



AGRICULTURE DEPARTMENT

POLICY NOTE

Demand No. 5 - AGRICULTURE

2012 - 2013

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Minister for Agriculture

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GOVERNMENT OF TAMIL NADU
2012

Policy Note 2012-2013
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INTRODUCTION

*However they roam, the world must follow still the plougher's team;
Though toilsome, culture of the ground as noblest toil esteem.*

- Thirukural (1031)

Growth of Tamil Nadu economy is keeping in pace with country's and world economies and as expected the growth rate of secondary and tertiary sectors is higher than the primary sector. Nevertheless, despite declining contribution over the period, primary sector plays a pivotal role in supporting secondary and tertiary sectors. Agriculture continues to be important to the people of Tamil Nadu and provides livelihood to about 40 per cent of the population. Therefore, even a minor setback in agriculture sector will have a profound impact on the economic growth of the State. Government of Tamil Nadu is according highest priority to Agriculture sector and the department is taking all efforts to usher in **Second Green Revolution** so as to improve the farm productivity and substantially increase the income of the farmers.

Agriculture today is plagued with many problems such as pressure on cultivable land due to fragmentation and diversion of productive agricultural lands to non-agricultural purposes, high level of spatial and temporal variability in rain, dwindling ground water resources, shortage of farm workers to carry out agriculture operations, poor adoption of improved crop management practices and location specific cropping system and weak post harvesting and marketing linkages. In addition, agricultural development has increasingly become technology propelled. The schemes and programmes implemented through annual and five year plans have yielded less than the desired

results for sustainable agriculture, necessitating development of new strategies and approaches with focused attention on key issues such as effective agricultural extension, integrated farming, adoption of frontier cost effective agricultural technologies, strengthening of market linkages. Goals and strategies have been formulated to tackle these challenges by drawing appropriate plans for implementation during 12th Plan period.

AGRICULTURE SCENARIO IN TAMILNADU

Tamil Nadu has about 7% of the Nation's population. The annual average rainfall of Tamil Nadu is only 921.50 mm which is less than the national average of 1200 mm. The total geographical area of Tamilnadu is 130 L.ha. which is 4% of the nation's geographical area. Tamil Nadu being a coastal state is highly vulnerable to seasonal fluctuations in terms of rainfall, temperature, relative humidity, wind speed, etc., causing uncertainty in Agriculture production. Tamil Nadu is endowed only with 3% of the nation's water resources, putting high stress on irrigation water availability. Current fallow lands which were 7.59 L.ha. during 2005-06 has increased to 11.17 L.ha. during 2009-10 while the net cultivated area which was 52.44 L.ha. during 2005-06 has come down to 48.92 L.ha. during 2009-10. Average size of percapita land holding has dwindled from 1.25 ha. during 1976-77 to 0.83 ha. during 2005-06. The number of Small and Marginal farmers has increased to 91% which poses strong challenge to increase the farm output.

The irrigated area in Tamil Nadu is declining steadily. The net irrigated area which was 29.31 L.ha. during 2008-09 has come down to 28.64 L.ha. during 2009-10 and the irrigation intensity was 1.14 during 2009-10. The 28.64 L.ha.

of irrigated area was covered by 2,239 canals, 78 reservoirs, 41,262 tanks and 18,36,055 wells.

AGRO CLIMATIC ZONES OF TAMIL NADU

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

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

I. AGRICULTURE

1. Introduction

Agriculture development is the key to poverty alleviation and development of rural areas. Tamil Nadu Government is keen on promoting agriculture sector. Agriculture plays the role of a driver which propels growth in Secondary and Tertiary sectors. In this backdrop, Government of Tamil Nadu with a serious concern to invigorate agriculture sector and ensure food security and balanced nutrition for all, has brought in various path breaking initiatives so as to usher in **Second Green revolution**. Concomitant to this vision, the Government is on the anvil of developing agriculture at farm level, by introducing **Farm level interventions** through computer based **Farm Crop Management System** which would integrate the farmers, extension and research wing and ensure timely input supply, complete adoption of technology, crop growth monitoring, pest and disease surveillance and marketing linkages.

As the pressure on land is increasing day by day and the cultivable area is continuously shrinking, which necessitates effective utilization of available land and efforts to increase the cropping intensity. As an initial measure, fallow lands suitable for agriculture will be identified and brought under cultivation, besides advocating **Integrated Farming System** wherein agriculture is integrated with allied activities such as animal husbandry, poultry, aquaculture, sericulture etc., for supplementing and sustaining the income of farmers. Complementing this effort, **crop diversification** will be promoted for giving wider options to obtain good remuneration.

Apart from this, initiatives such as individual farm based recommendations, suitable cropping pattern based on the soil, irrigation and microclimate are suggested through comprehensive **Farmers Integrated Handbook**, Permeation of **innovative technologies** viz., **System of Rice Intensification, Improved pulses production technologies** at farm level as a **whole village concept, Sustainable Sugarcane Initiatives, Precision Farming, Micro Irrigation** etc., are focused to double the production and triple the income of the farmers especially small, marginal farmers, Scheduled Caste and Scheduled Tribe farmers.

The Government to ensure effective reach of scheme benefits to the farmers and to improve extension outreach at farm level has provided **new vehicles**, appointed **Block Technology Managers, Subject Matter Specialists with other supporting staff and Farmers' Friend** besides establishing **Farmers' Hub** for speedy delivery of integrated package of extension information.

The Government with a determination to achieve an ambitious target of doubling the food grain production during 12th Five Year Plan, has fixed 120 L.MT for 2012-13 for which various new initiatives and approaches have been chalked out.

2. Season

2.1. Rainfall

The season wise rainfall received during 2011 and 2012 is as follows:-

(in mm)

Season	2011			2012 (upto 11.04.2012)		
	Normal Rainfall	Actual Rainfall	Deviation (%)	Normal Rainfall	Actual Rainfall	Deviation (%)
Winter Season (Jan. – Feb)	31.30	34.80	11.20	31.30	9.50	- 70
Summer season (March-May)	127.80	140.00	9.50	129.7	6.90	- 95
South West Monsoon (June – Sep)	321.20	300.50	-6.40			
North East Monsoon (Oct.– Dec)	441.20	540.80	22.60			
Total	921.50	1016.10	10.28			

During 2011-12, the rainfall during summer and South West Monsoon with wide variation in spatial and temporal distribution resulted in lesser coverage under rainfed crops during Kharif 2011. The North East Monsoon which was active from 24th October,2011 brought copious

rains which gave a fillip to samba paddy crop resulting in good coverage in almost all the districts.

Against all these odds, early water release from the Mettur Dam for irrigation ie., on 06th June, 2011 against the scheduled date of 12th June, enabled the delta farmers to take up Kuruvai cultivation well in advance more enthusiastically in an extent of 1.388 L.ha which is 0.649 L.ha more than the previous year coverage. During 2011-12, totally an extent of 6.90 L.ha has been covered under paddy in the delta districts compared to 6.18 L.ha covered during 2010-11 showing an increase of 72,000 Ha. under paddy.

2.2. Crop damage during 2011- 12

2.2.1. Damage due to North East Monsoon rains

Even though North East monsoon brought copious rains in the state, heavy rainfall in some of the districts affected crops in an extent of about 3685 Ha.

2.2.2. Damage due to Thane Cyclone

The cyclone **Thane** which hit Tamil Nadu on 30.12.2011 caused extensive damages to paddy, millets, pulses, sugarcane, groundnut and coconut in the districts of Cuddalore, Villupuram, Thanjavur, Nagapattinam, Thiruvarur, Kancheepuram, Thiruvallur, Dharmapuri and Thiruvannamalai. The crop damages were above 50 per cent in an extent of 1,85,922 Ha. affecting the livelihood of 2,51,129 small and marginal farmers and 30,081 other farmers.

The Government, immediately released ₹ 214.673 crores as relief assistance for the crop damages (₹10,000/- per hectare for paddy crop, ₹ 7500/- for other irrigated crops and ₹4000/- for other rainfed crops) to the

affected farmers in these districts. Hon'ble Chief Minister also announced a special package of assistance for a sum of ₹ 35.67 crores for the affected farmers to take up re-cultivation and re-plantation of agricultural crops. This package would be applicable for one season to the farmers who have lost their annual crops viz., paddy, pulses, millets, groundnut, sugarcane etc., and to one year for those farmers who have lost their coconut crop.

The Government has sanctioned a sum of ₹ 15.80 crores for cutting and removal of broken / fallen coconut trees due to cyclone **Thane** besides providing ₹ 13.53 crores as maintenance subsidy for the rejuvenation of coconut garden for subsequent 4 years.

3. Area and Production during 2010-2011 & 2011-12.

The estimates of area and production for 2010-11 and anticipated achievement during 2011-12 are as follows:-

Crop	Area (L.ha.)			Production (L.MT)		
	Target	Anticipated Achmt. (2011-12)	Achmt. during 2010-11	Target	Anticipated Achmt. (2011-12)	Achmt. during 2010-11
Rice	22.00	20.74	19.06	85.50	79.62	57.92
Millets	10.00	9.51	6.31	23.50	23.08	15.57
Pulses	10.00	9.07	6.37	6.00	3.30	2.46
Total food grains	42.00	39.32	31.74	115.00	106.00	75.95
Oilseeds	6.50	5.56	4.49	14.62	12.17	9.33
Cotton (L.Bales)	1.50	1.39	1.21	4.00	3.08	2.48
Sugarcane (cane)	3.50	3.90	3.16	472.50	409.32	342.52
Total	53.50	50.16	40.60			

Compared to 2010-11, the total cultivated area under agricultural crops is expected to increase by 24 % and the total food grain area and production is anticipated to increase by 24% and 40% respectively during 2011-12.

Inspired by the vision of our Hon'ble Chief Minister to usher in **Second Green Revolution**, the Government took manifold proactive steps for the development of agriculture and the welfare of farmers. Due to the various crop specific strategies and technologies adopted in a larger extent, the food grain production is expected to reach 106 L.MT during 2011-12 compared to 75.95 L.MT estimated during 2010-11.

Area and Production Programme for 2012-2013.

Crop	Area (L.ha)	Production (L.MT)	Productivity (Kg/ha)
Rice	22.00	86.50	3932
Millets	11.00	26.95	2450
Pulses	10.40	6.55	629
Total food grains	43.40	120.00	
Oilseeds	6.60	15.00	2273
Cotton (L.Bales)	1.55	4.20	461
Sugarcane (cane)	3.60	493.50	137
Total	55.15		

4. Second Green Revolution in Tamil Nadu – Increase in Farm Productivity and Farmers' Income.

The Government has resolved to usher in **Second Green Revolution** in Tamil Nadu to improve the economic status of the farmers for which it has set itself to bring in

necessary changes in strategies and approaches in agriculture as follows:-

1. Increasing the net cultivable area and productivity with crop specific interventions.
2. Soil health management approaches
3. Water resources management.
4. Input supply management system.
5. Crop specific strategies to bridge the yield gap.
6. Improving the economic status of farmers by increasing the productivity and increase their income three folds through farm based interventions and Integrated Farming System approach with extensive use of Information Technology.
7. Diversifying cultivation in favour of commercial crops while ensuring food and nutritional security.
8. Strengthening research and extension services in Tamil Nadu for "end-to-end" involvement of extension staff with individual farmer.
9. Capacity building for excellence.

Thrust Areas

- Soil health care and increasing the productivity per unit area
- Raising the income of farmers
- Strengthening and improving agriculture infrastructure
- Promoting Micro Irrigation to increase Water Use Efficiency
- Increasing the cropping and irrigation intensity
- Providing access to quality inputs
- Bringing fallow lands under cultivation

4.1. Increasing the net cultivable area and productivity with crop specific interventions

The innate factors such as conversion of fertile agricultural lands for non-agricultural purposes, erratic and uneven distribution of rainfall, dwindling ground water resources, indiscriminate use of fertilizers and pesticides, deterioration in soil health are posing challenges to agriculture. This has resulted in reduction of gross cropped area, net sown area and cropping intensity. Further, poor adoption of crop management practices and generalized cropping system have led to decline in organic matter content and marginalization of land holdings inhibiting large scale adoption of mechanized technologies.

The Government has come out with a stronger vision for effective utilization of available agricultural lands with the following objectives:-

- Identification and conversion of fallow lands into cultivable lands to promote less water intensive and more remunerative crops
- Reclamation of saline and alkaline soils
- Improvement and sustenance of soil health through adoption of organic farming in a larger extent
- Crop rotation and crop diversification to dispense with the practice of mono cropping without compromising food and nutritional security
- Agro climatic zone wise location specific desired cropping pattern
- Increasing the cropping intensity

Activities like identification of fallow lands suitable for cultivation at village level, analyzing the reasons for leaving the lands as fallow, devising suitable strategies to curb the increase in fallow lands, adopting site specific interventions

for desired cropping pattern and developing suitable irrigation sources such as farm ponds, check dams, percolation ponds to bring back atleast 5–10% of fallow area under cultivation have been envisaged, besides compensating the pressure of agricultural land conversion for other purposes.

The Government has also devised suitable strategies like recommendation of village-based Integrated Nutrient Management through stratified soil sampling and analysis, promotion of cluster approach and village concept, promotion of organic farming, Integrated Farming System, Rainfed Area Development, appropriate market linkages to enable the farmers to take up agriculture as a lucrative profession.

4.2. Soil Health Management Approaches

The preservation of soil fertility and nutrition management are much imperative for a profitable agriculture in a long run. The present fertility status of the soil is causing greater concern due to mono cropping, intensive cropping and indiscriminate use of chemical fertilizers and insufficient usage of organic fertilizers. Hence, it has become necessary to explore ways to rejuvenate soil health for which Government is taking suitable soil management approaches which are as follows:-

- ❖ Detailed soil survey to recommend suitable cropping system
- ❖ Distribution of Farmers' Integrated Hand Book for ensuring balanced fertilizer application in the recommended cropping system
- ❖ Encouraging cultivation of green manure crops in a larger extent.
- ❖ Emphasizing and encouraging organic farming

- ❖ Reclamation of saline and alkaline soils in inland areas besides coastal areas
- ❖ Correcting micro nutrient deficiencies

4.3. Water Resources Management

Water, one of the important integral components in agriculture has become a scarce resource in Tamilnadu. Hence, the Government is exploring all avenues to utilise the available water for irrigation to its best.

With the main aim to improve the Water Use Efficiency and enhance crop productivity, the Government is focusing on scientific approaches such as promotion of crop diversification, intercropping, adoption of Integrated Farming System, improving water holding capacity of the sub-basins, adoption of System of Rice Intensification and Improved Pulses production technologies as a village concept in a larger extent, popularization of Sustainable Sugarcane Initiatives, promotion of Precision Farming and Micro Irrigation, de-silting of tanks and ponds to increase their capacity, construction of water harvesting structures such as check dams, farm ponds, percolation ponds besides rain water harvesting structures for recharging ground water. Government will also emphasize on intensification of irrigated area development and water management schemes to prohibit the diversion of irrigation water for other purposes.

4.4. Input Supply Management System.

Ensuring adequate stocking and timely distribution of critical inputs such as seeds, fertilizers, micro nutrients, bio-fertilizers, plant protection chemicals, credit, etc., to the farmers at right time at right place is the first and foremost priority of extension service.

4.4.1. Seeds

The importance of timely availability of certified quality seeds with good yield potential and increasing the Seed Replacement Rate coupled with varietal replacement is the need of the hour. The Government on a perspective vision has vowed to evolve a comprehensive seed plan, create seed banks at village level with buffer stocks of seed materials for various crops, produce seeds on Public Private Partnership mode, strengthen infrastructure facilities for scientific seed production, processing and storage, raise seed farms on a cluster / village concept approach, promote community farming to enable the farmers to produce their own seeds specific to their region and produce seeds on a contract basis at farmers' field.

4.4.2. Fertilisers

The use of chemical fertilizers and their intensification in many areas are being reviewed and the Government will encourage application of appropriate fertilizers relevant to the soil and crops based on soil test recommendations. The application of slow release fertilizers combined with organic fertilizers will be promoted to improve the fertilizer use efficiency and also the nutritional status of the soil by working in a complementary manner with the natural ecosystem of the soil.

As Precision Farming and Micro Irrigation schemes are being taken up in a large scale, the Government will promote Water Soluble Fertilizers (WSF) / Liquid bio-fertilizers for various crops like cotton, maize, sunflower, groundnut, sugarcane and coconut as this provides optimum quantity of water & nutrients in well balanced proportion directly to the active root zone.

4.4.3. Plant Protection Management

Tamil Nadu is one of the pioneer states in successful adoption of Integrated Pest Management (IPM) and Non-Pesticidal Management(NPM) in a big way. The adoption of NPM in several rainfed and irrigated cropping systems has led to change over in policy and research attention on these systems. Tamil Nadu State is particularly attentive to increased adoption of this productivity enhancing, cost effective and eco-friendly production practices. Further, the increased use of pesticides has disturbing consequences on the present farming system, particularly due to the development of resistance, resurgence of crop pests and decline in population of the natural enemies. Hence, the Government besides stepping up investment in research and development of technology on NPM, has also taken steps to promote usage of bio-pesticides which are more effective in managing crops in an environmentally protective manner.

4.4.4. Bio-Control Agents

Increasing demand for organic produces and higher returns have made the farmers to incline towards organic farming for which usage of biocides and bio-control agents are essential. Bio control agents are produced through the Government owned 12 Bio Control Agents Production Centres and distributed to the farmers under various subsidy schemes to control pests like rice leaf folder, sugarcane internode borer, coconut black headed caterpillar, coconut rhinoceros beetle, cotton bollworm, groundnut red hairy caterpillar and Prodenia.

4.5. CROP SPECIFIC STRATEGIES

4.5.1. System of Rice Intensification (SRI) technology as a village concept.

SRI which is a water saving technology was introduced as a whole village concept for the first time during 2011-12. Potential SRI Villages at suitable locations were identified to act as a model for providing best demonstration effect. It was ensured that the technologies were completely adopted in the entire village through demonstrations under various schemes. This had resulted in increased coverage of 10.01 L.ha under SRI compared to 8.50 L.ha covered during 2010-11.

During 2011-12, **1880 SRI villages were organized** and an extent of 1,74,605 hectares of paddy were raised by adopting this technology. During 2012-13, "SRI village" concept will be implemented in 2000 villages covering an area of 1,90,000 hectares .The TANWABE Groups, Self Help Groups and Commodity Interest Groups will be involved in raising mat nursery, transplantation and harvest by providing appropriate training under ATMA.

4.5.2. System of Millets Intensification

With the objectives to increase area under millets, ensure food and nutritional security, demonstrate improved production technologies, enhance the productivity and augment millets production, **Initiatives for Nutritional Security through Intensive Millets Promotion (INSIMP)** was implemented during 2011-12 comprising activities such as demonstrations, production of high yielding varietal seeds, installation of pre processing and small processing units and value addition.

During 2012-13, a cafeteria of technologies such as appropriate cropping systems, transplantation of seedlings in irrigated millets, promotion of micro irrigation and precision farming in millets especially maize, use of farm machineries such as chisel plough, broad bed furrow former, seed drill, long handled weeder, top dress fertilizer applicator, maize sheller etc., will be advocated for intensifying millets cultivation to increase the production and productivity of millets.

4.5.3. Improved Pulses Production Technologies as a Village Concept

To meet the dietary protein requirement and to bridge the production - demand gap in pulses, an integrated production technology concept was implemented in a contiguous area of minimum of 50 Ha. per village in **1695 potential Pulses villages** by adopting the recommended critical steps with more focus on application of **Pulse Wonder** to increase the pulses productivity. An area of 94,957 Ha. was brought purely under pulses during 2011-12. This scheme will be implemented during 2012-13 also.

To encourage the cultivation of pulses as pure crop, schemes such as **Intensification of Redgram cultivation** and **Accelerated Pulses Production Programme** were implemented in 2011-12. The State Government for the first time, sanctioned a sum of ₹1048 lakhs towards **Micro irrigation exclusively for pulses** in an area of 5000 Ha. wherein portable sprinklers and rainguns were provided to the farmers at subsidized cost. It is programmed to upscale and adopt this technology in an extent of 10,000 Ha during 2012-13.

Due to the thrust given by the Government, the area under pulses is pegged at 9.07 L.ha for 2011-12 which is

42% more than the area covered during 2010-11. It is also expected that the production will reach around 3.30 L.MT during 2011-12 compared to 2.46 L.MT estimated during 2010-11.

As the production of redgram is largely influenced by demand, availability and price, the Government will introduce an improved technology during 2012-13 to increase the productivity, attain self sufficiency in redgram production and increase the income of the farmers.

