

## 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 Cholan (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 Agrovat 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.