



**AGRICULTURE DEPARTMENT**

## **POLICY NOTE**

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**Veerapandi S.Arumugam**

**Minister for Agriculture**

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GOVERNMENT OF TAMIL NADU

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**Policy Note 2010-2011**  
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## CHAPTER – I INTRODUCTION

*“ O'er many a land they'll see their monarch reign  
who fields are shaded by the weaving grain”*

- Kural (1034)

Agriculture is the prime profession that helps in the overall development of the state economy. Various steps taken by this Government to increase the investment in agriculture, Agri based technologies, marketing development, planning approach etc., has brought about substantial improvement in production inspite of seasonal vagaries like flood and drought.

Tamil Nadu occupies 7% of the nation's population, 4% of the land area and 3% of the water resources at all India level. The annual average rain fall at all India level is 1200 mm whereas the rainfall in Tamil Nadu is 930 mm. In this situation, the land and other natural resources are fully utilized in this State. The average land holding was 1.25 hectares during 1976-77 and it is 0.83 hectares as per 2005-06 census which is lower than the all India average of 1.33Ha. Thus, 91% farmers in Tamil Nadu are small and marginal farmers.

Of the total geographical area of 130 lakh hectares, around 51 lakh hectares are the net cultivated area. About 28.63 lakh hectares constituted the net irrigated area and the balance area of 22.37 lakh hectares is rainfed. In the area irrigated 26% area (7.53 lakh hectares) is under canal irrigation, 18% area (5.06 lakh hectares) under tank irrigation and 56% is (16.04 lakh hectares) under well

irrigation. Totally there are 2,239 canals, 41,260 tanks, 18,32,154 wells and 78 dams in Tamil Nadu. 40% of the ground water potential and 3% of the surface water potential is utilized for cultivation. Only 97 blocks out of 385 blocks have full ground water potential.

### Tamil Nadu has 7 agro climatic regions

Sl. No.	Agroclimatic Zone	Districts
1	North Eastern Zone	Kancheepuram, Tiruvallur, Cuddalore, Vellore and Tiruvannamalai
2	North Western Zone	Dharmapuri, Salem and Namakkal
3	Western Zone	Erode, Coimbatore, Tiruppur, Karur, Namakkal, Dindigul and Theni
4	Cauvery Delta Zone	Trichy, Perambalur, Pudukkottai, Thanjavur, Nagapattinam, Tiruvarur and part of Cuddalore
5	South Zone	Madurai, Sivaganga, Ramanathpuram, Virudhunagar, Tirunelveli and Thoothukudi
6	High Rainfall Zone	Kanyakumari
7	Hill Zone	The Nilgiris and Kodaikanal (Dindigul)

Based on the weather, rainfall and soil types, suitable crops and technologies for increasing the crop production are recommended.

Soil health, irrigation, seeds and new technologies, have contributed much in increasing the production and productivity. To attain uniform growth in all agro climatic zones and to tap the full potential from the rainfed soils new technologies are attempted.

Steps taken by Government for agricultural development:-

- Two acres free land distribution by converting waste land into cultivable lands is under implementation. So far 2,11,507 acres of waste land distributed to 1,77,356 numbers of farmers have been converted into cultivable lands.
- Distribution of Soil Health Cards and encouraging Organic Farming for soil health improvement are under implementation.
- In continuation of the National River Linkage Policy, State Water Policy has been drafted. National Development Council have consented for State River Water Linkage and Cauvery-Gundaru linkage scheme is under implementation at a cost of Rs.165 crores. Also Tamirabarani-Karumeniyaru-Nambiyaru linkage scheme is proposed to be implemented at a cost of Rs.369 crores under irrigation plan assistance.
- With efficient water management, by using less water, high quality marketable crops are produced through precision farming. Under this, Micro Irrigation with drip fertigation technologies are under implementation in larger areas in Tamil Nadu.

- **SRI Cultivation** that paved way for more rice production is adopted in larger area.
- In order to increase the pulses and oilseeds production substantially, **Seed Village Programme** is under implementation.
- The production and quality of vegetables and horticultural crops are being increased through implementation of **National Horticultural Mission**.
- To get remunerative prices for the vegetables and fruits produced by the farmers without the interference of middleman, 151 **Uzhavar Santhais** are functioning for the benefit of consumers.
- Establishment of **Agricultural Export Zones** to provide better opportunities for export besides Terminal Markets for better marketing opportunities.
- INM and IPM to reduce the input cost besides, pollution free environment.
- Tamil Nadu is a pioneer State in providing solace for crop loss due to flood and drought on a war footing manner by encouraging farmers to participate in the **National Agricultural Insurance Scheme** and Weather Based Crop Insurance Scheme besides extending crop loss compensation to the affected farmers.

In order to provide good market price for the produces and to improve agriculture on par with industries, multiple concessions are extended in “**Industrial Policy 2007**”. During 11<sup>th</sup> Plan period, steps have been taken to attain 4% growth in agriculture and the schemes are being implemented accordingly.

## CHAPTER – II AGRICULTURE

### 1. Introduction

Agriculture continues to be the important sector in the State economy as more than 56% of the people depend on agriculture and allied sectors for their livelihood. This Government is aiming to attain high food grain production to meet the needs of increasing population. The Government is taking strenuous efforts to increase the production of food crops viz., paddy, millets and pulses. Steps have also been taken to increase oilseeds production and to increase area under sugarcane and cotton. Various schemes comprising new technologies to increase the income of the farmers are also under implementation. The vision and policies of the government is to bring about sustenance in agricultural production.

The farmers are encouraged to take up cultivation enthusiastically through compensation for the crop loss due to natural calamities, relief from indebtedness by waiver of crop loans and extending compensation through crop insurance besides providing credit at low interest rate and no interest for prompt payers.

By quality input distribution, integrated nutrient management, integrated pest management activities, the productivity level is maintained besides this Government is taking sincere efforts to prevent the loss of produce through proper post harvest technologies. Steps have been taken by the Government to know the market trend precisely by farmers and to market the produce at proper price.

### 2. Season 2.1 Rainfall

The season wise rainfall received during 2009-10 is as follows:-

(in mm)

Season	Normal Rainfall	Actual Rainfall		Deviation % w.r.to normal	
		2008	2009	2008	2009
<b>2009</b>					
Winter Season (Jan. – Feb.)	36.80	46	7.8	(+) 25	(-)79
Summer season (March- May)	129.70	261.9	131	(+)102	(+) 1
South West Monsoon (June – Sept. )	332.80	324.9	313.1	(-) 2	(-)6
North east Monsoon (Oct. – Dec.)	431.40	630.5	378.9	(+) 46	(-) 12
<b>Total</b>	<b>930.70</b>	<b>1263.3</b>	<b>830.8</b>	(+)36	(-) 11
<b>2010</b>		<b>2009</b>	<b>2010</b>	<b>2009</b>	<b>2010</b>
Winter Season (Jan. – Feb.)	36.80	7.8	11.2	(-) 79	( - ) 70
Summer season (March- May) Rain received upto March	19.40	29.50	1.90	(+) 52	( - ) 90

The year 2009 started with poor rains besides late receipt of South West Monsoon. Due to this, the Mettur dam for Kuruvai cultivation was opened on July 28<sup>th</sup> instead of scheduled date of June 12<sup>th</sup>. Thirteen districts recorded poor rains during South West Monsoon. Hence, there was a shortfall of 3.6 L.Ha. under area coverage of all crops including paddy during Kharif season. As the North East Monsoon was favorable, to increase the crop productivity during Rabi season, quality inputs, required technologies and sufficient credit are extended in time through various schemes.

## 2.2 Assistance extended for late and poor receipt of South West Monsoon

As there was poor receipt of rains during Kharif 2009, Diesel subsidy amount of Rs.15 crores shared equally by State and Centre was sanctioned towards three supplementary irrigation for the affected crops as on 15.7.2009 in 18 districts of Ariyalur, Perambalur, Dindigul, Erode, Kancheepuram, Karur, Nagapattinam, Namakkal, Pudukottai, Ramnad, Sivagangai, Thanjavur, Thiruvallur, Thiruvannamalai, Thoothukudi, Vellore and Virudhunagar. A subsidy of Rs.1000 per hectare to the maximum of 2 Ha. per farmer was extended as diesel subsidy for the pumpsets and so far an amount of Rs.2.859 crores was extended as diesel subsidy to 27384 farmers. This supplementary irrigation was helpful to tide over drought situation.

## 2.3 Area Production and Productivity During 2009-10

Due to poor rains and drought the area and production anticipated during 2009-10 are as follows:-

Crop	Area (L.Ha.)		Production (L.MT)	
	Target	Achievement	Target	Achievement
Paddy	21.50	20.71	80.60*	71.50*
Millets	12.00	9.91	23.00	19.00
Pulses	12.00	8.33	6.90	4.50
<b>Total food grains</b>	<b>45.50</b>	<b>38.75</b>	<b>110.50</b>	<b>95.00</b>
Oilseeds	10.00	6.97	17.50	11.95
Cotton (L.Bales)	1.50	1.27	4.00	3.38
Sugarcane (cane)	3.50	3.16	472.50	363.40
<b>Total</b>	<b>60.50</b>	<b>50.35</b>		

\* Rice

## 2.4 Area coverage and production programme for 2010-2011

Crop	Area target (L.Ha.)	Production target (L.MT)
Paddy	21.50	81.50*
Millets	12.00	23.00
Pulses	12.00	7.50
<b>Total food grains</b>	<b>45.50</b>	<b>112.00</b>
Oilseeds	10.00	18.00
Cotton (L.Bales)	1.50	4.00
Sugarcane (cane)	3.50	472.50
<b>Total</b>	<b>60.50</b>	

\* Rice

## 2.5. Strategies to increase production in 2010-11

During 2010-11, to attain the targeted productivity efforts are taken by proper crop management through Soil health management, Water management, Quality input distribution, Area expansion, Mechanization, Technology management, Research and Extension.

### 2.5.1 Soil Health Management

*"Reduce your soil to that dry state, when ounce is quarter ounce's weight without one handful of manure, abundant crops you thus secure."*

- kural (1037)

The following are the programmes under implementation to improve the soil health.

- ❖ Balanced fertilizer application through Soil Health Card.

- ❖ Restoring the Soil Health by encouraging Organic farming, green manure application, composting and use of farm and municipal waste, application of vermicompost, Blue Green Algae, Azolla, biofertilizer etc., and protecting the environment.
- ❖ Reclamation of saline and alkaline soils and to increasing the production.
- ❖ Balancing Micro Nutrient deficiency and increasing the productivity.
- ❖ Conversion of wasteland to Agricultural land through reclamation

## 2.5.2 Water Management

*“ When water fails, functions of nature cease, you say;  
Thus when rain fails, no men can walk in ‘duty’s ordered way”  
- Kural (20)*

Considering the importance of water, the following schemes are under implementation

- ❖ Formation of State Water Policy and assistance for intra-state river water linkage.
- ❖ Intensification of irrigated area development and water management schemes.
- ❖ Improving water resource through formation of farm ponds, de-silting lakes and ponds, percolation pond formation etc.
- ❖ Rain water harvesting for recharging of underground water
- ❖ Replacing old pumpsets with new pumpsets to increase the water and power use efficiency.
- ❖ Encouraging drip and sprinkler irrigation
- ❖ Implementation of SRI technology in larger area.
- ❖ Promoting Precision farming.

## 2.5.3. Crop Management

### 2.5.3.1 Quality inputs.

- ❖ Ensuring availability of quality seeds in time to farmers for increasing productivity improvement.
- ❖ Training to farmers on seed production to ensure availability of required quantity of quality seeds of Paddy, Millets, Pulses and Oilseeds under Seed Village Programme.
- ❖ Increasing Seed Replacement Rate through Seed Village Programme and encouraging private seed entrepreneurs.
- ❖ Ensuring availability of quality fertilizers and pesticides to farmers
- ❖ Promoting the usage of biofertilisers and micro nutrients to pave way for soil health improvement and productivity enhancement.
- ❖ Sufficient credit in time and interest free crop loan for those who repay their loan promptly through co-operatives.

### 2.5.3.2 Area expansion

- ❖ Increasing rice production by expanding SRI technology in larger extent.
- ❖ Popularising the need of millets such as cumbu, cholam etc., and increasing the area of these crops under cultivation.
- ❖ Expanding the area under maize through Micro irrigation and contract farming.
- ❖ Expansion of area under pulses by encouraging pulses cultivation as pure crop, inter crop, bund crop and rice fallow.
- ❖ Area expansion and production improvement of irrigated cotton, maize, oilseeds and sugarcane through fertigation and precision farming.

### 2.5.3.3 Mechanisation

- ❖ To take up agricultural operations in time and to overcome the labour demand, machineries such as - Tray nursery, tractors, rotavator, power tiller, lazer leveler, harvester are hired at Government fixed nominal rate
- ❖ Distribution of paddy planter at subsidized rate.
- ❖ Distribution of conoweeder, marker, pulses grader and Turmeric curing boilers at subsidized cost.
- ❖ Micro irrigation equipments at subsidized cost.
- ❖ Extending subsidy to panchayats for the purchase of machinery.
- ❖ Subsidy for gender friendly equipments.
- ❖ Proper training to farmers to operate agricultural machineries and equipments.

### 2.5.3.4 Technical guidance

- ❖ Increasing rice production through proper training in System of Rice Intensification technologies such as planting of single young seedlings by square planting at 25 cm space besides water management through wetting and drying, use of conoweeder etc.,
- ❖ Adoption of modern technologies besides Drip irrigation and fertigation under precision farming in cholam, sugarcane and horticultural crops
- ❖ Providing technical guidance to farmers through large scale demonstration, method demonstration, farmers training etc.
- ❖ 2% DAP foliar spray for Pulses crop to get required nutrients.
- ❖ Intensification of Micro Nutrient usage in oilseeds.
- ❖ Adoption of IPM through FFS for pest and disease control.

### 2.5.3.5 Extension

- ❖ Availability of information in Agriculture, Horticulture, Agricultural Marketing and Seed certification in one place at Block level through Departmental restructuring.
- ❖ Agri clinics with Mini Soil Testing Laboratory at block level for technology transfer and quality inputs distribution.
- ❖ Involving Farmers Interest Groups, Farm Women Groups and NGOs in extension through technical trainings.

## 3. State Schemes

- Implementation of Soil Health Management schemes besides need based fertilizer application on the soil testing results.
- Quality seed production and distribution to farmers
- Ensuring timely availability of quality fertilizer and Plant Protection chemicals.
- Pest and disease control through Bio control agents to reduce the chemical pesticide usage.
- Improving the technical know how of the farmers through Farmers' Training Centres.
- Increasing the productivity improvement by conducting healthy competitions among farmers under Crop Yield Competition by adoption of modern technologies.
- Extending relief compensation to the farmers affected by the natural calamities.

### 3.1 Soil Health

#### 3.1.1 Soil Test based balanced fertilizer application

Need based application of fertilizers reduces the input cost and increases the yield. Thirty Soil Testing



Laboratories and 16 Mobile Soil Testing Laboratories are functioning to analyse soil samples and to provide fertilizer recommendation based on soil health. Annual target of 11.33 lakh soil samples was programmed to be analysed and during 2009-10, 9.75 lakh soil samples have been analyzed.

Apart from this to provide employment opportunities to agricultural graduates, Agri clinics with mini soil testing facilities are being established in all the 385 blocks at a cost of Rs.11.94 crores under National Agricultural Development Programme. Facilities have been extended to test 11.55 lakhs soil samples additionally through these Agri clinics. Thus the farmers have been provided access to test their soil samples at Block level besides getting technical advice and quality input distribution. About 21.74 lakh soil health cards have been issued to farm families so far.

### **3.1.2 Organic manures**

#### **3.1.2.1 Conversion of farm wastes into compost by Pleurotus**

Micro organisms in the soil are helpful in converting the soil nutrients into available form from unavailable form besides preventing depletion of soil nutrients through continuous cropping. To enhance the activity of soil micro organisms, organic manuring is essential. The availability of farm yard manure and compost for application to fields are limited. Therefore, a scheme to convert farm waste into compost through pleurotus is under implementation. Under this scheme a mini kit worth Rs.120/- containing 5 kg urea, 1 kg pleurotus and a technical pamphlet is distributed to farmers at free of cost. During 2009-10, 5000 minikits worth Rs.6 lakhs were distributed at free of cost. This scheme will be continued with a cost of Rs. 6 lakhs during 2010-11 also.

#### **3.1.2.2 Distribution of Green Manure Seeds**

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 Green Manure cultivation, every year 250 MTs of green manure seeds are produced and distributed at a total cost of Rs.50 lakhs with 25% subsidy. During 2009-10, 149 MTs of green manure seeds were produced and distributed. During 2010-11 also 250 MTs of green manure seeds will be produced and distributed.

#### **3.1.2.3 Application of Vermi Compost**

Earth worm, the "Farmers' Friend" is capable of sustaining the soil health. Vermi compost contains 2.1% Nitrogen, 3.44% Phosphorus, 1.01% Potash besides 7 Micronutrients such as copper, iron, Zinc, Manganese, Boron, Molybdenum and chlorine. It also contains huge amount of beneficial microbes. Vermicompost technology is now popularised so as to enable the farmers to prepare required natural manure in their own lands. Field Demonstrations and various training programmes are organised to equip the farmers with this technology. There has been wide appreciation among the farmers for this programme. 300 demonstrations were organised during 2009-10, to conduct training to 15,000 farmers at a total cost of Rs.11.55 lakhs. Each batch has 50 farmers getting an incentive of Rs.50/- each. Assistance of Rs.1200/- per demonstration is provided. This scheme will be implemented during 2010-11 also.

#### **3.1.2.4 Blue Green Algae and Azolla**

Azolla is a fern. Inside azolla a microbe called Anabena is present, which is capable of increasing soil health through fixation of atmospheric Nitrogen into the soil.

Likewise the substance Nitrogenase in the BGA is also capable of fixing atmospheric Nitrogen. To increase the yield of the paddy crop 525 MTs of bluegreen algae and 500 MTs of Azolla are produced annually in the State Seed Farms of this Department and distributed to the farmers through Agricultural Extension Centres. This scheme will be continued during 2010-11 also.

### 3.1.2.5 Production and distribution of Bio-Fertilizer

Bio-fertilizers such as - Azospyrillum and Rhizobium are capable of fixing atmospheric nitrogen into the soil. These are suitable to crops like paddy, millets and groundnut. The bio-fertilizer Phosphobacteria is capable of converting the nutrients to available form from unavailable form. The Rhizobium and Phosphobacteria are suitable for pulses crops. Under Soil Health Management and Integrated Nutrient Management, Bio-fertilizers are the cheapest input besides safe fertilizers to environment. At present 80 Lakhs Biofertiliser packets are produced and distributed through 6 Biofertiliser production units functioning in Cuddalore, Salem, Trichy, Kudumianmalai (Pudukottai), Sakkottai (Thanjavur) and Ramnad. Further 9 new Biofertiliser production units have been established, in the Government buildings in Chengalpat (Kancheepuram), Polur (Thiruvannamalai), Palakode (Dharmapuri), Avinasi (Thiruppur), Bhavani (Erode), Needamangalam (Thiruvarur), Uthamapalaym (Theni), Thenkasi (Thirunelveli) and Thoothukudi each at the rate of Rs. 90.50 Lakhs, totaling a cost of Rs. 814.50 Lakhs. Through these units the biofertiliser production will be increased to 192 Lakh packets and will be distributed from 2010-11 onwards.

### 3.1.3 Macro Nutrients

For the growth of crops 16 nutrients are essential, of which Carbon, Oxygen, Hydrogen are available to the crops

from atmosphere and water. Nitrogen, Phosphorus and Potash are the Macro nutrients. Calcium, Magnesium, Sulphur are secondary nutrients. Continuous cultivation of high yielding varieties leads to depletion of nutrients from the soil. To compensate the nutrient loss, need for application of these nutrients are essential. Organic farming alone will not suffice to increase the yield. Therefore, application of chemical or inorganic fertilizers based on soil fertility and requirement of respective crops is very much essential. In order to determine soil fertility status, soil testing is recommended and soil fertility cards are under distribution. Based on the seasonwise crop coverage, the annual fertilizer requirement is worked out on monthly basis. The Government of Tamil Nadu is taking sincere efforts during 2009-10 for getting allocation of fertilizers viz, urea, potash and compound / complex fertilizers from Government of India and steps have been taken to ensure availability without any shortage through fertilizer firms. Particularly, DAP fertilizers are distributed throughout Tamil Nadu through PACBs by providing an interest free advance of Rs.90 crores to State Agency TANFED during 2009-10. The availability of fertilizer stock and distribution are being monitored on daily basis.

Fertilizer distribution during 2009-10 and the Plan for 2010-11 are as follows:-

In lakh MTs

Fertilizer	2009-10 anticipated distribution	Plan during 2010-11
Urea	10.41	12.20
DAP	3.07	4.48
Potash	5.00	6.16
Complex	5.74	5.88

### 3.1.3.1 Quality Control

To ensure distribution of quality fertilizers and to punish the distributors who sell spurious fertilizers, Fertilizer Control Order 1985 is enforced. There are 14 notified Quality Control Laboratories functioning under the control of the Department of Agriculture with annual analyzing capacity of 17,500 fertilizer samples. Samples are drawn from wholesale, retail fertilizer units and also from fertilizer manufacturing units. During 2009-10, 16027 number of fertilizer samples have been tested and 529 fertilizer samples have been declared as non-standard. Accordingly departmental action and legal action have been initiated.

### 3.1.4 Micro Nutrients

For better crop growth and increasing productivity seven micro nutrients such as Iron, Copper, Zinc, Manganese, Boron, Molybdenum, Chlorine are essential. Micro nutrients deficiency is widespread in this State. Based on soil health and crop requirement micro nutrients application is recommended as this correction increases the productivity.

Soil Testing is conducted to analyse the micronutrient contents of the soil through "ATOMIC ABSORPTION SPECTROPHOTOMETER". This equipment is available in 19 Laboratories, out of 30 Soil Testing Laboratories. Further, this equipment is also available in 9 Mobile Labs, out of 16 Mobile Soil Testing Laboratories to analyze micro nutrients. Action is also taken to install Atomic Absorption Spectrophotometer in the 11 soil testing laboratories functioning from 2009-10 onwards at a total cost of Rs.1.10 crores.

Realizing the importance of micro nutrients required for various crops, about 1400 MTs of Micronutrient Mixtures of 14 grades are manufactured every year in Micro Nutrient Mixing Centre functioning at Kudumianmalai, in Pudukkottai District. Besides, 6000 MTs of Micro Nutrient Mixture manufactured by private firms are also distributed through retail outlets annually.

### 3.2 Seeds

Seeds are the vital input that ensure higher production. Seeds are distributed after ascertaining its physical and genetic purity. Seed Replacement Rate (SRR) is the percentage of area sown out of total area of crop planted in the season by using certified / quality seeds other than farm saved seeds. Certified seeds have to be replaced once in three cropping seasons. The Seed Replacement Rate for self pollinated crops such as paddy, ragi, pulses, groundnut is 33%, for cross pollinated crops such as cholam, cumbu and cotton is 50% and Seed Replacement Rate for hybrids is 100%.

The SRR for crops such as paddy, millets and cotton are as per requirement. But the SRR for pulses and oilseeds are at lower rate. Apart from distributing seeds through the department, the Government is also encouraging private seed production to attain the required SRR. Further, through Seed Village Programme quality seeds of paddy, millets, pulses and oilseeds are made available to the farmers at village level. Quality certified seeds are distributed at 50% subsidy under this scheme.

During 2010-11, it is programmed to distribute 18,000 MTs of paddy, 450 MTs of millets, 4,500 MTs of pulses 6,376 MTs of oilseeds and 175 MTs of cotton seeds through 880 Agricultural Extension Centres of this

department. The breeder seeds required for producing these certified seeds are obtained from Tamil Nadu Agricultural University and Indian Council for Agricultural Research and multiplied as foundation seeds through 43 State Seed Farms functioning in this department. These foundation seeds 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 MTs.

In order to involve Farm Women Groups, farmers and NGOs in seed processing activities it is planned to establish 75 private Seed Processing Units at Rs.7.50 Lakhs subsidy based on its capacity and 70 centres are established so far at a cost of Rs.462.00 Lakhs as subsidy. Action is being taken to establish the balance 5 processing centres. Each processing unit is capable of processing 1,000 MTs of seeds annually. The seed quality is ensured by Department of Seed Certification at various stages of inspection and quality seeds alone are distributed.