4.5.4. Sustainable Sugarcane Initiatives (SSI)

SSI is a comprehensive sugarcane production technology which increases productivity by about 30% resulting in better returns to farmers. This was introduced during 2011-12 as this technology is noteworthy for reduced requirement of planting material and water, increased fertilizer use efficiency by adoption of Precision Farming and mechanized harvest. This was adopted in an area of 3000 Ha. during 2011-12 in co-ordination with the Department of Sugars and preference was given to small and marginal farmers for adopting this technology. Now it has been programmed to implement this technology in an increased area of 6000 Ha. during 2012-13.

4.5.5. Precision farming, a cultivation protocol which results in 30% to 40% higher yield in oilseeds, maize, cotton, sugarcane, etc., with high quality first grade marketable produce is being promoted among the farmers. During 2011-12, this technology was adopted in 4000 Ha. in various agricultural crops. This scheme will be continued during 2012-13 also.

4.5.6. Micro Irrigation, a most important intervention which helps in judicious water usage, increased input use

efficiency, less weed infestation, maintenance of optimum plant population, yield increase and high keeping quality is being promoted in a larger extent. Considering the importance, **the Government has also announced 100% subsidy for small and marginal farmers and 75% for other farmers.** During 2011-12, an area of 15,000 hectares of agricultural crops were brought under Micro Irrigation and it is proposed to bring 20,000 Ha. during 2012-13 besides establishing Micro irrigation villages across the state.

4.6. Farm Based Interventions and Integrated Farming System Approach.

4.6.1. Farm Based Interventions – Bridging the yield gap through bottom up approach – Aggregation of village level upto block and district level successively.

Objectives

- To enable farmers to adopt improved cultivation methodology and techniques in their land holdings
- To provide linkages and easy access to critical inputs in time
- To enable farmers to use most appropriate farm machineries to reduce the drudgery, labour cost and get higher production and productivity
- To empower farmers with complete access to the information related to their farming operations
- To enable extension functionaries to become a friend and guide of farmers throughout cultivation cycle

The activities such as development of crop cultivation matrix, finalization of future cropping plan specific to individual farm, assessment of critical inputs requirement at village, block and district level, converging the efforts of

all stakeholders by sharing information through internet on AGRISNET portal and market linkage based on the assessment of production to get remunerative prices for the produce will be carried out holistically, to develop each and every farm, which will have a direct impact on production and productivity leading to a better farming.

4.6.2. Farm Level Planning, Management of Inputs and Farmers Specific Extension.

4.6.2.1. Farm Crop Management System (FCMS):

To implement farm level interventions through micro level planning and execution by the Departments viz., Agriculture, Horticulture, Agricultural Engineering, Agricultural Marketing and TNAU, a specially developed software package “**Farm Crop Management System**” has been developed. This will help in planning at individual farm level with an aim to bridge the yield gap backed with IT enabled extension and strong marketing support, to usher in **Second Green Revolution** to double the food grain production and triple the farmers' income. The farmers would be issued advisories on various agriculture operations in addition to integrating and synchronizing the efforts of various stakeholders in the field of agriculture and also to provide linkage to the post harvest processing and marketing, to make the agriculture operation sustainable. This concept will be implemented on AGRISNET platform by field functionaries using **Hand Held Device called Personal Digital Assistants** enabled with **GPRS, GIS & GPS** and **Pico Mini projector.**

4.6.2.2. Farmer Database Management System through Mobile Application:

To expeditiously collect baseline information of all farm families of Tamil Nadu, a mobile application has been designed. The baseline information includes personal

details, bank details, affiliation to various groups, land holdings, crops cultivated, source of irrigation, net income, plantation crops, farm animals, farm machineries, farm energy sources, micro irrigation facilities, apiary, fishery, sericulture and service requirement. This will facilitate agriculture and allied departments in planning process for farm level interventions apart from helping farmers to undertake informed scientific cultivation. Baseline information will be collected by the extension officials of Agriculture Department through a mobile application developed by IITM-RTBI, Chennai. The data will be integrated into AGRISNET portal. This module would help to collect baseline data of a large section of farmers in a shorter time.

4.6.2.3. Voice Enabled Data Updation Module

To ensure server enabled timely information dissemination and farmer's data updation, an interactive voice response system through mobile has been developed on a collaborative mode with IITM-RTBI, Chennai. This will facilitate the farmers in updating their information in the web portal through voice interface. Further they will be able to get the technological information automatically through servers for any queries.

4.6.2.4. Scheme Benefits Tracking System:

The information of scheme benefits will be integrated to the individual farmer identity and the detailed list of benefits and photographs matched with time and coordinates showing disbursement of said benefits will be maintained in the AGRISNET portal. For capital assets, provision is there for periodical monitoring and uploading photograph depicting the status of the asset. For technology oriented benefits, the various stages of implementation along with its performance will be captured as image and uploaded. This would help timely distribution and proper use

of scheme benefits to farmers with transparency in scheme implementation.

4.6.3. Integrated Farming System

Integration of various agricultural and allied activities viz., cropping, animal husbandry, fishery, agro forestry, etc., not only supplements the income of farmers but also helps in increasing the family labour employment. The Integrated Farming System introduces a change in the farming techniques for maximum production in the cropping pattern by optimizing the utilization of resources, ultimately improving the economic status of the farmers. The Government has planned to take up activities such as collection of basic data on allied enterprises, categorizing the villages based on the micro climatic conditions, development of crop plan (both Agriculture & Horticulture) in relation to soil type, irrigation and rainfall and integrating with other enterprises like dairy, poultry etc., for adoption to gain higher net income, facilitation for availability of inputs, credit, insurance, farm machineries besides technologies, periodical monitoring by extension functionaries for corrective measures in scheme implementation, providing market intelligence and instant expert advice on farm related issues. It is proposed to establish suitable models of Integrated farming villages during 2012-13.

4.6.4. Farmer's Integrated Hand Book

The Department of Agriculture has envisaged farm level interventions through “**Farm level planning**” to ensure sustainable agricultural production. As a first step, the Department of Agriculture has initiated collection of farmers database through AGRISNET, an IT enabled extension activity to take up all extension, input and scheme activities with agility. As a part of this, details of

farmers collected are entered in **Farmers Integrated Hand Book**, a foolproof record containing the personal information of farmers, soil test results, nutrient recommendation and scheme benefits valid for 3 years. This is being distributed to farmers to help them in applying adequate fertilizers and also to keep a record of farm wise, season wise production and productivity. Farmers can draw their cropping programme, input requirement and avail scheme benefits with the help of this Hand Book.

4.6.5. Farm mechanization

Migration of agricultural labourers to non-farm activities has resulted in acute shortage of man power affecting timely farm operations. Hence, there is an urgent need to bring suitable Farm Mechanisation in a massive way to sustain agricultural activities in Tamil Nadu. The Government which is considerate towards the farming community will support for farm mechanization on a group based approach during 2012-13.

4.6.6. Online Farm machinery booking

To alleviate problem due to shortage of farm labour, the Government has resolved to adopt three pronged approach, wherein machinery will be purchased to make it available to farmers on custom hiring basis besides, providing subsidy to farmers, farmers' groups and self help groups to acquire agri-machinery and equipments. The Government will form farmers'/ farm workers' groups trained in agricultural operations for seed to seed support services. Farmers largely depend on farm machineries which cannot be purchased by small and marginal farmers. As a support to small and marginal farmers, the Agricultural Engineering Department provides farm machineries on rental basis at a low tariff than the private outlets. Presently, they approach in person for booking which drains time and money. So the

Department of Agriculture has planned to provide an online booking system of farm machineries through the existing AGRISNET web portal. With this system, the farmer can plan well ahead about the requirement of farm machinery and book it online, through telephone and can make payment online through a payment gateway. This would help the farmers from time and money exhaustion.

4.7. Crop Diversification

The Government which is very much considerate towards the farming community has intended to promote Crop diversification, as it gives a wider choice in the production of variety of crops in a given area so as to expand production related activities on various crops and also to lessen risk. The crop shift also takes place due to government policies, thrust on some crops over a given time, distinct soil conditions, market infrastructure development, price related supports, higher profitability and stability in production. The Government will take up intensive measures to support Crop Diversification system in terms of Research and Development, extension support, Marketing, Infrastructure, stable price policy for diversified crops and proper risk mitigation mechanism without compromising food and nutritional security.

4.8. Strengthening Research and Extension Services to all Farm Families in Tamil Nadu.

A close interaction between farmers, extension workers and researchers is needed for diagnosing problems together and working out location specific recommendations at field level emphasizing participatory education rather than prescription. Government will focus on effective dissemination of technologies from lab to land through efficient delivery mechanism, preparation of Strategic

Research and Extension Plans (SREP) through participatory Rural Appraisal to encourage bottom up planning and integrate all these three stakeholders for empowering the farming community.

4.9. Capacity Building for Excellence.

Training and acquisition of skills are the integral components of a technology transfer system as innovative technologies to combat the challenges faced in day to day agriculture are emerging steadily. Hence Government will focus on

- Assessing farmers' needs and skills.
- Distinguishing different dimensions of capacity building such as awareness, knowledge and skills and using appropriate channels and methods for each.
- Different kinds of technologies and advice required by different categories/groups.
- Adoption of suitable transfer mechanism such as individual contact, mass media as per choice during different phases of awareness.
- Trial and adoption of new skills and technologies.
- Use of Information Technology for improving the quality and accelerating the transfer and exchange of information.
- Organizing training programmes on system based and sustainable technologies such as Integrated Pest Management (IPM) and Integrated Nutrient Management(INM).
- Organizing specific training on agro processing and agriculture marketing.

All the above cannot be fulfilled unless and until there is adequate infrastructure to train the farmers and extension personnel. Hence, the Government would establish State- of-the- art training institutions at various places and also strengthen the existing farmers training centres and other training institutes.

5. Schemes

Agriculture serves as a main plank for providing food and nutritional security to the growing population. The Government is planning and implementing multitude of schemes for the welfare of the farming community. The objectives are to mainly double the production and productivity of agricultural crops, triple the income of the farmers, satiate the requirements of industries and remove regional imbalances in farm productivity to ensure farm development by adopting front end advanced technologies, farm based interventions and convergence of schemes.

The Government is implementing various crop oriented subsidy schemes from its own fund resources besides various Centre-State Shared Schemes, Centrally Sponsored Schemes, Externally Aided Projects for the upliftment of farming community.

5.1. State Sponsored Schemes

The Government which is very much considerate towards the farmers has set itself to bring in desirable changes for a sustainable agriculture and improve the livelihood of the farmers on a sustained basis. Hence the Government is focusing on criticalities in farming such as soil health management, procurement and distribution of quality seeds, augmenting the production of pulses, cotton and sugarcane, plant protection, crop insurance, crop yield competition, etc.,

5.1.1. Soil survey and land use organization

Detailed soil survey is done to know the status and suitability of soil to raise various crops, thereby encouraging the farmers to grow more suitable crops adopting improved scientific technologies to attain higher productivity in his farm. The detailed soil survey is conducted through four Soil Survey Units at Coimbatore, Thanjavur, Vellore and Tirunelveli and inventory on soil resources including nature of soils is prepared. The characteristics of the soil are probed through field studies, laboratory analysis and classified according to internationally recognized system. The extent of soil is mapped on standard topographic base maps and finally interpreted for various uses. During 2011-12, soil survey has been completed in 0.52 L.ha. The detailed soil survey will be conducted in an area of 0.99 L.ha. during 2012-13.

5.1.2. Soil Health

Soil nutrient status of Tamil Nadu has deteriorated and organic matter content has got depleted from 1.26% in 1980s to 0.68% in 2010-11 due to intensive cultivation and mono cropping. To rejuvenate soil health and improve fertility status, it is planned to analyze the nutrient status of soil samples of individual farm holdings and identify the extent of problematic soils. This will help in judicious use of fertilizers and recommend appropriate soil ameliorants. The recommendations will be recorded in "**Farmer Integrated Hand Book**" and all the farmers would be covered in next 3 years period. The Central Control Laboratory located at Kudumianmalai, is the Apex Organization which provides technical competence through training to the laboratory personnel and ensures the precision and accuracy of analysis in the laboratories. Computers with internet facilities have been provided to all the 30 Soil Testing Laboratories

functioning in the state to upload details of soil samples analyzed and the database is managed through **AGRISNET**. Further, an amount of ₹390 lakhs has been sanctioned towards the purchase of 13 Mobile Soil testing vans for 13 Mobile Soil Testing Laboratories.

During 2011-12, a sum of ₹400 lakhs has been sanctioned towards the issue of 21 lakh Farmers Integrated hand book. 9.54 lakh soil samples have been collected and 7.79 lakh numbers analyzed. During 2012-13, it has been programmed to distribute 40.45 lakh Farmers Integrated hand book.

5.1.3. Organic Farming

The Government is resorting to various methods for maintaining the health and fertility status of the soil through balanced application of inorganic and organic fertilizers. As inorganic fertilizers cannot be entirely dispensed with, the Government is promoting Organic Farming in a massive way to restore the soil health from the residual effects of inorganic fertilizers with an eye on environmental safety. Schemes such as composting of farm wastes with *Pleurotus*, Vermicomposting of farm wastes, production and distribution of Bio-Fertilizers and procurement and distribution of green manure seeds are implemented.

- Every year kits containing 1 Kg of *Pleurotus*, 5 Kg of Urea with pamphlet are distributed to the farmers at free of cost to conduct demonstrations to produce **compost from farm waste using *Pleurotus***. During 2011-12, 4662 pleurotus kits were distributed to the farmers at a cost of ₹6.50 lakhs. During 2012-13, 5000 kits will be prepared at a cost of ₹7 lakhs and distributed to the farmers.

- The scheme viz., **Vermicomposting of agricultural waste will be implemented** to encourage the farmers to produce the required organic manure on their own lands. During 2011-12, 300 demonstrations and trainings were conducted at a cost of ₹11.55 lakhs. During 2012-13, 300 demonstrations and training to benefit 15000 farmers will be conducted at a cost of ₹11.55 lakhs.
- **Bio-fertilizer**, an important component of Integrated Nutrient Management, is an eco friendly and cost effective input produced in 15 Bio-Fertilizer Production Units functioning with an annual production capacity of 3850 MT (192.50 lakh packets of 200 gram each). 83 lakh packets were distributed during 2011-12. Three strains viz., *Azospirillum*, *Rhizobium* and *Phosphobacteria* are produced and distributed at a cost of ₹6/-per packet and tested for quality through Bio-fertilizer Quality Control Laboratory functioning at Tiruchirapalli. It is programmed to produce and supply 3850 MT during 2012-13.
- **Liquid Bio-fertilizers** which have advantages such as longer shelf life of 12 to 24 months, free of contamination, higher microbial population, cost effective and easy to use will be promoted by the Government to rejuvenate the soil health.
- **Farm Yard Manure & Tank Silt** which improve soil structure, water holding capacity, drainage and availability of nutrients to improve the soil health in a long run at cheaper cost will be popularized for increasing the organic matter content of the soil.

- Every year, it has been programmed to produce 525 MT of **Blue Green Algae** and 500 MT of **Azolla** that helps in fixing atmospheric Nitrogen and make it available to the rice crop. During 2011-12, 511 MT of Azolla were produced and distributed to the farmers. This scheme will be continued during 2012-13 also.
- Annually 250 MT of green manure seeds are procured and distributed at a total cost of ₹ 50 lakhs with 25% subsidy to encourage the usage of Green Manures. **Green manure crops** like Sunnhemp, 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. During 2011-12, 154 MT of green manure seeds were procured and distributed to the farmers at a total cost of ₹52.36 lakhs with 25% subsidy. This scheme will be implemented in a larger extent during 2012-13. Further, Government will implement an integrated approach wherein soil fertility will be improved by encouraging application of Green Manures and Farm Compost by upscaling the distribution of Green Manure Seeds and will also enable the farmers to incorporate green manure crops *in-situ* at 50% subsidy besides promoting application of farm compost by establishing vermicompost units.

5.1.4. Macro Nutrients

Inorganic fertilizers play a pivotal role in increasing the productivity of crops by supplying essential macro and micro elements. The Department of Agriculture is taking necessary measures to maintain soil fertility for which recommendations are given based on soil testing. As the indiscriminate use of inorganic fertilizers without any base

ultimately increases the cost of cultivation, the department is formulating plans with seasonwise, cropwise, farmwise fertilizer requirement every year. The Government is also taking concerted efforts to get allocation of fertilizers from Government of India and a supply plan is prepared to ensure adequate availability of fertilizers in time through fertilizer firms.

Fertilizer distribution during 2011-12 and requirement for 2012-13 are furnished below:-

(L.MT)

Fertilizer	Distribution 2011-12	Requirement 2012-13
Urea	10.39	11.91
MOP	3.82	5.09
DAP	4.23	5.67
Complex	7.84	6.48

The Government swiftly acted at the time of fertilizer crisis that had occurred in the recent times and deftly managed the situation by ensuring adequate stock, besides sanctioning **increased** interest free advance of ₹150 crores to TANFED for procurement and uninterrupted supply of fertilizers especially DAP. The Government will continue to purchase and distribute DAP through TANFED during 2012-13 also. Besides it has also been planned to purchase urea and MOP through TANFED / Government agencies and maintain Buffer stock to meet the demand without any shortfall.

Consequent to introduction of Nutrient Based Subsidy (NBS) with effect from 1.4.2010 by Government of India with 'fixed subsidy-variable retail price regime, chemical fertilizers prices except Urea have substantially increased. **To reduce the burden of farmers, the Government has exempted 4% VAT which is first time across the country.**

5.1.4.1. Quality Control

The Government is keen on ensuring the quality of the inputs being supplied to farmers and is taking concrete steps to stop the sale of sub-standard inputs. The Government is strictly enforcing Fertilizer Control Order, 1985 to ensure distribution of quality fertilizers and legal action is taken against the distributors who sell non-standard fertilizers. 14 notified Fertilizer Control Laboratories are functioning in the State with an annual analyzing capacity of 17,500 samples. During 2011-12, 17,398 samples were tested of which 534 samples were found non-standard and suitable departmental and legal action have been taken up against the defaulters. During 2012-13, it is programmed to analyze 17,500 fertilizer samples, 600 Bio-fertilizer samples and 1800 organic manure samples.

5.1.5. Micro Nutrients

Micro nutrients are essential for plant growth and any deficiency will have an impact on the production and productivity. The Government is analyzing the Micro Nutrient deficiency in the soil using Atomic Absorption Spectro Photometer installed in 19 Soil Testing Laboratories and 9 Mobile Soil Testing Laboratories. During 2011-12, additionally 11 Atomic Absorption Spectro Photometers are being installed in the remaining 11 Soil Testing Laboratories. Annually 1400 MT of 14 types of notified Micro Nutrient Mixtures are produced at Micro Nutrient Mixture Production Centre, Kudumianmalai, tested for quality at 6 Fertilizer Control Laboratories and distributed to the farmers through the Agricultural Extension Centres. During 2011-12, 1135 MT of Micronutrient mixtures were produced and distributed. During 2011-12, an amount of ₹ 60 lakhs was sanctioned for modernization of Micro Nutrient Mixture Unit besides ₹ 130 lakhs for the construction of MN mixture

godown. It is programmed to produce and distribute 1400 MT of Micro Nutrient Mixtures during 2012-13.

5.1.6. Seeds

Seed is the prime input for increasing the productivity of crops. High yielding varieties released by research institutes such as Tamil Nadu Agricultural University, Indian Council of Agricultural Research, other State Agricultural Universities and ICRISAT will be recommended specific to the region and seasons. The seeds will be made available to the farmers at right time to steer agriculture to a new height. The Government is in the process of evolving suitable cropping system specific to individual farm, soil type and irrigation status based on farm level interventions and a comprehensive seed is being formulated to meet out the seed demand.

In addition, the Government is taking initiatives to replace the existing obsolete and old ruling varieties with newly released and high yielding varieties, sensitize the farmers on production and usage of certified seeds, encourage quality seed production and seed processing activities on Public Private Partnership mode involving farmers, women self help groups, TANWABE groups, private entrepreneurs and NGOs, upgrade the infrastructure facilities for seed production, scientific processing and storage, raise seed farms on a cluster / village concept approach and promote community farming to enable the farmers to produce their own seeds specific to their region.

The Seed Replacement Rate is 33% for self pollinated crops such as paddy, ragi, pulses and groundnut, 50% for cross pollinated crops such as cholam, cumbu and cotton and 100% for hybrids. The Government to improve and strengthen the seed delivery mechanism has

conceptualized to identify and declare potential seed production areas as **Seed Valley** and establish **Village Seed Bank** to ensure availability of good quality seeds for enhancing productivity and help in generating income to improve the livelihood of the community members.

