block**	**Taluk**	**Area (Ha)**
	Coimbatore			
1	Anaikatty	Periyanaickan palayam	Coimbatore (N)	12.00
2	Kannampalayam	Sulur	Sulur	11.20
	Cuddalore			
3	Vridhachalam	Vridhachalam	Vridhachalam	10.00
4	Neyveli	Panrutti	Panrutti	40.00
	Dindigul			
5	SHF, Kodaikanal	Kodaikanal	Kodaikanal	5.74
6	Bryant park	Kodaikanal	Kodaikanal	8.20
7	Thandikudi	Kodaikanal	Kodaikanal	5.45
8	Reddiarchatram	Reddiarchatram	Dindigul	5.33
9	Sirumalai	Dindigul	Dindigul	200.04
	Kancheepuram			
10	Attur	Kattankulathur	Chengalpattu	12.24
11	Vichanthangal	Srikaveripakkam	Kancheepuram	22.96
12	Melkadirpur	Srikaveripakkam	Kancheepuram	42.63
13	Melottivakkam	Srikaveripakkam	Kancheepuram	20.60
14	Pitchivakkam	Sriperumputhur	Sriperumputhur	34.00
	Kanyakumari			
15	Kanyakumari	Agasteeswaram	Agasteeswaram	12.80
16	Pechiparai	Melpuram	Villavancodu	6.00
	Krishnagiri			
17	Thimmapuram	Kaveripattinam	Krishnagiri	9.50
18	Jeenur	Veppanapalli	Krishnagiri	121.96
	Karur			
19	Mudalaipatti	Thogamalai	Kulithalai	24.25

Table – 7 Cont…
List of State Horticulture Farms in Tamil Nadu

S. No	**District /** Farm	Block	Taluk	Area (Ha)
	Namakkal			
20	Semmedu	Kollihills	Namakkal	11.60
21	Padasolai	Kollihills	Rasipuram	22.67
	Pudukottai			
22	Kudumianmalai	Annavasal	Illupur	118.00
23	Vallathirakottai	Thiruvarungulam	Alangudi	521.20
24	Nattumangalam	Aranthangi	Aranthangai	53.02
	Salem			
25	Yercaud	Yercaud	Yercaud	10.00
26	Giant Orchard Karumandurai	Peddanaikampalayam	Attur	419.77
27	Maniyarkundram	Peddanaikkanpalayam	Attur	100.00
28	SHFKarumandurai	Peddanaikkanpalayam	Attur	39.35
29	Mulluvadi	Attur	Attur	47.80
30	Sirumalai	Ayothiapattinam	Vazhapadi	8.00
	Sivagangai			
31	Devakottai	Devakottai	Devakottai	81.20
32	Nemam	Kallal, Sakottai	Tiruputtur	38.77
	Thanjavur			
33	Marungulam	Thanjavur	Thanjavur	10.57
34	Aduthurai	Tiruvidaimaruthur	Tiruvidaimaruthur	8.80
	Theni			
35	Periyakulam	Periyakulam	Periyakulam	9.32
	Chennai			
36	Madhavaram	Madhavaram	Ambattur	11.40
37	Semmozhi Poonga	Chennai	Mylapore	3.17
	Tirunelveli			
38	Coutralam	Tenkasi	Tenkasi	14.89

Table – 7 Cont…
List of State Horticulture Farms in Tamil Nadu

S. No	**District /** Farm	Block	Taluk	Area (Ha)
	Vellore			
39	Thagarakuppam	Alangayam	Tirupattur	34.40
40	Kudappattu	Tirupattur	Tirupattur	9.96
41	Navlok	Walajah	Walajah	84.40
	Virudhunagar			
42	Poovani	Srivilliputtur	Srivilliputtur	9.46
43	Srivilliputhur	Srivilliputtur	Srivilliputtur	46.28
	Nilgiris			
44	Burliar	Coonoor	Coonoor	6.25
45	Kallar	Karamadai	Mettupalayam	8.92
46	Katteri	Coonoor	Coonoor	18.96
47	GBG	Ooty	Ooty	22.00
48	P.S.Coonoor	Coonoor	Coonoor	10.50
49	FPU Coonoor	Coonoor	Coonoor	
50	Sims park Coonoor	Coonoor	Coonoor	12.14
51	Doddabetta	Ooty	Ooty	4.08
52	Rose garden	Ooty	Ooty	14.40
53	Thummanatty	Ooty	Ooty	9.80
54	Nanjanadu	Ooty	Ooty	64.00
55	Devala	Gudalur	Gudalur	80.00
56	Colegrain	Ooty	Ooty	20.40
	Total			**2590.38**

Table - 8

LIST OF COLLEGES

1. Agricultural College and Research Institute, Coimbatore
2. Agricultural College and Research Institute, Madurai
3. Agricultural College and Research Institute, Killikulam, Vallanadu, Thoothukudi District.
4. Anbil Dharmalingam Agrl. College and Research Institute, Tiruchirapalli
5. Horticultural College and Research Institute for women, Tiruchirapalli
6. Horticultural College and Research Institute, Coimbatore
7. Horticultural College and Research Institute, Periyakulam, Theni District.
8. Agricultural Engineering College and Research Institute, Coimbatore
9. Agricultural Engineering College and Research Institute, Kumulur, Tiruchirapalli District.
10. Forest College and Research Institute, Mettupalayam, Coimbatore District.
11. Home Science College and Research Institute, Madurai

Table - 9
List of Research Stations (36)