The Government is encouraging the private firms involved in seed production and distribution. However, the private firms are producing lesser volume and high value Hybrid seeds of Maize, Sunflower, Vegetables, and Bt.Cotton in large quantities and distributed through 5313 private seed sale outlets.

The details of seeds distributed and seed replacement rate (SRR) achievement percentage during 2009-10 and plan for 2010-11 are as follows:-

Crop	Seed distributed during 2009-10 (in Tonnes)			
	Total Requirement	Department 'C' Seeds	Private 'C' / TFL Seeds	SRR Achievement
Paddy	107500	17832	57418	70
Millets	12153	284	6400	55
Pulses	24000	1315	2525	16
Oilseeds	80612	3038	5023	10
Cotton	217	73	144	100

Crop	Seed distribution plan of 2010-2011(in Tonnes)			
	Total Requirement	Department 'C' Seeds	Private 'C' /TFL Seeds	SRR
Paddy	107500	18000	57250	70
Millets	12153	450	6243	55
Pulses	24000	4500	800	20
Oilseeds	80612	6376	5716	15
Cotton	612	175	437	100

### 3.3 Plant Protection

***“ To cast manure is better than to plough: weed well: to guard is more than watering now” - Kural (1038)***

#### 3.3.1 Pest / Diseases Surveillance

Due to pest and disease attack production loss estimate is above 20%. To prevent the loss, a perfect monitoring of pest and disease is essential. In this connection, intensive monitoring is being done through fixed plot survey. The pest and disease incidences are forewarned besides recommending necessary control measures to the farmers on media like radio, television, press, etc.

The multiplication of pest and disease are kept under control by natural creation of enemies in the field. The spray of chemicals is not necessary when the incidence is within the economic threshold level. This not only reduces the expenditure but also protects the environment. Awareness training on Integrated Pest Management is also imparted to farmers from seed to harvest period. By this, the consumption of technical grade pesticides which was 10,926 MTs during 1984-85 have now been brought down to 2,315 MTs. Apart from this, use of bio-pesticides and bio control agents are encouraged instead of chemical pesticides. If disease affected seeds are raised, the crops become highly susceptible to disease. Hence to control seed borne diseases, seed treatment technology is being recommended.

### 3.3.2 Control of mealy bug by spray of chemicals in large extent

In Tamil Nadu during 2009-10, the attack of mealy bug of Euphorbia pest is noticed in 7027 Ha in the districts of Coimbatore, Erode, Salem and Namakkal specifically in the crops of Papaya, Mulberry and Tapioca. On inspecting the affected fields, the appropriate control measures viz., spraying with Neem based pesticides (Azadirachtin) in the first round and Chemical pesticides ( Profenofos) in the second round were recommended by the scientists of Tamil Nadu Agricultural University, Officers of Horticulture, Sericulture and Agriculture Departments. These technologies were explained to the farmers through electronic media and conduct of campaigns.

To control the infestation of mealy bug by spray of chemicals in larger areas, Rs.100 lakh is sanctioned as 100% subsidy in National Agricultural Development Programme under the project “**Control of mealy bug by spray of chemicals in large extent**”. The scheme is

implemented in about 7027 Ha. by distribution of pesticides at free of cost for two rounds of spraying.

### 3.3.3 Integrated Pest Management

In order to prevent the production loss from pest and disease attack, farmers are taught about technologies on Integrated Pest Management by conduct of Farmers Field School on all crops. Tamil Nadu is the pioneer State in implementing this programme. The aim of the scheme is to monitor the pest and disease attack at field level, besides status of its natural enemies and to adopt appropriate control measures through proper training. This reduces the cost of cultivation apart from protecting the environment. This reduces the harmful effect of the residues in the harvested produce besides preventing resurgence of pest.

The details of targeted number of Farmers Field School, achievement and farmers benefitted under various schemes in 2009-10 are as follows:-

Crop	Farmers Field School (Nos)	Trained Farmers (Nos)	Expenditure (in L.Rs.)
Paddy	744	22320	126.48
Oilseeds	100	3000	22.68
Pulses	416	12480	66.04
Maize	40	1200	9.07
Cotton	300	9000	38.50
<b>Total</b>	<b>1600</b>	<b>48000</b>	<b>262.80</b>

This scheme will be implemented during 2010-11 also.

### 3.3.4 Bio-control production centre and State Integrated Crop Protection Centre

The market demand is increasing for the product obtained through organic method of cultivation. Through 62 Bio-control production centres, bio-pesticides and bio agents are produced and distributed to the farmers to control the insects like sugarcane internode borer, coconut black headed caterpillar, coconut rhinoceros beetle, cotton bollworm, Groundnut Red Hairy caterpillar and Prodenia, besides bio pesticides to control pests on Cotton, Paddy and Pulses. The details of bio-control agents produced during 2009-10 are as follows:

Sl. No.	Pest attacking crops	Bio-control agents	No. of bio centres	Target	Achievement
1	Coconut black headed caterpillar	Bethelid Braconids Eulophids	20	10500 hectare	5950
2	Coconut Rhinoceros beetle	Green Muscardine Fungus	2	55000 vial	30450
3	Sugarcane inter node borer	Trichogramma chilonis	21	11000 hectare	4600
4	Groundnut Red Hairy caterpillar and prodenia	Nuclear Poly Hedrosis Virus	4	250 lit	50
5	Diseases of cotton, paddy and pulses	Biopesticides Pseudomonas Nuclear Poly Hedrosis Virus Trichogramma chilonis Trichoderma Viridi	12	27000 kg 2000 lit 7500 cc 12200 kg	27821 1479 5240 10375
6	Cotton bollworm	N.P. Virus	3	2000 (Hectare)	850

### 3.3.5. Quality Control on Pesticides

The pesticides are being distributed through 8610 private sale outlets. The Insecticide Act 1968 and Insecticide rules 1971 are implemented intensively to ensure the quality of pesticides. In the State 15 pesticide testing labs are functioning with an annual analyzing capacity of 21850 samples. Action is being taken against spurious and non standard pesticide manufacturers and sellers. During 2009-10 on analyzing 15338 samples, it is found that 64 samples are non standard on which suitable action is initiated.

## 4. Extension

- The Department of Agriculture is restructured from production oriented extension to market driven agricultural development to uplift the livelihood of the farmers. Provisions are made at block level to make available the extension services and the inputs of Agriculture, Horticulture and Plantation crops, Agricultural Marketing and Agri Business, Seed Certification and Organic Certification under a single roof.
- To inspect the extension work at District level, one Joint Director of Agriculture, one Deputy Director of Agriculture each to look after State and Central schemes and one Deputy Director of Agriculture to provide Agricultural information to the District collector are functioning.
- To implement the schemes at block level one Assistant Director of Agriculture and under his control, two Agricultural / Deputy Agricultural Officers and 6-7 Assistant Agricultural Officers are functioning.

- 385 Main Agricultural Extension Centres and 495 Sub- Agricultural Extension Centres are functioning in this Department to distribute inputs such as quality seeds, Micro Nutrients and bio fertilizers etc.,
- Computers are established in all the Agricultural Extension Centres to know the availability of inputs and speedy implementation of schemes.
- Automatic Weather Stations are established in 224 blocks and linked with Tamil Nadu Agricultural University web site to forecast the weather to the farmers to carry out agriculture related activities.
- Trainings are conducted often to the farmers, Farm Women Groups and Farmer Interest Groups through Extension Workers, Farmers Training Centres and State Agricultural Extension Management Institute.
- Monthly zonal workshops are conducted in co-ordination with University scientists at district level to find solutions for the field level problems encountered by the extension workers and to finalise the agricultural activities to be carried out for next month.
- Scientific workers conference is being organized at State level every year to find solutions on the agriculture related problems.

#### 4.1 Farmers Training Centres

Trainings are to be conducted to the farmers regularly to know about the agriculture management activities on Quality seed production, Integrated Nutrient Management, Water Management, Control of pest and

disease, Crop diversification, Precision Farming, System of Rice Intensification, value added produce and to raise market demand crops. Thus the prime role of Agricultural Extension is to make the farmers to adopt the modern technologies related to agriculture and allied activities and to ensure the production. The Farmers Training Centres are helping the male and women farmers involved in agriculture and male and female convener of Farmers Training Centre to know about the new agricultural technologies by conduct of training. To enhance their capacity, Farmers Training Centres are conducting village level training, convenors training, demonstration and sensitization training. In Tamil Nadu required trainings are being conducted through 22 Farmers Training Centres.

The details of activities done during 2009 -10 are:-

Sl. No.	Component	2009-10 ( in Nos)	
		Target	Achievement
1	Village Level Training	484	474
2	Convenor Training	220	209
3	Demonstration	968	948
4	Sensitisation Training	2420	2353

Similar trainings will be given during 2010-11 also.

#### 4.2 State Level Agricultural Management Institute:

The pioneer training institute in Tamilnadu is situated at Kudimiyamalai in Pudukottai district and is functioning since 1975. It is conducting trainings on office administration, office management cum computer training to the extension officers / students and officers of non-governmental organization. The technical competence and management capacity of the officers are being ensured

through these trainings. The details of training given during 2009-10 are:

Sl. No.	Details of training	No. of officers trained
1	Office Administration Training	150
2	Computer Training	50
	Total	200
	Finance (in Lakh Rupees)	1.98

This State Level Agricultural Management Training Institute facilities like 97 rooms, two hostels to accommodate 250 trainees, two guest houses, class rooms, seminar hall, computer room, library, review hall, auditorium and information hall are available. To strengthen the infrastructure facilities of this State level Agricultural Management Institute Rs.17.36 lakh is to be sanctioned under Part - II scheme 2010-11.

#### 4.3 (a) National Agricultural Insurance Scheme.

National Agricultural Insurance Scheme is being implemented from Kharif 2000 onwards in all the districts of Tamil Nadu through Agricultural Insurance Company of India Ltd., mainly to provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities such as cyclone, flood, drought, damages due to pest and diseases, and to protect their livelihood.

Under this scheme the food crops viz., Paddy, Millets, Pulses, Oilseeds, Sugarcane, Cotton and Horticultural Crops are insured. All the farmers (Loanee and Non-loanee farmers including tenant farmers) growing the notified crops are enrolled under National Agricultural Insurance Scheme.

Generally, under National Agricultural Crop Insurance scheme, Loanee farmers only are benefited as they are enrolled on compulsory basis. However, Non-loanee farmers do not come forward to register under this scheme as they are enrolled on voluntary basis. Hence to encourage the Non-loanee farmers to participate in this scheme, this Government after coming to power during 2006-07 has extended 50% premium subsidy to Non-loanee farmers. Further, from 2007-08 onwards, the Government of Tamil Nadu is extending 50% premium subsidy to both Loanee and Non-loanee farmers.

The subsidy extended by the State Government for Loanee and Non-Loanee farmers is as follows:-

Details		Government of India's Subsidy (%)	Government of Tamil Nadu's 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 wide spread calamities. Hitherto, the defined area was notified at block level for all notified crops. However from the year 2008-09 onwards, the major crops like Paddy, Maize, Groundnut, Cotton, Rice fallow cotton, Sugarcane, Onion, Banana, Potato, Pineapple, Turmeric, Tapioca and Ginger are being notified at firka level. The other crops such as Chulam (Jowar), Cumbu (Bajra), Ragi(Finger Millet), Gingelly(Sesamum), Blackgram, Greengram, Horsegram



and Chillies are being notified at block level. During the year 2009-10, Sunflower has also been included in the above scheme and it has been notified at block level during Rabi season.

During the year 2009-10, Government has sanctioned a sum of Rs.28.50 Crores towards payment of 50% premium subsidy for Loanee and Non-Loanee farmers including tenant farmers for settlement of premium subsidy to Agriculture Insurance Company. Till February 2010 a sum of Rs.23.07 Crores has been expended as 50% premium subsidy for coverage of 8.67 Lakh No.of farmers. From 2006-07 onwards, about 27.27 Lakh farmers participated in this scheme and Rs.892.46 Crores have been expended to benefit 8.62 Lakh farmers. The achievement details under National Agriculture Insurance Scheme from 2006-07 are furnished here under.

Sl. No.	Component	2006-07	2007-08	2008-09	2009-10 (So far)	Total
1.	Amount Sanctioned by the Government (Rs.in Crores)	8.00	15.00	28.50	28.50	80.00
2.	Amount utilized (Rs.in Crores)	1.01	10.29	20.83	23.07	55.20
3.	Farmers enrolled (Lakh Nos.)	3.15	5.57	9.88	8.67	27.27
4.	Compensation amount disbursed (Rs.in Crores)	9.44	282.63	600.39	--	892.46
5.	Farmers benefited due to compensation amount (in Lakh Nos.)	0.23	3.03	5.36	--	8.62
6.	Area covered (L.Ha.)	4.40	8.58	9.07	8.57	30.62

The scheme will be continued during 2010-2011 with an allocation of Rs.38.00 Crores.

#### 4.3. (b) Compensation amount released for Paddy-II crop (Samba) affected due to 'NISHA' cyclone in the month of November 2008 under National Agricultural Insurance Scheme.

In the month of November 2008, large extent of samba paddy crop was affected due to "NISHA" Cyclone for which an amount of Rs.651.66 crores was sanctioned as compensation to the affected farmers who had enrolled under National Agricultural Insurance Scheme during 2008-09. Out of the total sanctioned amount, the State Government share is Rs.306.477 crores and the Government of India share is Rs.306.477 crores. The balance amount of Rs.38.706 crores is the premium collected by the Agriculture Insurance Company of India Ltd. Government of Tamil Nadu has released its entire share of Rs.306.477 crores and the Government of India has released an amount of Rs. 254.859 crores, besides the premium amount of Rs.38.706 crores collected by the Agriculture Insurance Company of India Ltd., totaling a sum of Rs.600.042 crores has been disbursed to 5,36,352 affected farmers in 20 districts viz., Thiruvarur, Nagapattinam, Thanjavur, Ramanathapuram, Pudukottai, Cuddalore, Sivagangai, Trichy, Madurai, Tiruvannamalai, Virudhunagar, Kancheepuram, Villupuram, Perambalur, Karur, Tiruvallur, Salem, Krishnagiri, Tirunelveli and Theni. The balance amount to be released by the Government of India is Rs. 51.618 crores. Further, an amount of Rs.200 Crores has been allocated for the year 2010-11 to compensate the crop loss.

#### 4.3 (C) Weather Based Crop Insurance Scheme – Kharif 2009

Weather parameters such as temperature, rainfall, humidity, etc plays a vital role in influencing crop growth and

any variations in these parameters may ultimately have an impact on the crop growth and productivity.

With this backdrop, Weather Based Crop Insurance scheme is being implemented in Tamil Nadu on pilot basis from Kharif 2008 onwards wherein the critical stages of a crop such as sowing, vegetative, flowering and harvest stages are insured so as to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss resulting from incidence of adverse weather conditions. The scheme mainly covers the risk of deficit and excess rainfall.

The scheme is being implemented by Agriculture Insurance Company of India Ltd., (AIC) and Private Insurance companies viz., ICICI Lombard and IFFCO – Tokio General Insurance companies. Under this scheme, all major Cereals, Millets, Pulses, Oilseeds and Commercial / Horticultural Crops are insured. The scheme is compulsory for loanee and optional for Non-loanee farmers. National Agriculture Insurance Scheme is not implemented for Loanee farmers in 8 selected districts viz., Salem, Dharmapuri, Virudhunagar, Perambalur, Ariyalur, Villupuram, Dindigul and Coimbatore where Weather Based Crop Insurance Scheme is implemented. However, Non-Loanee farmers can choose either National Agriculture Insurance Scheme or Weather Based Crop Insurance Scheme and also Insurance company for enrollment.

During 2008-2009, Government sanctioned a sum of Rs.1.50 Crores towards the implementation of WBCIS on pilot basis in the above said districts.

The scheme was implemented for Loanee and Non-Loanee farmers by Agricultural Insurance Company of India Ltd., in Dharmapuri, Salem, Virudhunagar, Perambalur and Ariyalur district. ICICI – Lombard General Insurance

Company implemented the scheme for Non loanee farmers in Villupuram & Dindigul districts and IFFCO-TOKIO General Insurance Company for Non-Loanee farmers in Coimbatore district till Kharif 2009. Now Government of India has permitted both public and private Insurance companies to operate the Weather based Crop Insurance Scheme for Loanee and Non-Loanee farmers during Rabi 2009-10.

During 2009-10, notification, premium rates have been finalized for both Kharif and Rabi and the scheme is being implemented on pilot basis in the above districts by the insurance companies said above. The achievement details under Weather Based Crop Insurance Scheme from the year 2008-09 onwards are furnished hereunder:-

Sl. No.	Component	2008-09	2009-10 (Upto 30.11.09)
1.	Amount Sanctioned by the Government (Rs.in Crores)	1.50	1.50
2.	Amount utilized (Rs.in Crores)	1.43	1.00
3.	Farmers enrolled (Lakh Nos.)	0.21	0.12
4.	Compensation amount disbursed (Rs.in Crores)	1.25	..
5.	Farmers benefited due to compensation amount (in Lakh Nos.)	0.11	..
6.	Area covered (L.Ha.)	0.30	0.08

The scheme is expected to be continued during 2010-2011 also

#### 4.4 Crop Yield Competition

With the aim to encourage the farmers to increase the productivity and enhance the production in Paddy, Groundnut, Choram, Cumbu, Maize, Greengram and

Blackgram at State Level and District Level, Crop Yield Competitions are being conducted.

To participate in this competition, an enrolment fee of Rs.100/- for Paddy and Groundnut and Rs.50/- for other crops as State Level entry and Rs.50/- for Paddy and Groundnut and Rs.25/- for other crops for district level entry are collected and competitions are conducted. The following prizes are awarded to the farmers who get highest productivity at State and District level by adopting modern technologies.

(in Rs)

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

In 2009-10, the scheme is implemented with an allocation of Rs.14.07 lakh.

The scheme will be continued for 2010-11 also.

#### 4.5 PART-II SCHEMES

##### 4.5.1 Construction of integrated office Complex

At present, 22 district Joint Directors of Agriculture offices are functioning in the State in own buildings. During 2009-10 under Part-II scheme as first phase integrated office complex by housing district level offices of Agriculture, Horticulture, Agricultural Marketing and Agri Business, Seed Certification and Agricultural Engineering Departments is under construction in the districts of Thiruvannamalai and

Krishnagiri at Rs.300 lakhs. In the second phase, in 2010-11, the Integrated complex is to be constructed at Perambalur at a cost of Rs.150 lakhs.

##### 4.5.2 Construction of Agricultural Extension Centres

In the restructure, Agricultural Extension Centres are functioning with the offices of Agriculture, Horticulture, Agricultural Marketing and Seed Certification Departments positioned to provide integrated advice and scheme assistance under one roof. During 2009-10, the new buildings for 5 Agricultural Extension Centres located at Puduchatram (Namakkal), Thirunavalur (Villupuram), Krishnarayapuram and Thogaimalai (Karur) and Chitamoor (Kancheepuram) are under construction with an outlay of Rs.75 lakhs. A new building for the Agricultural Extension Centre at Kariyapatti is proposed to be constructed at a cost of Rs.15 lakhs under Part-II schemes 2010-11.

#### 5. Additional Central Assistance Scheme National Agricultural Development Programme (Rashtriya Krishi Vikas Yojana )

A special Additional Central Assistance scheme namely **National Agricultural Development Programme** was launched with 100% Central assistance during 11<sup>th</sup> Five Year Plan to achieve 4% growth rate in agricultural sector which provides flexibility to formulate required projects at District/State level on funding basis.

##### Objectives:

- To increase public investment in agriculture
- Increasing productivity of important crops through focused interventions
- Maximize returns to the farmers
- Bringing quantifiable changes in agriculture and allied sectors.

The projects relating to development in Agriculture, Animal Husbandry, Dairy, Fisheries and also minor irrigation are implemented under this programme. During 2007-08 and 2008-09, the Scheme was implemented at a total allocation of Rs. 325.69 crores. During 2009-10, the Scheme is implemented at a total allocation of Rs.127.90 crores. The details are as follows.

**a. Precision Farming.**

The Precision Farming technology is capable of increasing the productivity of crops by 2 to 3 times over the present level of productivity. This technology is highly effective for Agricultural Crops like Sugarcane, Cotton and Maize. Under this programme, drip irrigation with fertigation is provided besides adoption of all other scientific cultivation methods. Training is imparted by Tamil Nadu Agricultural University on technological aspects. This programme will be implemented as 20 Ha. clusters by registering the Farmers Societies for obtaining Bank loan and for marketing their produce. Bringing more area with available water and get higher production through adoption of scientific methods of cultivation, it is programmed to cover 4000 hectares with Agricultural Crops during 2009-10 at a cost of Rs.10.88 crores. The 50% subsidy extended for Drip irrigation is now enhanced to 65% subsidy with the central assistance of 40% and State assistance of 25% from 10%.

**b. Promoting System of Rice Intensification (SRI) Through Conduct of Demonstrations.**

The SRI system of cultivation which is less water intensive, needing less input and capable of giving high productivity is promoted, Demonstrations are conducted in 40000 hectares at a cost of Rs.12.00 crores. The beneficiaries are supplied with seeds, other

inputs, Conoweeder and marker at subsidised cost of Rs.3000/-.

**c. Supply of Conoweeder and Marker to Women SHGs.**

To maintain adequate spacing of rice crop, square planting is recommended which facilitates profuse tillering and gives higher productivity due to adequate sunlight, aeration, and fertiliser availability to the crop. Conoweeder is recommended for controlling the weeds. The weeds which are pressed into the Soil by the use of Conoweeder will add organic content to the soil. Moreover due to stirring of soil at the root zone, development of new roots and aeration results in better growth of crop. To adopt SRI method of cultivation, subsidised distribution of Conoweeder and marker through various schemes are in vogue. Further to make available of these implements at village level through women SHGs to the farmers this Scheme has been implemented to cover 3000 women groups at a cost of Rs.222 lakhs. Each women SHG is provided with 5 Conoweeders and one marker worth of Rs.7400/-

**d. Award for Better productivity in Organic Rice Cultivation.**

Under Organic method of crop cultivation, use of chemical fertilisers, Plant protection chemicals and growth regulators are avoided and application of natural manure, farm waste and biological method of cultivation are resorted. There is a great demand for the produce obtained through Organic method of cultivation in domestic and foreign countries. To encourage Organic farming, farmers who are cultivating Rice and registered with Organic Certification Department are enrolled under this scheme. Farmers thus registering and adopting Organic method of Rice cultivation

and got highest yield will be given Rs.50000/- as first prize ,Rs.25000/- as second prize and Rs.10000/- as third prize.

#### **e. Distribution of Zinc Sulphate for Rice Cultivation.**

Most of the rice cultivable areas of Tamil Nadu are deficient in Zinc. Since, 63% of the soils are reported to be deficient in Zinc, there is possibility of decline in rice production by 20%. Hence, Zinc sulphate at 25 Kg/Ha. at 50% subsidy has been distributed in 35295 Ha. where Navarai Paddy crop is cultivated. This Scheme was implemented at a cost of Rs.150 lakhs.

#### **f. Intensification of Minor Millets.**

Currently millets like Maize, Sorghum, Cumbu and Ragi are the popular millet crops cultivated in major area. Due to change in the dietary intake of people, area under minor millets like Thenai, Varagu and Samai has come down to a greater extent. In order to increase the area under these minor millets, 276 Nos. of One Hectare demonstrations were laid out so far with an assistance of 50% subsidy subject to maximum of Rs.5000 per demonstration on cultivation cost.

#### **g. Enhancing Productivity of Pulses.**

This scheme was implemented to meet the nutrient requirement and enhance production of pulses and to increase the productivity by disseminating appropriate technologies through demonstrations. Under this scheme, 2000 one hectare demonstrations were laid by providing incentive of Rs.5000 for inputs and Rs.15000 for Micro irrigation per demonstration. The scheme was implemented at a total allocation of Rs.400 lakhs.

#### **h. Application of 2% DAP Foliar Spray for Pulses**

To enhance the productivity of pulses, 2% DAP spraying is recommended during flowering stage and after 15 days. During 2009-10, the scheme for foliar spraying of 2% DAP for pulses has been implemented in an extent of 1L.Ha. at a cost of Rs.200 lakhs. Under this scheme, subsidy of Rs.200 per hectare is extended to meet the cost of DAP and spraying charges.