During 2012-13, it is programmed to distribute 18,700 MT of paddy seeds, 470 MT of millet seeds, 4,950 MT of pulses seeds, 6,500 MT of oilseeds and 100 MT of cotton seeds through the Agricultural Extension Centres. It has been proposed to entrust 50% of the certified seed production to Tamil Nadu Agricultural University in a phased manner. The seeds produced in the seed farms will be processed in the 16 major, 2 medium and 63 mini Seed Processing Units with an annual capacity of 29,600 MT. In order to strengthen the seed distribution, the Government is also encouraging private seed agencies.

The details of quality seed distribution and the Seed Replacement Rate (SRR) programmed for 2012-13 are as follows:-

Crop	Seed Distribution Plan for 2012-2013 (in Metric Tonnes)			
	Total Annual Requirement	Department Certified Seeds	Private Certified / Truthfully labelled Seeds	SRR
Paddy	110000	18700	57250	69
Millet	12150	470	6240	55
Pulses	20800	4950	680	22
Oilseeds	80610	6500	5700	15
Cotton	550	100	450	100

5.1.7. Plant Protection

5.1.7.1. Pest / Disease Surveillance

The increased use of pesticides has disturbing consequences on the crop ecosystem, particularly due to the development of resistance, resurgence of crop pests and decline in population of the natural enemies. Tamil Nadu is focusing on increased adoption of cost effective and eco-friendly cultivation practices. Hence, the Government has proposed to step up investment in research and technology and take up measures to use Bio-pesticides that are more effective in managing crops in an environmentally protective manner.

The occurrence of pest and diseases is intensively monitored by conducting fixed plot surveys and roving survey at weekly intervals and daily basis respectively besides forewarning on pest and diseases outbreak and necessary control measures are recommended to the farmers through radio, television, pamphlets, campaigns, etc., Seed treatment is also popularized among farmers to prevent the incidence of seed borne diseases at the early stages of the crop.

5.1.7.2. Integrated Pest Management

Integrated Pest Management is a practice wherein the pests are controlled by integrating physical, agronomical, chemical and biological methods to prevent the production loss by keeping the pest and diseases below the Economic Threshold Level (ETL). Integrated Pest Management technologies are promoted through Farmers' Field School besides sensitizing the farmers on pest and diseases management from seed to seed. Effective implementation of this programme has helped to reduce the consumption of pesticides from 10926 MT of technical grade in 1984-85 to 2261 MT in 2011-12, thus preventing pest

resurgence and reducing the ill effects of pesticide residues in crops and soil. This scheme will be continued during 2012-2013.

5.1.7.3. Production of Bio Control agents in Bio Control Labs and Integrated Pest Management Centres

The concept of organic farming is gaining momentum among farmers which has increased the usage of biocides and bio-control agents. To meet the demand, Government has established 10 Bio-control labs and 2 Integrated Pest Management Centres for production and distribution of Bio-control agents to the farmers at subsidized cost through Agriculture Extension Centres.

Bio-control agents	Production centres (Nos.)	Pests / Diseases controlled	Area (Ha.)	
			Achmt. 2011-12	Programme for 2012-13
<i>Trichogramma chilonis</i> (egg parasitoid)	21	Sugarcane Internode borer	11000	11000
Bethylid, Braconid and Eulophid parasites	20	Coconut Black headed caterpillar	10500	10500
Green Muscardine fungus	2	Coconut Rhinoceros beetle	45000 vials	45000 vials
Nuclear Polyhedrosis Virus	4	Groundnut Red hairy caterpillar, Prodenia and cotton boll worm	4560	4560
<i>Pseudomonas, Trichoderma viridi</i>	12	Diseases in cotton, pulses and paddy	10000	10000

5.1.7.4. Pesticide Testing Laboratories

Quality Plant Protection Chemicals are manufactured through 147 Pesticide Manufacturing Units and distributed to the farmers through 13,321 private sale outlets. Insecticide Act, 1968 and Insecticide Rules, 1971 are enforced to ensure supply of quality plant protection chemicals to the farmers. The pesticide samples drawn from the manufacturing units and private sale outlets are analyzed in the 15 notified Pesticide Testing Laboratories functioning at Kancheepuram, Cuddalore, Salem, Coimbatore, Erode, Thanjavur, Trichy, Madurai, Thoothukudi, Vellore, Dharmapuri, Nagapattinam, Theni, Sivagangai and Tirunelveli districts with a total annual analyzing capacity of 21850 samples. During 2011-12, 19,626 samples were analysed.

It is programmed to analyze 21850 pesticide samples during 2012-13.

5.1.8. Extension in Augmenting Agriculture

Effectiveness of the ongoing extension services and delivery mechanism include recent innovations and making them more responsive and accountable to the farmers. Information and knowledge are the keys to future agricultural growth and growth engines of an extension system. The prime responsibility of an extension service is to disseminate up-to-date and reliable information about farming methods, innovative technologies, availability of quality inputs, economic and profitable agriculture, etc., and ensure adoption in the farmers' fields. Extension is a platform through which initiatives for doubling the agricultural productivity and farmer's income are resorted to. Government has taken the following initiatives to strengthen the extension services:

- ❖ **213 new vehicles - Mobility of Extension staff at Block level:** The Government has provided 213 new vehicles to the extension officers at a cost of ₹1387 lakhs for monitoring the implementation of various crop oriented welfare schemes.
- ❖ **Farmers Guide Booklet - Farmers' Ready Reckoner Hand Book and Pocket Book**

To empower farmers for better understanding of technical information on cultivation, schemes implemented by the Government and agricultural related information, **Farmers Guide Booklet** has been prepared by all the Departments in Agriculture in two levels, one at **State level** for the use of officials of the Department and another at **district level** for the use of farmers. These books have been prepared with due care to supply needy information to farmers for their use as ready reckoner. These books contain comprehensive crop specific information on soil, water and pest & disease management, improved varieties, technologies, success stories of farmers, contact address of nearby extension officials, research institutes, input dealers, machinery suppliers, market agencies, insurance package, scheme benefits etc. Eight types of **Farmers Guide Booklet** have been prepared as detailed below:

- Food grains covering rice, millets and pulses
- Commercial crops viz., sugarcane, cotton and oilseeds
- Annual horticulture crops
- Perennial horticulture crops
- Soil & water conservation and farm mechanization

- Agricultural Marketing
 - Technologies of TNAU
 - Watershed programmes
- ❖ **Farmers Hub** - The Government is establishing Farmers' Hub in 10 districts viz., Coimbatore, Dindigul, Erode, Kancheepuram, Madurai, Ramanathapuram, Thanjavur, Tiruchirappalli, Thoothukudi and Virudhunagar at a cost of ₹1497 lakhs and these Farmers' Hub will act as a platform for information dissemination between farmers, farmers groups, extension functionaries and also as a centre for solving all field oriented problems related to agriculture and sister departments at one spot.
- ❖ **Personal Digital Assistants (PDA)** are being distributed to collect detailed data base on field, inform availability of inputs such as seeds, fertilizers, pesticides, bio-pesticides etc., record biometric observations of crops at critical stages to arrive estimated yield, pest and disease outbreak, improved cultivation technologies, individual based insurance settlement and linkages for marketing of harvested crops. During 2011-12, PDAs are distributed to 227 extension functionaries belonging to 20 blocks of Vellore and 11 blocks of Virudhunagar districts at a cost of ₹ 34.05 lakhs. During 2012-13, it is programmed to distribute 430 Nos. of PDAs to extension functionaries of Trichy, Erode, Thiruvarur and Coimbatore districts at a cost of ₹86 lakhs.
- ❖ **Touch Screen Kiosks** - To narrow down the yield gap and to facilitate the farmers for easy access to information like weather, input availability, farm based interventions, market intelligence and scheme

benefits besides knowing details of their own farm plan and inputs requirement. Touch Screen Kiosks will be established at block and sub block level in 125 places of Trichy, Erode, Thiruvarur and Coimbatore districts at a cost of ₹ 81.25 lakhs.

5.1.8.1. Farmers Training Centre

The prime responsibility of the department is to disseminate and ensure perfect adoption of innovative technologies by the farmers. Village based training, Convenors training, method demonstration and sensitization training are conducted through 22 Farmers Training Centres functioning in the State. These centres impart training on management practices and technologies such as quality seed production, crop diversification, Integrated Pest and Disease Management, Integrated Nutrient Management, System of Rice Intensification, Improved Pulses Production Technologies, Sustainable Sugarcane Initiatives, Precision Farming, Micro Irrigation, value addition etc.,

5.1.8.2. Water Management Training Centre

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

5.1.8.3. State Agricultural Extension Management Institute (STAMIN)

State Agricultural Extension Management Institute (STAMIN) at Kudumianmalai, Pudukottai District, is a State level apex agricultural extension training institute which is imparting training to the Agricultural Extension officers and farmers every year on various crop production technologies

and broad based extension system. It is one of the premier institutes in Tamil Nadu which is functioning from 1975. The technical competence and managerial ability of the officers are enriched through this institute. The details of training to be given in 2012-2013 are furnished below.

Sl. No	Details of training	No. of officers to be trained
1	Office Management training	82
2	Computer training	90
3	Induction training to AAOs	600
	Total	772
	Finance (₹in lakhs)	9.07

It has been decided to establish a new State Agricultural Management and Extension Training Institute (SAMETI) in the premises of STAMIN, Kudumiyamalai, Pudukottai district.

5.1.9.Crop Yield Competition

With an objective to motivate the farmers to adopt best cultivation practices and to obtain highest productivity and production in crops such as paddy, groundnut, cholam, cumbu, maize, greengram and blackgram, crop yield competitions at State and District levels are conducted every year.

An enrollment fee of ₹100/- for paddy and groundnut and ₹50/- for other crops for State Level entry and ₹50/- for paddy and groundnut and ₹25/- for other crops for district level entry is collected. The following prize amount is awarded to the farmers who obtain highest productivity at State and District levels.

(in ₹)

Crop	State Level		District Level	
	1 st Prize	2 nd Prize	1 st Prize	2 nd Prize
Paddy and Groundnut	25,000	15,000	15,000	10,000
Other crops	15,000	10,000	10,000	5,000

The scheme will be continued during 2012-13.

As a special gesture, a cash prize of ₹5 lakhs and medal worth of ₹3,500/- will be given by Hon'ble Chief Minister on the Republic Day function to the farmer who obtains highest yield at state level under System of Rice Intensification (SRI) for which the farmer has to enroll under SRI Crop Yield Competition by paying a registration fee of ₹150/-

5.1.10.Special Initiatives by the Government

The Government which had set itself an ambitious target of achieving 115 L.MT of food grain production and improving the productivity of other crops like sugarcane, cotton and oilseeds during 2011-12 launched series of initiatives as follows:

- ❖ Adoption of SRI as a whole village concept in 1880 villages covering an area of 1.60 L.ha besides setting a target of 9.50 L.ha throughout the state. So far an extent of 1.75 L.ha in 1880 villages have been brought under SRI. As a whole 10.01 L.ha have been covered under SRI.

- ❖ To bridge the production - demand gap in pulses, Improved Pulses Production Technologies with more focus on application of **Pulse Wonder** have been advocated in **1695 No.of Pulses villages**. For the first time, the State Government sanctioned a sum of ₹1048 lakhs towards **Micro Irrigation exclusively for pulses** in an area of 5000 hectares and of which a sum of ₹1025 lakhs was utilized.
- ❖ Without compromising food security, **Sustainable Sugarcane Initiatives**, a Comprehensive Production technology for increasing the productivity of sugarcane was popularized in 3000 Ha. and Micro Irrigation in an area of 7440 Ha. Critical inputs such as Water soluble fertilizers and TNAU Sugarcane booster were provided to farmers at 50% subsidy (limited to ₹25,000/Ha) under Sustainable Sugarcane Initiatives besides, training 4000 farmers at a total outlay of ₹1293 lakhs. A sum of ₹1235 lakhs was utilized for this purpose.

5.2. Centre – State Shared Schemes

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

Integrated Scheme for Oilseeds, Pulses, Oilpalm and Maize (ISOPOM) is a centre - state shared scheme implemented from 2004-05 onwards wherein the subsidy is borne by the Government of India and the State on 75:25 basis. The objective of the scheme is to increase the productivity of oilseeds, pulses, oilpalm and maize for which region specific strategies are formulated. From 2010-11, the scheme for pulses was integrated with NFSM - Pulses

and ISOPOM scheme is implemented only for oilseeds, oilpalm and maize.

5.2.1.1. Oilseeds

Tamil Nadu ranks first in the productivity of oilseeds in the country. The spiraling prices of oilseeds due to increased consumption have caused a greater concern. Hence to increase the productivity of oilseed crops and to meet the demand, activities like production of foundation and certified seeds, distribution of certified seeds, demonstration in groundnut, gingelly, sunflower crops, demonstration on IPM, distribution of gypsum, bio-fertilizers, weedicides, Nuclear Polyhedrosis Virus, hand and power operated sprayers and pipelines to supply water from source to field are carried out besides training farmers on latest technologies. A special component viz., combined nutrient spray exclusively for groundnut is also implemented.

5.2.1.2. Oilpalm

Oilpalm is a largest edible oil producing crop and fetches high income to the farmers. This scheme is implemented in 11 districts and activities such as maintenance subsidy, IPM, wire mesh to avoid rat menace, training to officers and farmers are carried out to increase the production of Oilpalm. M/s.Cauvery Oil Palm Ltd., (Tiruchirapalli, Thanjavur, Tiruvarur, Nagapattinam, Karur, Perambalur, Cuddalore, Villupuram) M/s. Godrej Agrovet Ltd., (Tirunelveli), M/s. Vaidegi Properties Private Ltd., (Vellore) and M/s. Ruchi Soya Industries Ltd., (Theni) have signed Memorandum of Understanding with the Government to expand the area under Oilpalm, set up extraction units and also generate employment opportunities.

5.2.1.3. Maize

Maize is a highly remunerative crop which leads in paving way for shift in cropping pattern due to change in consumption pattern and its demand for poultry and animal feed. This scheme is implemented with an objective to increase the productivity of maize for which components like production and distribution of certified seeds, demonstration, Integrated Pest Management, training to farmers and distribution of pipelines to carry water from the source are being implemented.

An amount of ₹1477.740 lakhs has been spent towards the implementation of ISOPOM during 2011-12. The scheme will be continued during 2012-13 also.

(₹ in lakhs)

Crop	2011-12		2012-13
	Approved Outlay	Achievement	Programme
Oilseeds	1615.030	1230.869	1684.620
Oilpalm	160.755	150.780	283.490
Maize	96.312	96.091	100.530
Total	1872.097	1477.740	2068.640

5.2.2. Technology Mission on Cotton – Mini Mission-II

Cotton is the most important raw material for the textile industry and one of the important cash crops which ensure stable income to the growers. With an objective to increase the production and productivity of cotton, Technology Mission on Cotton is being implemented from the year 2000-01. The Centre and state Governments share the financial assistance extended on 75:25 basis. This scheme is implemented in all the districts of Tamil Nadu.

The scheme was implemented with an allocation of ₹61.50 lakhs during 2011-12. Subsidy is extended for production & distribution of certified seeds and bio agents besides farmers training through farmers field schools expending an amount of ₹ 59.83 lakhs. The components under this scheme are to be proposed under National Agricultural Development Programme during 2012- 13 at an outlay of ₹319.50 lakhs.

5.2.3. Macro Management of Agriculture

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

5.2.3.1. Cereals Development Programme

The objective of this programme is to increase the production and productivity of rice and it is implemented in all the districts except Chennai, Nilgiris and NFSM - Rice operating districts viz., Pudukottai, Tiruvarur, Nagapattinam, Ramanathapuram and Sivagangai. Under this scheme, quality certified seeds are distributed. This scheme was implemented during 2011-2012 and an amount of ₹563.755 lakhs has been spent against an allocation of ₹657.50 lakhs.

This scheme will be continued during 2012-13 also.

5.2.4. Agricultural Technology Management Agency (ATMA)

Extension Reforms Scheme is being implemented since 2005-06 and now it is in operation in all the districts except The Nilgiris and Chennai through Agricultural Technology Management Agency (ATMA) covering 381 Blocks by Tamil Nadu Watershed Development Agency (TAWDEVA) which is the State Nodal agency. The funding pattern is 90:10 by Government of India and State Government respectively.

This scheme aims to decentralize the decision making to the block level, to increase the farmers' participation in programme planning and resource allocation and to increase the accountability of stakeholders by converging the programmes of all line departments. It is operating on gap filling mode by formulating Strategic Research and Extension Plan (SREP) and Annual Work Plans. The other objectives of the scheme are encouraging Public Private Extension Services, ensuring an integrated, broad-based extension delivery mechanism consistent with farming system approach, adopting group approach to extension and addressing gender concerns by mobilizing farm women into groups and providing training to them.

At district level, ATMA Governing Board (GB) under the chairmanship of district Collector provides overall policy direction and ATMA Management Committee (MC) headed by Joint Director of Agriculture as Project Director will execute the implementation of the scheme. The District Farmers Advisory Committee provides farmer's feedback for district level planning and implementation.

At block level, two committees viz., Block Technology Team (BTT), a team comprising of block level officers of Agriculture and all line departments and Block

Farmers Advisory Committee (BFAC), a group exclusively of farmers of the block formulate and implement the scheme.

ATMA is fulfilling the needs of training, demonstration, mobilizing Farmers' Interest Group through capacity building and providing revolving fund for entrepreneurial activities, inter-state and inter-district exposure visits besides giving awards to best performing farmer and farmer groups at block, district and state level. An amount of ₹2361.199 lakhs was spent against an allocation of ₹2763.527 lakhs for the above activities during 2011-2012.

To strengthen the extension activities at state, district and block level and to improve extension outreach right down to the village level, the Government has temporarily appointed 1300 Block Technology Managers, Subject Matter Specialists, supporting staff and 8109 Farmer Friends (one progressive farmer as Farmer Friend (FF) at village level for every two revenue villages) on contract basis at an outlay of ₹1656.62 lakhs. The Farmer Friends will act as a liaison partner between farmers and extension staff for speedy and timely implementation of schemes at micro level.

This scheme will be continued during 2012-13 in all the districts (including all the blocks of The Nilgiris district) except Chennai besides promoting mass based agricultural extension system in the state.

5.2.5. Coconut Development Board Assisted Schemes

Tamil Nadu ranks first, second and third in coconut cultivation in terms of productivity, production and area respectively at National level. The Government is taking necessary measures to increase the productivity of coconut from the present level in coordination with Coconut Development Board. The schemes of Coconut Development

Board aim at improving the productivity of coconut through area expansion and adoption of scientific technologies to sustain coconut farming. Under this scheme, Quality 'Tall x Dwarf ' and 'Dwarf x Tall' coconut seedlings are produced in the Navlock Coconut Nursery, Vellore district and distributed to the farmers besides carrying out activities such as strengthening of Regional Coconut Nurseries and conducting demonstrations to popularize scientific management techniques to increase coconut productivity.

The financial assistance for the above activities are equally shared by both Central and State Government except for conduct of demonstrations, which is 100% funded by Coconut Development Board. Every year, around 3.50 lakh coconut seedlings are distributed at subsidized cost.

During 2011-12, an amount of ₹352.935 lakhs was spent towards the distribution of coconut seedlings, strengthening of coconut nurseries and laying out of demonstration plots against an allocation of ₹377.325 lakhs. Further activities related to strengthening of Coconut development in Tamil Nadu will be taken up with active partnership of farmers in production and distribution during 2012-13.

5.2.6.Agricultural Insurance

Implementation of Crop Insurance Schemes in Tamil Nadu portrays the exemplary efforts taken by the State Government and Department of Agriculture by its resound success among the farmers. The State Government is taking strenuous efforts to fine tune the Crop Insurance Schemes by introducing interim compensation to insured farmers, reducing the insurance unit area to revenue village level, uniform seasonality discipline, on account payment, timely payment of claims, etc., which will definitely motivate

the farmers to take up risks in agriculture and stabilize the income of the farmers at the time of distress. The Crop Insurance Schemes which are in vogue are as follows:-

5.2.6.1.National Agricultural Insurance Scheme

National Agricultural Insurance Scheme with the objectives to provide insurance coverage to the farmers for the notified crops, provide financial support to the farmers in the event of failure of crops as a result of natural calamities, encourage the farmers to adopt progressive farming practices and high value inputs and help them to stabilize their farm income, particularly in disaster years is implemented in Tamilnadu from Kharif 2000 onwards. Paddy, millets, pulses, oilseeds, cotton, sugarcane, annual / commercial crops are insured under the scheme. The scheme is operated in notified areas (block/ firka level) for notified crops. All loanee farmers growing notified crops are enrolled compulsorily while non-loanee farmers are enrolled on voluntary basis.