1. Agricultural Research Station Bhavanisagar -638 451
2. Agricultural Research Station Kovilpatti –628 501
3. Agricultural Research Station Vaigai Dam-625 512
4. Agricultural Research Station Paramakudi – 623 707
5. Agricultural Research Station Tirupathisaram – 629 901
6. Rice Research Station Tirur – 602 025
7. Rice Research Station Ambasamudram – 627 401
8. Coastal Saline Research Centre Ramanathapuram – 623 501
9. Regional Research Station Kovilankulam, Aruppukottai - 626 107
10. Agricultural Research Station Virinjipuram – 632 104
11. Agricultural Research Station Pattukottai – 614 602
12. Hybrid Rice Evaluation Centre Gudalur – 643 212
13. Oilseeds Research Station Tindivanam – 604 002
14. Sugarcane Research Station Cuddalore – 607 001
15. Sugarcane Research Station Sirugamani – 639 115
16. Sugarcane Research Station Melalathur – 635 806
17. Soil and Water Management Research Institute Thanjavur – 613 501
18. Coconut Research Station Veppankulam – 614 906
19. Coconut Research Station Aliyarnagar – 642 101
20. Cotton Research Station Srivilliputhur – 626 125
21. Regional Research Station Paiyur – 635 112
22. Regional Research Station Virudhachalam – 606 001
23. National Pulses Research Centre Vamban – 622 303
24. Tamil Nadu Rice Research Institute Aduthurai – 612 101
25. Tapioca and Castor Research Station Yethapur – 636 119
26. Horticultural Research Station Pechiparai – 629 161
27. Horticultural Research Station Thadiyankudisai – 624 212
28. Horticultural Research Station Yercaud – 636 602
29. Horticulture Research Station Uthagamandalam – 643 001
30. Horticultural Research Station Kodaikanal – 624 103
31. Vegetable Research Station Palur – 607 113
32. Urban Horticulture Development Centre Chennai – 600 040
33. Cotton Research Station Veppanthattai - 621 116, Perambalur District
34. Maize Research Station Vagarai- 624 613, Dindigul District
35. Dryland Agricultural Research Station Chettinad–630102, Sivagangai
36. Floriculture Research Station Thovalai – 629 302. Kanyakumari District

Table - 10
Diploma Institutes

S.No	Name of Institute	No. of Seats
Constituent Institute – Diploma in Agriculture		
1	C. Subramanian Institute of Agriculture, Tindivanam	50
2	M. S. Swaminathan Institute of Agriculture, Bhavanisagar	50
3	Institute of Agriculture, Ambasamudram	40
4	Institute of Agriculture, Aruppukotai	50
5	Institute of Agriculture, Pechiparai	50
6	Institute of Agriculture, Kovilpatti	50
Affiliated Institutes – Diploma in Agriculture		
7	Ramakrishna Institute of Agriculture, Periyanayakkanpalayam, Coimbatore Dt.	50
8	Sagayathottam Institute of Agriculture and Rural Development, Takkolam	60
9	Thanthai Roever Institute of Agriculture and Rural Development, Permbalur	75
10	Vanavarayar Institute of Agriculture, Pollachi	50
11	Adhi Parasakthi Institute of Agriculture, Kalavai	50
	Total	**575**
Affiliated Institutes – Diploma in Horticulture		
1	Thanthai Roever Institute of Agriculture and Rural Development, Permbalur	75

Table - 11
List of Krishi Vigyan Kendras (KVK)

1. Krishi Vigyan Kendra, Madurai - 625 104
2. Krishi Vigyan Kendra, Virudhachalam - 606 001 Cuddalore District
3. Krishi Vigyan Kendra, Needamangalam - 614 407 Tiruvarur District
4. Krishi Vigyan Kendra, Sikkal - 611 008 Nagapattinam District
5. Krishi Vigyan Kendra, Sirugamani - 639 115 Tiruhirapalli Dist
6. Krishi Vigyan Kendra, Ramanathapuram - 623 501
7. Krishi Vigyan Kendra, Sandhiyur - 636 203 Salem District
8. Krishi Vigyan Kendra, Vamban - 622 303 Pudukkottai District
9. Krishi Vigyan Kendra, Tindivanam 604 002 Villupuram District
10. Krishi Vigyan Kendra, Viringipuram - 632 104 Vellore District
11. Rice Research Station, Thirur - 602 025 Tiruvallur District
12. Krishi Vigyan Kendra, Papaparapatti - 636 809, Dharmapuri District
13. Krishi Vigyan Kendra, Pechiparai - 629161, Kanyakumari District
14. Krishi Vigyan Kendra, Aruppukkottai - 626 107, Virudhunagar District

SEED CERTIFICATION

TABLE - 12

QUANTITY OF SEEDS CERTIFIED IN M.T.				
Sl. No.	Crop	2010-2011		2011-2012
		Target	Achievement	Target
1	Paddy	73700	86735	87650
2	Variety millets	420	242	250
3	Hybrid millets	10	8	10
4	Variety cotton	600	248	300
5	Hybrid cotton	10	0	0
6	Pulses	4400	3132	3500
7	Oilseeds	5400	3112	3200
8	Vegetables	90	74	90
	Total	84630	93551	95000
SEED INSPECTION (Numbers)				
Sl. No.	Details	2010-2011		2011-2012
		Target	Achievement	Target
1	Seed selling points inspection	67000	62502	67500
2	Seed samples taken	65000	55016	65000
SEED TESTING (Numbers)				
Sl. No.	Details	2010-2011		2011-2012
		Target	Achievement	Target
1	Samples tested	75000	85334	86000
TRAINING (Numbers)				
Sl. No.	Details	2010-2011		2011-2012
		Target	Achievement	Target
1	Persons trained	38000	41673	41800
ORGANIC CERTIFICATION (Acres)				
Sl. No.	Details	2010-2011		2011-2012
		Target	Achievement	Target
1	Area registered	28000	28115	30000