#### **i. Application of Gypsum and Combined Nutrient Spray for Groundnut.**

Continuous cultivation of crops leads to depletion of essential micro nutrients needed for crop growth. To enhance pod formation and oil content of groundnut, nutrients like Calcium and sulphur are essential. Hence, Gypsum is being distributed through Agricultural Extension Centres at 50% subsidy not exceeding Rs.750/Ha to Groundnut to cover an area of 1.00 L.Ha. Besides, spraying solution with 2.5 kg of DAP, one kg of Ammonium Sulphate and 0.5 kg of Borax soaked in water has been done to cover one L.Ha. at 50% subsidy not exceeding Rs.200/Ha. These two schemes were implemented with an allocation of Rs.950 lakhs.

#### **j. Micro irrigation for Pulses and Oilseeds.**

Under this scheme, subsidy is extended to provide Micro irrigation @ Rs 7500/Ha. to cover 4000Ha. under oilseeds and 2000 Ha. under pulses crop at a cost of Rs. 450 lakhs.

#### **k. Mass Spraying to Control Mealy Bug.**

To control mealy bugs in the districts of Coimbatore, Erode, Salem and Namakkal in agricultural and other crops, Mass spraying of plant protection chemicals has been done at an expenditure of Rs.100 lakhs. Under this scheme,

assessment of area was made and mass spraying carried out in 7027 Ha.

## **6. Centrally Sponsored Schemes**

### **6.1 National Food Security Mission (NFSM)**

With an objective to increase the production of rice and pulses, 'National Food Security Mission' programme is under implementation since 2007-08 as a direct funding scheme of Government of India with 100% assistance. National Food Security Mission – Rice is implemented in five districts of Nagapattinam, Thiruvarur, Pudukottai, Ramanathapuram and Sivagangai and National Food Security Mission programme - Pulses is implemented in 12 districts of Coimbatore, Cuddalore, Erode, Nagapattinam, Namakkal, Thiruvarur, Thiruvallur, Thoothukudi, Thiruvannamalai, Vellore, Villupuram and Virudhunagar.

Under National Food Security Mission – Rice, activities viz., demonstration on improved technologies, SRI techniques and Hybrid Paddy seed production and distribution, subsidized distribution of quality High Yielding varieties, seed minikits distribution, micro nutrients, distribution of conoweeders / other implements, distribution of plant protection Chemicals and bio inputs, training through Farmers Field School, 50% subsidy for pumpsets, seed drills, rotavators, knap sack sprayers, power weeders are carried out. Besides, power tillers are distributed at 25% subsidy subject to a maximum of Rs.45000 and rice transplanters are distributed at 50% subsidy. This scheme was implemented with an allocation of Rs.2969.27 Lakhs. This scheme will be continued in 2010-11 also.

Under National Food Security Mission – Pulses, activities such as production of Foundation Seed, production and distribution of Certified Seeds, gypsum, Micro nutrient

mixtures, Sprinklers, seed drill, rotavators, multicrop planters and farmers trainings are carried out, besides distribution of pumpsets and plant protection equipments at 50 % subsidy. Further, distribution of tarpaulins, power tillers, Storage bins with a capacity of 1 tonne and 0.50 tonne at 50% subsidy, and Study tour for farmers are also contemplated at an outlay of Rs.1492.081 lakhs.

Since the pulses scheme under ISOPOM will be integrated with NFSM (pulses) from the year 2010-11 onwards, pulses scheme under NFSM will be implemented in all the districts in Tamil Nadu except Chennai and The Nilgris.

### **6.2 Macro Management Scheme for Agriculture.**

With an aim to increase the yield and to improve the economic status of farmers by formulating various schemes based on the States' need, the Macro Management of Agriculture scheme is under implementation since 2000 with the sharing pattern of 90:10 between Government of India and State Governments. The details of programme implemented by the Department of Agriculture are as follows:

#### **6.2.1 Cereals Development Programme.**

With the objective to increase the rice production, Cereals Development Programme is implemented with an outlay of Rs.1249.05 lakhs with the components like distribution of quality certified seeds, conduct of System of Rice Intensification, Technology demonstrations and farmers training. The details of the achievements made under in this programme during 2009-10 are as follows.

Sl. No.	Component	Unit	Physical		Financial (Rs. in lakh)	
			Target	Acht.	Target	Acht.
1	Certified paddy seed distribution	Mt	11142.68	9897	557.08	548.76
2	Demonstration of SRI technology	Nos.	20000	18100	600.00	543.00
3	Farmers training	Nos	541	520	91.97	79.20
	<b>Total</b>				<b>1249.05</b>	<b>1170.96</b>

This programme will be continued during 2010-2011.

### 6.3 Technology Mission on Cotton - Mini Mission II

Technology Mission on Cotton is being implemented from the year 2000-01. This scheme is being implemented with the financial assistance extended by the central and state Governments in the ratio of 75:25 in all the districts of Tamilnadu except Kancheepuram, Thiruvallur, Kanyakumari and The Nilgiris.

#### Scheme Objectives

- to increase the production of cotton
- to distribute quality inputs
- to conduct training and implement plant protection measures

Under the scheme breeder seed distribution, foundation and certified seeds production and distribution at subsidized cost, seed treatment, Micro Nutrients, Biofertilizers, biopesticides, pheromone traps, hand sprayers are under distribution at subsidized cost besides training to farmers through Farmers' Field Schools, trainer's training and training to extension officers are contemplated. This

programme is implemented with a financial assistance of Rs.430.00 lakhs during 2009-10. The scheme will be implemented during 2010-11 also.

### 6.4. Integrated scheme for Oilseeds, Pulses, Oilpalm and Maize (ISOPOM)

This scheme is implemented from 2004-05 with an objective to increase the productivity of Oilseeds, Pulses, Oilpalm and Maize by formulating the plan based on region-wise requirement. The expenditure is shared between Government of India and State on 75:25 basis.

#### 6.4.1 Oil Seeds.

Under this scheme, components such as Production of Foundation and Certified seeds, Distribution of certified seeds, Demonstration in Groundnut, Gingelly, Sunflower crops, demonstration on IPM, Distribution of Gypsum, Bio-fertilizers, Bio-pesticides, Hand sprayers, Power operated Sprayers, weedicides are implemented besides training to farmers. Apart from this spraying of Micro nutrient mixture in Groundnut as a special scheme is also implemented and all these components are implemented at a total cost of Rs.1321.896 lakhs.

#### 6.4.2 Pulses.

Under this scheme, subsidy is extended for the activities such as production of Foundation seeds, production and distribution of Certified Seeds, Compact block demonstration for productivity improvement, IPM Demonstration, distribution of Gypsum, Bio-fertilizers, Bio-pesticides, N.P. Virus, Plant Protection Equipments, pipes for carrying water from source, micro nutrient and DAP foliar spraying besides farmers training. All these components are implemented at a total cost of Rs.642.668 lakhs.

### 6.4.3 Oilpalm

This scheme is implemented to meet out the domestic requirement of cooking oil and enable the farmers to fetch good profit. In order to expand the area under Oilpalm and to set up extraction units to generate employment opportunities, five entrepreneurs namely M/s. Cauvery Oil Palm Ltd(Trichi, Thanjavur, Thiruvavur, Karur, Perambalur, Cuddalore, Villupuram) M/s. Godrej Agrovet Ltd (Thirunelveli), M/s. Vaidegi properties private Ltd(Vellore), M/s. Ruchi Soya industries Ltd (Theni), Foods, M/s. Fats and Fertilisers (Thoothukudi) have signed Memorandum of Understanding with the Government. At present the scheme is under implementation in 12 districts. This scheme was implemented with an allocation of Rs.620.232 lakhs extending subsidy towards planting materials, area expansion and maintenance, training to farmers and area expansion through Drip irrigation besides special components such as fencing to prevent rat menace and control of pest by using pheromone traps.

### 6.4.4 Maize

To expand the area and to increase the productivity of Maize, components like production and distribution of certified seeds, demonstration, Integrated Pest Management, Training to farmers and pipelines to carry water from the source are being implemented under this scheme. A sum of Rs.77.752 lakhs has been allotted to implement the scheme during 2009-10.

The achievement made under ISOPOM during 2009-10 is as follows:-

Crop	2009-2010 (Rs. in lakhs)	
	Financial Allotment	Achievement
Oilseeds	929.577	<b>929.581</b>
Pulses	577.424	<b>512.203</b>
Oilpalm	409.756	<b>208.901</b>
Maize	77.752	<b>65.170</b>
Total	<b>1994.509</b>	<b>1715.855</b>

Pulses scheme under ISOPOM is integrated with Pulses scheme under National Food Security Mission from 2010-11. Hence other schemes under ISOPOM on oilseeds, oilpalm and maize will be continued in the year 2010-11 also.

### 6.5 Coconut Development Board Schemes (CDB )

The financial assistance under Coconut Development Board schemes are equally shared both by central and state Governments and also 100% fully funded by Coconut Development Board. In order to increase the production of coconut, Quality Tall X Dwarf coconut seedlings and other new variety seedlings are produced in the Navlock coconut nursery and distributed to the farmers besides carrying out activities such as strengthening of Regional coconut nurseries, demonstrations to improve the productivity of coconut are contemplated at a total cost of Rs.218.75 lakhs. With this, 3.50 lakh coconut seedlings are distributed every year. This scheme will be continued during 2010-11.



## **6.6 Agricultural Technology Management Agency (ATMA)**

ATMA scheme was introduced during the tenth five-year plan to remove the bottlenecks and shortcomings in the existing extension system. The scheme has been conceptualized to strengthen the joint efforts of research and extension by bringing innovative approaches in technology dissemination. Further the scheme helps in increasing the farmers' participation in planning, disbursement of funds allotted at block level and farm based approach by involving farmers in scheme implementation.

ATMA scheme is being implemented in all the districts of Tamilnadu with the financial assistance of central and state government in the ratio of 90:10.

Extension reforms are carried out with the coordinated efforts of Agriculture, Horticulture, Agricultural Engineering, Agricultural Marketing and Agri business, Animal Husbandry, Fisheries, Sericulture, Tamil Nadu Agricultural University, Forest Dept and Cooperative departments under this scheme.

Tamil Nadu Watershed Development Agency (TAWDEVA) has been nominated as the State Nodal Agency to implement the scheme in 30 districts. Tamil Nadu Agricultural University, Coimbatore has been nominated as the State Agricultural Management and Extension Training Institute (SAMETI).

At block level, a Farm Information Advisory Committee comprising of farmer's representatives and officers of Agriculture and sister departments prepare scheme plans according to the need of the area and monitor the implementation of the scheme.

At district level, a Management committee comprising of District Collector as the chairman and the Joint Director of Agriculture as the project officer prepare action plan, implement and monitor the activities of the schemes.

Training, demonstrations, formation of farmers' interest groups, capacity building, Revolving fund, Inter-State and Inter-District exposure visits are undertaken under this scheme. Awards are given to best performing ATMA groups at block, district and state level to encourage them.

During 2009-2010, this scheme was implemented at a cost of Rs.1181.38 lakhs. This scheme will be continued in 2010-11 also.

## **6.7 National Project on Organic Farming**

Soil health is imperative to enhance the productivity thereby increasing the food production. The value for the organic products is getting increased in the National and international Market. Thereby the income of the farmers is also increasing. This scheme is fully sponsored by the central Government and it is implemented to increase the organic content of the soil, which not only helps to increase the productivity but also improve the quality of the produce. Under this scheme, model vermi compost production units are established in 20 State Seed Farms at a cost of Rs.30.00 lakhs besides training to farmers at a cost of Rs.13.00 Lakhs. Establishing Model organic farms in 20 State Seed Farms is implemented as a three-year project. Government of India allotted a sum of Rs.40.00 lakhs as first installment, which was fully utilized to implement the scheme. During 2009-10, steps have been

taken to implement the scheme with the second installment sum of Rs.40.00 lakhs released by the Government of India.

### **6.8 Seed Village Scheme**

Seed village scheme is being implemented from 2006-07 onwards with full financial assistance of Government of India in order to improve the productivity by producing quality seeds, to enhance the income of the farmers and to ensure the availability of adequate quantity of quality seeds to farmers. Under the scheme, foundation / certified seeds of paddy, millets, pulses and oil seeds are distributed to the farmers at 50% subsidy to enable them to take up seed production besides training the farmers on seed production technologies. Apart from this, to motivate the farmers on seed store aspects and to upgrade the methods of storing seeds, seed storage bins are being distributed to SC and other farmers at a subsidy of 33% and 25% respectively. Further action has been initiated to build 78 number of seed storage godowns with a capacity of 1000Mt.each for Agriculture Department. This scheme was implemented at a cost of Rs.43.62 crores during 2009-10. The scheme will be continued during 2010-11 also.

### **7. TN IAMWARM PROJECT - Irrigated Agriculture Modernization and Water Bodies Restoration and Management (IAMWARM) Project**

This project is implemented by Agriculture, Horticulture, Agricultural Engineering, Agriculture Marketing & Agri Business, Animal Husbandry, Fisheries department and Tamil Nadu Agricultural University to improve the water resources.. It is a six year (from 2007-08 to 2012-13) project implemented with the assistance of World Bank in 63 selected sub basins.

### **Objectives**

- More income per drop of water
- To enhance irrigation efficiency by improving modern water saving technologies like drip irrigation and Agricultural demonstrations.
- To intensify Agriculture
- To popularize alternate cropping
- To enhance agricultural marketing strategies and employment opportunities
- To strengthen organizations managing water resources and its function.

Under this scheme, with an assistance of Rs.98.00 crores, Agriculture department is in the process of increasing the Agricultural productivity by effective management of land and water resources in 55 sub basins. During the plan period, the scheme activities will be carried out in 6.17 lakh hectares.

During 2007-08, nine sub basins viz., Varaganathi (Villupuram/Thiruvannamalai), Uppervellar (Salem), Palar (Coimbatore/Erode), Aliyar(Coimbatore), Thenvellar (Pudukottai / Trichy), Pambar (Pudukottai / Sivaganga), Kottakaraiyaru (Sivaganga / Ramanathapuram), Manimuthar (Sivaganga / Ramanathapuram / Madurai) and Arjuna river (Virudhunagar) were selected and Rs.8.46 Crores has been spent so far as against the approved allocation of Rs 15.70 crores.

### **The scheme activities are as follows:**

1. Conducting demonstrations on cultivation of various crops and organic farming.
2. Distribution of important inputs such as Bio-fertilizers, Micro nutrient mixtures, Gypsum and Blue Green algae.

3. Distribution of farm implements such as Hand sprayers, Power operated Sprayers, seed drills and Green Manure trawlers.
4. Information / Awareness and implementation of Information disseminating activities like Publicity, Capacity building, training and exposure visits to farmers.

During 2008-09, the activities in 16 Sub-basins, viz., 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) were implemented. Rs.2.78 Crores has been spent so far as against the approved allocation of Rs 6.64 crores.

With the approval the World Bank, various activities like demonstrations, Information, Awareness and Information dissemination in 25 Sub-basins were taken up. Under this scheme, the farmers in the respective sub-basins were benefitted through the water users' association

In Phase III, a sum of Rs.25.99 Crores has been approved by the World Bank to implement IAMWARM in 30 sub-basins from 2009-10 to 2012-13. During 2009-10, action has been initiated to implement the scheme in 55 sub-basins.

So far the World Bank has approved the scheme for an allocation of Rs.48.33 Crores. Steps are being taken to get the approval for the balance amount of Rs.49.67 Crores

from the World Bank to implement the scheme within the project period.

#### Scheme progress 2009-10

Sl. No.	Component	Physical		Financial (Rs.in Lakhs)	
		Target	Acht.	Target	Acht.
1. a.	Crop cultivation demn.(Ha.)	7709	7002	508.925	342.861
1. b.	Other Demonstrations ( Ha)	1400	633	84.000	29.210
2	Agricultural Implements(Nos.)	4485	4485	78.488	66.788
3	Information/Awareness and Information Dissemination	--	--	45.545	28.932
4	Special Cell for IAMWARM	--	--	3.000	0.565
	<b>Total</b>			<b>719.958</b>	<b>468.356</b>

***“That is a ‘land’ whose peaceful annals know, nor famine fierce Nor wasting plague, nor ravage of the foe” - Kural (734)***

To prove the above saying, this Government is taking earnest efforts to ensure Food Security in Tamil Nadu.

**CHAPTER - III**  
**SUGAR DEPARTMENT**

Sugar Industry is an agro-based industry and plays a vital role in the upliftment of rural economy. The sugar industries enhance the economic development and ensure good relationship among the farmers and millers. The sugar industries cater the needs of the country and contribute to the food and energy needs of the State.

In Tamil Nadu, Sugarcane is cultivated in an area of 3.50 Lakh hectares with an average productivity of 105 tonnes per hectare and 367.5 lakh tones of cane is produced annually. About 3.50 Lakh farmers are engaged in Sugarcane farming. The Government have taken various steps by introducing Drip Fertigation, Precision Farming, Tissue Culture and Mechanization of agricultural operations for reducing the cost of production and to increase the productivity.

In our state among 42 sugar mills 37 sugar mills are in operation and the remaining 5 sugar mills are defunct.

The Cane area registered, Cane crushed, Sugar produced and recovery percentage for the past five seasons and estimate for the current 2009-2010 season in Tamil Nadu are furnished below :

Crushing Season October - September	Sugarcane cultivated area (in Lakhs Acre)	Area Regis- tered (in Lakh Acre)	Sugar- cane crushed (L.M.T.)	Sugar Pro- duced (L.M.T.)	Reco- very %
2004-2005	5.55	3.51	114.92	11.09	9.65
2005-2006	8.37	6.40	231.46	21.38	9.24
2006-2007	9.77	7.42	274.49	25.39	9.25
2007-2008	8.85	6.81	229.68	21.41	9.32
2008-2009	7.85	5.65	165.72	15.95	9.70
2009-2010 Estimated	7.95	5.00	130.01	11.92	9.17

The Government of India announced the Statutory Minimum Price at Rs.1077.60 per M.T. linked to the basic recovery of 9.5% with a premium of Rs.11.30 per M.T. for every 0.1% increase in recovery above that level for 2009-2010 sugar season. The Government of Tamil Nadu have announced State Advised Price at Rs.1437.40 per M.T. linked to 9.5% recovery with a premium of Rs.11.30 per M.T. for every 0.1% increase in recovery above that level. Besides the payment of Stated Advised Price, bearing of entire Sugarcane Transport charges of Rs.90/- per tonne and providing average recovery based incentive, the sugarcane price paid per tonne of cane is Rs.1550/-.

The Government of India have issued ordinance amending the Essential Commodities Act 1955 and Sugarcane (Control) Order 1966 and introduced a new concept of Fair and Remunerative Price for Sugarcane on All India basis by withdrawing the existing provision for

payment of Statutory Minimum Price and 5A Price. Accordingly the Government of India has fixed the Fair and Remunerative Price of Rs.1298.40 per M.T. for the Sugar Season 2009-2010 linked to 9.5% recovery with a premium of Rs.13.70 per M.T. for every 0.1% increase in recovery above that level. However, all the Cooperative and Public Sector Sugar Mills are paying the State Advised Price in Tamil Nadu.

During the presentation of the Budget for the year 2010-2011, the Government have announced an additional price of Rs.100/- per tonne of sugarcane increasing the procurement price from Rs.1550/- to Rs.1650/- per tonne for the current 2009-2010 crushing season. Further, the Government have also announced the procurement price of Rs.2000/- per tonne of sugarcane, inclusive of transport charges and recovery based incentive for the coming 2010-2011 crushing season.

In some years, there is shortage of water due to insufficient rain which affects cane cultivation. To increase the sugarcane yield with the available water, schemes like Drip Irrigation, Precision Farming and Tissue Culture method are implemented.

Adopting Micro-irrigation combined with fertigation is possible in a paired row method of planting which can save about 40% of water besides assured cane yield increase. In order to motivate the Sugarcane farmers for installing Drip irrigation / Fertigation, the Government is extending 65% subsidy.

Computerization and Simputerization of cane cultivation operation is introduced to have transparency in agricultural activities, to capture real time data, monitoring and Control of Pest and diseases incidence, supply of agricultural inputs, loan details, cane cutting orders, cane payment details etc.

The Government is taking all possible steps for development and improvement of cane, mechanization and modernization of agricultural operations, providing remunerative price and prompt payment to Sugarcane growers.

The residual by product obtained from Sugar Mills known as Pressmud are being utilized for the production of value added Bio-compost using Distilleries spent wash and supplied to farmers for use in Cane fields to increase the yield. During 2009-2010 financial year (upto December 2009) Salem and Amaravathi Cooperative Sugar Mills have produced 4100 M.Ts. and 1180 M.Ts. of Bio-compost respectively. The Co-operative and Public Sector Sugar Mills have been advised to produce Vermi Compost from Pressmud. During the year 2009-2010 financial year (upto December 2009), the Co-operative and Public Sector Sugar Mills have produced 2619 M.Ts. of Vermi Compost.

### **Sugarcane Mechanical Harvester**

During the demand for 2008-2009, to avoid scarcity of cane harvesting labourers during harvest season and also to avoid higher cane cutting charges, the Government of Tamil Nadu

has taken a decision to purchase 34 Mechanical Sugarcane Harvesters at the rate of 2 machines per Cooperative / Public Sector Sugar Mills as first phase at a total cost of Rs.39.10 crores out of the funds to be arranged by the respective Cooperative / Public Sector Sugar Mills for which administrative sanction was accorded in Government Lr. No. 20701 / MIC -1 / 2009-5, dt: 2.2.2010. Necessary action has already been initiated to procure the Sugarcane Mechanical Harvesters.

### **Co-generation**

The sugar mills used to produce power from the by-product viz., bagasse. Apart from utilizing for its own consumption, the excess power generated being exported to State Grid. Due to this the mills are utilizing their own power and the State Power deficiencies is also met by the Sugar Industry.

During off-season, the Co-generation Units will be operated by utilizing coal as a fuel.

At present, the co-generation facilities are available in 3 Cooperative and 18 Private Sector Sugar Mills. Further, Government of Tamil Nadu have taken steps for implementing co-generation in 14 Cooperative and Public Sector Sugar Mills through Tamil Nadu Electricity Board at a cost of Rs.1309.50 crores. Due to this, the power generation capacity will be 213 MW.

**CHAPTER - IV**  
**DEPARTMENT OF HORTICULTURE AND**  
**PLANTATION CROPS**

Tamil Nadu has 7 agro climatic zones with good soil conditions to grow Medicinal and Aromatic plants, Spices, Fruits, Vegetables and other Horticultural crops. Tamil Nadu is the largest producer of flowers in the country.

Every year about 10.06 lakh ha. is covered under various horticultural crops. The total production of horticultural crops is 175.77 lakh MT.

There is a greater awareness about the nutrition value of fruits and vegetables and hence the consumption of fruits, vegetables and other horticulture crops has increased. With the implementation of high technologies in cultivation, the production and productivity has been increasing annually bringing in higher income to the farmers and hence attracting the farmers to grow these crops.

**Policy Focus for 2010-11**

- i. Promotion of Hi-tech Horticulture including Micro-Irrigation and Fertigation
- ii. Thrust on Integrated Pest Management & Integrated Nutrient Management
- iii. High density plantation, Canopy management
- iv. Strengthening the production of Pedigree Planting materials.
- v. Rejuvenation of old orchards of Mango and Cashew
- vi. Effective Transfer of Technologies by exposure visit cum training to farmers.
- vii. Human Resources Development through effective training for extension officers.
- viii. Post Harvest Management and reduction of post harvest losses.