The present premium subsidy pattern is as follows:-
(Percentage)

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

During 2011-12, a sum of ₹2769.52 lakhs was extended as premium subsidy against an allocation of ₹2850 lakhs by the State Government towards enrollment of 5.94 lakh of loanee and 2.54 lakh of non-loanee farmers. This scheme will be continued during 2012-13. As the present insurance scheme is being operated on area approach depriving the farmers of certain benefits under the scheme, Government has proposed to redesign the scheme for the benefit of individual farmers.

5.2.6.1.1. Compensation under National Agricultural Insurance Scheme

In the event of crop loss due to natural calamities, Agricultural Insurance Company pays compensation upto 100% for food and oilseed crops and 150% for annual and commercial crops, if the claim is less than the premium collected. If the claim exceeds the premium amount, then the exceeding amount is equally shared between Central and State Government. During 2011-12, a sum of ₹7975.19 lakhs was disbursed as compensation to 2.32 lakh number of farmers by the State Government.

5.2.6.2. Modified National Agricultural Insurance Scheme

Modified National Agricultural Insurance scheme was introduced in 2011 to remove the bottlenecks in implementation of National Agricultural Insurance Scheme. This scheme is implemented in Tamil Nadu on pilot basis in the districts of Cuddalore, Sivagangai and Namakkal from Kharif 2011. The additional benefits are accuracy in estimation of crop loss, interim compensation to farmers, loss assessment based on weather and yield parameters, implementation at revenue village level, indemnity payable for standing crop (sowing to harvesting), prevented sowing and failed sowing/ planting risk, post harvest losses, on

account payment upto 25% of likely claim for immediate relief, calculation of threshold yield i.e., average yield of last 7 years excluding 2 years of declared natural calamities, minimum indemnity level of 70% against 60% in NAIS. This scheme will be continued during 2012-2013.

5.2.6.3. Weather Based Crop Insurance Scheme

The compensation extended under NAIS implemented from Kharif 2000 onwards is calculated based on the yield results of Crop Cutting Experiments. However, the crop loss due to seasonal changes has not been accounted for. Therefore to overcome the shortcomings, Weather Based Crop Insurance Scheme was introduced on pilot basis. This scheme is being implemented to mitigate the hardship of the insured farmers against the likelihood of financial loss on account of anticipated crop loss due to adverse weather conditions. The critical stages of a crop such as sowing, vegetative, flowering and harvest stages are insured for weather parameters like excess / deficit rainfall, temperature, relative humidity, consecutive dry days, wind speed, etc.

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

During 2011-12, the scheme was implemented in 11 districts viz., Theni, Tirunelveli, Tirupur, Salem, Dharmapuri, Virudhunagar, Perambalur, Ariyalur, Villupuram, Dindigul and Coimbatore at an outlay of ₹250 lakhs. An amount of ₹225.31 lakhs was spent towards enrollment of 23,953 farmers. This scheme will be continued during 2012-13.

5.2.6.4. Coconut Palm Insurance Scheme

Coconut, a perennial crop which earns more income for the growers is cultivated in Tamil Nadu in an extent of 4.00 lakh ha with a production of 55,471 lakh nuts and productivity of 13,852 nuts/ha. As there are better prospects to bring more area and increase the production besides value addition, Coconut is largely affected by natural calamities. In view of this, the Government has introduced Coconut Palm Insurance Scheme in 11 districts viz., Vellore, Krishnagiri, Salem, Erode, Coimbatore, Thanjavur, Theni, Dindigul, Tiruppur, Tirunelveli and Kanyakumari on pilot basis during 2011-2012 with the objectives to provide insurance coverage against natural and other perils, provide relief against income loss, minimize risks and encourage replanting.

Healthy nut bearing coconut palms grown as mono or intercrop, on bunds or homestead and all varieties of coconut (Tall varieties of 7 to 60 years and Dwarf & Hybrids of 4 to 60 years) are insured. Individual farmers / growers cultivating atleast 10 healthy nut bearing palms are eligible for enrolment.

Sum Insured and Premium

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

Subsidy pattern

CDB (%)*	STATE GOVT (%)	FARMER (%)
50	25	25

* Coconut Development Board

During 2011-2012, a sum of ₹0.983 lakhs was spent as premium subsidy against an allocation of ₹10 lakhs and 707 farmers were enrolled under this scheme. This scheme will be implemented during 2012-2013 also.

5.3. Centrally Sponsored Schemes

5.3.1. Tamil Nadu Agriculture Information Service Network (TN-AGRISNET)

AGRISNET is a web portal of Agriculture department which provides updated information on weather forecast, Village level Fertility index, Soil Health status of each farm holding, welfare schemes, availability of all inputs, cropwise technologies, beneficiary list, Market trend of commodity prices, contacts besides farmers' database.

The Government to provide a better e-governance in Agriculture so as to keep farming community on knowledge updation of latest farm crop technologies and other cultivation approaches through new initiatives such as **Farm Crop Management System (FCMS), Touch Screen Kiosks**, new software modules - such as farmers database collection through mobile application, agro advisory service, farmers data updation through Interactive Voice Response (IVR), scheme benefit tracking system and online booking of farm machinery hiring system for effective individual farm planning, management of inputs and speedy transfer of extension activities under AGRISNET platform.

Government of India sanctioned a sum of ₹560 lakhs and the entire amount was utilized for commissioning of computers and other accessories in the Commissionerate of Agriculture, 30 district Joint directors offices, 385 block offices along with broad band connectivity. Government of India, in addition, has approved a sum of ₹331.25 lakhs to implement the novel concept of **Farm Crop**

Management System (FCMS) on pilot basis in 6 districts viz., Trichy, Coimbatore, Erode, Vellore, Thiruvarur and Virudhunagar.

5.3.2. National Agricultural Development Programme.

A special additional Central Assistance Scheme viz., National Agricultural Development Programme is implemented from 2007-08 with 100% assistance of Government of India. Greater flexibility and autonomy are provided to the States to develop and implement projects on the basis of priorities by formulating district and state agricultural plans with an aim to achieve 4% growth rate in agriculture and allied sectors during the 11th Five Year Plan.

Objectives

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

Government with an aim to bridge the demand and supply in pulses and bring down the spiralling prices of pulses, to promote balanced nutrition besides ensuring food security, to satiate the demand of edible oils and to increase the productivity of rainfed crops for Sustainable Agriculture implemented Special Schemes viz., Integrated Development of Pulses Villages, Initiatives for Nutritional Security through Intensive Millets Promotion (INSIMP), Oil Palm Area Expansion and Rainfed Area Development Programme besides various other schemes during 2011-12. The salient features of these special schemes are as follows:

5.3.2.1. Integrated Development of Pulses Villages

This programme was implemented in 5000 Ha. of pulses area @ 1000 hectares per unit per block by raising Redgram/ Blackgram/ Greengram as pure crop in a contiguous extent to motivate the farmers to adopt all the improved technologies, increase the present productivity level and take up cultivation in a larger extent. A subsidy of ₹5400 per ha. for Redgram and ₹4800/- per ha. for Blackgram / Greengram was extended as 100% subsidy for distribution of Seed minikits, inputs for Integrated Nutrient Management and Integrated Pest Management besides training on e- pest surveillance.

This scheme will be implemented during 2012-13 also.

5.3.2.2. Initiatives for Nutritional security through Intensive Millets Promotion (INSIMP)

With the objectives to increase area under millets to ensure food and nutritional security, demonstrate improved production technologies, enhance the productivity, augment millets production, demonstrations were organised in a block in different clusters for which technology demonstration kits of critical inputs were supplied to the beneficiaries. Other activities such as production of high yielding varietal seeds, installation of pre processing and small processing units, post harvest and value addition, awareness campaign, appointment of Technical Assistants and training of selected farmers including technical assistants from each unit were carried out.

This scheme will be implemented during 2012-13 also.

5.3.2.3. Oil Palm Area Expansion

The main objective is to attain self sufficiency in edible oil production for which activities such as distribution of planting material, area expansion, supply of drip Irrigation units, Diesel / Electric Pumpsets & borewells, inputs for intercropping in Oil Palm, assistance for IPM and INM, establishment of vermicompost units were carried out in 11 districts viz.,Trichy, Karur, Perambalur, Thanjavur, Thiruvarur, Nagapattinam, Villupuram, Cuddalore, Theni, Tirunelveli and Vellore.

This scheme will be implemented during 2012-13 also.

5.3.2.4. Rainfed Area Development Programme

With the objectives to increase agricultural productivity of rainfed areas in a sustainable manner by adopting appropriate farming system based approaches, to mitigate the crop loss due to drought, flood or uneven rainfall distribution by adopting diversified and composite farming systems, to create sustained employment opportunities through improved on-farm technologies and cultivation practices and to enhance farmers income and livelihood support for reduction of poverty in rainfed areas,“**Rainfed Area Development Programme (RADP)**”is being implemented with a financial outlay of ₹1385.03 lakhs with the technical guidance of ICRISAT by conducting demonstrations in 10000 ha. (500 Ha. per district) in 20 districts namely Thiruvallur, Villupuram, Thiruvannamalai, Trichy, Kanyakumari, Perambalur, Ariyalur, Karur, Dindigul, Coimbatore, Madurai, Thoothukudi, Vellore, Virudhunagar, Salem, Ramanathapuram, Namakkal, Theni, Erode and Dharmapuri. This scheme will be implemented during 2012-13 also.

Government of India has sanctioned ₹31,489 lakhs to implement National Agricultural Development Programme during 2011-2012 for Agriculture and allied Departments. The amount sanctioned and expenditure for the schemes implemented by Agriculture Department during 2011-12 are as follows:-

(₹ in lakhs)

Sl. No	Schemes Implemented	Amount sanctioned	Amount utilised
1.	Precision farming in Agricultural crops	1043.00	887.09
2.	DAP Foliar spray in Pulses	625.00	625.00
3.	Intensification of Redgram cultivation through demonstration	524.00	511.12
4.	Application of Gypsum in Groundnut	753.00	503.12
5.	Development of infrastructure facilities in State Seed farms	500.00	487.72
6.	Promoting SRI through Demonstration	2700.00	2588.96
7.	Application of Zinc Sulphate in rice growing areas	439.00	336.52
8.	Farmers Hub/ Kisan Bhavan (Uzhavar Maiyam)	1496.87	100.00
9.	Modernization of Micro Nutrient Mixture Unit at	60.00	--

Sl. No	Schemes Implemented	Amount sanctioned	Amount utilised
10.	Oilpalm Area Expansion (OPAE)	1171.40	708.39
11.	Integrated Development of Pulses Villages	732.00	293.29
12.	Initiatives for Nutritional security through Intensive Millets Promotion (INSIMP)	1051.00	1007.43
13.	Rainfed Area Development Programme (RADP)	1385.03	1223.27
14.	Distribution of Power Rotary Weeder to Sugarcane growers	35.00	29.24
15.	Distribution of Maize Sheller	12.50	--
16.	Distribution of Coconut seedlings	112.50	11.27
17.	Reclamation of Saline and Alkaline soils	399.20	173.58
18.	Construction of MN Mixture godown	130.00	--
19.	Construction of Lignite storage godown for Bio-fertilizer Production units	300.00	4.95
20.	TANWABE	77.10	74.97
	Total	13546.60	9565.92

5.3.2.5. New Initiatives Proposed for 2012-13

The following new initiatives have been proposed during 2012-13 under NADP

- Improvement of soil fertility
- Production of Enriched Manure from Farm waste
- Integrated Farming System
- Programme on Pulses Mission
- Distribution of Pulses and Oilseed minikits to Thane Cyclone affected Coconut growers
- Increasing Cotton Production & productivity
- Strengthening the Biofertiliser production units
- Strengthening of STL & FCL by inductively coupled Plasma meter
- Infrastructure facilities to PTL and action to obtain national level accreditation
- Enhancing the soil testing capacity of Sugar mills by supplying laboratory instruments and equipments including Atomic Absorption Spectrophotometer
- Ensuring availability of more number of D x T Hybrid Coconut seedlings to farmers
- Distribution of Coconut tree Climbing devices and Copra Driers
- Distribution of Solar energised pumpsets
- Providing livelihood security to SC/ST farmer groups
- Exploring commodity potential in Agriculture
- Rejuvenation of Agricultural Extension Service

5.3.3. National Food Security Mission.

National Food Security Mission aims to ensure food and nutritional security through increase in area, production and productivity of rice and pulses on mission mode approach. Government of Tamil Nadu has adopted a two pronged approach, wherein, districts with larger extent but lesser productivity and districts with higher productivity but lesser extent have been selected for implementation of the scheme.

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

Under National Food Security Mission – Rice, activities viz., demonstrations on SRI and Hybrid Rice Technology, subsidized distribution of quality seeds of High Yielding varieties & hybrids, distribution of seed minikits, micro nutrients, conoweeders / other farm implements, plant protection chemicals and bio inputs, distribution of pumpsets, rotavators, sprayers, power weeders, lazer land leveller, transplanter and power tiller at 50% subsidy besides farmers training were taken up at a cost of ₹2096.634 lakhs against an allocation of ₹2144.19 lakhs during 2011-2012. This scheme will be implemented during 2012-13 at a total cost of ₹2750.070 lakhs.

Under National Food Security Mission – Pulses, activities such as production of Foundation Seed, production and distribution of Certified Seeds, distribution of gypsum, Micronutrient mixture, Rhizobium, plant protection chemicals, weedicides, plant protection equipments, sprinklers / mobile sprinklers, pumpsets, rotavators, laser land levelers, pipes and power tillers were distributed during

2011-2012 at an outlay of ₹1144.688 lakhs. A sum of ₹861.919 lakhs was spent. This scheme will be implemented during 2012-13 at a total cost of ₹2411.460 lakhs.

5.3.4. Accelerated Pulses Production Programme (A3P)

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

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

This scheme was implemented in a compact area of 1000 hectares per unit in 5 blocks under NADP and 7 blocks under NFSM- Pulses. Under NADP, A3P scheme was implemented in Vellore, Krishnagiri, Tiruvannamalai, Dharmapuri and Thoothukudi districts with one unit in each district with a financial outlay of ₹ 252 lakhs. Under NFSM, A3P scheme was implemented in Vellore, Krishnagiri, Nagapattinam, Tiruvannamalai, Pudukkottai, Thoothukudi, and Villupuram districts with one unit in each district with a financial outlay of ₹348 lakhs. A sum of ₹5400/- towards Redgram and ₹4800/- towards Blackgram / Greengram was extended as 100% subsidy for distribution of INM, IPM inputs, minikits and e-pest surveillance for an area of one hectare.

During 2011-12, a sum of ₹193.226 lakhs and ₹280.293 lakhs was spent under NADP and NFSM respectively.

5.3.5. Seed Village

Availability of quality seed in adequate quantities at right time is a decisive factor that influences the production and productivity of crops. Hence, the Government is taking all efforts to supply required quantity of seeds through Public Private Partnership mode. Foundation/Certified seeds of paddy, millets, oilseeds, pulses are distributed to the farmers at 50% subsidy per acre besides training them on scientific methods of quality seed production to produce quality seeds

This scheme was implemented at a total outlay of ₹3100 lakhs of which ₹ 2863 lakhs was expended. This scheme will be continued during 2012-13.

The processing capacity of 10 existing Seed Processing Units will be augmented by modernizing the Seed Processing Units at Pudurpalayam (Tiruchirappalli), Bhavani (Erode), Kattuthottam (Thanjavur), Annapannai (Pudukottai), Jeyamkondam (Ariyalur), Inungur (Karur), Veerapandi (Theni), Karaiyiruppu (Tirunelveli), Rasipuram (Namakkal) and Aliyar (Coimbatore) at an outlay of ₹637.40 lakhs.

5.4. Externally Aided Projects

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

This project is a six year project (from 2007-08 to 2012-13) implemented with the assistance of World Bank to improve water resources in 61 selected sub basins through Water Resources Organization integrating the activities of the departments of Agriculture, Horticulture, Agricultural Engineering, Agriculture Marketing & Agri

Business, Animal Husbandry, Fisheries and Tamil Nadu Agricultural University.

An amount of ₹9800 lakhs has been allotted to the Agriculture Department for implementation of the following project activities during the entire project period.

- **Crop Demonstrations:** Crop demonstrations viz., Green manure-SRI-Rice Fallow Pulses, SRI-Rice Fallow Pulses, Modified SRI, Semi Dry Rice, Semi Dry Rice-Rice Fallow Pulses, Maize, Ragi, Pulses, Groundnut, Coconut and demonstrations on INM, Vermicompost (Silpaulin) are being laid out.
- Distribution of **Farm Implements:** Implements such as Conoweeder, Marker for SRI and Pulses Line Markers are distributed at 100% subsidy and Hand operated and Power operated Sprayers are also distributed to the farmers in the sub-basin areas at 50% cost.
- **Seed Village Programme:** It is implemented in selected one or two villages in a block. “**Farmers interest groups**” are also being formed for pulses, groundnut and green manure crops besides training and providing revolving fund to the groups for the group upliftment.
- **Information Education Communication / Capacity Building activities:** Training to farmers and farm workers, exposure visits, capacity building and also other publicity propaganda activities are being carried out.

During 2011-12, an amount of ₹881.604 lakhs and ₹423.95 lakhs were sanctioned to implement regular project activities in 30 sub-basins of phase III (second year) and 5 sub-basins of phase IV and a sum of ₹1391.443 lakhs was

sanctioned to implement the additional activities 1&2 in Phase I, II, III & IV sub-basins.

Phase III & Phase IV Regular Activities- 2011-12

S. No	Activities	Physical (Ha.)		Financial (₹ in lakhs)	
		Target	Ach.	Target	Ach.
1	Crop Demonstrations	12244	12057	846.635	803.593
2	Other Demonstrations	1586	1523	99.960	91.980
3	Agri. Implements (Nos)	9474	9474	160.807	142.184
4	Seed Village Programme	47	39	25.568	19.328
5	Information, Education and Communication	-	-	169.584	137.961
6	IAMWARM Cell		-	3.000	2.460
	Grand Total	23351	23093	1305.554	1197.506

Phase I, II, III & IV Additional Activities -2011-12

S. No.	Activities	Physical (Ha.)		Financial (₹ in lakhs)	
		Target	Ach.	Target	Ach.
1	Crop focus technology demonstrations in 5 Ha. Cluster (with 50% cost)	2122	2055	273.938	265.227
2	Rice Fallow Pulses in 2 Villages / Block. (@ Cluster of 50 Ha in each Village	6000	5573	120.000	111.466
3	Other Demonstrations	9465	7019	286.650	231.242
4	Awards for Best Farmers	122	67	12.300	5.600
5	Agri. Implements & Equipments (Nos)	23528	23528	354.175	299.599
6	Seed Village Programme	328	318	178.432	170.525
7	Capacity Building Activities	15360	12480	127.200	103.350
8	IAMWARM Cell - Procurement of equipments & Hiring of I&T van, etc.,		-	38.750	32.360
	Grand Total	56925	51040	1391.445	1219.369

The Cumulative financial progress from 2007-08 to 2011-12 is as follows:

(₹in lakhs)

S. No	Sub basins	DPR Cost	Achievement
1	Phase – I (9 sub-basins)	1570.200	1553.200
2	Phase – II (16 sub-basins)	663.600	660.300
3	Phase – III (30 sub-basins)	2599.100	1689.244
4	Phase – IV (5 sub-basins)	1205.300	389.205
5	Phase – IV – 2 (Amaravathy Sub basin)	767.300	-
6	Additional Activities – 1	2037.100	917.799
7	Additional Activities – 2	706.500	212.447
8	Additional Activities – 3	350.000	-
	Total	9899.100	5422.195

The World Bank has now approved Additional Activities-3 for an amount of ₹350 lakhs and ₹767.30 Lakhs for implementation of the project activities in Phase IV-2 (Amaravathi Sub basin) during 2011-12 and 2012-13. In 2012-13, it is proposed to implement Regular Activities in 30 Sub basins of Phase III and 5 sub basins of Phase IV

and additional Activities in 61 sub basins of Phase I, II, III & IV as detailed below:

S.No.	Activities	Phase	Amount (₹ in lakhs)
1	Regular Activities	Phase III (30 sub-basins) Third year	814.206
		Phase IV (5 sub-basins) Second year	781.326
		Sub Total	1595.532
2	Additional Activities - 1	Phase I (9 Sub basin)	498.218
		Phase II (16sub basin)	175.507
		Phase III (30sub basin)	325.195
		Sub Total	998.920
3	Additional Activities - 2	Phase I (9 Sub basin)	143.600
		Phase II (16sub basin)	97.740
		Phase III (30sub basin)	88.440
		Phase IV (5sub basins)	23.170
		Sub Total	353.250
		Grand Total	2947.702

2. HORTICULTURE

1. Preface

Horticulture is the prime engine that provides relatively higher income, employment opportunity in rural areas besides providing nutritional security. The varied agro climatic zones of this State are well suited for cultivation of fruits, vegetables, flowers, spices, plantation crops, medicinal, aromatic crops and other horticultural crops. Tamil Nadu is the largest producer of flowers in the country. Though the area under horticultural crops is less than one fifth of total cropped area, its share to total agricultural growth is significantly high.