TABLE – 13
SEED CERTIFICATION UNITS

Sl No.	Location	Jurisdiction (Districts)
1	Coimbatore	Coimbatore, Nilgiris and Tiruppur (Part)
2	Cuddalore	Cuddalore
3	Dharmapuri	Dharmapuri
4	Dindugul	Dindugul
5	Erode	Erode and Tiruppur (Part)
6	Karur	Karur
7	Kancheepuram	Kancheepuram
8	Kanyakumari	Kanyakumari
9	Krishnagiri	Krishnagiri
10	Madurai	Madurai
11	Namakkal	Namakkal
12	Nagapattinam	Nagapattinam
13	Perambalur	Perambalur and Ariyalur
14	Pudukottai	Pudukottai
15	Ramanathapuram	Ramanathapuram
16	Salem	Salem
17	Sivagangai	Sivagangai
18	Thiruvallur	Tiruvallur and Chennai
19	Thoothukudi	Thoothukudi
20	Tiruvarur	Tiruvarur
21	Thanjavur	Thanjavur
22	Tirunelveli	Tirunelveli
23	Tiruvannamalai	Tiruvannamalai
24	Theni	Theni
25	Tiruchirapalli	Tiruchirapalli
26	Vellore	Vellore
27	Villupuram	Villupuram
28	Virudhunagar	Virudhunagar

TABLE – 14

SEED INSPECTION UNITS		
S.No	**Location**	**Jurisdiction (Districts)**
1	Coimbatore	Coimbatore, Nilgiris and Tiruppur (Part)
2	Erode	Erode and Tiruppur (Part)
3	Salem	Salem and Namakkal
4	Dharmapuri	Dharmapuri and Krishnagiri
5	Karur	Karur and Dindigul
6	Madurai	Madurai and Theni
7	Thanjavur	Thanjavur and Pudukottai
8	Tiruchirapalli	Tiruchirapalli, Perambalur and Ariyalur
9	Chennai	Chennai, Thiruvallur and Kancheepuram
10	Tirunelveli	Tirunelveli and Kanyakumari
11	Virudhunagar	Virudhunagar and Thoothukudi
12	Ramanathapuram	Ramanathapuram and Sivagangai
13	Vellore	Vellore and Tiruvannamalai
14	Villupuram	Villupuram and Cuddalore
15	Nagapattinam	Nagapattinam and Tiruvarur

TABLE – 15

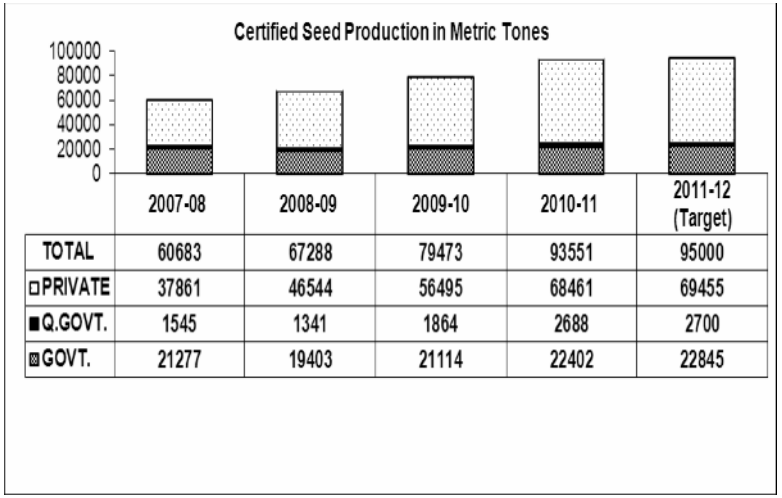
SEED TESTING LABORATORIES		
S.No	**Location**	**Jurisdiction (Districts)**
1	Coimbatore	Coimbatore and Tiruppur
2	Nilgris	Nilgiris
3	Erode	Erode
4	Dharmapuri	Dharmapuri
5	Salem	Salem
6	Krishnagiri	Krishnagiri
7	Namakkal	Namakkal
8	Tiruchirapalli	Tiruchirapalli
9	Villupuram	Villupuram
10	Pudukkottai,	Pudukkottai,
11	Perambalur	Perambalur and Ariyalur
12	Karur	Karur
13	Thanjavur	Thanjavur
14	Nagapattinam	Nagapattinam
15	Tiruvarur	Tiruvarur
16	Madurai	Madurai
17	Theni	Theni
18	Dindugal	Dindugal
19	Virudhunagar	Virudhunagar
20	Ramanathapuram	Ramanathapuram
21	Sivagangai	Sivagangai
22	Tirunelveli	Tirunelveli
23	Thoothukudi	Thoothukudi
24	Kanyakumari	Kanyakumari
25	Kancheepuram	Kancheepuram
26	Vellore	Vellore
27	Tiruvannamalai	Tiruvannamalai
28	Tiruvallur	Tiruvallur & Chennai
29	Cuddalore	Cuddalore

TABLE – 16

ORGANIC CERTIFICATION OPERATIONAL JURISDICTION

Sl. No.	Organic Certification Unit	Jurisdiction
1	Organic Certification Inspector 1 (Training)	Whole of State
2	Organic Certification Inspector 2 (Evaluation & e–Supporting Cell)	Whole of State
3	Organic Certification Inspector-Coimbatore.	Coimbatore, Tiruppur,Nilgiris, Erode, Salem, Namakkal, Dharmapuri, Krishnagiri Districts.
4	Organic Certification Inspector- Tiruchirapalli	Tiruchirapalli, Karur, Perambalur, Ariyalur, Pudukottai, Thanjavur, Tiruvarur, Nagapattinam Districts.
5	Organic Certification Inspector-Madurai.	Madurai, Virudhunagar, Tirunelveli, Sivagangai, Ramanathapuram, Theni, Dindugal, Thoothukudi, Kanyakumari Districts.
6	Organic Certification Inspector-Vellore.	Vellore, Tiruvannamalai, Villupuram, Kancheepuram, Tiruvallur, Cuddalore Districts.