**Status of Horticultural crops in Tamil Nadu**

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

Crops	2008-09			2009-10 (Provisional)			2010-11 (Estimated)		
	Area	Prod	Pvty.	Area	Prod	Pvty.	Area	Prod	Pvty.
Fruits	3.05	73.88	24.22	3.32	80.53	24.26	3.62	87.78	24.27
Vegetables	2.60	83.32	32.05	2.83	90.82	32.09	3.08	98.99	32.14
Spices & Condiments	1.53	8.05	5.29	1.67	8.77	5.30	1.82	9.56	5.31
Plantation Crops	2.52	8.07	3.48	2.75	8.80	3.20	3.25	10.71	3.57
Flowers	0.27	2.28	8.44	0.29	2.49	8.59	0.32	2.71	8.60
Medicinal & Aromatic Plant	0.09	0.17	2.01	0.10	0.18	2.02	0.11	0.20	2.02
<b>Total</b>	<b>10.06</b>	<b>175.77</b>		<b>10.96</b>	<b>191.59</b>		<b>11.95</b>	<b>205.95</b>	

**State Plan Schemes**

**Integrated Horticulture Development Scheme**

This scheme is being implemented in all the 31 districts excluding Chennai. Under this scheme elite planting materials, high yielding / hybrid vegetable seeds, and flower seeds are being distributed to farmers at 50% subsidized cost. During 2009-10, this scheme was implemented with an outlay of Rs.266.73 lakhs. During 2010-11 this scheme is proposed to be implemented with an outlay of Rs.385 lakhs.

**Horticulture Training Centres.**

In all the four training centres functioning under the control of this Department at Kudumianmalai in Pudukottai district, Madhavaram in Thiruvallur district, Thali in Krishnagiri district and in the Horticulture Training Centre, Ooty in The Nilgiris, trainings being imparted to the

farmers, besides field level functionaries. During 2009-10, Training was given to field level functionaries / Farmers with an outlay of Rs.8.00 lakhs. During 2010-11 it is planned to train 6500 farmers and field level functionaries with an outlay of Rs.8.00 lakhs.

#### **Integrated Tribal Development Programme.**

Under this scheme, elite planting materials of Mango, Spices like pepper and horticulture crops like Coffee are being distributed to the tribal farmers at 75% subsidy and vegetable seeds are being distributed to the tribal farmers at 90% subsidized cost in Salem, Namakkal, Dharmapuri, Tiruvannamalai, Vellore, Trichy and Villupuram districts. Training with exposure visits are being organized in order to educate the tribal farmers on improved technologies. Oil engines and plant protection equipments at 75% subsidy and installation of drip irrigation system at 90% subsidy are provided to the tribal farmers. During 2009-10, this scheme was implemented with an outlay of Rs. 40.00 lakhs. During, 2010-11 it has been proposed to implement this scheme with an outlay of Rs. 50.00 lakhs.

#### **Western Ghats Development Programme.**

This scheme is implemented in the districts of Coimbatore, Erode, Dindigul, Madurai, Virudhunagar, Tirunelveli and Kanyakumari. Improvement of Infrastructural facilities for the Horticulture Farms in the districts has been taken up. During 2009-10, this scheme was implemented with an outlay of Rs.41.92 lakhs. During, 2010-11 it has been proposed to implement this scheme with an outlay of Rs 60.00 lakhs.

#### **Hill Area Development Programme.**

Under this scheme, high yielding / hybrid vegetable seeds, oil engines, and agricultural implements like

sprayers, packing materials for fruits, vegetables and flowers etc. are distributed to the small and marginal farmers of The Nilgiris district at 25% subsidy. During 2009-10, this scheme was implemented with an outlay of Rs 134.83 lakhs. During, 2010-11 it has been proposed to implement this scheme at 50% subsidy with an outlay of Rs.300.00 lakhs.

#### **City Vegetable Development Scheme.**

Under this scheme planting materials, seeds, fertilizers and plant protection chemicals are distributed to Chennai city dwellers at full cost, besides providing technical know-how to them. During 2009-10, this scheme was implemented with an outlay of Rs.7.00 lakhs. During, 2010-11 it has been proposed to implement this scheme with an outlay of Rs.7.50 lakhs.

#### **National Agriculture Development Programme - Precision Farming**

Precision Farming is being successfully implemented from the year 2008. It has been seen that there is 30 to 50% increase in yield, high quality of produce, uniformity in growth and extended harvest. This scheme has received a good response from the farmers.

The total cost per hectare is Rs.1.30 lakhs (Installation of drip Rs.80000, Crop Cultivation Cost is Rs.50000). This scheme is implemented with 50% subsidy. During 2009-10, this scheme was implemented with an outlay of Rs1887.68 lakh to cover 6940ha. During, 2010-11 it has been proposed to implement this scheme with an outlay of Rs.2737 lakhs to cover 8500 Ha.

#### **National Agriculture insurance Scheme.**

National Agriculture Insurance Scheme provides insurance coverage to notified horticultural crops Viz Banana, Onion, Potato, Tapioca, Pineapple and Ginger.



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 farm income especially during disaster years.

Initially the loanee farmers alone were benefited and Tamil Nadu Government has extended this scheme to non-loanee farmers also by providing 50% premium subsidy. During 2009-10, this scheme is being implemented with an outlay of Rs.950 lakh to cover 24008 acres. During, 2010-11 it has been proposed to implement this scheme with an outlay of Rs. Rs.950 lakh to cover 24008acres.

#### Weather Based Crop Insurance Scheme (WBCIS)

The objective is to mitigate the hardship of the farmers caused by financial loss on account of crop loss resulting from incidence of adverse weather conditions especially deficit and excess rainfall. This is implemented on a pilot basis in selected districts of Tamil Nadu. For loanee farmers there will be no National Agriculture Insurance Scheme in the districts where WBCIS is implemented. The non loanee farmers can either opt for National Agriculture Insurance Scheme or WBCIS. During 2009-10, this scheme is being implemented with an outlay of Rs.50 lakh to cover 4132 acres. During, 2010-11 it has been proposed to implement this scheme with an outlay of Rs.50 lakh to cover 4132 acres.

#### Targets and Achievements.

The financial allocation for the year 2009 - 2010 and the expenditure incurred and the proposed outlay for the year 2010-11 for the State Plan Schemes are furnished below.

### State Plan Schemes

#### Financial : Rs.in lakhs

Name of the Scheme	Unit	2009-10				2010-11 (proposed)	
		Physical		Financial		Phy.	Fin.
		Tar.	Achmt.	Tar.	Achmt.	Tar.	Tar.
Integrated Horticulture Development Scheme Area Expansion	Ha.	20230	20230	266.73	266.73	25000	385.0
Horticulture Training Centre	Nos.	6501	3357	8	4.55	6500	8.0
Integrated Tribal Development Programme	Ha.	907.97	904	40	40	1000	50.0
Western Ghat Development Programme	Ha.	85	85	41.92	41.92	85	60.0
Hill Area Development Programme	Ha.	1935.9	1935.90	134.83	134.83	2000	300.0
National Agriculture Development Programme	Ha.	6940	3292	1887.68	687.35	8500	2737.0
Part II Schemes	Nos.	-	-	100	100	-	112.5
City Vegetable Development Scheme	Ha.	200	200	7	7	300	7.50.0
National Agricultural Insurance Scheme	Acre	24008	47156	950	452.25	24008	950.0
Weather Based Crop Insurance Scheme	Acre	4132	4145	50	43.28	4132	50.0
<b>Total</b>				<b>3486.16</b>	<b>1777.91</b>		<b>4660.0</b>

**CHAPTER - V**  
**TAMIL NADU HORTICULTURE**  
**DEVELOPMENT AGENCY (TANHODA)**

Tamil Nadu Horticulture Development Agency a registered society was formed during 2004 as a “Special purpose vehicle” for the purpose of implementing various horticulture schemes funded by the Government of India sponsored and shared between State and Centre.

The following schemes are being implemented through TANHODA

Sl. No	Name of the Scheme	Financial Assistance	
		GOI Share	GOTN Share
1	National Horticulture Mission	85%	15%
2	Micro – Irrigation Scheme	40%	25%
3	National Bamboo Mission	100%	--
4	National Mission on Medicinal Plants	100%	--
5	Tamil Nadu – IAMWARM	----	100%
6	State Horticulture Farms	--	100%

**1. Schemes shared between State and Centre**

**1.1. National Horticulture Mission:**

National Horticulture Mission is implemented for the holistic development of Horticulture in the State. This scheme is being implemented in the following 20 districts.

Coimbatore	Ramanathapuram
Cuddalore	Salem
Dharmapuri	Sivagangai
Dindigul	Thanjavur
Erode	The Nilgiris
Kanyakumari	Theni
Krishnagiri	Tirunelveli
Madurai	Trichy
Perambalur	Vellore
Pudukottai	Villupuram

During 2009-2010 this scheme was implemented with an outlay of Rs.96.22 crores of which Government of India share was Rs.81.80 crores(85%) and Government of Tamil Nadu share was Rs.14.42 Crores (15%)with an expenditure of Rs.83.23 crores. It is proposed to implement the scheme during 2010-2011 as per the sanction received from Government of India. However Annual Action Plan has been sent to Government of India for Rs.130.00 crores.

During this year “High density planting” a new technology will be popularized among the farming community. Planting tissue culture banana will be encouraged in the field. Farm mechanization will be introduced under National Horticulture Mission. Efforts will be taken to increase the production and productivity of horticultural crops by implementing this scheme.

The scheme is implemented through District Mission Committees headed by the District Collectors and District Joint Director of Horticulture / Deputy Director of Horticulture as the Member secretary of the committee.

## **1.2 Micro Irrigation Scheme**

Water plays a major role in Agriculture. The conventional methods of Irrigation are inefficient and have led to wastage of water. The use of Modern Micro Irrigation scheme like drip and sprinkler irrigation is the way for the efficient use of surface as well as ground water resources.

Under this scheme, 65% subsidy is given towards the installation of drip/Sprinkler systems, for Coconut and all agricultural crops and sugarcane crops registered by the sugar mills. The Horticulture Department and Agriculture Engineering Department are the implementing Agencies for fruit crops, vegetables, flowers, spices, medicinal and aromatic plants and plantation crops.

During 2009 – 10, it was programmed to implement the scheme in an area of 27,842 ha with a financial outlay of Rs.5367 lakhs. The scheme was implemented in 18019 Ha with an expenditure of Rs.4143 lakhs. The scheme will be implemented for the year 2010-11 to cover an area of 35,000 ha. with the financial outlay of Rs.11501.10 lakhs.

## **2. Schemes Fully Funded by Government of India.**

### **2.1 National Bamboo Mission in Tamilnadu**

Bamboos are much preferred material in sectors like Pulpwood, Paper industries, Housing, Arts, Craft etc., Bamboos are having more than 1500 users and are fast growing species in plant genera. To increase the area under Bamboo and increasing its productivity the National Bamboo Mission scheme is being implemented with 100% Central Government Assistance through Tamil Nadu Horticultural Development Agency (TANHODA) in Tamil Nadu.

During 2008-09 an amount of Rs.202 lakhs to cover an area of 1006 ha was sanctioned. During 2009-2010 the scheme is implemented in 800 Ha. with an outlay of Rs.205 lakhs. This scheme is proposed to be implemented during 2010-11 to cover an area of 300 ha. with the financial outlay of Rs.155.55 lakhs.

### **2.2 National Mission on Medicinal Plants in Tamil Nadu (From 2008 – 09 to 2011 – 12)**

With the objective of satisfying the demand for herbal products which are increasing exponentially, a Centrally Sponsored Scheme on National Mission on Medicinal Plants in Tamil Nadu is being implemented and the scheme is sponsored by the NMPB, Department of AYUSH, Ministry of Health & Welfare, Government of India. The scheme envisages covering an area of 18292 Ha of medicinal crops in the 11<sup>th</sup> Five Year Plan period. Depending upon the availability of species (rare, endangered and prioritized species in high demand) the subsidy ranges from 20% to 75% with an average of 30% subsidy on cultivation cost is given to 93 species of medicinal plants. Twelve Model Nurseries and forty eight Small Nurseries will be established with an estimated cost of Rs. 20.000 Lakhs for Model Nurseries & Rs. 4.000 Lakhs for Small Nurseries during the scheme period with 50 % assistance of Rs.10.00 lakhs and Rs.2.000 Lakhs respectively.

A sum of Rs.682.87 lakhs allotted during 2008-09 was revalidated and the scheme is implemented in 3260 Ha. during 2009-10. During 2009-10 a sum of Rs. 1155.40 lakhs has been sanctioned, out of which Rs.300 lakhs have been released. The scheme will be implemented for the year 2010-11 to cover an area of 4926 ha. with the financial outlay of Rs.1366.96 lakhs. .

### 3. State Horticulture Farms – Parks and Gardens.

There are 54 State Horticulture Farms in the State including parks and gardens. After the restructuring of the department farms have come under the control of TANHODA. The objective of State Horticulture Farms is to produce pedigree planting materials for the major crops like Mango, Aonla, Sapota, Guava, Jack and other fruit crops, other Ornamental crops and Cash crops like Cashew, Coffee and others.

The farms also serve as model demonstration farms to the local growers. The Botanical parks and gardens serve as study centers for students and attract large number of tourists. During this year 2010-11, a production target of 110.40 lakh numbers has been fixed for the farms. The preparatory works for the production of planting material for 2010-11 have already been started to make them available for the schemes at the right time.

As per the announcement made in the Agriculture Demand for 2009-10, work on the improvement facilities in Government gardens and parks are in progress. The works are being planned in Yercaud farm, Coutrallam farm, Madhavaram farm, Bryant park / Chettiar park Kodaikanal.

In respect of Government Botanical Garden Udhagai, Kodaikanal Farm, Rose park Udhagai and Sims park Coonoor the Empanelment of Consultants have been finalized and the work plans are under scrutiny. The establishment work of World Class Botanical Garden Phase I at a cost of Rs.7.96 crores, at Cathedral Road, Chennai is in progress.

### 4. Externally Aided Projects.

#### 4. 1. IAMWARM Project.

The objective of the scheme is to bring Crop Diversification and Area Expansion with high value horticultural crops, in 63 river sub basins of Tamil Nadu.

As a first phase in 2007-08, the project was implemented in 9 sub-basins viz., Varahanadhi, Upper Vellar, South Vellar, Pambar, Manimuthar, Kottakkaraiyar, Arjunanadhi, Palar, Aliyar and an area of 6047 Ha horticultural crops has been introduced against the target of 6139 ha. with an expenditure of 634.77 lakhs.

In the Second Phase, the Project was extended to another 16 sub-basins during 2008-09 viz., Pennaiyar (up to Krishnagiri), Swethanadhi, Anaivari Odai, Chinnar, Agniar, Ambuliyar, Upper Vaigai, Varattar-Nagalar, Upper Gundar, Therkar, Senkottaiyar, Sindapalli-Uppodai, Nishabanadhi, Kalingalar, Poiney, Koundinyanadhi and an area of 9310 ha has been covered out of the Target of 9564 ha. A sum of Rs.1553.160 lakhs has been incurred as expenditure.

The Project is extended in 30 sub basins in Phase III during 2009-10 viz, Araniyar, Kosasthalaiyar, Ongur, Nallavur, Thuringalar, Pambar to Thirukoilur, Gadilam, Markandanadhi, Kambainallur, Pambanar –Verattar, Gomukinadhi, Theniar, Girdhamal, Kanal Odai, Lower Gunder, Vembar, Uthirakosamangai, Palar, Sevalaperiar, Deviar, Nagarier, Vallampatti, Uppathur, Kovilar, Uppodai, Salikulamar Korampallam Karumeniyar, Vaipar, Hannumannadhi.

During 2009-10 for the third year of first phase and for the second year of second phase an area expansion of 4891 ha with an outlay of Rs.871.07 lakhs is being implemented. The proposed outlay for 2010-11 is Rs.1970.84 lakhs to cover an area of 10096 ha.

**5. PROGRESS OF SCHEMES IMPLEMENTED BY  
TANHODA**

**Physical: Ha.**

**Financial Rs. in lakhs**

Sl. No.	Name of the Scheme	2009-10				2010-11(Proposed)	
		Physical		Financial		Phy	Fin
		Tar	Achmt	Tar	Achmt	Tar	Tar
1	National Horticulture Mission	40521	40521	9622.00	8323.96	41400	13000.00
2	Micro – Irrigation Scheme	27842	18019	5367.00	4143.13	35000	11501.10
3.	National Mission on Medicinal Plants in Tamil Nadu	3945	3260	682.87	606.00	4926	1366.96
4	National Bamboo Mission	850	800	205.00	120.00	300	155.55
5	State Horticultural Farms (lakh Nos)	119.83	110.00	806.60	777.59	110.40	899.50
6	Tamil Nadu IAMWARM	4891	4939	871.07	790.55	10096	1970.84
	<b>TOTAL</b>			<b>17554.54</b>	<b>14761.23</b>		<b>28893.95</b>

**CHAPTER - VI**  
**TAMIL NADU HORTICULTURAL PRODUCERS**  
**CO-OPERATIVE ENTERPRISES LIMITED**  
**(TANHOPE)**

Tamil Nadu Horticultural Producers Co-operative Enterprises Limited (TANHOPE) was registered as a primary Horticultural Co-operative Society to benefit the small and marginal horticultural farmers. This Co-operative Society was registered under Co-operative Societies Act. The Director of Horticulture and Plantation Crops is the Special Officer and Joint Director of Horticulture is the Managing Director.

**Objectives of TANHOPE**

To promote and encourage the development of Horticulture crops.

1. To organize marketing of Fruits and Vegetables on modern lines by means of grading, sorting and standard packaging.
2. Marketing on Co-operative basis and marketing through retail outlets and branches and to undertake export of fresh and processed produces.

So far 3904 Horticultural crop growers have been enrolled in this Society by paying a membership fee of Rs.100 per farmer.

**Supply of Inputs:**

TANHOPE supplies inputs required for various Horticultural schemes implemented by the Department of horticulture and Plantation Crops. The inputs are distributed to the farmers through the Officers of Horticulture department.

The Department of Horticulture and Plantation Crops will use TANHOPE as the procurement Agency to procure inputs in a manner similar to ELCOT, which is being used as procurement agency by the Government Departments for procurement of electronic equipment and Information Technology equipment.

TANHOPE will procure various inputs like Vegetable seeds, fruit Plants, Cocoa plants, Tissue culture Banana plants, Jasmine Rooted cuttings, Biofertilizers, Biofungicides, Biopesticides, Organic manure, Vermicompost, Neem cake, Micro Nutrient Mixture, Water Soluble Fertilizers, Plant protection Chemicals etc and supply to Department of Horticulture and plantation crops.

## **CHAPTER - VII**

### **AGRICULTURAL ENGINEERING**

#### **1. Introduction**

Agricultural Engineering activities are taken up in Tamil Nadu to meet the needs of farmers through sustainable land and water management programmes so as to bring about quantifiable increase in the production and productivity in Agriculture. In compliance of this vision and to supplement the aim of achieving 4% annual growth in the agriculture during the XI Five Year Plan period, the Agricultural Engineering Department has been constantly engaged in the conservation, development and management of land and water resources through Watershed Management, Water Management and Agricultural Mechanisation programmes. Besides, the department takes up machinery hiring programmes to farmers for Minor Irrigation and Land Development activities.

#### **2. Watershed Management**

Soil and Water are the two vital natural resources of the watershed which are to be conserved effectively for improving productivity in agriculture. Soil and Water Conservation programmes on watershed basis will not only prevent soil erosion but also conserve soil and soil moisture for sustainable agriculture. Also, as the rain water is the key input for the dry land agriculture, the maximum retention of rain water in the soil will have a tremendous influence on agriculture production. Hence, harvesting rain water in appropriate time and location plays a major role in sustainable agriculture. Soil and water conservation measures and rain water harvesting structures such as contour bunding, check dams, percolation ponds, farm ponds, village ponds, recharge shafts etc. are taken up in

river valley catchments, hill areas of Nilgiris, tribal hill areas, western ghat areas and in plains with the main objectives of preventing soil erosion, improving soil moisture, rain water harvesting and recharging of ground water. Soil and Water Conservation programmes on watershed basis will improve the productivity on a sustainable basis and ensure the livelihood of the farming community.

#### **2.1. 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 from the catchments, to reduce siltation of multipurpose reservoirs, prevention of land degradation in the catchment areas, improvement of land capability and moisture regime in the watersheds, promotion of land use to match land capability. Under this programme, soil and water conservation measures are taken up in the watersheds identified 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 2009-2010, it is programmed to take up soil and water conservation works under this scheme in south pennaiyar and mettur river valley catchments in Vellore, Tiruvannamalai, Dharmapuri, Krishnagiri and Villupuram districts in an area of 12,403 hectares and to construct 1,970 structures at a cost of Rs.1,487.52 lakhs. So far up to February 2010, works have been completed in an area of 11,775 hectares and 1,970 structures have been constructed at an expenditure of

Rs.1,151.01 lakhs and the balance works are under progress. The programme will be continued during 2010-2011 at an outlay of Rs.1,800.00 lakhs.

## **2.2. Rain Water Harvesting and Run off Management Programme**

Rain water harvesting and runoff management works on watershed basis 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 2009-2010, it is programmed to construct 626 rainwater harvesting structures at an outlay of Rs.500.00 lakhs. So far up to February 2010, construction of 628 rain water harvesting structures have been completed at a cost of Rs.494.84 lakhs and further works are under progress. During 2010-2011, it is proposed to continue this programme with an outlay of Rs.1,812.00 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 one of the major objectives under Integrated Tribal Development Programme. The programme is implemented with multi sector approach in the tribal areas of Jawadhu hills (Vellore

and Tiruvannamalai district), Kalrayan hills (Salem and Villupuram districts), Shevaroy hills (Salem district), Sitheri hills (Dharmapuri district), Kolli hills (Namakkal district) and Pachamalai (Trichy district). Under this programme, soil and water conservation measures such as land levelling, 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% grant. During 2009-2010, it is programmed to take up soil and water conservation works in an area of 768 hectares of tribal lands at a cost of Rs.156.20 lakhs. So far up to February 2010, works have been completed in an area of 774 hectares at a cost of Rs.153.40 lakhs and further works are under progress. The programme will be continued during 2010-2011 at an outlay of Rs.171.80 lakhs.

## **2.4. Western Ghats Development Programme**

Western Ghats Development Programme is being implemented involving various departments to ensure eco-restoration, eco-development and eco-protection in western ghats areas. Under this programme, soil and water conservation measures are taken up on watershed basis in the western ghats areas of Coimbatore, Erode, Dindigul, Theni, Madurai, Virudhunagar, Tirunelveli and Kanyakumari districts. The beneficiaries are required to contribute 10% of the cost of works 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 2009-2010, it is programmed to construct 1,874 structures at a cost of Rs.747.00 lakhs. So far up to February 2010, 1,703 structures have been constructed at an outlay of Rs.612.64 lakhs and works are under progress. During 2010-2011, the programme will be continued at a total outlay of Rs.990.50 lakhs.



## **2.5. Hill Area Development Programme**

Hill Area Development Programme is implemented with an aim of restoring and maintaining the ecology of the Nilgiris District. Under this programme, soil and water conservation measures are taken up by the department through integrated watershed development approach. Soil and water conservation works and landslide preventive measures are being taken up in the priority watersheds in Nilgiris district. The beneficiaries are required to contribute at the rate of 10% of the cost of works 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 2009-2010, it is programmed to construct 436 structures and landslide preventive measures at a cost of Rs.436.20 lakhs and works are under progress. During 2010-2011, the programme will be continued at a total outlay of Rs.479.82 lakhs.

## **2.6. Dry land development works under NADP**

In order to increase the production and productivity under dry land crops such as millets, pulses, oilseeds etc., Government have sanctioned a sum of Rs.268.65 lakhs under NADP 2008-2009 towards implementing dry land development works in selected 30 blocks covering Sivaganga, Pudukottai, Virudunagar, Theni, Thirunelveli, Cuddalore, Vellore, Trichy, and Erode districts and so far up to February 2010, compartmental bunding works have been completed in an area of 4,295 ha. and 193 farm ponds have been constructed at a total cost of Rs.178.32 lakhs. The remaining programme is under progress. In addition to this, a sum of Rs.250.00 lakhs have been sanctioned during 2009-2010 under NADP towards construction of 556 farm

ponds in drought affected districts and so far up to February 2010, 557 farm ponds have been constructed at a cost of Rs.246.73 lakhs. The remaining works are under progress.

## **2.7. Scheme for Artificial Recharge to Ground Water**

Artificial ground water recharge structures are constructed under the State scheme from 2008-2009 onwards to augment the ground water aquifer so as to improve the ground water table. During 2009-2010, it is programmed to construct 3,180 Nos. of groundwater recharge structures at a cost of Rs.2,500.00 lakhs. So far up to February 2010, construction of 2,820 structures have been completed at a cost of Rs.2,030.30 lakhs. Further works are under progress. The programme will be continued during 2010-2011, also.