Importance on nutritional value of fruits and vegetables is gaining momentum and their consumption has increased, thereby raising the demand. Technology breakthrough in horticultural crops has improved the quality and yield considerably, besides, bringing higher income to the farmers leading to crop diversification. There has been considerable increase in area and production under horticultural crops over the years. During 2012-13, focused attention will be given for area expansion and adoption of high-tech methodologies in horticultural crops.

2. Policy Focus

- **Second Green Revolution** for doubling production.
- Promoting Horticulture as a profitable and viable sector by leveraging technology.
- Increasing the income levels of horticulture farmers and assuring them an improved quality of life.
- Strengthening the forward and backward linkages.

- Promoting Organic farming as a way of life.
- Exploiting Information Technology tools in all aspects of horticulture.
- Encouraging farm mechanization.

3. Strategies

1. Increasing productivity and production through adoption of Hi-tech horticulture practices.
2. Strengthening the production and supply of quality pedigree planting materials.
3. Timely supply of inputs - High yielding / Hybrid seeds, fertilizers, bio-fertilizers, bio-pesticides, etc.
4. Promoting High Density Planting in perennial crops.
5. Efficient and effective utilization of water and fertilizer through Precision Farming.
6. Thrust on Integrated Nutrient Management & Integrated Pest Management.
7. Canopy management and rejuvenation of old orchards.
8. Reduction of post-harvest losses through modern post-harvest technologies.
9. Providing refrigerated transportation facilities for horticulture produce to reach the local, national and international market.
10. Availability of horticultural produce in the markets for consumers through retail outlets.
11. Creating awareness on Organic farming through a multi pronged approach.

12. Ensuring higher income to farmers through efficiency improvement in the production, supply chain and market linkages of horticultural produce, using Information Technology.
13. Use of Information Technology tools in administration, information exchange, extension, marketing for speedy transfer of horticulture related information.
14. More thrust on horticulture based farming system in rainfed areas.
15. Capacity building for Department Personnel / Farmers/ Entrepreneurs.
16. Strengthening infrastructure facilities in the horticulture training institutes.
17. Promotion of horticulture as an integrated activity involving agriculture, animal husbandry, silviculture, apiculture, sericulture, fisheries in rural areas and encouraging terrace gardening in the cities.
18. Development of new gardens and eco-parks for promotion of tourism.
19. Effective utilization of assets in the State Horticulture Farms.

4. Area and Production of horticultural crops in Tamil Nadu for the year 2010-11, 2011-12 & 2012-13

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

Sl. No	Name of Crops	2010-11 (Provisional)		2011-12 (Estimate)		2012-13 (Programmed)	
		Area	Prodn.	Area	Prodn.	Area	Prodn.
1	Fruits	3.20	79.65	3.32	85.35	3.72	101.94
2	Vegetables	2.73	83.87	2.84	90.52	3.18	107.59
3	Spices & Condiments	1.66	9.39	1.73	10.87	2.10	15.11
4	Plantation Crops	2.65	11.47	2.75	11.99	3.04	13.86
5	Flowers	0.31	3.00	0.32	3.23	0.39	4.21
6	Medicinal & Aromatic Crops	0.11	0.61	0.12	0.68	0.12	0.72
	Total	10.66	187.99	11.08	202.64	12.55	243.43

5. State Plan Schemes

5.1. Integrated Horticulture Development Scheme (IHDS)

Under this scheme, quality planting materials, high yielding / hybrid vegetable seeds and flower seeds are being distributed to farmers at 50% subsidy, upto a maximum of 1 Ha / beneficiary for fruits and 0.5 Ha / beneficiary for high yielding / hybrid vegetables, and flower seeds. This scheme is being implemented in all the districts excluding Chennai.

During 2011-12, this scheme was implemented at an expenditure of ₹371.18 lakhs covering 26,583 Ha.

In 2012-13, the scheme is proposed to be implemented at an outlay of ₹1925 lakhs to cover 75,000 Ha.

5.2. Horticulture Training Centres (HTC)

Horticulture Training Centres are functioning at Kudumianmalai in Pudukottai district, Madhavaram in Tiruvallur district, Thally in Krishnagiri district and Ooty in The Nilgiris. Training will be imparted to the farmers and field level functionaries of the Department of Horticulture & Plantation Crops on latest technologies. During 2011-2012, training was given to 6400 farmers at an expenditure of ₹6.97 lakhs. During 2012-2013, it is planned to train 6400 farmers / field level functionaries at an outlay of ₹19.20 lakhs.

A special training programme is proposed to be given to farmers, extension staff and officers of eight low per capita income districts of Cuddalore, Dharmapuri, Sivagangai, Krishnagiri, Villupuram, Perambalur, Dindigul and Tiruvannamalai under the National Horticultural Mission and Micro Irrigation at an outlay of ₹110 lakhs. The infrastructure facilities at training institute, Thally is proposed to be strengthened at an outlay of ₹150 lakhs under NADP during 2012-13.

5.3. Integrated Tribal Development Programme (ITDP)

Under this scheme, high quality planting materials of mango, coffee, pepper at 75% subsidy and high yielding / hybrid vegetable seeds, etc. are being distributed to tribal farmers at 90% subsidy. Oil engines and plant protection equipments will be provided at 75% subsidy. This

programme is being implemented in Salem, Namakkal, Dharmapuri, Tiruvannamalai, Vellore, Trichy and Villupuram districts. Training cum exposure visits are organized to educate the tribal farmers on improved technologies. During 2011-12, this scheme was implemented at an expenditure of ₹40 lakhs in 907 Ha. During 2012-13, it has been proposed to implement this scheme in 1000 Ha at an outlay of ₹40 lakhs.

In addition to this, installation of drip irrigation system under the 100% subsidy scheme will be dovetailed from National Mission on Micro Irrigation.

5.4. Western Ghats Development Programme & Hill Area Development Programme (WGDP / HADP)

The objective of these schemes is to promote farmers cluster, co-operative action of acquisition of inputs, hiring of machineries, sharing of experiences and information, licensing, certification, marketing, channelizing Government service, subsidies through farmers service and entrepreneurship thus transferring the technology on the need basis. These schemes also aim to promote sustainable horticulture development on watershed through farmers' council. Farmers cluster formation i.e. Common Livelihood Group (CLG) and Farmers Apex Council will be formed on pilot basis for distribution of inputs, implements, input production, livestock as per the guidelines.

Western Ghats Development Programme is implemented in the districts of Coimbatore, Erode, Dindigul, Madurai, Virudhunagar, Tirunelveli and Kanyakumari. Training on latest horticulture technology will be given to farmers. During 2012-13, it has been proposed to implement this scheme in 1000 Ha at an outlay of ₹ 186 lakhs.

Under HADP, high yielding / hybrid vegetable seeds, oil engines, and agricultural implements/machineries like sprayer, power tiller, mini tractor, packing materials for fruits, vegetables and flowers are distributed to small and marginal farmers of The Nilgiris district at 25% - 50% subsidy. During 2011-2012, this scheme was implemented at an outlay of ₹ 206.800 lakhs. During, 2012-13, it has been proposed to implement this scheme at 50% subsidy in 4000 Ha. at an outlay of ₹ 240 lakhs.

5.5. City Vegetable Development Scheme (CVDS)

The objective of the scheme is to provide horticultural inputs to city dwellers for promoting home gardening.

This is a non subsidy scheme. Under this, planting materials, seeds, fertilizers and plant protection chemicals are distributed to residents of Chennai at full cost, with technical know-how. During 2011-12, this scheme was implemented at an expenditure of ₹3.50 lakhs. During 2012-13, the Government intends to give a major thrust to this scheme by increasing the budget under the scheme to ₹25.00 lakhs and for improving the infrastructure and services of the four Horticulture Depots at Anna Nagar, K.K. Nagar, Perambur and Thiruvanmiyur at an outlay of ₹ 75 lakhs.

5.6. National Agriculture Development Programme (NADP)

The objective of the programme is to contribute towards achieving 4% growth rate in Agriculture.

During the year 2011-12, the following components were implemented at an outlay of ₹ 4434.83 lakhs.

1. Precision Farming
2. Hi-Tech Productivity Enhancement Programme
3. Peri Metro Vegetable Cluster Development Programme
4. Rainfed Area Development Programme

In addition to the above components, 'Mechanized harvesting and processing of turmeric and tapioca', 'Providing assistance for the II year maintenance of perennial crops in Cyclone 'Thane' affected areas', 'Encouraging pandal cultivation of vegetables', 'Establishment of District Horticulture Extension cum Training Centre', 'Modernization of State Horticulture Farms', including sub-schemes / shelf of projects have been proposed for implementation during the year 2012-13 at an outlay of ₹ 10838 lakhs to cover 21410 Ha.

5.7. Precision Farming

Precision Farming is being successfully implemented from 2008 onwards. It is seen that there is a spectacular increase in productivity (to the tune of 30% to 50% increase) due to adoption of high yielding / hybrid seeds, Micro Irrigation and fertigation in vegetables, turmeric and banana. This component has received great response from farmers, and during 2011-2012, it was implemented at an expenditure of ₹ 600.18 lakhs covering 2858 Ha with 50% subsidy limited to ₹ 20,000 per Ha. During 2012-13, it has been proposed to implement this component in 6000 Ha at an outlay of ₹ 1260 lakhs.

5.8. Hi-Tech Productivity Enhancement Programme

This component is implemented with the objective of enhancing the productivity of horticulture crops by adopting Hi-Tech interventions which include high density planting, adoption of improved package of practices, cultivation of vegetables with high yielding hybrids. During 2011-2012, this component was implemented at an expenditure of ₹ 1255.14 lakhs covering 3646 Ha at 50% subsidy. During 2012-13, it is proposed to implement this component in 7745 Ha at an outlay of ₹ 1030.93 lakhs.

5.9. Rainfed Area Development Programme (RADP)

There is a huge opportunity to increase the production of horticulture crops by following recent advanced technologies in rainfed areas. Horticulture based farming system, apiculture and protected cultivation are the components proposed under this sub scheme. During 2011-2012, this sub-scheme was implemented at an expenditure of ₹ 879.05 lakhs to cover 2655 Ha at 50% subsidy. During 2012-13, it is proposed to implement this component in 2300 Ha at an outlay of ₹ 772 lakhs.

5.10. Peri Metro Vegetable Cluster Development Programme

In order to ensure continuous supply of fresh vegetables to the burgeoning urban markets, it is absolutely necessary to create forward linkages from rural to urban areas. This will also ensure assured income to farmers in the rural areas adjoining the cities. Clusters of farmers will be formed to supply their produce to the society run by farmers at the District level. Private entrepreneurs will be engaged to collect, sort, grade and pack the produce at their location and supply the same to retail outlets in the city. This scheme will be implemented as a Public Private Partnership.

Cultivation of vegetables, formation of farmer clusters, formation of farmers society, collection centers, reefer vans, retail outlets, mobile stores are the components under this sub-scheme.

This scheme has been sanctioned during 2011-2012 for implementing in Chennai city and an amount of ₹ 1700 lakhs has been earmarked. In 2012-13, it has been proposed to implement this scheme in Coimbatore city in 2162 Ha. at an outlay of ₹ 1701 lakhs.

5.11. National Agriculture Insurance Scheme (NAIS)

National Agriculture Insurance Scheme provides insurance coverage to notified horticultural crops viz banana, onion, potato, tapioca, pineapple and ginger. The objective 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.

The farmers are provided with 50% premium subsidy. During 2011-12, this scheme was implemented at an outlay of ₹ 950 lakhs to cover 24,000 acres. During 2012-13, it is proposed to implement this scheme at an outlay of ₹ 950 lakh to cover 24,000 acres.

5.12 Weather Based Crop Insurance Scheme (WBCIS)

The objective of the scheme is to mitigate the hardship caused to farmers on account 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 opt either for National Agriculture Insurance Scheme or Weather Based Crop Insurance Scheme. During 2011-12, this scheme was

implemented at an outlay of ₹ 52.50 lakhs to cover 4132 acres. During 2012-13, it is proposed to implement this scheme at an outlay of ₹52.50 lakhs to cover 4132 acres.

5.13. Part II Scheme

In part II scheme 2011-12, an amount of ₹110 lakhs was sanctioned. Under this scheme, infrastructure facilities are being created at a cost of ₹30.00 lakhs at Horticulture Training Center, Madhavaram. District Horticulture Extension and Training Centers are being established at Erode and Trichy at a cost of ₹20 lakhs each and also training infrastructures are being created at Horticulture Training Centre, Thally at a cost of ₹40 lakhs.

Under Part II scheme 2012-13, it is proposed to establish a District Horticulture Extension and Training Centre at Dharmapuri at a cost of ₹30 lakhs. Since there are no separate input storage godowns for Horticulture Department in any of the blocks, the first Input Storage Godown along with Horticulture Extension Centre is proposed to be established at Thondamuthur Block of Coimbatore District at a cost of ₹25 lakhs. It is also proposed to extend the District Horticulture Extension and Training Centres at Trichy and Erode at a cost of ₹10 lakhs each. The State Planning Commission has recommended a total sum of ₹75 lakhs for these schemes.

5.14. Scheme Performance during 2011-12 and proposals for the year 2012-13.

The financial allocation for the year 2011-12, expenditure incurred and the proposed outlay for the year 2012-13 for the State Plan Schemes are furnished below.

State Plan Schemes

(Financial : ₹.in lakhs)

Name of the Scheme	Unit	2011-12				2012-13 (proposed)	
		Physical		Financial		Phy.	Fin.
		Tar.	Achmt	Tar.	Achmt.	Tar.	Tar.
Integrated Horticulture Development Scheme	Ha.	26583	26583	371.18	371.18	75000	1925.00
Horticulture Training Centre	Nos.	6400	6400	6.97	6.97	6400	19.20
Integrated Tribal Development Programme	Ha.	907	907	40.00	40.00	1000	40.00
Western Ghat Development Programme	Ha.	-	-	-	-	1000	186.00
Hill Area Development Programme	Ha	4000	4000	206.80	206.80	4000	240.00
City Vegetable Development Programme	Ha	200	200	3.50	3.50	200	100.00
National Agriculture Development Programme	Ha.	16671	9502	4434.83	2511.86	21410	10838.00
National Agricultural Insurance Scheme	Acres	24000	24000	950.00	566.52	24000	950.00
Weather Based Crop Insurance Scheme	Acres	4132	4132	52.50	43.28	4132	52.50
Part – II Scheme				110.00	110.00		75.00
Total				6175.78	3860.11		14425.70

5.15. Special Package for 'Cyclone Thane' affected Horticulture Crops.

'Cyclone Thane' hit Tamil Nadu on 30.12.2011 and caused extensive damage to horticulture crops to an extent of 48040.90 Ha and affected the livelihood of 70366 farmers. The crop damage assessment was taken up on war footing manner and a compensation of ₹ 4,148 lakhs was disbursed to the affected horticulture farmers. Towards rehabilitating the livelihood of affected farmers, **Hon'ble Chief Minister** announced a special package for horticulture crops for ₹ 72,496 lakhs. Under the Special Package, re-cultivation of annual crops and replanting of perennial horticulture crops with maintenance for 4 years will be taken up in the affected areas by undertaking the following activities.

- Cutting and removal of fallen trees
- Procurement of machinery for cutting fallen trees
- Removal of stumps
- Ploughing
- Pitting and filling
- Re-cultivation – Annual Crops & Perennial crops
- Intercropping
- Irrigation facilities and Micro Irrigation

The Government have accorded sanction for establishment of Project Management Unit (PMU) to be stationed at Cuddalore at an outlay of ₹ 203.48 lakhs, including Block Level Management Cells in the blocks where perennial crops like cashew, jack have been severely affected. 64 posts have been created for a period of one year on deputation basis from departments like Agriculture, Horticulture, Agriculture Engineering, TNAU, Rural Development and Panchayat Raj. 62 temporary posts have

been created for one year which will be filled up on contract basis.

A sum of ₹ 2524.818 lakhs has been sanctioned from the existing National Agriculture Development Programme towards supplying minikits to Cyclone Thane affected farmers. Further, a sum of ₹ 365.17 lakhs has been sanctioned towards ploughing cost at the rate of ₹ 1000 per Ha. to raise intercropping in the perennial crops affected area. Government have also sanctioned a sum of ₹ 9129.27 lakhs for providing lump sum grant (Back ended) at the rate of ₹ 25,000 per Ha to the farmers affected by Cyclone Thane towards the expenditure for removal of stumps & roots and ploughing. Farmers will be allowed to exercise option either to undertake the activities viz. cutting and removal of fallen trees through Mahatma Gandhi Rural Employment Guarantee Scheme (MNREGES) funds and ploughing through Agricultural Engineering Department at a cost of ₹ 1,000 per Ha under Calamity Relief fund or to avail the cash assistance of ₹ 25,000/ per Ha for removal of stumps & roots and ploughing.

The PMU will function under the leadership of a Project Officer in the cadre of Additional Collector, to implement the Rehabilitation package for Agriculture and Horticulture crops, timely distribution of packages, co-ordinate among departments and report the progress of implementation to the respective Directorates and to the Government.

3. SUGAR DEPARTMENT

Sugarcane is one of the most important industrial crops in our state and also emerging as a multi product crop contributing to the production of sugar, jaggery, alcohol, electricity, paper and other allied products. The sustenance of the Sugar mills and well being of the sugarcane growers is mutually interlinked. Hence the major focus is towards enhancing sugarcane productivity and production thereby improving the living standard of the Sugarcane growers.

Around 3.50 Lakh farmers are cultivating sugarcane in Tamil Nadu which is 5% of the total cultivable area. During 2011-12 sugar seasons, the sugarcane crop was cultivated in 3.16 Lakh Hectares in the state and the total estimated sugarcane production was 342.52 L.Mt. During 2012-13, it is programmed to cultivate Sugarcane in 3.60 L.Ha. with a production target of 493.50 L.Mt. Out of the total sugarcane production, 60-70 % of the cane was drawn and crushed by the sugar mills of Tamil Nadu during 2011-12 and this crushing rate is expected to be increased during 2012-13 sugar season.

The sugar industry is one of the largest agro-based industries next to the Textiles. There are 47 Sugar Mills in Tamil Nadu comprising of 16 Sugar Mills under Co-operative Sector, 3 Sugar Mills under Public Sector and 28 Sugar Mills under Private Sector. Of these, presently 44 Sugar mills are functioning, while 3 sugar mills are not functioning viz., Madura Sugars (Public Sector) from 2002-2003 crushing season onwards and a private sugar mills viz. Arunachalam Sugar Mills, Malappampadi, Tiruvannamalai District from 2003-2004 crushing season onwards and a new sugar mills viz., Sri Ambiga Sugar limited, Unit – III , Manjini is under establishment.

The area cultivated, registered, cane crushed, Sugar produced and recovery percentage for the past five years and estimate for 2011-12 in Tamil Nadu are given below:

Crushing season (October – September)	Cane area cultivated (L. Ha.)	Cane area registered (L. Ha.)	Cane crushed (L.Mt)	Sugar Production (L.Mt)	Recovery %
2006-07	3.35	3.00	274.49	25.39	9.25
2007-08	3.91	2.76	229.68	21.41	9.32
2008-09	3.54	2.29	165.72	15.95	9.62
2009-10	3.09	2.02	142.99	12.70	8.88
2010-11	2.93	2.19	203.12	18.46	9.09
2011-12 (Estimated)	3.16	2.75	220.96	20.75	9.39

The concept of “Fair and Remunerative Price” (FRP) for sugarcane was introduced by the Government of India on all India basis by deleting the existing provisions for payment of Statutory Minimum Price, 5A Price and also by amending the Essential Commodities Act, 1955 and Sugarcane (Control) Order, 1966. Accordingly, the Government of India has fixed the Fair and Remunerative Price of ₹1450 per Metric tonne for the sugar season 2011-12 linked to 9.5% recovery with an incentive of ₹15.30 per Metric tonne for increase of every 0.1% recovery. The Government of Tamil Nadu has fixed the State Advised Price of ₹2100 per Metric tonne inclusive of transport subsidy for 2011-12 crushing season and the cane payment is being made as per the orders of the Government.

The projected demand for sugarcane has to be met by improving the productivity per unit area which is possible by introduction of new varieties and new technologies such as Sustainable Sugarcane Initiatives, Drip Fertigation, Tissue culture etc. To double the sugarcane production and

to achieve full capacity utilization, the Sustainable Sugarcane Initiative method of cane cultivation along with Drip Fertigation is being implemented in 3000 Hectares during 2011-12 by installing 1000 shadenet units in all sugar mills of Tamil Nadu and it is programmed to cover around 6000 Hectares under Sustainable Sugarcane Initiative Scheme during 2012-13.