TABLE - 17
Department of Seed Certification
Performance under various schemes



	2007-08	2008-09	2009-10	2010-11	2011-12 (Target)
TOTAL	60683	67288	79473	93551	95000
PRIVATE	37861	46544	56495	68461	69455
Q.GOVT.	1545	1341	1864	2688	2700
GOVT.	21277	19403	21114	22402	22845

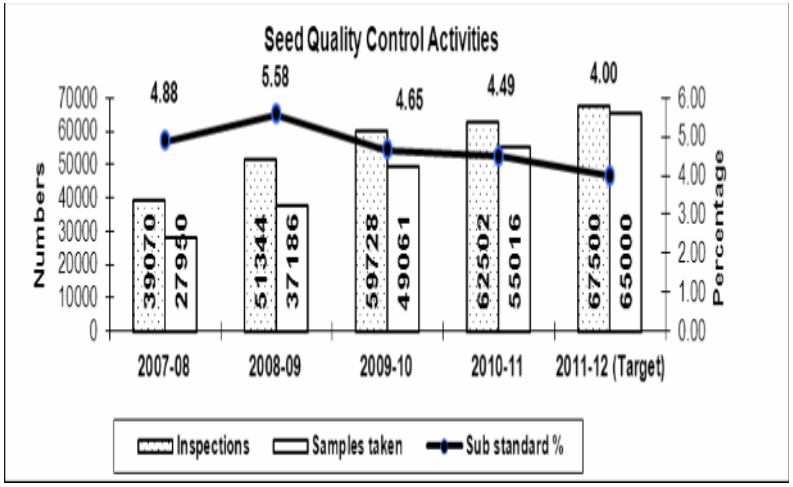
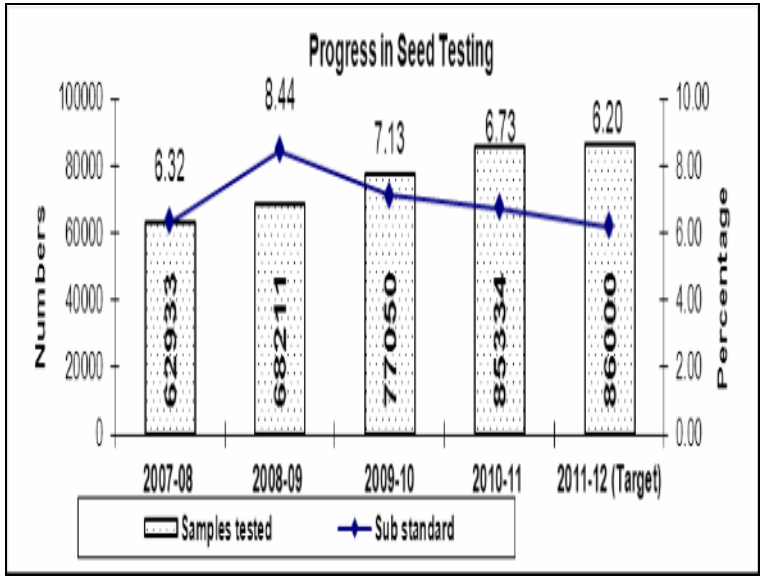


TABLE – 17 Continued ….



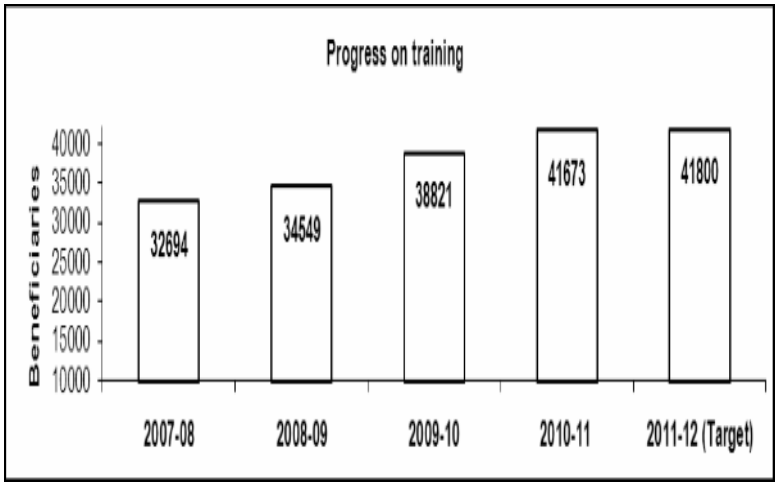


TABLE – 17 Continued ….