## **3. Water Management**

### **3.1. Command Area Development and Water Management Programme**

Command Area Development and Water Management Programme is being implemented with farmers participation in various commands in the state with an aim of improving the water use efficiency and ensuring equity distribution of water among the farmers. The programme is implemented with the financial assistance from the Centre and State Governments on 50:50 basis. At present, this programme is being implemented in Wellington Reservoir Project in Cuddalore district, Thirukoilur Anicut Project in Villupuram district, Kodiveri Anicut Project in Erode district, Gundar Chittar Karuppanadhi Project in Tirunelveli district, Vaniyar Reservoir Project & Ichambadi Anaicut Project in Dharmapuri district. Government have also approved this programme for implementation in new command namely South Vellar Project in Pudukottai district from the year

2009-2010. Under this Programme, on-farm development works such as Construction of Field Channels, Rotational Water Supply, Construction of Field drains are taken up in the command areas. One time functional grant at the rate of Rs.1,000/- (State Government share of Rs.450/-, Central Government share of Rs.450/- and Farmers share of Rs.100/- ) per hectare is given to farmers council for the maintenance of the OFD works. During 2009-2010, it is programmed to take up on farm development works at a total outlay of Rs.4,720.52 lakhs which includes construction of field channel in an area of 22,585 hectare, construction of field drain in an area of 1,100 hectare and rotational water supply in an area of 21,035 hectare. So far up to February 2010, works have been completed at a total outlay of Rs.3,175.66 lakhs which includes construction of field channel in an area of 15,047 hectare, construction of field drain in an area of 651 hectare and rotational water supply in an area of 13,385 hectare and further works are under progress. During 2010-2011, it is proposed to implement the programme with a total outlay of Rs.5,013.60 lakhs. Government of India have also approved, in principle, to take up the programme in Vaigai command area covering Madurai, Sivagangai and Ramanathapuram districts and Kudaganar project area in Dindigul and Karur districts during 2010-2011.

### **3.2. World Bank aided Tamil Nadu IAMWARM project**

The World Bank aided Tamil Nadu Irrigated Agriculture Modernization and Water bodies Restoration and Management (TNIAMWARM) project is being implemented in Tamil Nadu. The project has been commenced during 2007-2008 and to be completed by 2012-2013. During this period, it is programmed to implement various programmes such as micro irrigation, farm ponds, farm mechanisation, pipe laying, information, education, communication and

capacity building programmes in 63 sub-basins. During 2009-2010, it has been programmed to implement the programmes in 25 sub-basins at a cost of Rs.2,891.09 lakhs and the works are under progress. During 2010-2011, it is proposed to continue the programme in 20 more sub-basins at a total outlay of Rs.3,931.50 lakhs.

### **4. Agricultural Mechanisation Programme**

The Agricultural Engineering Department is keen on spearheading an agricultural machinery revolution in the State to overcome the difficulties arised due to the shortage of agricultural labourers. The Agricultural Mechanisation programme is being implemented in the State with an aim of popularising the agricultural machinery among the farmers so as to supplement the available farm power, to meet out the shortage of agricultural labourers, to ensure timeliness in carrying out various farm operations and to increase agricultural production. Also, demonstration of newly developed agricultural equipments and machinery is taken up in the farmer's fields. In order to increase productivity and income of the farmers, trainings on new technology in the field of Agricultural machanisation are imparted to the various levels of man power engaged in agriculture. Also subsidy assistance is provided to farmers for replacing their old inefficient pumpsets with new pumpsets with an aim of saving electricity and improving pumping efficiency.

#### **4.1. Agricultural Mechanisation Programme under Macro Management Mode of Agriculture.**

The Agricultural Mechanisation Programme under Macro Management Mode is implemented with the assistance shared between Centre and State Governments on 90:10 basis. Under this scheme, 25% to 40% of the cost of the machinery or the ceiling limit prescribed by Government of India, whichever is less is provided to the

farmers as subsidy to purchase agricultural machinery and equipments like power tillers, tractors, rotavators etc. During 2009-2010, it is programmed to provide subsidy assistance of Rs.990.45 lakhs to the farmers for procuring 165 tractors, 2,000 power tillers and 81 rotavators and so far up to February 2010, subsidy assistance of Rs.949.95 lakhs has been provided to the farmers for procuring 75 tractors, 2,000 power tillers and 81 rotavators. The remaining programme is under progress. The programme to provide subsidy assistance to farmers for procuring agricultural machinery / implements will be continued during 2010-2011 also.

#### **4.2. Agricultural mechanisation Programme under National Agriculture Development Programme (NADP)**

Much importance is being given to increase the pace of agricultural mechanisation in the State under NADP. Subsidy assistance is provided to the farmers for purchasing agricultural machinery / implement as detailed below.

- Distribution of agricultural machinery / implements at 33% subsidy subject to maximum ceiling limit of Rs.4.00 lakhs to the Agricultural Machinery Service Centre / Agri.Clinic at Block Level for hiring out to farmers.
- 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 maximum ceiling limit of Rs.4.00 lakhs to farmers for the purchase of High cost Farm Machinery / Implements.

- providing 50% subsidy assistance to farmers for the purchase of Gender friendly equipments limited to Rs.5000/- for each implement.

Government have sanctioned a total sum of Rs.44.69 Crores towards Agricultural Mechanisation programme under NADP during 2008-2009 and 2009-2010. This sanction includes provisions for the following items;

- a. Rs.18.08 Crores under NADP 2008-2009 towards subsidy assistance to farmers and so far up to February 2010, a sum of Rs.17.17 Crores was provided to farmers for purchasing 7,983 farm machinery and implements and the remaining programme is under progress.
- b. Rs.2.00 Crores towards subsidy assistance under NADP-Drought Mitigation Programme during 2009-2010 and accordingly subsidy has been released to farmers for purchasing 245 power tillers, 53 power weeders, 13 paddy transplanters and 310 rotavators.
- c. Rs.16.21 Crores under NADP 2009-2010 towards subsidy assistance to farmers for purchasing farm machinery and implements and so far up to February 2010, a sum of Rs.8.48 Crores was provided to farmers for purchasing 1,815 farm machinery and implements and the remaining programme is under progress.
- d. Rs.8.40 Crores towards purchase of 60 laser land levellers, 430 Agricultural machinery / implements for custom hiring to farmers.

The programme is proposed to be continued during 2010-2011 also at an outlay of Rs.55.00 Crores.

#### **4.3. Demonstration of newly developed agricultural equipments and machinery**

Demonstration of newly developed agricultural equipments and machinery is taken up in the farmer's fields with the financial assistance from Central Government. During 2009-2010, it is programmed to conduct 578 demonstrations at an outlay of Rs.12.90 lakhs and to purchase farm implements at a cost of Rs.18.80 lakhs for the purpose of conducting demonstrations. So far up to February 2010, 528 Nos. of demonstrations have been conducted at a cost of Rs.11.17 lakhs and the remaining programme is under progress. It is proposed to continue the programme at an outlay of Rs.34.00 lakhs during 2010-2011.

#### **4.4. 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 the financial assistance from the Central Government. During 2009-2010, it is programmed to conduct 120 training programmes for 2,400 farmers in handling and maintenance of Agricultural Machinery / Implements at an outlay of Rs.32.40 lakhs. So far up to February 2010, 109 training programmes have been conducted at a cost of Rs.29.02 lakhs and the remaining programme is under progress. During 2010-2011, it is proposed to conduct 130 training programmes to farmers at an outlay of Rs.35.00 lakhs.

#### **4.5. Replacement of Old Pump sets**

With an aim of saving electricity and improving pumping efficiency, subsidy assistance is provided to farmers for replacing their old inefficient pump sets with new pump sets. Subsidy assistance of Rs.12,000/- or 50% of the cost of the new pumpset, whichever is less, is given to SC/ST farmers and Rs.10,000/- or 50% of the cost of the

new pumpset, whichever is less, is given to all other farmers. During 2009-2010, it is programmed to provide subsidy assistance of Rs.1,000.00 lakhs to farmers for replacing 9,600 old pumpsets. So far up to February 2010, subsidy assistance of Rs.734.05 lakhs has been provided to farmers for replacing 8,404 old inefficient pumpsets. The remaining programme is under progress. It is proposed to continue the scheme during 2010-2011 to provide Rs.1,000.00 lakhs as subsidy assistance to 9,600 farmers for replacing their old pumpsets with new pumpsets.

### **5. Machinery Hiring Programmes to farmers**

#### **5.1. Minor Irrigation Machinery.**

The department is having a fleet of minor irrigation machinery viz., 29 Rotary Drills, 13 Percussion Drills, 22 Mini Drills, 95 Hand Boring Sets, 7 Long Hole Equipments and 45 RB units for hiring out to the farmers for minor irrigation activities of sinking of new Borewells / tubewells and revitalisation of dried up wells. Besides, the services of 17 A.C.Resistivity meters and 3 Electrical Loggers are provided to farmers for locating well sites and aquifers. The programme for hiring of Minor irrigation machinery will be continued during 2010-2011 to provide 1,500 tubewells / borewells in areas where there is ground water potential.

#### **5.2. Land Development Machinery.**

Land Development Machinery viz. 85 bull dozers, 165 tractors, 28 combine harvesters and 2 hydraulic excavators are available in the Agricultural Engineering Department for hiring out to farmers towards Land Development works. Besides, the machinery are engaged in reclamation of lands and for reclaiming the damages caused due to flood and natural calamities. The programme for hiring of Land Development machinery will be continued during 2010-2011 also.

## CHAPTER - VIII

### TAMIL NADU WATERSHED DEVELOPMENT AGENCY (TAWDEVA)

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 programmes, and subsequently the watershed development programmes like National Watershed Development Project for Rainfed Areas (NWDPR), Watershed Development Fund (WDF) and Integrated Watershed Management Programme (IWMP) funded by various Ministries are implemented by this agency. In addition, during 2010-11 Western Ghats Development Programme (WGDP) will also be implemented in 3 districts viz., Theni, Dindigul and Madurai on Watershed approach basis.

TAWDEVA is the Nodal Agency as well as implementing agency of National Agricultural Development Programme (NADP) and also functions as a Nodal Agency for various State / Central schemes such as 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 has announced this massive scheme during 2006-07 and is being implemented till date. 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 for profitable and sustainable agricultural operation by undertaking land development wherever required and issue of patta to landless poor agricultural labour families.
- II. Wherever contiguous blocks of 10 acre and above of category I and II lands exist, and if ground water is available, then, efforts are taken to develop them into horticulture clusters by undertaking land development, creating irrigation sources, free energisation, establishing micro irrigation system and by planting quality horticultural seedlings.
- III. Wherever the private patta wastelands along with punjai lands are available in a cluster of 50 acre and above, such lands are taken up for cluster development, if the small and marginal farmers come forward for joint management. If ground water is

available, then, land development, source of irrigation, free energisation and micro irrigation system are provided for developing **Horticultural / Agriculture** crops through cluster mode.

In 10 acre and above and 50 acre and above clusters, Lift Irrigation Societies are formed by the beneficiaries for joint development and management of common infrastructure that is created. 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.

### **Achievements**

#### **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. Out of 53,440 acre requiring land development, so far 53,363 acre have been developed benefiting 32961 farmers. For irrigation and ground water recharge, the farm ponds are created of the size of 15 X3X1.5 cu.m. and, 15X6X1.5 cu.m. at the rate of Rs.2,750/-, Rs.4,650/- per pond respectively. In total, 16,471 farm ponds have been completed under this programme.

### **Physical**

**(Extent in acres)**

Phase	Extent distributed	Number of beneficiaries	Reclamation needed	Reclamation done
Ist phase (17.9.06)	25,282	24,358	11,122	11,122
IInd phase (17.12.06)	25,806	26,749	8,078	8,078
IIIrd phase (17.3.07)	26,029	20,648	5,490	5,490
IVth phase (17.6.07)	24,506	19,821	6,763	6,763
Vth Phase (17.9.07)	32,066	24,932	6,547	6,547
VIth Phase (29.12.07)	26,982	21,487	5,411	5,411
VIIth Phase (17.3.08)	18,040	18,979	2,925	2,925
VIIIth Phase (17.6.08)	12,901	4,355	1,136	1,126
IXth Phase (17.9.08)	16,493	11,948	1,711	1,644
Xth Phase (17.11.08)	2,394	1,664	-	-
upto 15.1.2010	1,008	2,415		
Outsourcing	-	-	4,257	4,257
<b>Grand Total</b>	<b>2,11,507</b>	<b>1,77,356</b>	<b>53,440</b>	<b>53,363</b>

**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 expenditure of Rs.609.72 lakhs have been developed by planting of horticulture crops. In the remaining 23 clusters, development activities in an extent of 403.14 acres are under progress.

About 2,000 farmers belonging to these clusters have been trained regarding planting technology, micro irrigation, Integrated Nutrient Management and maintenance of common infrastructures that have been created under cluster development.

**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 of development of clusters in the patta wasteland and dry lands of 50.00 ac. and above lands of small and marginal farmers by providing common infrastructures like borewell, micro irrigation, planting of high income generating horticulture crops. Wherever ground water is not available, bio-mass tree crops are being planted.

So far 47 clusters covering an extent of 2627.23 acres benefitting 1620 beneficiaries have been taken up for development by planting horticulture / bio-mass crops with Rs.623.97 lakhs. Out of this, 10 clusters covering an extent of 552.20 acres with an expenditure of Rs.140.25 lakhs covering 296 beneficiaries have been developed. In the remaining 37 clusters having an extent of 2075.03 acres with an expenditure of Rs.483.72 lakhs, covering 1324 beneficiaries are taken up in which 6 are bio-mass clusters and 31 clusters are Horticulture crop clusters.

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

The Government have sanctioned the scheme during the year 2009-10 for the development of agriculture crops in patta wasteland and dry lands in an extent of 50.00 acres and above lands of small and marginal farmers by providing common infrastructures like borewell, micro irrigation, planting of high income generating agriculture crops.

**Area of Operation:**

The scheme is implemented in all districts except Chennai and Nilgiris.

**Financial achievement:**

An expenditure of Rs.2711.98 lakhs has been incurred towards the development of waste lands.

It is proposed to implement the above programmes during 2010-11 also for the benefit of poor landless agricultural labourers and small / marginal farmers in this State to improve the income and status of agricultural labourers and small /marginal farmers.

**2. National Watershed Development Project for Rainfed Areas (NWDPR)**

National Watershed Development Project for Rainfed Areas (NWDPR) is being implemented in Tamilnadu from VIII Five Year Plan (1990 – 91) 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 Collector through DWDA at District level and through Watershed committees/Associations at Village level. Under X Plan NWDPR, an area of 2,90,338 ha was developed with an outlay of Rs.130.65 crores covering 755 watersheds in 23 districts.

During XI Plan NWDPR, it is proposed to treat an area of 117700 Ha covering 200 watersheds in 18 districts at an estimated cost of Rs. 70.59 crores.

During 2010-11, it is proposed to treat 35000 Ha with an outlay of Rs.21.00 crores.

**3. Watershed Development Fund assisted by NABARD**

Watershed Development Fund in Tamil Nadu has been created to treat 100 watershed projects at a cost of Rs.60 Crores with the assistance of National Bank for Agriculture and Rural Development (NABARD). The scheme has been in operation since 2004-05 and the duration of the scheme is six years.

**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 being 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 no. of projects has been increased from 100 to 150.
3. Interest rate is 4.5%
4. Repayment period 9 years (3 years after availing Loan)

**Project period:**

1.	Capacity Building Phase (CBP) (50 to 100 Ha. to be covered)	18 months
2.	Preparation of feasibility study report (FSR)	6 months.
3.	Full implementation Phase (FIP)	3 years
	<b>Total period</b>	<b>5 years</b>



**Area of Implementation:**

At present the programme is being implemented in the following 24 Districts in the State.

Coimbatore, Cuddalore, Dharmapuri, Dindigul, Kancheepuram, Karur, Krishnagiri, Madurai, Namakkal, Perambalur, Ariyalur, Pudukottai, Ramnad, Salem, Sivaganga, Theni, Thoothukudi, Tirunelveli, Tiruvallur, Tiruvannamalai, Trichy, Vellore, Villupuram and Virudhunagar.

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

**Allotment of fund for different component which would be effective for new Full Implementation projects from 2009-10.**

Unit cost per Ha.		Rs. 12,000.00
Physical treatment	70%	Rs. 8,400.00
Administrative overheads	10%	Rs. 1,200.00
Livelihood support for Landless Farmer & Women	7.5%	Rs. 900.00
Community Organisation & Training programme	12.5%	Rs. 1,500.00

**Project Implementation:**

During 2004-05 and 2005-06, 100 watersheds were selected by the State Steering Committee.

In the first 2 years period of the project, Capacity Building Phase is done during the first 18 months and Feasibility Study Report 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.

During the year 2010-11, treatment works would be taken up in the current 38 Full Implementation Projects to treat an area of 4166 ha with a financial commitment of Rs.500.00 Lakhs.

**4. National Agricultural Development Programme - Rashtriya Krishi Vikas Yojana**

The National Agricultural Development Programme has been launched to achieve 4% annual growth rate in agricultural sector. The objective of the scheme is to promote participation of farmers in cluster mode in agriculture, reducing yield gap in key crops through focused interventions, maximize returns to the farmers and 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, Agriculture, Animal Husbandry, Milk Production, Fisheries Development and Irrigation Development schemes are being implemented.

As a part of National Agricultural Development Programme, TamilNadu Watershed Development Agency has been sanctioned funds for implementing the following projects:-

**(i) Development of land parcels of 50 acres & above in patta dry lands**

Land parcels of 50 acres and above in dry lands (punjai lands) would be taken up for development of Horticulture clusters if ground water is available, otherwise Bio-mass clusters would be taken up depending on the preference of the beneficiaries.

During 2007-08 out of the targeted 35 clusters upto February 2010, 35 clusters have been taken up for development by sanctioning an amount of Rs.430.53 lakhs, benefiting 1187 small and marginal farmers over an extent of 1,972 acres have been developed.

During 2008-09 the scheme was implemented in 9 districts of Erode, Vellore, Tiruvannamalai, Tiruchi, Cuddalore, Sivagangai, Virudunagar, Theni & Tirunelveli and proposed to cover 27 clusters, with an allocation of Rs.364.78 lakhs. So far, 14 clusters covering an extent of 810 ac have been taken up for development by sanctioning an amount of Rs.175.00 lakhs, benefiting 422 small and marginal farmers.

**5. Integrated Watershed Management Programme (IWMP)**

The watershed Development Programmes under IWMP 2009-10 is being implemented in 24 districts from 2009-10 onwards. The share of the Central and State funding pattern is 90:10. It is proposed to treat an area of 249524 ha. with a total project fund of Rs.299.432 crores

over a project period of 5 - 7 years. The area proposed to be treated will be covered in 544 watersheds.

**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 and to promote local livelihood and 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.

The action is being taken for establishment of State Level Data Cell (SLDC) and Watershed Cell cum Data Centre (WCDC).

For the implementation of the IWMP over a period of 5-7 years, out of the 90% Government of India's share, 6% share amount of Rs.1,616.90 lakhs has been received during Oct.'2009. In the 50 projects sanctioned during 2009-10, the preparatory phase activities like base line survey, Participatory Rural Appraisal, Entry Point Activities are being implemented. During 2010-11, 50 New projects are will be taken up.

## 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 1972-73 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 by this programme.

### 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, Pudukkottai, 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	Cheyar
16	Vellore	Vellore, Kaniyambadi, Thimiri, Katpadi, Alangayam, Kanthili
17	Viruthunagar	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 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 Rs.6000/-. The cost of the works undertaken under this programme is entirely met from project fund. However contributions are collected from beneficiaries at 10%. In respect of community works and SC/ST, the contribution amount is 5% of the value 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 works taken up under the Drought Prone Areas Programme are of a special nature and involve a variety of activities such as:-

- Land Development : Land Leveling, 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 2006-07 the Government of India have sanctioned 1222 watersheds in 7 batches at a total project cost of Rs.33,670.00 lakhs, for treating a total area of 6,14,142 Ha. The Government of India and State Government have released Rs.27,155.80 lakhs. Of which Rs.25,586.52 lakhs have been spent by the District Rural Development Agency of 17 districts and a total area of 4,76,422 Ha have been treated. The details of ongoing 1222 watersheds are given below.

**(Rs. in Lakhs)**

No. of Ongoing Watersheds	1222
Projects cost	33,670.00
Government of India	25,252.50
Government of Tamil Nadu	8,417.50
Amount Released	27,155.80
Government of India	20,407.59
Government of Tamil Nadu	6,748.21
Expenditure	25,586.52 (94%)
Area Treated (Hect)	4,76,422 (78%)

During the financial year of 2009-2010, the Government of India have released Rs.1,215.132 lakhs and the State Government have released its share of Rs.582.981 lakhs under DPAP and the programme is being implemented.

## 7. INTEGRATED WASTELAND DEVELOPMENT PROGRAMME

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, Perundurur, 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

Sl. No.	Districts	Blocks
10	Namakkal	Sendamangalem, Kolli Hills, Namagiripettai, Pallipalayam, Rasipuram
11	Perambalur	Perambalur, Ariyalur, Sendurai, T. Pazhur Thirumanur, , Veppanthettai (I & II)
12	Pudukkottai	Aranthangi, 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	Tiruvallur	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	Viruthunagar	Vembakottai, Sivakasi, Virudhunagar, Rajapalayam, Srivilliputhur, Thiruchuli

This programme has been under implementation since 1993-94. From 1<sup>st</sup> April 1995, the programme has also been brought under the purview of the Common Guidelines like Drought Prone Area 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 Rs.6000/-. The cost of the works undertaken under this programme are entirely met from project fund. However contributions are collected from beneficiaries at 10%. 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 works taken up under the Integrated Wasteland Development Programme are of a special nature and involve a variety of activities such as:-

Land Development	:	Land Leveling, Contour Bunding, Silt Application, Stone Bunding, Retaining Wall, Summer Ploughing, Vegetative Bunding and Continuous trenching.
Water Resources Development	:	Cattle Pond, Farm Pond, Formation of Orrani, 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 2006-07 the Government of India have sanctioned 910 watersheds in 80 projects at a total cost of Rs.26,220.39 lakhs, for treating a total area of 4,57,596 Ha. The Government of India and State Government have released Rs.20,760.92 lakhs. Of which Rs.19,353.28 lakhs have been spent by the District Rural Development Agency of 24 districts and a total area of 3,35,745 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	20,760.92
Government of India	19,249.14
Government of Tamil Nadu	1,511.78
Expenditure	19,353.28 (93%)
Area Treated (Hect)	3,35,745 (73%)

During the financial year of 2009-2010 the Government of India have released Rs.720.808 lakhs and the State Government have released its share of Rs.107.067 lakhs under IWDP and the programme is being implemented.

**CHAPTER - IX**  
**AGRICULTURAL EDUCATION, RESEARCH AND**  
**EXTENSION**

The labour scarcity in agriculture, spiralling prices, increased 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. In these circumstances, Tamil Nadu Agricultural University is engaged in research leading to evolving high yielding varieties, improved cultivation and plant nutrition management, plant protection measures against pest and diseases, weed management, designing farm machinery for ploughing, sowing, weeding, and after cultivation activities including harvesting. In the changed and evolving scenario, efforts are made to disseminate research findings through appropriate methods and demonstrate them to the farmers. Price forecasts are also made to enable the farmers to get profitable prices for their produce. As all these efforts need a human resource development, Tamil Nadu Agricultural University is also involved in educating for the betterment of human resources.

**I. Agricultural Education**

Tamil Nadu Agricultural University is imparting education by taking into consideration the scientific changes through its 10 colleges (Table 9) located in 7 campuses. With this in view, new courses have been introduced and modifications have been made to some of the existing ones. On line examination to the students has been introduced and Tamil Nadu Agricultural University is considered to be one of the leading institutions in the country. Among the

students admitted in 2009-10, 527 students are studying in the five B.Sc. degree programmes, while 265 students are studying in the seven B.Tech programmes.

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 with the enrolment of 189 students during 2009-10.