In order to motivate the sugarcane farmers to adopt drip fertigation, the Government has increased the subsidy for drip irrigation from 65% to 100% to small and marginal farmers and 75% to other farmers. This will save around 40% of irrigation water and increase the cane yield by 35 % to 45%.

The Sugarcane Productivity is increased by improving the physical properties of the soil through bio-composting along with Integrated Nutrient Management and utilisation of organic resources as organic manure. The value added vermi compost is produced from the press mud obtained from the mills and distributed to the farmers for increasing the sugarcane productivity. The farmers were encouraged to take up production of vermi compost, bio inputs and organic manure at village level to enrich the soil as well as to increase the productivity of Sugarcane.

The existing ruling varieties cultivated are Co.86032, CoC.22, CoV.94102 etc. The Sugar Mills along with Tamil Nadu Agricultural University and other Sugarcane Research Stations have introduced promising high yielding, drought and pest resistant varieties like CoC 24, Co 99004, Co 99006 Co 94012, Co.Si.7, CoG.5 etc., to improve production and productivity of the sugarcane. The Sugarcane Cess Fund is also utilized for developing new sugarcane varieties in coordination with Tamil Nadu Agricultural University.

In order to minimize the cost of cutting Sugarcane and also to overcome the difficulty in engaging cane cutting workers , the Government of Tamil Nadu has decided to purchase Sugarcane Harvesters for Co-operative & Public Sector Sugar Mills with their own resources and the administrative approval has been obtained from the Government. A Committee has been formed and the technical specifications were prepared to purchase sugarcane harvesters which are suitable for Tamil Nadu conditions. The proposal seeking assistance from Sugar Development Fund has been sent to Government of India. After availing the assistance, the Sugarcane Harvesters will be purchased subject to the financial viability of the mills.

4. TAMIL NADU HORTICULTURE DEVELOPMENT AGENCY (TANHODA)

Tamil Nadu Horticulture Development Agency was registered as a society under the Tamil Nadu Societies Registration Act 1975, in 2004 as a “Special Purpose Vehicle” for implementing various Horticulture Schemes funded by the Government of India and shared schemes.

The following schemes are being implemented through TANHODA ;

S. No	Name of the Scheme	Financial Assistance	
		GOI Share	GOTN Share
1	National Horticulture Mission	85%	15%
2	Micro – Irrigation Scheme (SF/MF) Other farmers	50% 40%	50% 35%
3	National Bamboo Mission	100%	--
4	National Mission on Medicinal Plants	100%	--
5	Tamil Nadu – IAMWARM	----	100%
6	State Horticulture Farms	--	100%

All the above schemes except, schemes in SI.No 5 & 6 are implemented through District Mission Committees/ District Micro Irrigation Committees headed by the District Collector as Chairman and District Joint Director of Horticulture / Deputy Director of Horticulture as the Member Secretary of the Committee.

1. Schemes shared between Central and State Governments

1.1. National Horticulture Mission (NHM):

National Horticulture Mission is a flagship scheme of the Government of India, with a sharing pattern of 85:15 between Centre and State. The scheme aims at holistic development of horticulture with focus on expansion of area under high income generating horticulture crops. This scheme is implemented on a mission mode from 2005-2006.

This scheme is implemented in the 22 districts namely Ariyalur, Coimbatore, Cuddalore, Dharmapuri, Dindigul, Erode, Kanyakumari, Krishnagiri, Madurai, Perambalur, Pudukottai, Ramanathapuram, Salem, Sivagangai, Thanjavur, The Nilgiris, Theni, Tiruppur, Tirunelveli, Trichy, Vellore and Villupuram.

Components of the scheme include area expansion in high value horticulture crops, production of planting materials, rejuvenation of old orchards, canopy management, protected cultivation, organic farming, mechanization, post-harvest management, creation of marketing infrastructure and human resource development. During 2011-2012, this scheme was implemented at an expenditure of ₹6572 lakhs covering 42096 Ha. It is proposed to implement the scheme during 2012-2013 at an outlay of ₹15,000 lakhs to cover 50845 Ha.

1.2. National Mission on Micro Irrigation (NMMI)

Tamil Nadu is a water stressed state. The conventional methods of irrigation require more water that leads to wastage of water. The use of Micro Irrigation systems like drip and sprinkler irrigation is the way for

efficient use of surface as well as ground water resources. For agricultural crops, the identification of beneficiaries is done by the Agriculture department, and for Horticulture crops, by the Horticulture department. For tree crops, the identification is done by the Agriculture Engineering Department, and for sugarcane, the identification is done by Sugar Mills for the registered growers.

Under this scheme, 100% subsidy is given to small & marginal farmers and 75% subsidy to other category farmers for installation of drip/sprinkler systems for all horticulture crops and agriculture crops like sugarcane, coconut, cotton, maize, groundnut and pulses. The scheme is being implemented only through registered and empanelled Micro Irrigation firms. In 2011-12, the scheme was implemented by TANHODA at an expenditure of ₹ 8,744 lakhs covering 27,550 Ha. The scheme is proposed to be implemented in the year 2012-13 to cover 70,000 Ha. at an outlay of ₹ 41,000 Lakhs.

2. Schemes Fully Funded By Government of India

2.1 National Bamboo Mission (NBM)

Bamboo is preferred as a raw material in sectors like pulpwood, paper industries, housing, arts, craft, etc., Bamboo has more than 1500 uses and is a fast growing species among plants. Its usefulness as biomass for production of electricity is becoming prominent in recent years. To increase the area and productivity, the National Bamboo Mission scheme was envisaged.

This scheme was implemented during 2011-12 to cover 250 Ha. at an expenditure of ₹ 40 lakhs and during 2012-13, it is proposed to cover 400 Ha at an outlay of ₹ 70 lakhs.

2.2 National Mission on Medicinal Plants (NMMP)

With the objective of satisfying the ever increasing demand for herbal products, a Centrally Sponsored Scheme on National Mission on Medicinal Plants is being implemented. In 2011-12, the scheme was implemented in 3774 Ha at an expenditure of ₹ 918 lakhs. In 2012-2013, it is proposed to cover 5000 Ha. at an outlay of ₹ 1200 lakhs.

3. State Horticulture Farms (SHF)

There are 49 State Horticulture Farms in Tamil Nadu under the control of TANHODA. The objective of State Horticulture Farms is to produce quality pedigree planting materials for the major crops like mango, amla, sapota, guava, jack and other fruit crops, ornamental plants, 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 2011-12, a production target of 170.45 lakh numbers was fixed for the farms and it was entirely achieved. The target proposed for 2012-13 is 178.00 lakh numbers.

4. Parks and Gardens

TANHODA also maintains 7 parks and gardens. The gardens attract large number of visitors and have emerged as major tourist destinations in the state. They also serve as demonstration centres for ornamental gardening and floriculture.

Sl. No	Garden/park	Extent (in Ha.)	No. of visitors (2010-11)	No. of visitors (2011-2012)
1	Government Botanical Garden, Ooty	22.00	20,77,610	21,80,409
2	Government Rose garden, Ooty	14.40	6,54,751	7,51,617
3	Sim's Park, Coonoor.	12.14	5,14,509	5,49,320
4	Park at SHF, Katterly	18.96	Opened on 20/5/2011	8,126
5	Bryant Park & Chettiyar Park, Kodaikanal	8.42	5,91,397	5,92,858
6	Anna Park & Lake Park, Yercaud	10.00	1,83,653	3,70,783
7	Semmozhi Poonga, Chennai	3.17	3,89,705	4,41,963
Total		89.09	44,11,625	48,95,076

5. EXTERNALLY AIDED PROJECTS

5.1. Tamil Nadu Irrigated Agriculture Modernization and Water Bodies Restoration and Management Project – Horticulture (TN - IAMWARM PROJECT)

TN IAMWARM project is an externally aided project and the total project outlay for Horticulture department is ₹72.765 lakhs. The objective of the project is to bring crop

diversification and area expansion with high value horticultural crops, in 61 sub basins of Tamil Nadu.

In the **first Phase** in 2007-08, the project was implemented in 9 sub-basins viz., Varahanadhi, Upper Vellar, South Vellar, Pambar, Manimuthar, Kottakkaraiyar, Arjunanadhi, Palar and Aliyar.

In the **second Phase**, the project was extended to another 16 sub-basins during 2008-09 viz., Pennaiyar (upto Krishnagiri), Swethanadhi, Anaivari Odai, Chinnar, Agniar, Ambuliyar, Upper Vaigai, Varattar-Nagalar, Upper Gundar, Therkar, Senkottaiyar, Sindapalli-Uppodai, Nishabanadhi, Kalingalar, Poiney and Koundinyanadhi.

In the **third Phase**, the project was extended to 30 sub basins viz, Araniyar, Kosasthalaiyar, Ongur, Nallavur, Thuringalar, Pambar to Thirukoilur, Gadilam, Markandanadhi, Kambainallur, Pambanar-Verattar, Gomukinadhi, Theniar, Girdhamal, Kanal Odai, Lower Gundar, Vembar, Uthirakosamangai, Palar, Sevalaperiar, Deviar, Nagariar, Vallampatti, Uppathur, Kovilar, Uppodai, Salikulamaru, Korampallam, Karumeniyar, Vaipar and Hannumannadhi for implementation during 2010-11.

In the **fourth Phase**, the project was extended to 5 sub basins viz, Adayar, Cooum, Cheyyar- Kiliyar, Paralaiyar and Kayalkudiar for implementation during 2011-12.

Progress of schemes implemented by TANHODA
(Financial ₹ in lakhs)

Name of the Scheme	Unit	2011-2012				2012-2013	
		Phy		Fin		Phy	Fin
		Tar	Achmt	Tar	Achmt	Tar	Tar
National Horticulture Mission	Ha.	47100	42096	7294.14	6572.00	50845	15000.00
National Mission on Micro – Irrigation	Ha.	30000	27550	9687.50	8744.00	70000	41000.00
National Bamboo Mission	Ha.	250	250	40.00	40.00	400	70.00
National Mission on Medicinal Plants	Ha.	3774	3774	918.00	918.00	5000	1200.00
State Horticultural Farms	Lakh Nos	170.45	166.27	1380.93	1103.76	178	1450.00
Tamil Nadu IAMWARM	Ha.	8182	6562	1338.45	960.19	8258	1308.00
Total				20659.02	18337.95		60028.00

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

Tamil Nadu Horticultural Producers Co-operative Enterprises Limited was registered in the year 1994 as a primary Horticultural Co-operative Society under Tamil Nadu Co-operative Societies Act to benefit small and marginal horticultural farmers. The Commissioner of Horticulture and Plantation Crops is the Special Officer and Joint Director of Horticulture is the Managing Director. So far, 3904 horticultural farmers have been enrolled in the society with a membership fee of ₹100 per farmer.

Objectives

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

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

Perimetro Vegetable Cluster Development Initiative under NADP. It intends to open vegetable and fruit retail outlets under a unique brand name 200 retail outlets will be opened in Chennai and 100 in Coimbatore.

In order to ensure continuous supply of vegetables to the burgeoning urban markets, it is absolutely necessary to create forward linkages from rural to urban areas. This will also ensure assured income to farmers in the rural areas adjoining cities. Clusters of farmers will be formed to supply their produce to a Society run by the farmers at the District level. Private entrepreneurs will be engaged to collect, sort, grade and pack the produce at their location and supply the same to retail outlets in the city. This scheme will be implemented as a Public Private Partnership. Cultivation of vegetables, formation of farmer clusters, formation of farmers' society, collection centers, reefer vans, retail outlets, mobile stores are the components under this scheme.

During 2011-2012, this scheme has been sanctioned for implementation in Chennai city at an outlay of ₹1700 lakhs. In 2012-13, it has been proposed to implement this scheme in Coimbatore city also at an outlay of ₹ 1701 lakhs.

6. TAMIL NADU COCONUT FARMERS WELFARE BOARD

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

To disseminate the latest technologies on coconut cultivation, a bi-monthly News Letter is published for the benefit of coconut farmers. Various schemes like area expansion of coconut, distribution of coconut nutrients, establishment of mini solar drier are being implemented through the Coconut Farmers Welfare Board. The Board will be reconstituted by the Government to continue with its activities.

7. AGRICULTURAL ENGINEERING

1. Introduction

The Government is committed to achieve higher growth rate in the primary sector and taking all efforts to usher in “**Second Green Revolution**” for improving farm productivity and farmers’ income. To achieve the above vision, the Agricultural Engineering Department is continuing its efforts in conserving and developing the natural resources of land and water in the State. Programmes for promoting agricultural mechanisation to overcome the difficulties due to shortage of farm workers in the rural areas are given due importance on a mission mode. On farm development works for increasing water use efficiency in command areas and soil & water conservation works for preventing land degradation are taken up. Front end advanced technologies are being adopted for recharging the ground water.

2. Agricultural Mechanisation

The availability of farm workers in rural areas is reducing due to migration of the labourers to non-farm sectors. The shortage of farm workers causes difficulties in carrying out timely farm operations and serious set back to the efforts in increasing the agricultural production. To overcome these hurdles and to increase the farm power, a focused approach is being taken to make available required machinery / implements for agricultural operations through Agricultural Mechanisation Programmes. During the year 2011-2012, three pronged strategies were adopted to achieve the goal of Agricultural Mechanisation at a faster pace as given below;

- i. **Purchase of heavy duty high value machinery to the Agricultural Engineering Department for custom hiring at first level** – 25 High Power

Tractors, 20 Paddy Combine Harvesters, 2 Paddy Transplanters, 22 Trucks and 9 Rotary Drills have been purchased at a total cost of ₹ 1500.46 lakhs for custom hiring to farmers.

- ii. **Procurement of medium sized agricultural machinery / implements by the PACCS for custom hiring to farmers at second level** – a sum of ₹2536.50 lakhs has been released as 50% subsidy assistance to PACCS to purchase agricultural machinery/ implements for custom hiring to farmers.
- iii. **Subsidy assistance to Farmers, Farmers Group and Self Help Group to acquire agricultural machinery / implements at third level** – Subsidy assistance of ₹ 2705.85 lakhs has been released to Farmers, Farmers Group and Self Help Groups to purchase agricultural machinery and implements under the NADP scheme.

During 2012-2013, farm workers group will be formed and trained in operation and maintenance of farm machinery required for taking up agricultural operations in addition to the purchase of machinery for custom hiring and provision of subsidy assistance to farmers for purchase of agricultural machinery and implements.

2.1. Agricultural Mechanisation Programme under the Centrally Sponsored Scheme of Macro Management of Agriculture.

The scheme of popularising agricultural machinery / implements in agriculture is being implemented under the Centrally Sponsored Scheme of Macro Management of Agriculture with the financial assistance from the Centre and State Government on 90:10 basis. Under this scheme, subsidy assistance is provided to farmers to purchase

Tractors, Power Tillers and Rotavators as per the norms of the Government of India guidelines. During 2011-2012, a sum of ₹1037.98 lakhs has been given as subsidy assistance to farmers to purchase of 2517 agricultural machinery such as Tractors, Power Tillers and Rotavators. During 2012-2013, the Agricultural Mechanisation Programme is proposed to be continued with higher allocation under the Macro Management of Agriculture.

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

To promote the use of agricultural machinery and implements in agriculture, the Agricultural Mechanisation Programme is being implemented in a larger scale under the NADP. Under this scheme 50% subsidy assistance is provided to farmers for purchasing agricultural machinery / implements subject to the ceiling limit prescribed for each implements and a maximum ceiling limit of ₹4.00 lakhs to purchase high cost farm machinery. During 2011-2012, subsidy assistance of ₹2705.85 lakhs has been given to farmers for purchasing 8598 Nos. of agricultural machinery and implements. During 2012-2013, it is proposed to continue the programme with a higher allocation.

2.3. Demonstration of Newly Developed Agricultural Equipments and Machinery

To popularise the use of newly developed agricultural machinery / implements among the farming community, demonstrations are conducted at the farmer's fields. The programme is implemented with 100% assistance from Central Government. During 2012-2013, it is proposed to conduct 475 demonstrations of agricultural machinery and implements.

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

To create awareness among farmers on the use of newly developed agricultural machinery / implements, training programmes are conducted to farmers for handling and maintenance of the machinery with 100% financial assistance from central Government. The training programmes on machinery and implements used for Paddy and Sugarcane Cultivation, Plant Protection equipments and Conjunctive use of water through Sprinkler & Drip Irrigation systems are imparted to the farmers. During 2011-2012, 105 training programmes have been conducted at a cost of ₹32 lakhs. During 2012-2013, it is proposed to conduct more number of training programmes to farmers.

2.5. Training to rural youth on “Operation and Maintenance of the newly developed Agricultural Machinery / Implements”.

The Agricultural Mechanisation Programme is being implemented in a mission mode to popularise the use of the newly developed agricultural machinery / implements in Agriculture to improve farm power and increase agricultural production. In order to improve the technical know-how of the farmers in handling and maintenance of the newly developed agricultural machinery / implements, trainings are imparted to the rural youth on various aspects of operation, repair and maintenance of agricultural machinery / implements promoted under the Agricultural Mechanisation Programme. During 2011-2012, six months training programmes are conducted at six workshops of the Agricultural Engineering Department at Tiruvarur, Vellore, Coimbatore, Trichy, Madurai and Tirunelveli at a total cost of ₹30.53 lakhs. The six months training programme to rural youth is proposed to be continued during 2012-2013 also.

3. Custom Hiring of Agricultural Machinery to Farmers

- The department is having a fleet of minor irrigation machinery viz., 26 Rotary Drills, 13 Percussion Drills, 21 Mini Drills, 79 Hand Boring Sets, 7 Long Hole Equipments and 37 Rock Blasting Units for hiring out to the farmers for minor irrigation activities such as sinking of new Borewells and revitalisation of dried up open wells.
- 9 Rotary Drills have been purchased at a cost of ₹472.20 lakhs during 2011-2012.
- Services of 18 Resistivity Meters and 3 Electrical Loggers are provided to farmers for locating well sites and aquifers.
- 94 Bull Dozers, 165 Tractors and 2 Hydraulic Excavators are available in the Agricultural Engineering Department for hiring out to farmers at nominal hire charges for taking up works such as land levelling, land shaping and ploughing.
- 31 Paddy Combine Harvesters are available in the department for hiring out to farmers for harvesting of Paddy.
- 25 High Power Tractors, 20 Paddy Combine Harvesters, 2 Paddy Transplanters along with 22 Trucks have been purchased at a cost of ₹728.26 lakhs during this year 2011-2012 for hiring to farmers.
- All the above machinery are also used for relief work at the time of flood and natural calamities.
- The programme of custom hiring of agricultural machinery to farmers will be continued during the year 2012-2013.
- The details of machinery available for custom hiring in each district and the hire charges are furnished in the Table.

3.1 Online booking of Agricultural Machinery under Custom Hiring.

In order to simplify the procedure for allotting agricultural machinery to farmers, a new facility has been launched for online booking of agricultural machinery under custom hiring. This system would help the farmers to know the availability of agricultural machinery and booking from their mobile phone. This will save time in allotting the machinery to the farmers and will pave way for efficient, quick and transparent system for custom hiring.

3.2. Encouragement of formation of farm workers group to ease the farm work.

The dearth of farm workers in the rural areas causes a serious set back to the efforts in increasing the agricultural production in the State. To overcome the hurdles due to the shortage of farm workers, it is proposed to form farm workers group and train them in operation and maintenance of farm machinery for taking up agricultural operations for paddy, pulses etc. on need base. These groups of farm workers could be engaged in various farm operations by the farmers duly paying nominal charges.

4. Water Management

In Tamil Nadu, 80% of the water potential is utilised for irrigation. But the Water Use Efficiency of the conventional irrigation methods is abysmally low at about 35 – 50% only. As the industrial and domestic need of water is increasing day by day, the water availability for irrigation gets reduced. Hence judicious management of irrigation water has become imperative to improve Water Use Efficiency significantly.