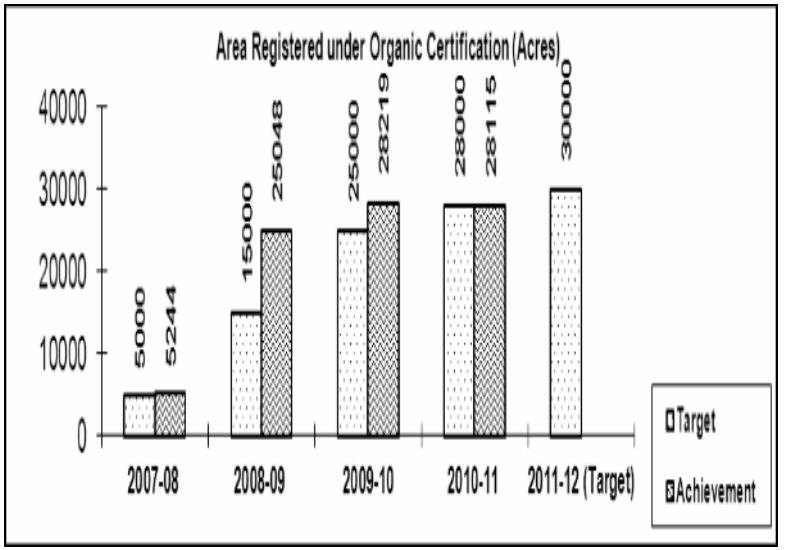


TABLE- 18

MARKET COMMITTEE WISE REGULATED MARKETS

1. KANCHEEPURAM	2. VELLORE	3. TIRUVANNAMALAI
1) Kancheepuram	16) Vellore	28) Tiruvannamalai
2) Tiruthani	17) Tirupathur	29) Arani
3) Thiruvallur	18) Arcot	30) Vandavasi
4) Red hills	19) Arakonam	31) Chetpet
5) Madurantagam	20) Vaniyampadi	32) Cheyyar
6) Uthiramerur	21) Kaveripakkam	33) Polur
7) Ponneri	22) Gudiyatham	34) Chengam
8) Thirukkalukundram	23) Kalavai	35) Pudupalayam
9) Sunguvarchatram	24) Ammoor	36) Vanapuram
10) Pallipattu	25) Katpadi	37) Vettavalam
11) Uthukottai	26) Ambur	38) Thellar
12) Acharapakkam	27) Thimiri	39) Mangala Mamandoor
13) Gummidipoondy		40) Desur
14) Nasarethpettai		41) Peranamallur
15) Chengalpet		42) Dhusi
		43) Kilpennathur

TABLE- 18 Cont….

MARKET COMMITTEE WISE REGULATED MARKETS

4. CUDDALORE	5. VILLUPURAM	6. SALEM
44) Virudhachalam	54) Tindivanam	71) Salem
45) Cuddalore	55) Tirukoilur	72) Athur
46) Panruti	56) Ulundurpet	73) Namakkal
47) Thittakudi	57) Villupuram	74) Rasipuram
48) Kattumannarkoil	58) Chinnasalem	75) Thiruchengodu
49) Chidambaram	59) Kallakkurichi	76) Sankagiri
50) Kurinchipadi	60) Gingee	77) Konganapuram
51) Sethiyathoppu	61) Thiagadurgam	78) Kollathur
52) Srimushnam	62) Sankarapuram	79) Velur
53) Bhuvanagiri	63) Tiruvennainallur	80) Mecheri
	64) Manalurpet	81) Vazhapadi
	65) Avalurpet	82) Thammampatti
	66) Marakkanam	83) Namagiripettai
	67) Vikaravandi	84) Thalaivasal
	68) Ananthapuram	85) Omalur
	69) Valathi	86) Kadyampatti
	70) Moongilthurai pattu	87) Gangavalli
		88) Karumunthurai
		89) Cholakkadu

TABLE- 18 Cont…

MARKET COMMITTEE WISE REGULATED MARKETS

7. DHARMAPURI	8. COIMBATORE	9. ERODE
90) Dharmapuri	106) Tiruppur	124) Erode
91) Krishnagiri	107) Avinashi	125) Avalpoonthurai
92) Hosur	108) Sevur	126) Kodumudi
93) Kelamangalam	109) Annur	127) Sivagiri
94) Palacode	110) Karamadai	128) Chithode
95) Pennagaram	111) Coimbatore	129) Bhavani
96) Pochampalli	112) Sulur	130) Boothapadi
97) Kaveripattinam	113) Palladam	131) Anthiyur
98) Uthangarai	114) Udumalpet	132) Mylampadi
99) Harur	115) Anaimalai	133) Kavundampadi
100) Pappireddipatti	116) Pollachi	134) Gobichettipalayam
101) Kambainallur	117) Malaiyadipalayam	135) Nambiyur
102) Bargoor	118) Negamam	136) Vellakkoil
103) Rayakottai	119) Kinathukkadavu	137) Sathiyamangalam
104) Denkanikkottai	120) Thondamuthur	138) PunjaiPuliyampatti
105) Papparapatti	121) Madathukkulam	139) Thalavadi
	122) Pethappampatti	140) Perundurai
	123) Pongalur	141) Kunnathur
		142) Kangayam
		143) Vellankoil
		144) Dharapuram
		145) Moolanur
		146) Alangeyam
		147) Muthur
		148) Elumathur

TABLE- 18 Cont….

MARKET COMMITTEE WISE REGULATED MARKETS

10. TIRUCHIRAPALLI	11. THANJAVUR	12. PUDUKKOTTAI
149) Jayankondam	168) Athiramapattinam	181) Alangudi
150) Karur	169) Ammapettai	182) Aranthangi
151) Ariyalur	170) Budalur	183) Pudukkottai
152) Manapparai	171) Kumbakonam	184) Kandarvakkottai
153) Andimadam	172) Madukkur	185) Avudayarkoil
154) Thuraiyur	173) Orathanadu	186) Keeranur
155) Perambalur	174) Pattukottai	187) Keeramangalam
156) Lalgudi	175) Papanasam	188) Ponnamaravathi
157) Tiruchirapalli	176) Peravoorani	189) Illuppur
158) Thottiyam	177) Thanjavur	190) Karampakkudi
159) Manachanallur	178) Vallam	
160) Kulithalai	179) Thirupananthal	
161) Thuvarankurichi	180) Pappanadu	
162) Irumputhipatti		
163) Chinnathara-puram		
164) Pullampadi		
165) Thathaiyan-garpet		
166) Melanikuzhi		
167) Kattuputhur		

TABLE- 18 Cont….