During the year 2009-10, 355 students have been admitted in post graduate degree programmes and 102 students have registered for their Ph.D. Programme. A new Ph.D. Programme in Agribusiness and Development Management is offered from this year (2009-10). It is noteworthy to mention that many students of this University have been selected to the IAS, IRS, IFS, TNPSC Group-I, banking sector and in many Government appointments; particularly 6 students have been selected for Indian Forest Service. It has been programmed to introduce online examination in masters' and doctoral programmes from the academic year 2010-11. During this year, a choice based credit system will be introduced for the students of M.Sc and Ph.D programmes. Post Graduate dual programmes with University of Saskatchewan and Mc Gill University of Canada will be offered from 2010-11.

The Open and Distance Learning directorate is offering three post graduate degree programmes, two post graduate diploma programmes, certificate courses of 6 months duration in Tamil on 21 important topics and 5 topics in English.

## II. Research

### (a) Salient findings during 2009-2010

In Tamil Nadu Agricultural University, the research activities are carried out by the scientists placed in the 10 colleges, 36 research stations (Table 10) and 14 Krishi Vigyan Kendras (Table 11). The outcome of the research has been exhibited by release of 11 new crop varieties, namely, Rice-Anna (R)4, Kudiravali- CO (KV)2, Greengram-VBN(Gg)3, Gingelly-TMV(Sv)7, Castor-YRCH1, Cotton-SVPR4, Sugarcane-COC(SC)24, Guinea grass-CO(GG)3, Brinjal-CO(B)H2, Snakegourd-PLR (SG)2 and Cashew-VRI(CW)H1 and 4 farm Implements namely, improved TNAU Dhall Mill, two row precision organic manure cum fertilizer applicator, worker friendly arecanut stripper and multi row power weeder for SRI.

In rice research, the identification of new three line rice hybrid with high marketability suitable for cultivation during *samba / thaladi* seasons and new cross combinations in Rice Test Cross Nursery, leading to cultures with good quality rice containing male sterile lines with cross pollination and flowering characters were made.

In the research under fruit crops, four new banana varieties viz., H-212 (AB), NPH-02-01 (AAB), H-96/7 (ABB) were developed apart from red pulped dioecious papaya 9-1 (D).

Maize tonic containing plant growth regulators and nutrients to improve yield potential and pulses tonic containing plant growth regulators and nutrients to maximize yield were also evolved.

The Agro Climatic Research Centre has been making block wise medium range weather forecast for the

forthcoming four days which is developed on daily basis and uploaded in the Tamil Nadu Agricultural University website.

During 2009-10, efforts were made to evolve methods in processing of agricultural produce so as to reduce post harvest losses, develop technologies for value addition in agricultural produce and gadgets to increase the efficiency of primary processing activities, refinement of transplanter for SRI cultivation, including the nursery raising system and self propelled weeding and inter cultural equipments.

The Seed Centre has produced and distributed a quantity of 172 tonnes of breeder seeds in different crop varieties during the year 2009-10 to the Department of Agriculture, National Seed Corporation and other public institutions for further multiplication into foundation and certified seeds. Considering the increasing demand for quality seeds, Tamil Nadu Agricultural University has also produced and supplied about 750 tonnes of foundation and Truthfully Labelled Seeds (TFL) during 2009-10.

### (b) Programme of research for 2010-2011

During 2010-2011 research will be taken up towards Genetic Engineering of sugarcane for abiotic stress tolerance, high temperature tolerance in rice and RNAi technology for resistance mechanism for virus diseases.

Research will also be taken up on weather forecasting models to improve the weather forecast accuracy, weather based pest and disease forewarning system, altering crop geometry of dryland crops to suit farm mechanization and study on the controlled release of nano herbicides for weed management in rainfed agriculture, precision farming techniques in sunflower, Plant Growth



Regulators (PGR) consortia to improve yield in groundnut, post harvest physiological studies to improve shelf life and quality of fruits and vegetables, new technology for rapid composting of municipal solid waste and formulation of Designer fertilizer mixtures for the improvement of crop yields especially in oilseeds, cotton, sugarcane, rice, pulses and vegetable for promoting the balanced use of fertilizers.

In millets, a high yielding dual purpose sorghum variety CO(S) 30 will be released during the year 2010-2011. A promising, high yielding and early maturing pearl millet hybrid, TNBH 0642 will also be released.

In redgram, a new CGMS based hybrid, CPH 3 will be evaluated in Adaptive Research Trials throughout the state for its adaptability. An elite black gram culture, COBG 653 with an average yield of 877 kg/ha will be released for commercial cultivation. In groundnut, drought tolerant varieties viz. ,ICGV 87846, a semi-spreading and ICGV 00351, a bunchy groundnut culture will be popularized in 2010-2011.

It is programmed to produce about 190 tonnes of breeder seeds and 800 tonnes of foundation and TFL seeds during the year 2010-11.

New research initiatives, namely breeding for biotic stress in banana and papaya, evaluation of biostimulants in chilli and rootstock investigation in black pepper for biotic stress will be taken up.

It has been programmed to develop low cost solar drying system for farmers and agro industrial application, retrofitting biomass based hot air generator with the solar tunnel drier, minimization of production cost of biofuel,

introduction and popularization of pulse cultivation machines and development of equipment both multi-picking and single picking harvest in cotton.

A project on “A value chain on Industrial Agro forestry in Tamil Nadu” funded by National Agricultural Innovation Project (NAIP) has been implemented by Forest College and Research Institute, Mettupalayam for promotion of pulp and match wood tree species in association with pulp and match wood industries. In 2010-11, a horizontal expansion will be made and about 2000 hectares are likely to be covered by the industries.

### **III. Extension**

The Directorate of Extension Education plays a key role in transferring the research findings to the farmers. During 2009-2010, the training to entrepreneurs (1311 beneficiaries), field level demonstrations benefiting 238 farmers were conducted in 63.90 ha. Front line demonstrations were laid out in 118 ha benefiting 475 farmers. Human Resource Development training will be offered to Agriculture Extension Officers and NGO's during 2010-2011.

#### **TN-IAMWARM project**

During 2009-10, improved production technologies were demonstrated in rice fallow pulses, gardenland pulses, maize, sunflower, cotton, groundnut and SRI in rice as per the need of the sub basins. Intercropping of cocoa in coconut was made in 600 hectares. During 2010-11, SRI in rice will be demonstrated in 2818 ha. Precision farming will be demonstrated in banana (80 ha), vegetables (105 ha) and sugarcane (210 ha).

During 2010-2011, a new agricultural extension scheme entitled “e-Velanmai” enabling ICT tools to disseminate farm technologies will be implemented in 25 sub basins at a cost of Rs.1.58 crores.

### **National Agricultural Development Programme (NADP)**

The National Agricultural Development Programme is implemented by Tamil Nadu Agricultural University during 2007-08, 2008-09 and 2008-09 with a funding of Rs.3611.86 lakhs, Rs.715.05 lakhs, and Rs.105.00 lakhs respectively. Under this scheme, Automatic Weather Stations (AWS) have been installed in 224 blocks out of 385 blocks at a cost of Rs.1634.54 lakhs. The data recorded from the AWS will be used for improving the accuracy of the weather forecast. In order to enlighten the farmers on the preservation of soil fertility and agricultural technology, 195 Agri clinic cum mini Soil Testing Laboratories were established under this programme. In this regard, training was imparted to 361 Agri Clinic entrepreneurs. To facilitate in providing the information on agricultural technologies, weather details and price data to the farmers instantly, the Tamil Nadu Agricultural University AGRI - TECH portal has been created, at a cost of Rs.496.00 lakhs and 2,00,000 web pages containing detailed technologies have been hosted.

During the year (2009-10), a scheme on ‘Production and Supply of Cassava Mosaic Virus free planting materials’ and another scheme on ‘Introduction of Mini Portable Sprinkler Irrigation system for the coastal sandy soils of Tamil Nadu’ are implemented at a cost of Rs.60 lakhs and Rs.45 lakhs respectively and these schemes will be continued in 2010-2011.

## **CHAPTER X**

### **SEED CERTIFICATION AND ORGANIC CERTIFICATION**

#### **1. Introduction**

Seed plays a vital role among the Agricultural inputs. Based on this, repeated efforts have been taken up continuously to increase the production of quality seeds. Agricultural inputs like irrigation and fertilizers only help to draw out the yield potential of the seed. In order to make available adequate quantities of quality seeds at the right time to the farming community, the Department of Seed Certification is implementing Seed Certification, Seed Quality Control, Seed Testing and Training programmes.

#### **2. Seed Certification**

Encouraging the production and certification of adequate quantities of genetically pure and good quality seeds, particularly of high potential improved and hybrid varieties of different crops are the main aims of Seed Certification. Though there has been a constant increase in the production of certified seeds over the years, the Department is taking necessary steps to meet the multifold increase in the quality seed requirement. Due to the encouragement of Private seed producers, the quantity of certified seeds has doubled during the last one decade. Because of this, the availability of quality seeds to the farming community without any shortage has been ensured. Out of the total certified seeds produced, 69.18 percent is contributed through private sector, 28.83 percent is contributed by Government and 1.99 percent is contributed through Quasi Government sector. During the year 2009-10 a quantity of 69943 metric tones of seeds were certified.

During 2010-11 it is proposed to certify a quantity of 82,500 metric tones of seeds under various crops. The breeder seeds required are obtained from Tamilnadu Agricultural University, Other Universities and Research Centers.

#### **3. Seed Inspection**

Seed quality control is essential for the Seed programme. The Department implements Seed Quality Control activities based on The Seeds Act 1966, The Seed Rules 1968 and The Seeds (Control) Order 1983. Seed selling licenses are issued based on the provisions under The Seeds (Control) Order 1983. Seed trade should be monitored to ensure the quality. Seed selling points are inspected at periodical intervals and samples are drawn from the seed lots kept for sale and sent for analysis to the Seed Testing Laboratories. If the results are found to be substandard, proper Legal or Departmental actions are proceeded against the concerned persons. At present about 8043 seed selling points are functioning in our State. During 2009-10, 53602 seed selling point inspections were carried out and 46319 seed samples were drawn for quality check. Proper Legal and Departmental actions were proceeded against 1740 numbers of Seed lots, which were found substandard. 442 Cases were filed in the Court of Law and of which 328 Cases have been decided in favor of the Government and 114 cases are pending in the court of law. For the violations under Seed Legislations, Legal Actions have been taken up and a fine of Rs.5,24,000 has been collected from the defaulters. During 2010-11 it is proposed to make 67,000 Seed Selling Point Inspections and to draw 65,000 Seed Samples for quality check.

#### 4. Seed Testing

To Implement the Seed Certification and Seed Quality Control Programmes, Seed Testing Programme is very essential and much needed. Seed Testing is conducted based on the procedures framed by the International Seed Testing Association (ISTA). Seeds are tested for germination, Moisture, Physical Purity, Seed Health and Other Distinguishable varieties and the results are declared. The Seed testing is conducted at the Notified Seed Testing Laboratories. In Tamil Nadu, at present 11 Notified Seed Testing Laboratories are functioning. Certified Seed Samples, Official Seed Samples and the Service Seed Samples sent by the farmers, Seed Dealers and Seed Producers are tested in the Laboratories. During 2009-10, 64284 number of seed samples were tested. During 2010-11 it is proposed to test 75000 number of seed samples.

Establishment of Seed Testing Laboratories in the 18 districts namely Cuddalore, Dindigul, Karur, Kanyakumari, Krishnagiri, Namakkal, Nagapattinam, Perambalur, Pudukkottai, Ramanathapuram, Sivaganga, Tiruvallur, Thoothukudi, Tiruvarur, Tiruvannamalai, Theni, Vellore, and Virudhunagar are under progress so as to have Seed Testing facilities in all the districts of our state. During 2010-11 these 18 Laboratories will start functioning.

Grow out tests are conducted at the Kanampalayam Farm (Coimbatore) and at the Glass House attached to this Directorate to ascertain the Genetic purity of Seed crops. The Genetic Purity tests are conducted for crop seeds, where it is a pre requisite for Certification and also for the samples received from the seed inspection wing. A DNA finger print laboratory was also established at this Directorate to obtain quick confirmation of variety.

#### 5. Training

In order to enlighten and encourage the officials of the Department, Seed producers and Seed Dealers the following training programmes are being conducted.

**5.1. Orientation training:** Training is given to the newly joined 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 aspects to the seed producers. The trainees include seed growers who are mostly small and marginal farmers.

**5.4. Quality control Training to Seed Dealers:** Training is given to the seed dealers not only on the quality maintenance in storage and selling of seeds, but also on the regulatory aspects of seed legislation.

The number of persons trained under various training programs is increasing year by year. During 2009-10, 38669 persons were trained, and it is proposed to train 38000 persons during 2010-11.

#### 6. Organic Certification

More intensive and economic agriculture production led to wide use of high doses of concentrated chemical

fertilizers and chemical pesticides but insufficient use of organics, leading to negative results, decrease in fertility and soil structure.

Instead of recycling the plant and animal wastes back into the land as fertilizer, we pollute the air and water by using chemical fertilizers and pesticides affecting the environment. Thus Organic farming not only restores soil fertility but also re-establishes natural balance and there by conserve bio diversity.

Organic farming is also a solution to global warming, According to Dr.Christine Jones, one of Australian leading experts of carbon sequestration “by increasing 1% Organic carbon in one ha.of the soil shall remove 88 tones of carbon dioxide from the atmosphere by sequestration thus preventing global warming”.

The Agricultural produce from Organic farms are not only highly nutritive but also contains more antioxidants and 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 growing world wide demand for Organic food.

Tamil Nadu Organic Certification Department (TNOCD) was established in the year 2007 to carry out Inspection and Certification of Organic production system in accordance with National Programme for Organic Production (NPOP) launched by Government of India in the year 2000 and Notified in October 2001 under the Foreign Trade and Development Act (FTDR Act).

Tamil Nadu Organic Certification Department has been accredited by APEDA (Agricultural and Processed Food Products Exports Development Authority), New Delhi, Ministry of Commerce and Industry, Government of India. The accreditation number allotted to TNOCD is NPOP/NAB/0019. Here after Organic Certification carried out by this Department shall be on par with standards of European Union.

TNOCD also imparts free training to registered Organic farmers on National Programme for Organic Production and TNOCD Standards & Procedures.

During the year 2009-10, 21458 acres of land have been registered under Organic Certification against the target of 18000 acres. This included 140 individual farmers possessing 6166 acres of land, 31 farmers groups containing 7973 Farmers holding 14808 acres and others including 19 Government farms, 1 NGO and 2 Corporate sectors holding 484 acres.

During 2010-11 it is proposed to register an area of 21000 acres under Organic Certification.

## **CHAPTER - XI**

### **AGRICULTURAL MARKETING AND AGRI BUSINESS**

#### **Introduction**

Agricultural Marketing has become the key driver of the Agriculture sector today due to new market realities posed by the increasing accent on globalization, liberalization and privatization of the economy. The core 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 aim of this Department is regulating agricultural produce trade by enforcing Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987 most effectively and also implementing new technologies to minimize post harvest losses by adopting various cost effective post-harvest operations like value addition, storage, grading, packaging, processing and easy transportation. Market fee of 1% on the value of agricultural produce purchased by the traders is collected by the Market Committees and the fund is being utilized for developmental activities of Market Committees.

Agricultural marketing system primarily links the production and trade. Market-driven production approach and Agri-marketing facilitate shifting of agricultural system to commercial one. Agricultural Marketing infrastructure plays a pivotal role in fostering and sustaining the tempo of rural economic development.

The Department of Agricultural Marketing functioning since 1977 for regulating agricultural marketing, had been renamed as "Department of Agricultural Marketing and Agri. Business" to focus on other latest technologies like post

harvest management, grading, packaging, food processing and export. Agri Business is a process, which starts with a decision to produce a saleable farm commodity.

#### **Activities of the Department of Agricultural Marketing and Agri Business**

1. Establishment and maintenance of Uzhavar sandhais for the benefit of farmers as well as consumers.
2. Setting up of regulated markets for getting fair price to the produce and also for benefiting the farming community.
3. Creating awareness among the farmers about the benefits of grading, storage, value addition and processing of produce in regulated markets by giving training, publicity and propaganda.
4. Agmark grading of agricultural, animal husbandry and forestry products.
5. Setting up of Agri Export Zones for promoting export of agricultural produce by increasing the area under exportable crops and providing necessary post harvest management and other infrastructure facilities.
6. Disseminating market price information of Regulated markets and Uzhavar sandhais through media and internet on a daily basis for the benefit of farmers.
7. Promoting the establishment of food processing industries to minimize the wastage of agricultural produce and to increase employment opportunities.

#### **Uzhavar sandhais (Farmers' Markets)**

The innovative scheme – "Uzhavar sandhai" was introduced in 1999-2000 for direct selling of fruits and vegetables at a fair price by farmers to consumers without any intermediaries. The first Uzhavar sandhai at Madurai on 14.11.1999 and 100<sup>th</sup> Uzhavar sandhai at Pallavaram were

inaugurated by the Hon'ble Chief Minister of Tamil Nadu. Throughout Tamil Nadu 103 Uzhavar Sandhais were opened in the year 1999-2000.

During 2007-08, an announcement was made to open 50 more Uzhavar sandhais, besides the renovated 28 Uzhavar sandhais which were closed in the year 2001-02. Based on that, at present 151 Uzhavar sandhais are functioning. In 2009-10 (upto February), everyday on an average 1944 Metric tons of fruits and vegetables worth Rs.2.65 crores are being sold by 8,389 farmers and thereby 3.35 lakh consumers are being benefited. Computers have been provided to 25 Uzhavar sandhais. Cold storages with capacity of 2 Metric tons have been constructed at a cost of Rs.133.10 lakhs to prevent deterioration of fruits and vegetables in 22 Uzhavar sandhais, where sale of fruits and vegetables exceed 15 Metric tons per day. They have been well received by the farmers.

### **Market Committees and Regulated Markets**

In Tamil Nadu 277 Regulated markets and 144 rural godowns are functioning under 21 Market Committees. These Market Committees are functioning with Members nominated by Government and Chairpersons elected by the Members. Competitive and remunerative prices are ensured for the produce sold by the farmers through closed tender system in Regulated markets. Free grading facilities for agricultural commodities are also made available in Regulated Markets. No fee is collected from farmers for the services provided in Regulated Markets. Market Committees collect 1% as Market fee from the traders on the value of agricultural produce purchased by them. Besides that, license fee is also collected from traders and weighmen. 15 check-posts that functioned in the jurisdiction of Market Committees were abolished. Regulated markets provide various kinds of facilities like electronic weigh bridges,

weighing balances, godowns, immediate payment after auction, daily price information, rest sheds, drinking water, cattle sheds, free medical aid to farmers, input shops, phone, fax facilities etc.

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 getting better remuneration. For dissemination of market price information among the farmers, 184 regulated markets and 21 market committees have been provided with computers. During 2009-10 (upto February), about 16.02 lakh Metric ton of agricultural produce worth Rs.6228 crores has been sold by farmers through Regulated markets. In 2009-10 (upto February), Market committees have collected the revenue of Rs.62.28 crores as market fee.

### **Uniform Notification**

Based on the jurisdiction of Market committees / Regulated markets, so far 40 Agricultural Commodities have been notified. Now, preliminary notification for enforcing Uniform Notification throughout the State has been issued. Good response and high appreciation are received from the public for Uniform Notification. No fee is collected from the farmers. Market fee of 1% is collected from the traders by the Market Committee and the fund is being utilized for developmental activities of Regulated markets and construction of Uzhavar sandhais.

### **Pledge loan**

Regulated markets are issuing pledge loan to small and marginal farmers to avoid distress sales due to price fall. Under this scheme farmers can store their agricultural produce in the godowns of Regulated markets for a period of 6 months without any fee and avail pledge loan of 75% on

total value of their produce upto a maximum of Rs.1,00,000 at 5% interest rate. Similarly pledge loan facilities are also extended to traders at 9% interest rate. During 2009-10 (upto February), Rs.1614.33 lakhs has been issued to 2305 farmers and Rs.89 lakhs to 98 traders as pledge loan.

### **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 under this scheme and become eligible for a grant of Rs.1,00,000 in case of death/permanent disability due to accident / 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 Rs.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 Rs.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 Rs.10 per individual per year equally.

### **Construction of drying yards in villages**

In post harvest stages of grains, maximum benefit can be achieved by following improved storage practices at optimum moisture content. About 5 to 10% of post harvest losses are occurring in cereals and pulses. In order to minimize the post harvest losses in grains, the Department of Agricultural Marketing and Agri Business has started construction of drying yards at villages from 1997. Under this scheme, so far 1228 drying yards have been constructed at a total cost of Rs.23.20 crores.

### **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 Rs.17.06 crores. In this complex, 314 shops have been allotted to traders of paddy, agricultural inputs and flowers for utilization.

### **Velanvilaiporul perangadi (Mega Market)**

A Velanvilaiporul perangadi for fruits and vegetables has been established with 50 shops, 216 floor-space rental shops, grading hall, transaction shed at Oddanchatram of Dindigul district at a cost of Rs.3.08 crores and is being utilized by the farmers and traders.

### **Establishment of Terminal Markets**

Terminal Markets with all value addition facilities like processing, storage and marketing are to be established near metro areas of Chennai, Madurai and Coimbatore as per the revised guidelines of the Government of India for fruits, vegetables and other perishable commodities. The Industrial and Technical Consultancy Organization of Tamil Nadu Ltd (ITCOT) has been appointed as consultant for the above projects.

For establishment of terminal Market at Coimbatore region, 40 acres of land at SIPCOT, (State Industries Promotion Corporation of Tamil Nadu) Perundurai Industrial Estate has been identified and Global Tender has been floated for Request for Qualification (RFQ). Expression of Interest (EOI) has been received from nine private entrepreneurs. Preparation of evaluation report for identifying eligible entrepreneurs by ITCOT is under progress. Tender evaluation committee has been set up by the Government.



In case of Madurai region, 50 acres of land at Mukkampatti and Thiruvadhavur villages has been allotted. Revised feasibility report and Project Information Memorandum (PIM) have been sent to Government of India for 'in-principle' approval. For establishment of terminal market at Chennai region, 32 acres of land has been identified at Navalur village of Sriperumpudhur taluk in Kanchipuram district. Feasibility report and Project Information Memorandum (PIM) have been sent to Government of India for 'in-principle' approval.

### **Dissemination of Agricultural Production and Marketing Information**

Market intelligence is a prerequisite to promote marketing activities. Farmers can get better price by moving their produce to the market which pays higher price, when the information on commodity price prevailing in various markets is made available to them in advance. In this context, Agricultural Production and Marketing Information Centres were established in 14 Regulated markets during the first phase. These centres were provided with computers, internet facility and electronic display boards. Market price and arrival information of agricultural produce and post harvest management practices are flashed in the electronic display boards of regulated markets. Besides, a software has been developed for disseminating price and arrival information of fruits and vegetables in Uzhavar sandhais on daily basis.

### **Agri Export Zones**

Agri Export Zones for cut-flowers, flowers and cashew have been approved and Memorandums of Understanding were signed with Agricultural and Processed food products Export Development Authority (APEDA) and private entrepreneurs.

Agri Export Zone for cut-flowers has been established at Hosur in Krishnagiri district by the firm M/s.Tanflora -a joint venture company of Tamil Nadu Industrial Development Corporation Limited (TIDCO) and a private promoter at a cost of Rs.24.85 crores. An Agri Export Zone for flowers at Udhamandalam in the Nilgiris district has been established with the participation by M/s.Nilflora – a private promoter at a project cost of Rs.15.89 crores. An electronic flower auction centre at a cost of Rs.11 lakhs has been opened and functioning in the Nilgiris. 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 Rs.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 have started commercial productions. During 2009-10 (upto February), the firm M/s.Tanflora has done a turn over of Rs.7.65 crores worth cut-flowers, M/s.Nilflora has done a turn over of Rs.1.60 crores worth flowers and M/s.Sattva Agro Export Pvt. Ltd., has done a turn over of 1.28 crores worth cashew.

### **Flower Auction Centre**

A Flower auction centre at Kavalkinaru in Tirunelveli district has been established for the benefit of flower growers at a cost of Rs.163.40 lakhs. In 2009-10 (upto February), on an average 1500 kg of flowers worth Rs.85,756 has been sold by 124 farmers per day.

### **Establishment of Market complexes with cold storage facility**

Market complexes with cold storage facility at a project cost of Rs.1 crore each for Mango at Krishnagiri in Krishnagiri district, for Onion at Pongalur in Coimbatore district, for Grapes at Odaipatti in Theni district, for Tomato

at Palacode in Dharmapuri district are being established in the available lands of Regulated markets by utilizing market development fund of Tamil Nadu State Agricultural Marketing Board for the welfare of small and marginal farmers. Tenders for the above projects have been called for and construction works have been started by the Engineering wing of Tamil Nadu State Agricultural Marketing Board.