4.1. Command Area Development and Water Management Programme of Accelerated Irrigation Benefit Programme.

The Centrally Sponsored Scheme of Command Area Development and Water Management Programme of Accelerated Irrigation Benefit Programme is implemented with the financial assistance from the Central and State Government on 50:50 sharing basis. Under this scheme, On Farm Development works are taken up with farmer's participation to improve Water Use Efficiency in canal irrigated areas. On-farm development works such as construction of field channels, rotational water supply and construction of field drains are taken up in the command areas. One time functional grant at the rate of ₹1000/- (State share of ₹450/-, Central share of ₹450/- and Farmers share of ₹100/-) per hectare is given to farmers council for the maintenance of assets created under the programme. During 2011-2012, On Farm Development works have been completed in an area of 26413 hectares at an expenditure of ₹ 6884.90 lakhs in six commands viz., Wellington Reservoir Project (Cuddalore district), Thirukoilur Anicut Project (Villupuram district), Kodiveri Anaicut Project (Erode district), Gundar-Chittar -Karuppanadhi Project (Tirunelveli district), Vaigai Project (Madurai, Sivagangai, and Ramanathapuram districts) and Kodaganar Reservoir Project (Dindigul and Karur districts). During the year 2012-2013, it is proposed to continue the programme in eight commands viz. Vaigai Project (Madurai, Sivagangai, Ramanathapuram districts), Kodaganar Reservoir Project (Dindigul and Karur districts), Kalingarayan Anaicut Project (Erode district), Varadhamanathi Reservoir Project (Dindigul District), Manimuktha Nathi System Project (Villupuram and Cuddalore districts), Cheyyar Anaicut System (Thiruvannamalai district), Ellis Anaicut Project (Villupuram district) and Pelandurai Reservoir Project (Cuddalore district).

4.2. World Bank Aided TN IAMWARM Project

To increase irrigated agriculture productivity and Farm Power in Tamil Nadu, the scheme of Irrigated Agriculture Modernisation and Water bodies Restoration and Management (TN IAMWARM) Project is being implemented with assistance from World Bank. The project is spread over the period of six years from 2007-2008 to 2012-2013 and implemented by the Public Works Department, Agriculture, Agricultural Engineering and various other departments. The project outlay earmarked for the components of Agricultural Engineering Department in 51 sub-basins under this project is ₹135.79 crores.

The scope for improving Water Use Efficiency lies mainly in expanding the area under Micro Irrigation. Hence, to conserve and use water more efficiently, popularisation of Micro Irrigation Systems of Drip and Sprinkler Irrigation among the farmers is being taken up on a massive scale under the project. As Micro Irrigation Scheme is one of the most important interventions required to enhance farm productivity, 100% subsidy assistance is given to small and marginal farmers and 75% subsidy assistance to other farmers for putting up drip and sprinkler irrigation systems under Micro Irrigation Scheme. During 2011-2012, an area of 7408 hectares has been covered with drip and sprinkler irrigation system under the IAMWARM project with a subsidy assistance of ₹1917.19 lakhs. It is proposed to continue the Micro Irrigation Scheme to cover an area of 6100 hectares during 2012-2013. Besides, other components like farm ponds, water harvesting structures, improved water conveyance through pipes for command areas, publicity, IEC activities, capacity building, etc. are also taken up under this IAMWARM project. During 2011-2012, various components have been implemented at

a cost of ₹3291.06 lakhs. This project is to be continued during 2012-2013 also.

5. Ground Water Recharge:

Water is the critical input for all growing sectors including agriculture and the area under well irrigation is constantly increasing over years which had resulted in over exploitation of ground water. In view of this, the ground water table is lowered below the economic pumping level besides sea water intrusion into the inland aquifer in the coastal region. Therefore, it is absolutely necessary to take up Rain Water Harvesting programmes in a massive manner for recharging the ground water aquifers to the extent possible.

5.1. Rain Water Harvesting and Run off Management Programme

To improve the moisture regime of the watershed for increased land use, Rain Water Harvesting and Runoff Management structures such as check dams, percolation ponds, farm ponds, new village tanks, ooranies and recharge shafts are constructed in all districts except Chennai and the Nilgiris. Under this programme, the beneficiaries are required to contribute 10% of the cost of works executed in community lands in cash (it is 5% in case of SC/ST), 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% assistance and the remaining 10% is collected as beneficiary share (it is 5% in case of SC/ST) in the form of cash / labour / material. During 2011-2012, 578 Rain Water Harvesting structures have been constructed at a cost of ₹ 499.59 lakhs. During 2012-2013, it is proposed to continue the programme at an outlay of ₹500 lakhs.

5.2. Scheme for Artificial Recharge of Ground Water

To augment the ground water aquifer for improving the ground water table, artificial ground water recharge structures such as check dams, village tanks, ooranies, percolation ponds with recharge shaft are constructed to harvest rain water. The programme is taken up with 100% assistance from the Government. During 2011-2012, a sum of ₹2500 lakhs has been sanctioned for the construction of 559 Artificial Recharge Structures. During 2012-2013, it is proposed to implement the programme with a higher allocation.

5.3. Construction of Farm Ponds under the Integrated Development of Pulses Villages in Rainfed Areas

The harvesting, conservation and management of the rain water is very important in dry land to reduce the impact of the moisture stress and bring about sustainability in pulses production. During 2011-2012, 506 new farm ponds have been constructed under the National Agricultural Development Programme at a cost of ₹365.14 lakhs for giving supplemental irrigation to pulse crops so as to enhance the production and productivity in five districts namely Krishnagiri, Dharmapuri, Vellore, Tiruvannamalai and Thoothukudi. During 2012-2013, the programme is proposed to be taken up in the eight districts viz. Krishnagiri, Dharmapuri, Vellore, Tiruvannamalai, Thoothukudi, Tiruppur, Dindigul and Salem.

6. Soil & Water Conservation.

In Tamil Nadu, the land available for agriculture is subjected to soil erosion of varying degrees which results in degradation of cultivable land. The state has harnessed almost the entire available irrigation potential for agriculture. The land and water resources of the state are to be conserved and developed intensively to protect and improve

the soil health. Hence, Soil and Water Conservation programmes are taken up in a larger scale to prevent soil erosion, to prevent land degradation and to improve soil moisture regime for sustainable increase in agricultural production.

6.1. Soil & Water Conservation in River Valley Project Catchments

The Centrally Sponsored Scheme of River Valley Project is implemented under the Macro Management of Agriculture with the financial assistance from the Centre and State Government on 90: 10 basis. Under this programme, Soil and Water Conservation measures are taken up in the inter-state river valley catchments of Tamil Nadu with the objectives viz., prevention of soil loss to reduce siltation of multipurpose reservoirs, prevention of land degradation, improvement of land capability, improvement of soil moisture regime and promotion of land use to match land capability. Soil and water conservation measures such as silt detention structures, contour bunding, farm ponds, water harvesting structures, drainage line treatments, horticultural plantations, agro forestry are taken up in the catchment areas approved by the Soil and Land Use Survey of India (SLUSI) and approved by Government of India. The Soil and Water Conservation measures are taken up with 100% assistance and however, work to individual farmer such as land levelling, farm ponds etc., are executed with 25% farmer's contribution. During 2011-2012, soil and water conservation measures have been completed in South Pennaiyar and Mettur river valley catchments in Dharmapuri and Krishnagiri Districts with a total expenditure of ₹1235.78 lakhs. During 2012-2013, it is programmed to continue the programme in Dharmapuri, Krishnagiri and Erode districts.

6.2. Soil & Water Conservation in Tribal Areas under Integrated Tribal Development Programme

Development of tribal agricultural lands by adopting suitable soil and water conservation measures is the objective of this programme. The programme is implemented in the tribal areas of Jawadhu hills (Vellore and Tiruvannamalai districts), Kalrayan hills (Salem and Villupuram districts), Shervaroy hills and Arunuthu hills (Salem District), Sitheri hills (Dharmapuri district), Kolli hills (Namakkal district) and Pachamalai (Salem and Tiruchirappalli districts). Soil and water conservation measures such as land shaping, pipe laying, construction of contour rubble bunds, contour stone walls and check dams are taken up by the department in the lands of the tribal farmers with 100% assistance from the Government. During 2011-2012, soil and water conservation programmes have been taken up in 1406 hectares at a cost of ₹344.73 lakhs. During 2012-2013, it is proposed to continue this programme at an outlay of ₹403.85 lakhs.

6.3 Soil & Water Conservation under Hill Area Development Programme

With the aim of restoring and maintaining the ecology of the Nilgiris, Hill Area Development Programme is being implemented in the Nilgiris District. Under this scheme, Soil and water conservation measures such as stream training works, bench terracing, drainage line treatment works, collection wells, water harvesting structures, terrace support works, silt detention structures and landslide preventive measures are being taken up by the Agricultural Engineering Department in the Nilgiris District. The beneficiary contribution is 10% of the cost of works if taken up in their patta lands and it is 5% in case of SC/ST beneficiaries. For community works, 5% of the cost of works is collected as beneficiary contribution. The landslide treatment measures are executed with 100%

assistance. During 2011-2012, Soil and Water Conservation measures under Hill Area Development Programme have been completed at a cost of ₹508.85 lakhs. During 2012-2013, it is proposed to continue soil & water conservation works and landslide preventive measures in the Nilgiris.

6.4. Soil & Water Conservation under Western Ghats Development Programme

Soil & Water Conservation Measures under Western Ghats Development Programme are being implemented to ensure eco-restoration, eco-development and eco-protection in Western Ghats areas of Coimbatore, Tiruppur, Madurai, Dindigul, Theni, Virudhunagar, Tirunelveli and Kanyakumari districts. Soil and water conservation measures such as contour rubble bunds, gabion structures, check dams, drainage line treatment works, water harvesting structures, farm ponds, percolation ponds, village ponds, land shaping are taken up under this programme. The beneficiary contribution is 10% of the cost of works if taken up in their patta lands and it is 5% in case of SC/ST beneficiaries. For community works, 5% of the cost of works is collected as beneficiary contribution. During 2011-2012, Soil & Water Conservation programmes have been completed at an expenditure of ₹598.52 lakhs in Coimbatore, Tiruppur, Virudhunagar, Tirunelveli and Kanyakumari districts. During 2012-2013, it is proposed to continue the programme for Soil and Water Conservation works at an outlay of ₹703.19 lakhs.

7. 'Thane' Cyclone Rehabilitation works:

Six hundred power operated chain saws have been purchased at a cost of ₹300 lakhs under State Scheme and distributed to Horticulture and Agriculture Departments for cutting and removal of fallen trees in the Thane Cyclone affected areas of Cuddalore & Villupuram Districts.

8. TAMIL NADU WATERSHED DEVELOPMENT AGENCY (TAWDEVA)

National economy, sustainable food security and agro based industries are dependent on agriculture. Agriculture growth is mainly dependent on tapping the water resources. In the recent days, the agricultural lands have slowly been converted for non-agricultural purposes or turned into wastelands due to scarcity of water resources. The twin objectives of water conservation and prevention of soil erosion which are fundamental to agriculture sector are realized through various programmes of Tamil Nadu Watershed Development Agency (TAWDEVA).

Tamil Nadu Watershed Development Agency (TAWDEVA) established in 2002, is implementing various watershed development programmes as follows:

- Drought Prone Areas Programme (DPAP)
- Integrated Wasteland Development Programme (IWDP)
- National Watershed Development Project for Rainfed Areas (NWDPR)
- Watershed Development Fund (WDF)
- Integrated Watershed Management Programme (IWMP)

TAWDEVA is the Nodal Agency for various State / Central schemes such as

- National Agriculture Development Programme (NADP)
- National Food Security Mission (NFSM)
- Agriculture Technology Management Agency (ATMA)

- Agriculture Resource Information Systems and Networking (AGRISNET)
- National Project on Management of Soil Health & Fertility

In addition, Western Ghats Development Programme (WGDP) is being implemented from 2010-2011 in 3 districts viz., Theni, Dindigul and Madurai on Watershed basis.

Though all the above Watershed Development programmes share the common objectives of soil and water conservation, afforestation and enhancement of agricultural productivity, there is a subtle difference between these programmes. Drought Prone Areas Programme and Integrated Wasteland Development Programme are early programmes (started in the year 1972 and 1993 respectively) funded by Ministry of Rural Development, Government of India. National Watershed Development Project for Rainfed Areas (NWDPA) is funded by Ministry of Agriculture and Co-operation. Watershed Development Fund is assisted by, NABARD 50% as grant and balance 50% as Loan.

1. Drought Prone Areas Programme (DPAP)

Major part of TamilNadu 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, Drought Prone Areas Programme is being implemented in some districts of TamilNadu from 1972-73 and presently in 80 notified blocks of 17 districts identified by Government of India as drought prone areas. Efforts are on to mitigate the adverse effects of drought conditions in these areas.

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 ₹ 33,670 lakhs for treating a total area of 6.141 lakh Ha. The Government of India and State Government have released ₹ 30,658 lakhs of which ₹ 29,211 lakhs have been spent by the District Rural Development Agency and District Watershed Development Agency of 17 districts and a total area of 5.385 lakh Ha have been treated. After 2006-07, there was no fresh projects sanctioned by Government of India.

During 2011-12, Government of India have released ₹ 806 lakhs and State Government have released its share of ₹ 248 lakhs under DPAP and the programme is being implemented. In 2011-12, ₹ 1525.90 lakhs has been spent for treating an area of 0.254 lakh Ha. During 2012-13, the balance area of 0.756 lakh Ha. will be treated. The Government of India have decided to complete the funding of projects before December 2012. List of blocks wherein this programme is under implementation is given in Table.

2. Integrated Wasteland Development Programme (IWDP)

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

Under Integrated Wasteland Development Programme, watersheds are sanctioned by Government of India in projects. From 1999-2000 to 2006-07, Government of India have sanctioned 910 watersheds in 80 projects at a total cost of ₹ 26,220 lakhs for treating a total area of 4.576 lakh Ha. The Government of India and State Government have released ₹23,199 lakhs, of which ₹22,037 lakhs have been spent by District Rural Development Agency and District Watershed Development Agency in 24 districts and a total area of 3.781 lakh Ha have been treated. After 2006-07, there was no fresh projects sanctioned by Government of India.

During 2011-12, Government of India have released ₹ 455 lakhs and the State Government have released its share of ₹ 29 lakhs under IWDP and the programme is being implemented. In 2011-12, ₹ 981 lakhs has been spent for treating an area of 0.163 lakh Ha. During 2012-13, the balance area of 0.795 lakh Ha. will be treated. Government of India have decided to complete the funding of projects before December 2012. The list of blocks is given in Table.

3. National Watershed Development Project for Rainfed Areas (NWDPR):

National Watershed Development Project for Rainfed Areas (NWDPR) is being implemented in Tamil Nadu from VIII Five Year Plan (1990 – 91) onwards. The expenditure is shared between Centre and State on 90:10 basis.

Under this programme, it was proposed to treat an area of 1.156 lakh Ha covering 200 watersheds in 18 districts at an estimated cost of ₹ 6,936 lakhs over the period of 5 years. An amount of ₹ 2,857 lakhs was released from 2007-08 to 2010-11 to develop an area of 0.476 lakh Ha. In 2011-12, ₹ 231 lakhs has been released

and 0.038 lakh Ha is being treated. During 2012-13, 0.166 lakh Ha. is proposed to be treated at a cost of ₹ 999 lakhs. List of blocks wherein this programme is under implementation is given in Table.

The action plan for the ongoing Drought Prone Areas Programme and Integrated Wasteland Development Programme and National Watershed Development Project for Rainfed Areas have been prepared already and the programmes are at completion stage. The Integrated Watershed Management Programme (IWMP) by Integrating DPAP, IWDP & NWDPR schemes, is being implemented from 2009-2010.

4. Integrated Watershed Management Programme (IWMP)

The Integrated Watershed Management Programme is being implemented in 1632 watersheds of 24 districts from 2009-10 onwards for a project period of 7 years. The share of the Central and State funding pattern is 90:10. Government of India have sanctioned for the year 2009-10, 2010-11 and 2011-12 to treat an area of 8.421 lakh Ha with a project cost of ₹ 1,01,057 lakhs over a project period of 7 years. So far, ₹ 10,237 lakhs have been released by the Centre and State and an expenditure of ₹ 4,369 lakhs has been incurred towards preliminary activities and an area of 0.353 lakh Ha has been treated.

Objectives:

- ❖ Balanced use of natural resources and livelihood by watershed approach and efficient watershed management by mobilizing social capital.
- ❖ Restoring ecological balance by harnessing, conserving and developing national resources.
- ❖ Resource development usage will be planned to promote farming and allied activities, to promote local livelihood, to ensure resource conservation and regeneration.
- ❖ Creating sustainable water resources and to have sustainable source of income for the rural community by conserving water in watershed areas by following multi tier approach.
- ❖ Utilizing the Information Technology and Remote Sensing inputs in planning, monitoring and evaluation of the programmes.
- ❖ Promoting overall development in rural areas.

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

For the implementation of 50 projects of IWMP 2009-10, over a period of 4 -7 years, Government of India and State share 20% amount of ₹ 5,617 lakhs and ₹ 624 lakhs respectively has been released so far under this project. The preparatory phase activities like base line survey, Participatory Rural Appraisal, Entry Point Activities and Detailed Project Report preparation were completed and the project development works are under progress.

Government of India have sanctioned 62 projects in 2010-11 and 56 projects in 2011-12, and 6% of Government of India and State share amount of ₹ 3,996 lakhs were released to carry out preliminary activities. List of blocks

wherein this programme is under implementation is given in Table.

Details of various watershed programmes being implemented by TAWDEVA

Sl. No	Details	DPAP	IWDP	NWDPRA	WDF	IWMP
1	Share between Centre and State	75:25	11:1	90:10	50 % State 50% NABARD	90:10
2	No. of districts covered	17	24	18	24	24
3	No. of blocks covered	80	96	45	78	128
4	Sanctioned projects	7	80	200	155	168
5	No. of watersheds	1222	910	200	155	1632
6	Area to be treated in lakh Ha.	6.141	4.576	1.156	1.729	8.421
7	Area actually treated in lakh Ha.	5.385	3.781	0.476	0.261	0.353
8	Project duration	5 years	5 years	5 years	6 years	4 -7 years
9	Per unit cost ₹ / Ha	6000	6000	6000	12000	12000
10	Contribution by beneficiary General	10%	10%	10%	16% Labour Contribution	10%
	SC/ST & Common Land	5%	5%	5%		5%

Guidelines for implementation of Schemes

The above programmes are implemented with participatory mode throughout the project period (5 - 7 years). The Action plan is being prepared by the Village Panchayat / Watershed Committee approved by the District Collector and implemented as per the Guidelines of Government of India and the directions of the State Government.

Programme Implementation:

The Watershed Committee of that watershed should select the required Development works and after getting the approval of the Grama Sabha and Administrative sanction from the District Collector / Chairman, DWDA implements the works through the User Groups of the village.

The watershed committee consists of 10 members in which 5 numbers are nominated each from User Group, Self Help Group, SC / ST, Landless women, one Watershed Development Team Member. The Grama Shaba can select or elect this Committee Chairman. The Secretary will be nominated by the committee. This committee has to be registered as per Tamil Nadu Registration Act 1975.

The following activities are taken up under the Integrated Watershed Management Programme, Drought Prone Areas Programme, Integrated Wasteland Development Programme and National Watershed Development Project for Rainfed Areas Programme:-

Entry Point Activities

For getting the confidence of the villagers about the programme and participation in the implementation of the programme, the Entry Point Activities such as Augmentation of drinking water, maintaining natural resources, ground

water recharge, drying yard and thrashing floor construction, small and minor bridges construction will be taken up.

Institutional and Capacity Building

5% of total project cost is allotted for the Institutional and capacity building and training for various levels of stake holders like State / District level officers, Project Implementing Agency, Watershed Development Team Members, Watershed Committee Members, Self Help Group Members, User Group Members, Watershed Secretaries and Watershed Farmers.

Development Activities:

The following development activities are carried out in private land.

a. Land Development

Activities such as land leveling, contour bunding, silt application, stone bunding, retaining wall, summer ploughing, vegetative bunding and continuous trenching will be taken up.

b. Water Resources Development:

Activities such as farm pond, desilting of tanks and percolation ponds will be done.

c. Plantation Activities:

Under this category, agro forestry, horticulture plantation, fodder development, crop demonstration and homestead garden will be taken up.

d. Common Property Development:

The development activities carried out in common land are check dam, cattle pond, supply channels, desilting of ooranis, desilting of tanks and ponds, community nursery and agro forestry.

Farm Production System and Micro Enterprises

For this component, 10% funds has been allocated and the grant will be provided for the activity to the individual or group to the maximum of ₹ 24,000/- for undertaking activities such as value addition in agriculture and horticulture produce, seed production and processing, vermi compost, mushroom cultivation, dairy farming and poultry, brick making, terracotta and pottery making, custom hiring of farm implements, palm crafts, agarbathi making, mat weaving and event management.

Self Help Group and Livelihood interventions for Landless Farmers

Landless farmers, Self Help Group and User Group are formed in the watershed area. Revolving funds are given to the Self Help Groups for taking up the activities like planting, watering, watch & ward of plantations and other assets, community nurseries, fodder development, fodder banking, storage godown, seed processing, groundnut shelling unit, custom hiring of harvester, draught animals, dairy farming management, live stock and backyard poultry and Emu & Japan Quails or other activities carried out by the Groups in the watershed areas. The revolving fund has to be repaid without interest for making payment of revolving fund to other Groups in rotation.