MARKET COMMITTEE WISE REGULATED MARKETS

13. MADURAI	14. RAMANATHAPURAM	15. TIRUNELVELI
191. Thirumangalam	197. Virudhunagar	217. Kovilpatti
192. Usilampatti	198. Rajapalayam	218. Sankarankoil
193. Melur	199. Sathur	219. Thoothukudi
194. Madurai	200. Aruppukottai	220. Pudur
195. T.Kallupatti	201. Srivilliputhur	221. Kadambur
196. Vadipatti	202. Watrap	222. Kalugumalai
	203. Vembakkottai	223. Thenkasi
	204. Sivaganga	224. Ambasamudram
	205. Thiruppuvanam	225. Valliyur
	206. Manamadurai	226. Srivaikundam
	207. Singampuneri	227. Tirunelveli
	208. Karaikudi	228. Vilathikulam
	209. Ilayankudi	229. Kadayanallur
	210. Devakkottai	230. Thisayanvilai
	211. Ramanathapuram	231. Pavurchatram
	212. Paramakudi	232. Thiruvenkadam
	213. Kamuthi	233. Ettayapuram
	214. Thiruvadanai	234. Sivagiri
	215. Rajasingamangalam	235. Alangulam
	216. Mudukulathur	236. Sathankulam

TABLE- 18 Cont….

MARKET COMMITTEE WISE REGULATED MARKETS

16. KANYAKUMARI	17.THENI	18. DINDIGUL
237) Ethamozhi	243) Theni	250) Dindigul
238) Vadaseri	244) Cumbum	251) Ottanchatram
239) Kaliyakkavilai	245) Bodinayakanur	252) Palani
240) Monday Market	246) Chinnamanur	253) Natham
241) Kulasekaram	247) Andipatti	254) Bathalagundu
242) Thoduvatti	248) Uthamapalayam	255) Gopalpatti
	249) Periayakulam	256) Vadamadurai
		257) Vedachandur
19. NAGAPATTINAM	**20. TIRUVARUR**	**21. NILGIRIS.**
258) Kivalur	266) Valangaiman	274) Udagamandalam
259) Kuttalam	267) Koradacheri	275) Kothagiri
260) Mailaduthurai	268) Mannarkudi	276) Coonur
261) Nagapattinam	269) Poonthottam	277) Gudalur
262) Sembanarkoil	270) Vaduvur	
263) Sirkazhi	271) Kudavasal	
264) Vedaranyam	272) Thiruvarur	
265) Thiruppondi	273) Thiruthuraipoondi	

TABLE- 19
INFRASTRUCTURE FACILITIES AVAILABLE IN THE REGULATED MARKETS (Nos.)

Sl. No.	Market Committees	Own Land	Go-down	Rural Go-down	Tran-sac-tion Shed	Rural Busi-ness Hub	Dry-ing Yard	Automatic weighing and bagging machine	Farmers Rest Shed
1	Kancheepuram	8	5	8	7	--	14	--	4
2	Vellore	11	16	10	10	1	13	--	4
3	Tiruvannamalai	14	19	11	26	--	27	1	10
4	Cuddalore	5	--	6	13	1	13	--	5
5	Villupuram	13	6	14	47	1	25	1	1
6	Salem	7	3	10	10	1	18	--	2
7	Dharmapuri	7	--	5	7	1	21	--	3
8	Coimbatore	18	71	14	31	1	51	--	13
9	Erode	18	18	11	53	1	46	--	8
10	Tiruchirapalli	14	12	11	20	--	18	--	5
11	Thanjavur	7	7	6	13	--	20	--	4
12	Pudukkottai	2	1	2	2	--	5	--	--
13	Madurai	4	--	5	3	--	7	--	3
14	Ramanathapuram	13	10	12	12	1	18	--	11
15	Tirunelveli	16	7	13	14	1	19	--	8
16	Kanyakumari	5	2	5	5	--	8	--	4
17	Theni	5	--	6	4	--	7	--	1
18	Dindigul	6	4	5	5	1	8	--	1
19	Nagapattinam	3	5	5	2	--	6		--
20	Tiruvarur	4	2	5	4	--	9		2
21	Nilgiris	--	--	--	--	--	--		--
Total		**180**	**178**	**164**	**288**	**10**	**353**	**2**	**89**

TABLE- 20
District-wise Agmark Grading Laboratories

Sl. No.	Name of the District	Name and Place of Agmark Grading Laboratory	
1	Chennai	Principal Laboratory	Commissionerate of Agricultural Marketing and Agri Business, Guindy
2	Kancheepuram	Chennai (North)	
		Chennai (South)	
3	Vellore	Vellore	
4	Cuddalore	Panruti	
5	Thanjavur	Thanjavur	
6	Tiruchirapalli	Tiruchirapalli– I	
		Tiruchirapalli– II	
7	Karur	Karur	
8	Madurai	Madurai – I	
		Madurai – II	
9	Theni	Theni	
10	Dindigul	Dindigul	
11	Virudhunagar	Virudhunagar	
12	Tirunelveli	Tirunelveli	
		Thenkasi	
13	Thoothukudi	Thoothukudi	
14	Kanyakumari	Nagarkoil	
		Marthandam	
15	Salem	Salem	
16	Dharmapuri	Dharmapuri	
17	Coimbatore	Coimbatore	
18	Erode	Perundurai	
		Erode – I	
		Erode – II	
		Chithode	
19	Tiruppur	Tiruppur	
		Palladam	
		Kangayam – I	
		Kangayam – II	
		Vellakkoil	