For the benefit of coconut growers in Thanjavur and Thiruchirapalli districts Market Complex with cold storage facility for Coconut at Pattukottai in Thanjavur district at a cost of Rs.4 crores is being established by utilizing market development fund of Tamil Nadu State Agricultural Marketing Board. For the above project an area of 20.37 acres of land has been allotted at Ponnaravayankottai Ukkadai village in Pattukottai taluk of Thanjavur district. Tender has been called for and construction work is under progress.

#### **Agro and Agro Processing Industrial Policy**

As per the new Agro and Agro Processing Industrial Policy the Department of Agricultural Marketing and Agri-Business serves as a single window clearance agency for agro processing industries in the state. An Export Promotion Cell is to be created in Department of Agricultural Marketing and Agri Business.

Agro processing clusters shall be promoted in Industrial Parks and Special Economic Zones keeping in view of value-addition of turmeric (Erode), Sago (Salem), Banana (Thiruchirapalli), Mango (Krishnagiri), Cashew (Panruti), and Grape (Theni).

#### **Incentives:**

- All incentives available for manufacturing industries under the Industrial Policy shall be applicable to

agro-industries and manufacturing of agri-machinery and micro-irrigation equipments.

- Efforts shall be taken to fully utilize the benefits available under the schemes of Government of India as well as to enable agro units to access Government of India funding support.
- All concessions under the State Policy shall be available in addition to the concessions offered by Government of India in the agro-processing sector subject to both Government of India and Government of Tamil Nadu subsidies not exceeding 50% of project cost.
- SMEs exemption in agro and food processing shall be provided to support for getting HACCP (Hazard Analysis and Critical Control Point) and other international safety related certification for export purposes at 50% of the cost incurred for obtaining quality certification mark from a certifying agency recognized by State Government/ Central Government subject to ceiling of Rs.5 lakhs.
- Vehicles transporting perishables shall be labelled "Green Transport" and given speedy clearances at check posts.
- Primary producers who commit to install micro-irrigation systems shall be given priority in provision of free electricity connections. Overriding priority for free electricity connection shall be given to small and marginal farmers if they join together to form a cluster of 20 hectares and above and undertake to jointly set up, own and manage the common irrigation systems using micro-irrigation technology.
- 50% subsidy shall be given on planting material for Jatropha and other bio-fuel crops and the subsidy available to agro-processing industry shall be extended to bio-fuel and bio-diesel extraction plants.

- Jatropha seed shall be exempted from purchase tax and Jatropha oil shall be exempted from VAT for a period of 10 years from the date of commercial production.

Food processing eliminates 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 can obtain better returns and employment opportunity by cultivation of good quality processable agricultural produce. The Department of Agricultural Marketing and Agri Business is the State nodal agency to Ministry of Food Processing Industries, Government of India. Applications received upto 2007 for establishment of food processing industries are being scrutinized, recommended and forwarded by the Department of Agricultural Marketing and Agri Business to Ministry of Food Processing Industries, Government of India. Now the nationalized banks are recommending the applications, which were received after the year 2007.

#### **Agmark grading**

Agmark grading is a symbol, for quality food products. Agmark grading protects the consumers from harmful effects of consuming adulterated food products and ensures quality of food products. In Tamil Nadu, 30 State Agmark grading laboratories and 1 principal Agmark grading laboratory at Chennai have been engaged in grading and certification. 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 2009-10 (upto February), 13.18 lakh quintals of agricultural

commodities have been graded by Agmark grading laboratories.

#### **Tamil Nadu Irrigated Agriculture Modernization and Water Bodies Restoration and Management (TN-IAMWARM)**

The World Bank assisted TN-IAMWARM project is being implemented in 63 sub-basins of Tamil Nadu for a period of 6 years from 2007-08 to 2012-13 at a total cost of Rs.24.84 crores. In 2009-10 the project has been implemented in all the three phases with budgeted outlay of Rs.932.93 lakhs.

So far, 191 Marketing infrastructure like drying yards (94 Nos.), storage sheds (83 Nos.), collection centers (4 Nos.), pack house (1 No), Agri business centers (9 Nos.) and other facilities have been provided for the benefit of farmers. Trainings on post harvest technology, interface workshop and exposure visit have been conducted for the benefit of sub-basin farmers. Market linkage/ tie-up arrangement is established through Memorandum of Understanding (MoU) between commodity group farmers and private entrepreneurs to realize additional income to the farmers. So far, 542 commodity groups were formed and 456 MoUs have been signed between commodity groups and private entrepreneurs. In 2010-11 the project will be implemented in Phase II and Phase III sub basins with financial outlay of Rs.545.93 lakhs for creating market infrastructure and capacity building trainings (IEC/CB) to farmers.

#### **National Agriculture Development Programme (NADP / RKVY)**

Under the 'Development of Kavunji village as Corporate village' scheme, construction of community post

harvest marketing infrastructure like smoke-house, grading and sorting yards have been completed and purchase of cleaning machine for fruits and vegetables, collection vehicles and crates are under progress at a total cost of Rs.92 lakhs for the benefit of precision farming farmers at Kavunji village of Dindigul district. Marketing infrastructure for specific commodities like cold storage for tomato at Maicheri in Salem district at a cost of Rs.100 lakhs, market complex for coconut at Pethappampatti in Tiruppur district at a cost of Rs.100 lakhs and rural business hub at 10 places at a cost of Rs.150 lakhs are being established. Construction for the above projects has been started by the Engineering wing of Tamil Nadu State Agricultural Marketing Board.

Purchase of agricultural farm implements at a cost of Rs.500 lakhs by Agricultural Engineering Department is under progress. After the purchase, these implements will be hired out through Regulated Markets and Agri Business Centres.

## **Tamil Nadu State Agricultural Marketing Board**

### **1. Training to farmers and staff**

The training centre of Tamil Nadu State Agricultural Marketing Board functioning at Salem caters to the training 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 by 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 is conducted for 20 staff of market committees. The Personal contact programme is conducted for 100 farmers in 5 batches (20 farmers / batch) for 3 days.

### **2. 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, godowns, compound wall, etc. in Regulated Markets.

- (a) Construction of drying yards at 100 places of various villages at a cost of Rs.2.50 crores has been proposed (Rs.2.50 lakhs /drying yard) and so far construction has been completed in 97 places and in the remaining 3 places, works are under progress.
- (b) Electronic weighing balances with allied equipments have been provided to 50 new Uzhavar sandhais at a cost of Rs.1.45 crores.

### **3. 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 Rs.50 lakhs. For the benefit of farmers as well as staff of this Department 2 research studies and 4 training programmes have been conducted in 2009-10 (upto February), by utilizing the interest accrued from corpus fund deposit.

#### **4. 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 by publicity and propaganda wings at Chennai, Madurai, Coimbatore and Thiruchirapalli.

#### **5. Market Development Fund**

Tamil Nadu State Agricultural Marketing Board derives its fund resource from the Market Committees. These 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.

#### **6. 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 Rs.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 information of commodities.

#### **Tamil Nadu Small Farmers Agri-business Consortium (TNSFAC)**

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 as well as 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 and providing project development facilities. So far, venture capital assistance of Rs.1214.84 lakhs for 31 Agri-Business projects with a project cost of Rs.13262.73 lakhs has been sanctioned by Tamil Nadu Small Farmers Agri-business Consortium.

**AGRICULTURE DEPARTMENT  
TABLE – 1**

**Details of Agricultural Extension Centres**

District	Main Agricultural Extension Centres	Sub Centres	Total
Thiruvallur	14	21	35
Kancheepuram	13	16	29
Vellore	20	24	44
Thiruvannamalai	17	24	41
Cuddalore	13	17	30
Villupuram	21	27	48
Tiruchirappalli	14	11	25
Perambalur	4	3	7
Ariyalur	6	4	10
Karur	8	4	12
Pudukottai	13	20	33
Thanjavur	14	47	61
Thiruvarur	10	32	42
Nagapattinam	11	33	44
Ramanathapuram	11	6	17
Madurai	13	19	32
Theni	8	12	20
Dindigul	13	15	28
Salem	20	11	31
Namakkal	15	17	32
Dharmapuri	8	9	17
Krishnagiri	10	7	17
Erode	14	21	35
Tiruppur	13	13	26
Coimbatore	13	15	28
Virudhunagar	11	6	17
Sivaganga	12	9	21
Tuticorin	12	16	28
Tirunelveli	19	31	50
Kanyakumari	9	11	20
<b>Total</b>	<b>379</b>	<b>501</b>	<b>880</b>

**TABLE – 2  
State Seed Farms (36)**

Sl. No.	Place	District
1	Kancheepuram	Kancheepuram
2	Kolandalur	Thiruvallur
3	Vanur	Villupuram
4	Iruvelpattu	
5	Kakkuppam	
6	Vadakananthal	
7	Miralur	
8	Vandrayanpet	Cuddalore
9	Aththiyandhal	
10	Vazhavachanur	
11	Mettur Dam	Salem
12	Danishpet	
13	Papparapatti	Dharmapuri
14	Pongalur	Tiruppur
15	Pappankulam	
16	Sathiyamangalam	Erode
17	Bhavani	
18	Inungur	Karur
19	Neikkuppaipudur	Trichirappalli
20	Pudurpalayam	
21	Annapannai	Pudukkottai
22	Sakkottai	Thanjavur
23	Devambalpattinam	Thiruvarur
24	Kanchikudikkadu	
25	Keerandhi	
26	Nedumbalam	
27	Thiyagarajapuram	
28	Sakkaramangalam	
29	Moongilkudi	

Sl. No.	Place	District
30	Nagamangalam	Nagapattinam
31	Thirukkadaiyur	
32	Vinayakapuram	Madurai
33	Keezhakudalur	Theni
34	Devadanam	Virudhunagar
35	Karaiiruppu	Tirunelveli
36	Thirupathisaram	Kanyakumari

**State Oilseed Farm (6)**

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

**Pulses Farm (1)**

Sl. No.	Place	District
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	T.V.Malai	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	Trichy	..	..	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	Thiruvarur	1	..	5	6
22	Madurai	1	..	1	2
23	Theni	..	..	2	2
24	Dindigul	1	..	..	1
25	Ramnad	..	1	1	2
26	Sivagangai	..	..	2	2
27	Virudhunagar	..	..	4	4
28	Tirunelveli	..	..	3	3
29	Thoothukudi	1	..	1	2
30	Kanyakumari	...	...	1	1
<b>TOTAL</b>		<b>16</b>	<b>2</b>	<b>63</b>	<b>81</b>

TABLE - 4

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

TABLE - 5

Sl. No	District	Pesticide Testing Laboratory	Bio Fertiliser Production Centre	Bio Control Laboratory	Micro Nutrient Mixture Production Centre
1	Kancheepuram	1 Kancheepuram	1 Chengleput	1 Panjupetta	
2	Cuddalore	2 Cuddalore	2 Cuddalore		
3	Villupuram			2 Villupuram	
4	Thiruvannamalai		3 Polur		
5	Vellore	3 Vellore			
6	Salem	4 Salem	4 Salem	3 Seelanaickanpatti	
7	Namakkal			4 Namakkal	
8	Dharmapuri	5 Dharmapuri	5 Palacode	5 Papparpatti	
9	Coimbatore	6 Coimbatore		6 Coimbatore	
10	Tiruppur		6 Avinashi		
11	Erode	7 Erode	7 Bhavani	7 Bhavani	
12	Trichy	8 Trichy	8 Trichy	8 Trichy	
13	Pudukkottai		9 Kudumiamalai		1 Kudumiamalai
14	Thanjavur	9 Aduthurai	10 Sakkottai	9 Kattuthottam	
15	Thiruvarur		11 Needamangalam		
16	Nagapattinam	10 Nagapattinam			
17	Madurai	11 Madurai		10 Melur 11 Vinayagapuram	
18	Theni	12 Vaigai Dam	12 Uthamapalayam		
19	Ramanathapuram		13 Ramanathapuram		
20	Sivagangai	13 Sivagangai			
21	Tirunelveli	14 Tirunelveli	14 Tenkasi	12 Palayamkottai	
22	Thoothukudi	15 Kovilpatti	15 Thoothukudi		



**TABLE - 6**

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	Thiruvannamalai	4 Thiruvannamalai	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	Trichy	10 Trichy	10 Srirangam
14	Perambalur	11 Perambalur	
15	Karur	12 Karur	
16	Pudukkottai	13 Kudumianmalai	11 Vellala vidadhi
17	Thanjavur	14 Sakkottai	12 Pattukkottai
18	Nagapattinam		13 Malliam
19	Thiruvarur		
20	Madurai		
21	Theni	15 Theni	14 Vaigai Dam
22	Dindigul	16 Dindigul	
23	Ramanathapuram	17 Paramakudi	15 Uchipuli 16 Devi pattinam
24	Sivagangai	18 Sivagangai	17 Chadurveda mangalam
25	Virudhunagar	19 Virudhunagar	18 Devadhanam
26	Tirunelveli	20 Palayamkottai	19 Senkottai 20 Vadakarai
27	Thoothukudi	21 Thoothukudi	21 Killikulam
28	Kanyakumari	22 Nagercoil	22 Puthalam

**TABLE - 7**

Sl. No	District	Parasite Breeding Centre - Sugarcane	Parasite Breeding Centre - Coconut
1	Kancheepuram	1 Maduranthagam	1 Chengalpattu
2	Thiruvallur		2 Puttur
3	Cuddalore	2 Virudhachalam	3 Cuddalore
4	Villupuram	3 Villupuram 4 Kallakurichi 5 Tindivanam	
5	Vellore	6 Ambur 7 Gudiyatham 8 Thiruppathur	4 Melalathur 5 Vaniyambadi 6 Natrampalli (Thiruppathur)
6	Thiruvannamalai	9 Thiruvannmalai	
7	Salem	10 Mohanur	7 Sukkampatti
8	Namakkal		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	Trichy	14 Lalgudi	12 Trichy
15	Perambalur	15 Perambalur	
16	Karur	16 Karur 17 Kulithalai	
17	Pudukkottai		
18	Thanjavur	18 Thanjavur	13 Thanjavur
19	Nagapattinam	19 Mayiladuthurai	
20	Thiruvarur		
21	Madurai	20 Melur	14 Madurai (N)
22	Theni		
23	Dindigul	21 Nilakottai	
24	Ramanathapuram		15 Uchipuli
25	Sivagangai		16 Singampunari
26	Virudhunagar		17 Devadhanam
27	Tirunelveli		18 Senkottai
28	Thoothukudi		19 Udhanakudi
29	Kanyakumari		20 Nagarcoil

**TAMIL NADU HORTICULTURE DEVELOPMENT AGENCY**

**TABLE – 8**

**List of State Horticulture Farms in Tamil Nadu**

District Sl. No.	Name of District	Farm Sl. No.	Name of State Horticulture Farm.	Area (Ha.)
1	Coimbatore	1	Anaikatty	12.00
		2	Kallar	8.72
		3	Kannampalayam	27.66
2	Cuddalore	4	Neyveli	40.48
		5	Virudhachalam	10.53
3	Krishnagiri	6	Thimmapuram	9.89
		7	Jeenur	122.38
4	Dindigul	8	Kodaikanal	5.16
		9	Bryant Part Kodaikanal	8.30
		10	Thandikudi	5.45
		11	Reddiarchatram	5.33
12	Sirumalai	12	Sirumalai	202.47
		13	Attur	12.24
5	Kancheepuram	14	Vichanthangal	22.96
		15	Melkadirpur	42.12
		16	Melottivakkam	20.36
6	Kanyakumari	17	Kanyakumari	12.80
		18	Pechiparai	6.07
7	Namakkal	19	Semmedu	11.62
		20	Padasolai	28.14
8	Pudukottai	21	Kudumianmalai	118.68
		22	Vallathirakottai Giant Orchard	521.20
		23	Nattumangalam	53.02

District Sl. No.	Name of District	Farm Sl. No.	Name of State Horticulture Farm.	Area (Ha.)
9	Salem	24	Yercaud	10.12
		25	Karumandurai Giant Orchard	419.77
		26	Maniyarkundram	100.00
		27	Karumandurai	44.84
		28	Mulluvadi	48.20
		29	Sirumalai (Arunuthumalai)	8.10
10	Sivagangai	30	Devakottai	81.20
		31	Nemam	38.77
11	Thanjavur	32	Aduthurai	8.80
		33	Marungulam	10.58
12	The Nilgiris	34	Burliar	6.25
		35	Katteri	18.96
		36	Coonoor	4.05
		37	Pomological Station, Coonoor	6.52
		38	Sims Park Coonoor	12.14
		39	Doddabetta	4.00
		40	Thummanatty	9.80
		41	Vijayanagaram	14.40
		42	Govt. Botanical Garden, Udhaigai.	22.00
		43	Nanjanad	85.18
44	Devala	80.00		

District Sl. No.	Name of District	Farm Sl. No.	Name of State Horticulture Farm.	Area (Ha.)
13	Theni	45	Periyakulam	9.31
14	Thiruvallur	46	Madhavaram	5.76
		47	Pichivakkam	40.43
15	Tirunelveli	48	Courtallam	14.89
16	Karur	49	Mudalaipatti	23.96
17	Vellore	50	Thagarakuppam	34.40
		51	Kudapattu	10.40
		52	Navlock	84.45
18	Virudhunagar	53	Poovani	9.57
		54	Giant Orchard, Srivilliputhur	46.27
<b>Total</b>				<b>2620.70</b>

**Table 9****LIST OF COLLEGES**

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

**TABLE 10****LIST OF RESEARCH STATIONS**

- |  |   |
|--|---|
| 1. Regional Research Station, Paiyur, Krishnagiri Dist.                | 19. Agricultural Research Station, Virinjipuram, Vellore Dist.      |
| 2. Tapioca and Castor Research Station, Yethapur, Salem Dist.          | 20. Oilseeds Research Station, Tindivanam, Villupuram Dist.         |
| 3. Agricultural Research Station, Bhavanisagar, Erode Dist.            | 21. Sugarcane Research Station, Cuddalore                           |
| 4. Coconut Research Station, Aliyarnagar, Coimbatore Dist.             | 22. Regional Research Station, Vridhachalam, Cuddalore Dist.        |
| 5. Agricultural Research Station, Vaigaidam, Theni Dist.               | 23. Soil and Water Management Research Institute, Thanjavur         |
| 6. Agricultural Research Station, Paramakudi, Ramnathapuram Dist.      | 24. Sugarcane Research Station, Sirugamani, Trichy Dist.            |
| 7. Coastal Saline Research Centre, Ramanathapuram                      | 25. Coconut Research Station, Veppankulam, Thanjavur Dist.          |
| 8. Regional Research Station, Aruppukottai, Virudhunagar Dist.         | 26. Agricultural Research Station, Pattukottai, Thanjavur Dist.     |
| 9. Cotton Research Station, Srivilliputhur, Virudhunagar Dist.         | 27. National Pulses Research Centre, Vamban, Pudukottai Dist.       |
| 10. Agricultural Research Station, Kovilpatti, Thoothukudi Dist.       | 28. Cotton Research Station, Veppanthattai, Perambalur Dist.        |
| 11. Rice Research Station, Ambasamudram, Tirunelveli Dist.             | 29. Vegetable Research Station, Palur, Cuddalore Dist.              |
| 12. Agricultural Research Station, Tirupathisaram, Kanyakumari Dist.   | 30. Horticultural Research Station, Yercaud, Salem Dist.            |
| 13. Maize Research Station, Vagarai, Dindigul Dist.                    | 31. Institute of Commercial Horticulture, Ooty, Nilgiri Dist.       |
| 14. Dryland Agricultural Research Station, Chettinad, Sivagangai Dist. | 32. Horticultural Research Station, Kodaikanal, Dindigul Dist.      |
| 15. Hybrid Rice Evaluation Centre, Gudalur, Nilgiri Dist.              | 33. Horticultural Research Station, Thadiyankudisai, Dindigul Dist. |
| 16. Tamil Nadu Rice Research Institute, Aduthurai, Thanjavur Dist.     | 34. Horticultural Research Station, Pechiparai, Kanyakumari Dist.   |
| 17. Rice Research Station,   | 35. Floricultural Research Station,                                 |

- |     |  |     |   |
|-----|--|-----|---|
| 18. | Tirurkuppam, Thiruvallur Dist.<br>Sugarcane Research Station,<br>Melalathur, Vellore Dist. | 36. | Thovalai, Kanyakumari Dist.<br>Urban Horticulture Development<br>Centre, Chennai -40. |
|-----|--|-----|---|

**Table 11**

**LIST OF KRISHI VIGYAN KENDRA**

1. Krishi Vigyan Kendra, Sandhiyur, Salem District.
2. Krishi Vigyan Kendra, Madurai.
3. Krishi Vigyan Kendra, Sirugamani, Trichy District.
4. Krishi Vigyan Kendra, Virudhachalam, Cuddalore District.
5. Krishi Vigyan Kendra, Ramanathapuram.
6. Krishi Vigyan Kendra, Vamban, Pudukottai District.
  
7. Krishi Vigyan Kendra, Pechiparai, Kanyakumari District.
8. Krishi Vigyan Kendra, Tirurkuppam, Thiruvallur District.
9. Krishi Vigyan Kendra, Virinjipuram, Vellore District.
10. Krishi Vigyan Kendra, Tindivanam, Villupuram District.
11. Krishi Vigyan Kendra, Needamangalam (SSF), Thiruvarur District.
12. Krishi Vigyan Kendra, Sikkal (SSF), Nagapattinam District.
13. Krishi Vigyan Kendra, Aruppukottai, Virudhunagar District.
14. Krishi Vigyan Kendra, Pappalapatti, Dharmapuri District.