TABLE - 21
DISTRICT WISE FARMER'S MARKETS

1. Kancheepuram	2. Tiruvallur	3. Vellore
1. Kancheepuram 2. Pallavaram 3. Chengalpet 4. Medavakkam 5. Nanganallur 6. Madhuranthagam 7. Keelkattalai 8. Jameenrayapettai 9. Guduvancheri 10. Padappai 11. Sunguvarchatram 12. Kundrathur 13. Thirukalukundram 14. Kannagi nagar	15. Tiruthani 16. Thiruvallur 17. Ambattur 18. Paruthipattu 19. Naravarikuppam 20. Perambakkam	21. Vellore 22. Katpadi 23. Vaniyampadi 24. Gudiyatham 25. Kahithapattarai 26. Ranipettai 27. Arcot 28. Tirupathur 29. Natrampalli
4. Tiruvannamalai	**5. Cuddalore**	**6. Villupuram**
30. Tiruvannamalai 31. Polur 32. Arani 33. Cheyyar 34. Chengam 35. Vandavasi 36. Keelpennathur 37. Tamarai nagar	38. Cuddalore 39. Chidambaram 40. Viruthachalam 41. Panruti 42. Vadalur	43. Tindivanam 44. Villupuram 45. Kallakurichi 46. Ulundurpettai 47. Gingee 48. Sankarapuram
7. Salem	**8. Namakkal**	**9. Dharmapuri**
49. Sooramangalam 50. Ammapet 51. Athur 52. Thathakapatti 53. Mettur 54. Attayampatti 55. Hasthampatti 56. Elampillai 57. Thammampatti 58. Jalagandapuram 59. Edapadi	60. Namakkal 61. Tiruchengode 62. Rasipuram 63. Kumarapalayam 64. Paramathivelur 65. Mohanur	66. Dharmapuri 67. Pennagaram 68. Palacode 69. Harur 70. A.Jattihalli

TABLE – 21 Cont…
DISTRICT WISE FARMER'S MARKETS

10. Krishnagiri	11. Coimbatore	12. Nilgiris
71. Hosur 72. Krishnagiri 73. Kaveripattinam 74. Denkanikottai 75. Avallapalli	76. Kovai R.S.Puram 77. Singanallur 78. Pollachi 79. Mettupalayam 80. Kurichi 81. Sulur 82. Vadavalli 83. Sundarapuram 84. Palladam	85. Udhagamandalam 86. Coonoor 87. Kothagiri 88. Gudalur
13. Erode	**14. Tiruchirapalli**	**15 .Perambalur**
89. Sampath Nagar 90. Gobichettipalayam 91. Sathiyamangalam 92. Periyar Nagar 93. Perundurai	94. Tiruchirapalli Anna Nagar 95. Tiruchirapalli K.K.Nagar 96. Thuraiyur 97. Manapparai 98. Musiri 99. Thuvakudi 100. Lalgudi	101. Perambalur 102. Veppanthattai
16. Karur	**17. Thanjavur**	**18. Nagapattinam**
103. Karur 104. Kulithalai 105. Velayuthampalayam 106. Pallapatti. 107. Vengamedu	108. Thanjavur 109. Kumbakonam 110. Pattukottai 111. Tirukattupalli 112. Papanasam	113. Mayiladuthurai 114. Nagapattinam 115. Sirkali
19. Tiruvarur	**20. Pudukottai**	**21. Madurai**
116. Tiruthuraipoondi 117. Mannargudi -1 118. Tiruvarur 119. Needamangalam 120. Muthupettai 121. Mannargudi -2 122. Valangaiman	123. Pudukottai 124. Aranthangi 125. Alangudi 126. Gandarvakottai 127. Karambakkudi 128. Viralimalai	129. Madurai Anna nagar 130. Chokkikulam 131. Palanganatham 132. Usilampatti 133. Thirumangalam 134. Melur 135. Anaiyur

TABLE – 21 Cont…
DISTRICT WISE FARMER'S MARKETS

22. Dindigul	**23. Theni**	**24. Sivagangai**
136. Dindigul 137. Palani 138. Chinnalapatti 139. Kodaikkanal 140. Batlagundu	141. Theni 142. Cumbum 143. Bodinayakkanur 144. Periyakulam 145. Devaram 146. Andipatti 147. Chinnamanur	148. Sivagangai 149. Devakottai 150. Karaikudi 151. Tirupatthur
25. Ramanathapuram	**26. Virudhunagar**	**27. Tirunelveli**
152. Ramanathapuram 153. Paramakudi 154. Kamuthi	155. Aruppukottai 156. Rajapalayam 157. Srivilliputhur 158. Virudhunagar 159. Sivakasi 160. Sathur 161. Kariyapatti 162. Thalavaipuram	163. Sankarankoil 164. Palayamkottai 165. Tenkasi 166. Kandiyaperi 167. Melapalayam 168. Ambasamudram
28. Thoothukudi	**29. Kanyakumari**	**30. Ariyalur**
169. Tuticorin 170. Kovilpatti	171. Vadaseri 172. Myladi	173. Ariyalur 174. Jeyankondam
31. Tiruppur		
175. Udumalpet 176. Tiruppur (North) 177. Tiruppur (South) 178. Dharapuram 179. Kangayam		

DEMAND NO.5 AGRICULTURE DEPARTMENT

Estimate of the Amounts Required for Expenditure in 2011–2012

REVISED BUDGET ESTIMATE 2011–2012

(Rupees in Thousands)

	Revenue	Capital	Loan	Total
DEMAND FOR GRANT – Voted	2,263,50,42	273,91,93	150,00,01	2,687,42,36
Appropriation Charged	2	…	…	2

Net Expenditure Rupees in Thousands

Head of Account		2009-10	2010-11	2011-12	2011-12
		Accounts	Revised Estimate	Interim Budget Estimate	Revised Budget Estimate
2059	PUBLIC WORKS	2,03,09	2,37,00	2,49,35	2,49,35
2202	GENERAL EDUCATION	…	2	2	2
2401	CROP HUSBANDRY	1,464,23,65	1,414,29,91	1,537,73,94	1,689,05,06
2402	SOIL AND WATER CONSERVATION	83,44,25	105,32,34	134,42,95	156,69,95
2415	AGRICULTURAL RESEARCH AND EDUCATION	180,29,37	236,15,61	248,13,39	258,45,61
2435	OTHER AGRICULTURAL PROGRAMMES	78,81,57	86,47,19	93,15,83	99,57,33

2501	SPECIAL PROGRAMMES FOR RURAL DEVELOPMENT	6,81,91	1848,07	12,00,00	12,00,00
2551	HILL AREAS	3,80,54	3,81,83	4,00,39	4,00,39
2702	MINOR IRRIGATION	7,95,36	8,14,04	8,94,81	9,06,81
2705	COMMAND AREA DEVELOPMENT	16,64,68	20,37,60	20,48,18	20,48,18
2852	INDUSTRIES	7,68	…	…	77
3451	SECRETARIAT – ECONOMIC SERVICES	6,48,16	7,93,59	8,58,92	8,69,92
4401	CAPITAL OUTLAY ON CROP HUSBANDRY	8,04,00	15,91,50	10,73,16	46,23,48
4402	CAPITAL OUTLAY ON SOIL AND WATER CONSERVATION	48,22,12	51,06,68	50,24,02	55,04,01
4435	CAPITAL OUTLAY ON OTHER AGRICULTURAL PROGRAMMES	14,55,89	55,79,13	55,82,02	106,82,02
4551	CAPITAL OUTLAY ON HILL AREAS	11,21,29	9,68,11	4,15,82	4,15,82
4702	CAPITAL OUTLAY ON MINOR IRRIGATION	…	60,00	…	8,00,00
4705	CAPITAL OUTLAY ON COMMAND AREA DEVELOPMENT	25,82,25	33,37,03	53,66,60	53,66,60
6401	LOANS FOR CROP HUSBANDRY	20,00,00	106,44,48	1	150,00,00
7610	LOANS TO GOVERNMENT SERVERNTS ETC.	…	…	…	1

DEMAND NO.5 AGRICULTURE DEPARTMENT
REVISED BUDGET ESTIMATE 2011–2012

(Rupees in Thousands (Gross))

Head of Department			Revenue	Capital	Loan	Total
05 01	Secretariat	Voted	8,69,92	…	1	8,69,93
05 02	Directorate of Agriculture	Voted	1,240,19,90	40,10,48	150,00,00	1,430,30,38
05 03	Directorate of Agricultural Marketing and Agri. Business	Voted	67,75,52	106,82,02	…	174,57,54
05 04	Directorate of Seed Certification	Voted	26,52,61	…	…	26,52,61
05 05	Directorate of Horticulture and Plantation Crops	Charged	1	…	…	1
		Voted	311,73,48	4,33,97	…	316,07,45
05 06	Agricultural Engineering Department	Charged	1	…	…	1
		Voted	355,00,95	122,65,46	…	477,66,41
05 07	Agro Engineering Services	Voted	33,93	…	…	33,93
05 08	Tamil Nadu Agricultural University, Coimbatore	Voted	252,66,35	…	…	252,66,35
05 09	Directorate of Organic Certification	Voted	57,76	…	…	57,76
	Total	**Charged**	**2**	**…**	**…**	**2**
		Voted	**2,263,50,42**	**273,91,93**	**150,00,01**	**2,687,42,36**

PART-II SCHEMES 2011-2012

(Rupees in Lakhs)

SL. No.	Description of the Schemes	Total
	SECRETARIAT	
1	Purchase of 15 Nos. of Computers with 15 Nos. of UPS, 10 Nos. of Lazer Printers, 2 Nos. of Dot Matrix Printer, 2 Nos. of Scanner, 1 No. of Line Matrix Printer and 2 Nos. of Fax Machine.	10.00
	AGRICULTURE DEPARTMENT	
2	Construction of Integrated Office Complex for Agriculture, Horticulture, Agriculture Marketing and Agri Business, Seed Certification and Agricultural Engineering Department at Tiruppur.	150.00
3	Construction of 2 Block Agricultural Extension Centres at Puthagaram in Nagapattinam District and Perumagalur in Thanjavur District.	43.00
4	Providing 270 Nos of Hand held Machines to block Assistant Director of Agriculture, Agricultural Officer and Assistant Agricultural Officer of all 14 blocks of Tiruchirapalli district, 6 selected blocks in Erode districts and 5 selected blocks each in Vellore and Virudhunagar districts.	45.00
5	Web enabled Daily Agricultural Information, Monitoring and Evaluation Project.	5.00

	HORTICULTURE AND PLANTATION CROPS DEPARTMENT	
6	Establishment of District Horticulture Extension and Training Centre at Erode and Tiruchirapalli.	40.00
7	Creation of Training infrastructure at Horticulture Training Centre at Thally.	40.00
8	Creation of infrastructure facilities at Horticulture Training Centre, Madhavaram.	30.00
	AGRICULTURAL ENGINEERING DEPARTMENT	
9	Additional amount for the construction of second floor of Chief Engineer's office.	18.00
10	Purchase of 2 Nos. of Total station at the rate of ` 8.00 lakhs each.	16.00
11	Purchase of 32 Nos. of Handheld Global Positioning System (GPS) for the use of 32 Offices of the Department at the rate of ` 75,000/- each.	24.00
12	Purchase of 6 Nos of Resistivity meters at the rate of ` 2 lakhs each.	12.00

	AGRICULTURAL MARKETING AND AGRI BUSINESS DEPARTMENT	
13	Strengthening of State Agmark Grading Laboratories by Providing UV-Spectrophotometer, Digital Refracto meter, Digital Muffle Furnace, Digital Hot Air Oven and Digital Moisture Meter.	41.00
14	Replacement of 2 Vehicles to 3 Joint Directors of Agriculture at the Commissionerate of Agricultural Marketing and Agri Business.	12.00
	TAMIL NADU AGRICULTURAL UNIVERSITY	
15	Demonstration of Lazer Leveller under farmer participatory mode in System Rice Intensification.	5.34
16	Standardization of Biochar derived from different sources of plant communities.	4.92
17	Research Delivery Model on sustainable Land Management and diversified crop production technologies in coastal agro-ecosystem of Thoothukudi district.	3.50
18	Standardization of Vermicompost Production under Bamboo plantations of Tamil Nadu.	4.92
	Total	**504.68**

K.A.Sengottaiyan
Minister for Agriculture