**SEED CERTIFICATION  
TABLE - 12  
QUANTITY OF SEEDS CERTIFIED IN M.T.**

Sl. No.	Crop	2009-10		2010-11
		Target	Achievement	Target
1	Paddy	70950	65137	71570
2	Variety millets	400	210	420
3	Hybrid millets	15	4	10
4	Variety cotton	920	471	600
5	Hybrid cotton	20	1	10
6	Pulses	4300	1400	4400
7	Oilseeds	5305	2668	5400
8	Vegetables	90	52	90
	<b>Total</b>	<b>82000</b>	<b>69943</b>	<b>82500</b>

**SEED INSPECTION**

Sl. No.	Details	2009-10		2010-11
		Target	Achievement	Target
1	Seed selling points inspection	65000	53602	67000
2	Seed samples taken	60000	46319	65000

**SEED TESTING**

Sl. No.	Details	2009-10		2010-11
		Target	Achievement	Target
1	Samples tested	75000	64284	75000

**TRAINING**

Sl. No.	Details	2009-10		2010-11
		Target	Achievement	Target
1	Persons trained	34500	38669	38000

**ORGANIC CERTIFICATION**

Sl. No.	Details	2009-10		2010-11
		Target	Achievement	Target
1	Area registered in acres	18000	21458	21000

**TABLE - 13  
SEED CERTIFICATION UNITS**

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

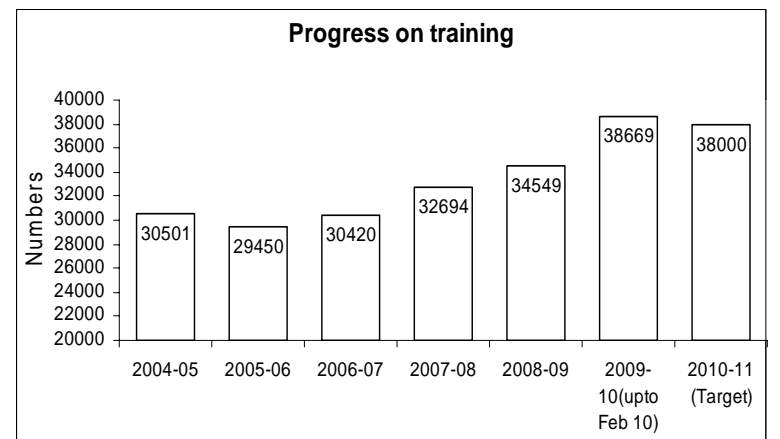
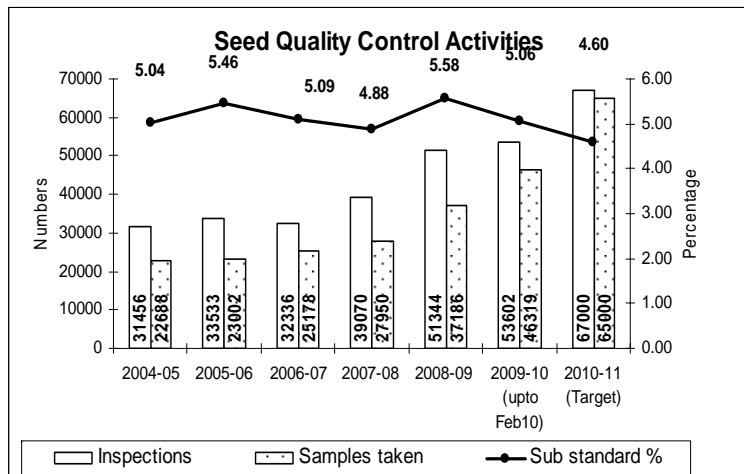
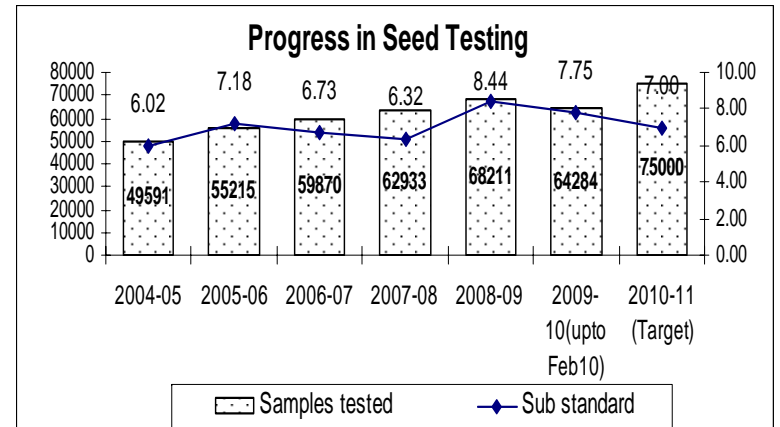
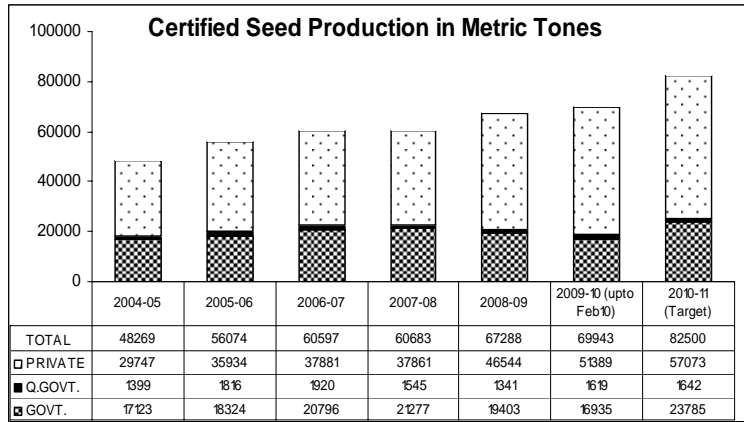
<b>SEED INSPECTION UNITS</b>		
<b>S.No</b>	<b>Location</b>	<b>Jurisdiction (Districts)</b>
1	Coimbatore	Coimbatore and Nilgiris
2	Erode	Erode
3	Salem	Salem and Namakkal
4	Dharmapuri	Dharmapuri and Krishnagiri
5	Karur	Karur and Dindigul
6	Madurai	Madurai and Theni
7	Tanjore	Thanjavur and Pudukottai
8	Trichy	Trichy and Perambalur
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 Thiruvannamalai
14	Villupuram	Villupuram and Cuddalore
15	Nagapattinam	Nagapattinam and Thiruvarur

<b>SEED TESTING LABORATORIES</b>		
<b>S.No</b>	<b>Location</b>	<b>Jurisdiction (Districts)</b>
1	Coimbatore	Coimbatore
2	Nilgiris	Nilgiris
3	Dharmapuri	Dharmapuri krishnagiri and Namakkal
4	Erode	Erode
5	Madurai	Madurai, Theni, Dindugul, Virudhunagar, Ramanathapuram and Sivagangai.
6	Salem	Salem
7	Tanjore	Tanjore, Nagapattinam and Thiruvarur
8	Tirunelveli	Tirunelveli, Thoothukudi and Kanyakumari
9	Kancheepuram	Kancheepuram, Vellore, Thiruvannamalai, Chennai and Tiruvallur
10	Villupuram	Villupuram
11	Trichy	Trichy, Pudukkottai, Karur, Perambalur and Cuddalore

**ORGANIC CERTIFICATION OPERATIONAL JURISDICTION**

<b>Sl. No.</b>	<b>Organic Certification Unit</b>	<b>Jurisdiction</b>
1	Organic Certification Inspector I	Whole of State
2	Organic Certification Inspector II	Whole of State
3	Organic Certification Inspector, Coimbatore Region.	Coimbatore, Nilgiris, Erode, Salem, Namakkal, Dharmapuri, Krishnagiri Districts.
4	Organic Certification Inspector, Trichy Region.	Trichy, Karur, Perambalur, Ariyalur, Pudukottai, Tanjore, Thiruvarur, Nagapattinam Districts.
5	Organic Certification Inspector, Madurai Region.	Madurai, Virudhunagar, Tirunelveli, Sivaganga, Ramanathapuram, Theni, Dindugal, Tuticorin, Kanyakumari Districts.
6	Organic Certification Inspector, Vellore Region.	Vellore, Thiruvannamalai, Villupuram, Kancheepuram, Thiruvallur, Cuddalore Districts.

### Department of Seed Certification Performance under various schemes





**TABLE - 14**  
**MARKET COMMITTEE-WISE REGULATED MARKETS AND**  
**RURAL GODOWNS**  
**(Numbers)**

Sl. No.	Market Committees	Regulated market	Rural Godown
1	Kancheepuram	15	7
2	Vellore	12	8
3	Tiruvannamalai	16	8
4	Cuddalore	10	5
5	Villupuram	17	12
6	Salem	19	8
7	Dharmapuri	16	4
8	Coimbatore	18	12
9	Erode	25	9
10	Tiruchirappalli	19	11
11	Thanjavur	13	4
12	Pudukkottai	10	2
13	Madurai	6	5
14	Ramanathapuram	20	12
15	Tirunelveli	20	13
16	Kanyakumari	6	5
17	Theni	7	6
18	Dindigul	8	5
19	Nagapattinam	8	4
20	Tiruvarur	8	4
21	Nilgiris	4	--
<b>Total</b>		<b>277</b>	<b>144</b>

**TABLE- 15**  
**INFRASTRUCTURE FACILITIES AVAILABLE IN THE**  
**REGULATED MARKETS**  
**(Numbers)**

Sl. No.	Market Committees	Own Land	Godown	Rural Godown	Transaction Shed	Drying Yard	Farmers Rest Shed	Sanitary Facilities	Drinking water Facilities
1	Kancheepuram	8	5	7	7	6	4	7	6
2	Vellore	11	16	8	10	7	4	8	7
3	Tiruvannamalai	13	19	8	26	12	10	10	13
4	Cuddalore	6	--	5	13	5	5	9	5
5	Villupuram	13	6	12	47	15	1	21	18
6	Salem	7	3	8	10	10	2	11	12
7	Dharmapuri	7	--	4	7	7	3	3	7
8	Coimbatore	18	71	12	31	34	13	18	14
9	Erode	18	18	9	53	28	8	20	14
10	Tiruchirappalli	14	12	11	20	14	5	14	14
11	Thanjavur	7	7	4	13	7	4	5	3
12	Pudukkottai	2	1	2	2	2	--	--	1
13	Madurai	4	--	5	3	2	3	6	6
14	Ramanathapuram	13	10	12	12	14	11	13	11
15	Tirunelveli	15	7	13	14	14	8	15	15
16	Kanyakumari	5	2	5	5	8	4	5	5
17	Theni	5	--	6	4	5	1	3	--
18	Dindigul	6	4	5	5	6	1	6	6
19	Nagapattinam	3	5	4	2	3	--	5	7
20	Tiruvarur	4	2	4	4	4	2	4	2
21	Nilgiris	--	--	--	--	--	--	--	--
<b>Total</b>		<b>179</b>	<b>178</b>	<b>144</b>	<b>288</b>	<b>203</b>	<b>89</b>	<b>183</b>	<b>166</b>

**TABLE- 16****MARKET COMMITTEE WISE REGULATED MARKETS**

<b>1. KANCHEE-PURAM</b>	<b>2. VELLORE</b>	<b>3. THIRUVANNA-MALAI</b>
1) Kancheepuram	16) Vellore	28) Tiruvannamalai
2) Tiruthani	17) Tirupathur	29) Arani
3) Tiruvallure	18) Arcot	30) Vandavasi
4) Red hills	19) Arakonam	31) Chetpet
5) Madurantagam	20) Vaniyampadi	32) Cheyyar
6) Uthiramerur	21) Kaveri-pakkam	33) Polur
7) Ponneri	22) Gudiyatham	34) Chengam
8) Thirukkalukun-dram	23) Kalavai	35) Pudupalayam
9) Sunguvar-chatram	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

<b>4. CUDDALORE</b>	<b>5. VILLUPURAM</b>	<b>6. SALEM</b>
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) Kattumannar koil	58) Chinnasalem	75) Thiruchengodu
49) Chidambaram	59) Kallakurichi	76) Sankagiri
50) Kurunchipadi	60) Gingee	77) Konganapuram
51) Sethiyathoppu	61) Thiagadurgam	78) Kollathur
52) Srimushnam	62) Sankara-puram	79) Velur
53) Bhuvanagiri	63) Tiruvennai-nallur	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) Moongil-thuraipattu	87) Gangavalli
		88) Karumunthurai
		89) Cholakkadu

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) Gobichetti- palayam
101) Kambainallur	117) Malayadi- palayam	135) Nambiyur
102) Bargoor	118) Negamam	136) Vellakkoil
103) Rayakottai	119) Kinathu-kkadavu	137) Saithiyamagalamb
104) Denkanikkottai	120) Thonda-muthur	138) Punjai Pulliyampatti
105) Papparpatti	121) Madathu-kkulamb	139) Thalavadi
	122) Pethappam-patti	140) Perundurai
	123) Pongalur	141) Kunnathur
		142) Kangayamb
		143) Vellankoil
		144) Dharapuramb
		145) Moolanur
		146) Alangeyamb
		147) Muthur
		148) Elumathur

10. TIRUCHIRAPALLI	11. THANJAVUR	12. PUDUKKOTTAI
149) Jayankondamb	168) Athirama- pattinamb	181) Alangudi
150) Karur	169) Ammapettai	182) Aranthangi
151) Ariyalur	170) Budalur	183) Pudukkottai
152) Manapparai	171) Kumbakonamb	184) Kandavakkottai
153) Andimadam	172) <i>Madukkur</i>	185) Avudayarkoil
154) Thuraiyur	173) Orathanadu	186) Keeranur
155) Perambalur	174) Pattukottai	187) Keeramangalamb
156) Lalgudi	175) Papanasamb	188) Ponnamaravathi
157) Tiruchirapalli	176) Peravoorani	189) Illuppur
158) Thottiyamb	177) Thanjavur	190) Karampakkudi
159) Manachanallur	178) Vallamb	
160) Kulithalai	179) Thirupananthal	
161) Thuvaram kurichi	180) Pappanadu	
162) Irumputhipatti		
163) Chinnathara- puramb		
164) Pullampadi		
165) Thathaiyan- garpet		
166) Melanikuzhi		
167) Kattuputhur		

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

<b>16. KANYAKUMARI</b>	<b>17.THENI</b>	<b>18. DINDIGUL</b>
237) Ethamozhi	243) Theni	250) Dindigul
238) Vadaseri	244) Cumbum	251) Oddanchatram
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) Periyakulam	256) Vadamadurai
		257) Vedachandur
<b>19. NAGAPATTINAM</b>	<b>20. TIRUVARUR</b>	<b>21. NILGIRIS.</b>
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) Thiruvavarur	
265) Thiruppondi	273) Thiruthuraiipoondi	

**TABLE - 17**  
**District-wise Agmark Grading Laboratories**

Sl. No.	Name of the District	Name and Place of Agmark Grading Laboratory	
1	Chennai	Principal Laboratory	Department of Agricultural Marketing and Agri Business, Guindy
2	Kancheepuram	Chennai (North)	
		Chennai (South)	
3	Vellore	Vellore	
4	Cuddalore	Panruti	
5	Thanjavur	Thanjavur	
6	Tiruchirapalli	Trichirapalli- I	
		Trichirapalli- 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 - 18**  
**DISTRICT WISE UZHAVAR SANDHAIS**

1. Kancheepuram	2. Tiruvallur	3. Vellore
1. Kancheepuram 2. Pallavaram 3. Chengalpet 4. Medavakkam 5. Nanganallur 6. Madhuranthagam	7. Tiruthani 8. Tiruvallur 9. Ambattur 10. Paruthipattu 11. Naravarikuppam	12. Vellore 13. Katpadi 14. Vaniyampadi 15. Gudiyatham 16. Kahithapattarai 17. Ranipettai 18. Arcot 19. Tirupathur 20. Natrampalli
4. Tiruvannamalai	5. Cuddalore	6. Villupuram
21. Tiruvannamalai 22. Polur 23. Arani 24. Cheyyar 25. Chengam 26. Vandhavasi	27. Cuddalore 28. Chidambaram 29. Viruthachalam 30. Panruti 31. Vadalur	32. Tindivanam 33. Villupuram 34. Kallakurichi 35. Ulundurpettai 36. Gingee
7. Salem	8. Namakkal	9. Dharmapuri
37. Sooramangalam 38. Ammapet 39. Athur 40. Thathakapatti 41. Mettur 42. Attayampatti 43. Hasthampatti 44. Elampillai	45. Namakkal 46. Tiruchengode 47. Rasipuram 48. Kumarapalayam 49. Paramathivelur 50. Mohanur	51. Dharmapuri 52. Pennagaram 53. Palacode 54. Harur
10. Krishnagiri	11. Coimbatore	12. Nilgiris
55. Hosur 56. Krishnagiri 57. Kaveripattinam 58. Denkanikottai	59. Kovai 60. R.S.Puram 61. Singanallur 62. Pollachi 63. Mettupalayam 64. Kurichi 65. Sulur	65. Udhaga- mandalam 66. Coonoor 67. Kothagiri

<b>13. Erode</b>	<b>14. Thiruchirapalli</b>	<b>15 .Perambalur</b>
68. Sampath Nagar 69. Gobichettipalayam 70. Sathiyamagalam 71. Periyar Nagar 72. Perundurair	73. Trichy Anna Nagar 74. Trichy K.K.Nagar 75. Thuraiyur 76. Manapparai 77. Musiri. 78. Thuvakudi	79. Perambalur
<b>16. Karur</b>	<b>17. Thanjavur</b>	<b>18. Nagapattinam</b>
80. Karur 81. Kulithalai 82. Velayuthampalayam 83. Pallapatti	84. Thanjavur 85. Kumbakonam 86. Pattukottai 87. Tirukattupalli 88. Papanasam	89. Mayiladuthurai 90. Nagapattinam 91. Sirkali
<b>19. Tiruvarur</b>	<b>20. Pudukottai</b>	<b>21. Madurai</b>
92. Tiruthuraiipoondi 93. Mannarkudi 94. Tiruvarur 95. Needamangalam 96. Muthupettai	97. Pudukottai 98. Aranthangi 99. Alangudi 100. Gandarvakottai 101. Karampakudi	102. Madurai Anna nagar 103. Chokkikulam 104. Palanganatham 105. Usilampatti 106. Tirumangalam 107. Melur 108. Anaiyur.
<b>22. Dindigul</b>	<b>23. Theni</b>	<b>24. Sivagangai</b>
109. Dindigul 110. Palani 111. Chinnalapatti 112. Kodaikkanal 113. Batlagundu	114. Theni 115. Kambam 116. Bodinaickanur 117. Periyakulam 118. Devaram 119. Andipatti 120. Chinnamanur	121. Sivagangai 122. Devakottai 123. Karaikudi 124. Thirupathur

<b>25. Ramanathapuram</b>	<b>26. Virudhunagar</b>	<b>27. Tirunelveli</b>
125. Ramanathapuram 126. Paramakudi 127. Kamuthi	128. Aruppukottai 129. Rajapalayam 130. Srivilliputhur 131. Virudhunagar 132. Sivakasi 133. Sathur 134. Kariyapatti 135. Thalavaipuram	136. Sankarankoil 137. Palayamkottai 138. Tenkasi 139. Kandiyaperi 140. Melapalayam 141. Ambasamudram
<b>28. Thoothukudi</b>	<b>29. Kanyakumari</b>	<b>30. Ariyalur</b>
142. Thoothukudi 143. Kovilpatti	144. Vadaseri 145. Myladi	146. Ariyalur 147. Jayankondam
<b>31. Tiruppur</b>		
148. Udumalpet 149. Tiruppur (North) 150. Tiruppur (South) 151. Dharapuram.		

Besides the above, one Uzhavar Sandhai is to be opened shortly at Thammampatty in Salem district and for another one Uzhavar Sandhai at Arapalayam in Madurai district work will be started after getting enter upon permission.

**DEMAND – 5 AGRICULTURE DEPARTMENT**  
**ESTIMATE OF THE AMOUNTS REQUIRED FOR EXPENDITURE IN 2010-2011**  
**BUDGET ESTIMATE 2010-2011**

(Rupees in Thousands)

	Revenue	Capital	Loan	Total
DEMAND FOR GRANT – Voted	1,877,25,70	98,67,24	1	1,975,92,95
APPROPRIATION – Charged	3	--	--	3

**Net Expenditure Rupees in Thousands**

		2008-09 Accounts	2009-10 Budget Estimate	2009-10 Revised Estimate	2010-11 Budget Estimate
2059	Public Works	2,57,04	2,31,55	2,31,55	2,37,00
2202	General Education	3,56	30,00	30,00	2
2401	Crop Husbandry	1,029,54,07	1,380,72,29	1,537,08,00	1,455,35,25
2402	Soil and Water Conservation	48,85,38	75,22,48	92,79,81	97,37,95
2415	Agricultural Research and Education	184,73,95	150,87,40	155,84,33	186,86,17
2435	Other Agricultural Programmes	63,80,93	81,42,56	83,98,73	78,78,72
2501	Special Programmes for Rural Development	9,98,48	10,00,00	10,00,00	10,00,00
2551	Hill Areas	3,20,36	3,37,45	3,70,06	3,60,95
2702	Minor Irrigation	7,77,37	10,45,03	8,13,83	9,16,48
2705	Command Area Development	17,39,43	19,64,25	17,31,88	18,93,74
2852	Industries	--	--	8,18	--
3451	Secretariat – Economic Services	5,28,14	7,31,60	7,32,06	8,87,45

		2008-09 Accounts	2009-10 Budget Estimate	2009-10 Revised Estimate	2010-11 Budget Estimate
4401	Capital Outlay on Crop Husbandry	3,83,31	4,75,06	19,70,06	3,57,55
4402	Capital Outlay on Soil and Water Conservation	65,81,94	52,89,92	55,42,51	50,42,96
4435	Capital Outlay on other Agricultural Programmes	5,43,63	2,54,41	14,76,10	4,51,41
4551	Capital Outlay on Hill Areas	11,04,78	13,89,45	11,31,48	13,53,00
4702	Capital Outlay on Minor Irrigation	--	--	--	60,00
4705	Capital Outlay on Command Area Development	36,55,85	1727,71	31,56,22	26,02,32
6401	Loans for Crop Husbandry	40,00,00	1	20,00,00	1

**DEMAND – 5 AGRICULTURE DEPARTMENT**  
**BUDGET ESTIMATE 2010-2011**

(Rupees in Thousands (Gross))

Head of Department				Revenue	Capital	Loan	Total
1	05 01	Secretariat	Voted	21,87,45	--	--	21,87,45
2	05 02	Directorate of Agriculture	Voted	1,187,89,68	1,65,03	1	1,189,54,72
3	05 03	Director of Agricultural Marketing and Agri Business	Voted	53,76,68	4,51,41	--	58,28,09
4	05 04	Directorate of Seed Certification	Charged Voted	1 21,66,07	-- --	-- --	1 21,66,07
5	05 05	Directorate of Horticulture and Plantation Crops	Charged Voted	1 189,54,43	-- 1,72,52	-- --	1 191,26,95
6	05 06	Agricultural Engineering Department	Charged Voted	1 220,61,43	-- 90,78,28	-- --	1 311,39,71
7	05 07	Agro Engineering Services	Voted	24,83	--	--	24,83
8	05 08	Tamil Nadu Agricultural University, Coimbatore	Voted	181,09,90	--	--	181,09,90
9	05 09	Directorate of Organic Certification	Voted	55,23	--	--	55,23
<b>Total</b>			<b>Charged Voted</b>	<b>3 1,877,25,70</b>	<b>-- 98,67,24</b>	<b>-- 1</b>	<b>3 1,975,92,95</b>

**Part – II Schemes - 2010 – 2011**

(Rupees in Lakhs)

Sl. No	Description of the Schemes	Amount
<b>SECRETARIAT</b>		
1	Purchase of one Water Purifier	0.60
<b>AGRICULTURE DEPARTMENT</b>		
2	Construction of Integrated Office complex for Agriculture, Horticulture, Agriculture Marketing and Agri Business, Seed Certification and Agricultural Engineering Department at Perambalur	150.00
3	Providing infrastructure facilities for State Agricultural Extension Management Institute (STAMIN)	17.36
4	Construction of Block Agricultural Extension Center at Kariyapatti, Virudhunagar district.	15.00
5	Purchase Colour Xerox Machine	3.00
<b>HORTICULTURE AND PLANTATION CROPS DEPARTMENT</b>		
6	Creation of Storage Godown facilities at the existing Agriculture Extension Centres and special repairs to Deputy Director of Horticulture Offices at Salem and Madurai.	37.50
7	Establishment of Protected Cultivation Training Centre at Horticulture Research and Training Centre, Thally	25.00
8	Establishing Infrastructure facilities in TamilNadu Horticulture Management Institute, Madhavaram	50.00
<b>AGRICULTURAL ENGINEERING DEPARTMENT</b>		
9	Construction of an additional floor (2 <sup>nd</sup> floor) over the existing building of the office of the Chief Engineer (AE)	80.00
10	Purchase of 1 Number of new Rotary Drills for Agricultural Engineering Department as replacement of old Rotary drills for hiring out to the farmers	60.00
11	Purchase of 25 Numbers of Handheld Global Positioning System (GPS) for 25 Sub Divisions of Agricultural Engineering Department	5.00
12	Purchase of Computer Systems and Peripherals for 16 Sub Divisions of Agricultural Engineering Department	10.00



Sl. No	Description of the Schemes	Amount
	<b>AGRICULTURAL MARKETING AND AGRI BUSINESS DEPARTMENT</b>	
13	Purchase of 12 Electronic balances	<b>12.00</b>
14	Purchase of 2 UV Visible Spectrophotometers	<b>8.00</b>
15	Purchase of 14 Computers	<b>9.45</b>
16	Purchase of 1 Copier / Xerox Machine	<b>0.55</b>
	<b>TAMILNADU AGRICULTURAL UNIVERSITY</b>	
17	Development of engine operated weeder for SRI	<b>5.00</b>
18	Identification of promising strains of Pleurotus species in Bamboo Plantations of Tamil Nadu for open field cultivation	<b>3.00</b>
19	Adoption and development of existing gasifier system using Melia dubia as feed stock	<b>3.00</b>
20	Evaluation of Millets as undercrops in Agro forestry eco system of Tamil Nadu	<b>4.44</b>
21	Exploration of insecticidal properties of Jatropha Oil against key pests of Ailanthus, cotton and Mulberry	<b>2.94</b>
22	Studies of induced resistance through alteration in host nutrition to Thrips Tabaci Lindeman (Thripidae Thysanoptera) in Onion	<b>2.00</b>
	<b>Total</b>	<b>503.84</b>

**VEERAPANDI S. ARUMUGAM**  
Minister for Agriculture