5. Watershed Development Fund (WDF) assisted by NABARD:

Watershed Development Fund in Tamil Nadu has been created to treat 100 watershed projects at a cost of ₹ 6,000 lakhs with the assistance of National Bank for Agriculture and Rural Development (NABARD). The scheme is in operation since 2004-05.

Objectives:

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.
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) | 4 years |
| Total period | 6 years |

Area of Implementation:

At present, the programme is being implemented in 24 Districts viz Coimbatore, Cuddalore, Dharmapuri, Dindigul, Kancheepuram, Karur, Krishnagiri, Madurai, Namakkal, Perambalur, Ariyalur, Pudukottai, Ramanathapuram, Salem, Sivaganga, Theni, Thoothukudi, Tirunelveli, Tiruvallur, Tiruvannamalai, Tiruchy, Vellore, Villupuram and Virudhunagar. List of blocks wherein this programme is under implementation is given in Table.

Apart from the regular watersheds that are being approved by the State Steering Committee, there are 10 PPID projects (Pilot Project for Integrated Development of Backward Blocks) in 5 Districts namely Ramanathapuram, Dindigul, Thoothukudi, Tiruchy and Nagapattinam which is fully funded by NABARD.

Allotment of fund for different component which would be effective for new full implementation projects from 2009-10.

Unit cost per Ha.		₹ 12,000.00
Physical treatment	70%	₹ 8,400.00
Administrative overheads	10%	₹ 1,200.00
Livelihood support for landless farmer & women	7.5%	₹ 900.00
Community Organisation & Training programme	12.5%	₹ 1,500.00

Project Implementation:

In the first 2 years period of the project, capacity building is done during the first 18 months and feasibility study is done in the next 6 months with the assistance from NABARD.

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

Presently under NABARD grant assistance, 10 projects and loan assistance for 145 projects have been taken up, of which 79 projects are in full implementation funded through TAWDEVA. Upto 2010-11, a total area of 0.200 lakh ha. has been treated at a cost of ₹ 1,265 lakhs. During 2011-12 an area of 0.061 lakh ha. has been treated at a cost of ₹ 368 lakhs. For the forth coming years in 2012-13 and 2013-14, an area of 0.076 lakh ha. would be treated at a cost of ₹ 441 lakhs.

6. National Agriculture Development Programme (NADP)

The National Agriculture Development Programme has been launched to achieve 4% annual growth rate in agricultural sector. The scheme is implemented in the State as Additional Central Assistance from Government of India, since 2007.

TamilNadu Watershed Development Agency is the Nodal Agency for National Agriculture Development Programme.

Objectives:

- ❖ To promote participation of farmers in cluster mode in agriculture.
- ❖ To provide flexibility in the process of planning.
- ❖ To ensure that the local needs / crops / priorities are reflected in the agricultural plan.
- ❖ Reducing yield gap in key crops through focused interventions.
- ❖ Maximize returns to the farmers.
- ❖ Bringing quantifiable changes in the production and productivity of agriculture and allied sectors.

Under this programme, schemes of Agriculture, Horticulture, Agricultural Engineering, Tamil Nadu Agricultural University, Seed Certification, Agricultural Marketing, Animal Husbandry, Dairy Development & Milk Production, Fisheries, Tamil Nadu Veterinary & Animal Sciences University, Tamil Nadu Civil Supplies Corporation, Department of Co-operatives and Public Works Department (Irrigation), are being implemented.

The State Level Sanctioning Committee (SLSC) has been constituted to sanction, monitor and review the implementation of NADP in the State. The State Level Sanctioning Committee (SLSC) is headed by the Chief Secretary to Government as Chairman, Agricultural Production Commissioner and Secretary to Government as Vice Chairman & Member Secretary. Various department Secretaries to Government, Commissioner's of Agriculture & Horticulture, Director's of Animal Husbandry & Fisheries, Vice Chancellor's of Tamil Nadu Agricultural University & Tamil Nadu Veterinary & Animal Sciences University, Member Secretary, State Planning Commission are the members of State Level Sanctioning Committee (SLSC) with Government of India representatives from Department of

Agriculture & Co-operation, Department of Animal Husbandry, Dairying & Fisheries.

Every year, project proposals received from agriculture and allied departments based on Government of India allocation are placed before State Level Sanctioning Committee (SLSC), for discussion and approval. State Government issues Government order for the SLSC approved projects and the funds are released to the implementing departments accordingly.

Year wise Government of India release and Expenditure details

(₹ in lakhs)

Sl. No.	Year	GOI Release	Expenditure
1	2007-08	15360	18312*
2	2008-09	14038	14475*
3	2009-10	12790	12790
4	2010-11	25003	17315
5	2011-12	33306	14190
	Total	100497	77082

* The excess expenditure over and above GOI release against the fund sanctioned in State Level Sanctioning Committee (SLSC) is met out from the State fund.

7. Revised Comprehensive Wasteland Development Programme (RCWP) Distribution of Government Wastelands to Landless poor Agricultural Labour Families.

So far 2,12,965 acres of Government wastelands have been distributed to 1,78,994 farmers and a sum of ₹ 2,717 lakhs has been incurred as expenditure towards reclamation of wasteland, development of cluster and creation of farm pond covering an extent of 53,818 acres which needed reclamation under this scheme.

The scheme is implemented from the year 2006-07 in all districts except Chennai and Nilgiris. As and when the Revenue Department assigns the lands to the landless poor, reclamation work for those lands will be taken up under this programme.

Cluster Development:

Objectives:

- I. Wherever land with contiguous blocks of 10 acres and above exist with sufficient ground water, efforts are taken to develop them.
- II. Wherever the private patta wastelands along with punjai lands are available in a cluster of 50 acres and above with sufficient ground water, such lands are taken up for cluster development. In case, the ground water is not available, depending upon the preference bio-mass tree species and fodder crops are planted and given to the farmers.

Project Implementation

a. Development of land parcels of 10 acres and above:

Under the development of land parcels of 10 acres and above 130 clusters have been completed and 5 clusters are in progress to the total extent of 2,526.16 acres with an expenditure of ₹ 547 lakhs for developing horticulture crops and bio-mass. The 5 cluster works would be completed during 2012-13.

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

In this cluster development, 21 clusters have been completed and 18 clusters are under progress to the extent of 2,188.25 acres with an expenditure of ₹ 244 lakhs for developing horticulture crops and bio-mass. The 18 cluster works would be completed during 2012-13.

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

From 2009-10 onwards 7 clusters are in progress to the extent of 410.56 acres with an expenditure of ₹ 39 lakhs for developing agriculture crops. All the 7 cluster works would be completed during 2012-13.

New Initiative

Based on the soil and water conservation structures created through various watershed pogrammes, it has been proposed to develop crop specific clusters on need basis in the watershed areas and integrating all schemes implemented by Agriculture and allied departments to uplift the village level economy and encourage sustainable

livelihood. This will be achieved through a new scheme to be commenced from this year.

XII Five Year Plan objective

The total geographical area of Tamil Nadu State has been delineated into 18,568 micro watersheds covering an area of 130.27 lakh ha. The treatable micro watersheds in the state is 11,116 Nos. covering an area of 60.85 lakh ha. Out of the treatable micro watersheds, so far 7216 Nos. of watersheds were covered in an area of 38.73 lakh ha under various Ministries of Government of India with the sharing of State Government. It is proposed to include remaining watersheds to be treated in the XII Five Year Plan period.

Geo Informatics System

At TAWDEVA, as per the common guidelines, a State Level Data Centre (SLDC) with core GIS facilities with spatial and non-spatial data have been established and augmented with satellite imagery data and Global Positioning System. This is an important step towards efficient management and scientific planning of watersheds. The key areas of GIS functionality at SLDC includes:

- ❖ Polygon marking of watershed boundaries: This exercise makes it possible to avoid overlapping of watersheds.
- ❖ Monitoring of project activities: The execution of developmental works in the watersheds are monitored consistently to evaluate through satellite Remote Sensing Images and Global Positioning System.
- ❖ Web based information sharing for watershed planning: Various important thematic maps vital for watershed planning and archived systematically at SLDC. These will be made available through Internet for the benefit of District Watershed Development Agencies, other line departments and common public.

9. AGRICULTURAL EDUCATION, RESEARCH AND EXTENSION

Food and nutrition are the two important aspects which warrant importance in the present day context. Amidst the challenges of shrinking resources and escalating cost of inputs, the productivity of food grains has to be doubled and the farmers' income tripled. Tamil Nadu Agricultural University is spearheading its triple major activities of Education, Research and Extension converged to work in synergy to bring forth **Second Green Revolution** in agriculture.

Nevertheless, a growth rate of 4% in Agriculture is essential to raise the GDP by 9% by the turn of the XII Five Year Plan period. All the research strategies are planned to achieve this target without any shortfall. Research on the development of new varieties and technologies are programmed to meet the present needs of the farmers.

All the state of the art technologies are used to propagate scientific technologies to farming community viz., village meetings, newspapers, radio, television, mass contact programmes, exhibitions and melas.

The latest communication facilities like internet and mobile phones are used for disseminating the knowledge to farmers through web portals and Short Message Services. Knowledge input on day to day market intelligence is updated for the benefit of the farming community. Location specific technology input imparted through trainings and on farm demonstrations by Krishi Vigyan Kendras enable knowledge penetration to reach the unreached.

1. Agricultural Education

For women empowerment, Hon'ble Chief Minister inaugurated the Horticultural College and Research Institute for women on 25.7.2011 at Navalur Kuttappattu, Srirangam taluk, Tiruchirappalli district exclusively for women for the first time in the country. During 2011-12 academic year, 39 students took admission and 37 are continuing their studies.

Tamil Nadu Agricultural University is currently offering 13 Under Graduate programmes, 30 Master and 27 Doctoral level programmes. In the year 2011-12, the number of students enrolled in Under Graduate programmes were 882 in Tamil Nadu Agricultural University colleges. In 7 Bachelor of Technology courses, 292 students got admitted under self supporting programme.

In this academic year (2011–12), 395 students are undergoing Postgraduate studies and 198 in Doctoral programme.

At the post graduate level, i) M. Tech Food Processing and Marketing at TNAU and Master of Professional Studies in Food Science and Technology by Cornell University, USA and ii) M. Tech Biotechnology and Business Management at TNAU and Master of Professional Studies in Plant Breeding by Cornell University, USA are being offered for the benefit of the students. So far, 24 students have completed the dual degree programme successfully.

PG Diploma in Capital and Commodity Markets and Organic Farming, M.Tech in Nanotechnology and M.Tech in Environmental Engineering and Ph.D in Agribusiness Management were also started during 2011-12. In the academic year 2011-12, a PG Diploma programme on Plant Health Management in collaboration with National Institute

of Plant Health Management, Hyderabad has been initiated. Education has become so popular that many foreign students from Iran, Egypt, Sudan, Nepal, and Ethiopia choose to undergo studies at this institute.

Memoranda of Understanding (MoU) have been signed with 23 Overseas Universities and 50 National Institutions to help Masters and Ph.D students to do extra mural research and to facilitate credit transfer.

Directorate of Students' Welfare (DSW) is the hub of the providing career counseling and job placement and has made stupendous achievement by placing over 500 graduates through campus interviews in nearly 45 organizations during the year 2010 alone. There is zero unemployment in B.Sc. (Ag) Graduates. The centre has opened an "**Overseas Employment Unit**" which facilitated graduates to get placement in organisations abroad. A state-of-the-art "**Communication Laboratory**" has been established to improve the soft skills and employability of the graduates. Besides placement, annually at the least 30 students from TNAU are getting opportunity in the western countries for pursuing their higher studies with scholarships and research assistantships.

It is worth mentioning that TNAU graduates bagged the most prestigious Commonwealth Scholarship consecutively for the past four years. TNAU records the highest recruitment number by Agricultural Scientists Recruitment Board (ASRB) among the 56 State Agricultural Universities of India.

TNAU is also offering many correspondence courses through the Directorate of Open and Distance Learning. At present, 21 certificate courses in tamil, 9 certificate courses in english, 3 PG diploma and 3 PG courses are being offered.

A new three years degree programme, “Bachelor of Farm Technology” in tamil medium was started in 2010 exclusively for the farmers, as the first of its kind in India. A total of 229 farmers have joined this programme during 2010. There is a subsidy of 50% fee from 2011-12 and it is enough to pay ₹3750/semester.

2. Agricultural Research

2.1. Research Findings 2011-12

Research activities are carried out in all the 11 colleges, 36 research stations and 14 Krishi Vigyan Kendras. The outcome of the research is manifested by the release of (a) Twelve Varieties / Hybrids Viz., TNAU Maize Hybrid CO 6, TNAU Sugarcane Si 8, TNAU Coconut ALR (CN) 3, TNAU Papaya CO 8, TNAU Coccinia CO 1, TNAU Bottle Gourd Hybrid CO 1, TNAU Ash Gourd Hybrid CO 1, TNAU Mushroom CO (TG) 3, TNAU Malai vembu MTP 1, Kufri Neelima potato, TNAU Blackgram VBN 7 and TNAU Coconut VPM 4. (b) Five Agricultural Implements namely, Arecanut harvester, Tractor operated multipurpose hoist, Improved coconut tree climber, Pulse Line Marker and Aerial access hoist for coconut harvesting and (c) Three Management technologies viz., Subsurface drip fertigation system, Biocolour from beetroot and STCR based IPNS for agricultural and horticultural crops.

2.2. Research Programmes for 2012-13

- ❖ High yielding, disease resistant varieties of rice, sorghum and cumbu varieties are being developed. Evolution of nutritionally superior ragi varieties with high Calcium, Zinc and Iron content is under progress. Development of medium duration (130–135 days) and long duration (180 days) redgram hybrids based on cytoplasmic genetic male

sterile lines; development of high yielding varieties of greengram and blackgram with synchronous maturity and resistance to mungbean yellow mosaic virus are in progress in pulses breeding. In oil seed crops, breeding for high oil and drought tolerant varieties in sunflower and groundnut are in progress.

- ❖ Integrated farming system is given the major thrust for increased income generation to the farmers. To enhance the crop productivity and to improve the livelihood of the dryland farmers, adoption of precision farming technologies viz., summer ploughing, compartmental bunding, broad bed furrow, sowing with the seed drill, intercultural operation, seed hardening and seed treatment, micronutrient etc., These technologies can be implemented by imparting training to the dryland farmers. Technologies will be developed to sustain the crop productivity under global warming situation. Technologies to enhance the water holding capacity in rainfed lands and to mitigate the mid season drought will be identified. To overcome the labour scarcity, mechanization will be promoted to reduce the cost of cultivation and increase the profit.
- ❖ Use of biofertilizer to supply of various nutrients to the crop, use of microbes in value addition, research on bioenergy will be taken up. Establishment of model seed production demonstration farm will be taken up in identified districts. Seed production of pulses and oilseeds under farmers’ participatory mode will be taken up. Trainings to enhance the efficiency and capacity building for seed entrepreneurs will be imparted.

- ❖ Crop growth promoters such as Pulse wonder, Sugarcane Booster, Coconut tonic, Maizemax, Cottonplus for pulses, sugarcane, coconut, maize and cotton respectively will be popularized on a large scale.
- ❖ Resource characterization of different category of farmers on farming system in Western and North western zone of Tamil Nadu, alternate cropping strategy as a contingent plan and agro techniques for various situations in field crops, good agricultural practices aiming for better resource use efficiency, Conservation agriculture in cropping systems will be optimized.
- ❖ Efficient strains of bio fertilizers will be identified. Microbes will be utilised for value addition, vaccines for viral infections, crops suitable for bioenergy exploitation.
- ❖ High yielding and pest resistant vegetables will be screened.
- ❖ Vegetable production technology and supply chain management knowhows to meet the vegetable demand of nearby cities is to be provided to the vegetable growers on cluster approach.
- ❖ Mechanization in rainfed farming will be given importance. Machines for land shaping, seed drills, plant protection equipments, harvesters etc., will be popularized among the farmers.
- ❖ Development of papaya hybrids with improved fruit quality and resistance to Papaya Ring Spot Virus (PRSV) is in progress. Standardization of high

- density planting (HDP), Ultra High Density Planting (UHDP) and fertigation practices will continue to assume importance in mango, banana and papaya.
- ❖ Qualitative crop improvement research will be taken on Fe/Zn fortified rice, High vitamin A rice, low phytate maize, Enhanced oil quality in sunflower and virus resistance in Cassava and Banana.
- ❖ Under the Environmental Sciences, the research focus will be on utilization of wastewater from paper mill, tanneries and distilleries for agriculture and other end users, utilization of solid wastes from agriculture, domestic and gelatin industries for organic manure production and utilizing it as organic inputs. Similarly, solid waste utilization from poultry litter towards organic farming, bioremediation of contaminated soils in different agro-ecological zones of Tamil Nadu, and developing remediation technologies for improving salt affected soils and Carbon sequestration and budgeting in plantations of fast growing trees will be taken.
- ❖ Research on Soil Science and Agricultural Chemistry encompasses, carbon sequestration potential of rice ecosystem, demonstration of seed yield enhancement in maize and rice through nutriseed Pack technique and designing prototype machineries for industrial production of nutriseed Packs, standardization of biochar derived from different sources of plant communities and influence of soil compaction on soil physical health in intensively mechanized farming as compared to conventional operation farming will be studied.

3. Extension

3.1. Production of Audio Visual Aids

Tamil Nadu Agricultural University has proposed to strengthen the Audio Visual Extension material for effective Farm Crop Management System (FCMS) for farmers and extension officials' use and other campaigns. Short films covering success stories, frontier technologies of various crops will be made available to the FCMS tools for use by field level functionaries.

3.2. Establishing community radio stations by TNAU in Tamil Nadu

Community Radio is an effective medium for transferring the location specific farm technologies to farmers on a larger scale. Tamil Nadu Agricultural University has proposed to set up Community Radio stations in 28 districts in a phased manner over a span of three years. The weather conditions, daily market prices of agricultural commodities, success stories of farmers, Scientists' advices on different cropping patterns will be covered apart from environmental protection, health, education etc.

3.3. Integrated remediation for improving and managing polluted soils/ water is in operation in Tirupur, Coimbatore, Erode, and Karur Districts. The physical and chemical characters of the affected lands of Tirupur and Erode district by problem soils and water are assessed and integrated remediation measures for their management will be recommended.

3.4. Krishi Vigyan Kendras' activities

Through Krishi Vigyan Kendras, 109 On Farm Testing (OFT) of newly released varieties and technologies, 200 Front Line Demonstrations were conducted and popularised, 3362 Trainings were given to extension officers, rural youths and, SHGs. Farm advisory service provided was 11076.

Four Buyers and sellers meets were organized at Coimbatore, Chennai, Viringipuram and Tirur to get the feed back from farmers, sellers on Market preference for perishable commodities.

3.5. The System of Rice Intensification (SRI) is a tremendous success with 36.8 per cent increase in yield. The overall average yield recorded under SRI was 7432 kg/ha while under conventional practice it was only 5482 kg/ha. Besides, 30 per cent water saving was also achieved.

3.6. Tamil Nadu Precision Farming Project is a State sponsored mega demo project implemented through Turn Key mode has also spread over to 53,885 ha. Doubling of crop yield and high quality of farm output has created a revolution in vegetable cultivation.

3.7. Sustainable Sugarcane Initiative improves the productivity of water, land and labour, all at the same time, while reducing the overall pressure on water resources. The technology package has been standardized. The yield increase is 60 to 90 tons per hectare.

3.8. Management of invasive Papaya mealy-bug through parasitoid: Outbreak of papaya mealy bug, *Paracoccus marginatus* was noticed during 2008 on papaya, mulberry, tapioca, jatropha, vegetables, fruits, cotton, plantation crops,

spices and flowers crops in different parts of Tamil Nadu causing extensive damage going up-to 90 per cent. Management of this pest through classical biological control by importing parasitoid viz., *Acerophagus papaya* from USA through NBAII (National Bureau of Agriculturally Important Insects), ICAR, Bengaluru proved to be effective.

So far, about 35 lakh parasitoids have been produced and released by TNAU in various parts of Tamil Nadu which effectively controlled the mealy bug. Through this practice, the agricultural produce saved due to pesticide avoidance was ₹435 crores as pesticides worth ₹265 crores was not used, besides protection of the environment by the release of parasitoid.

3.9. Drip fertigation in Red gram:

One of the ways of improving productivity of red gram is by growing it under controlled irrigation by using drip fertigation system. The technology has been standardized. The yield increase was from 1350 to 1850 kg per hectare.

3.10. National Agricultural Innovation Programme:

Tamil Nadu Agricultural University is the lead centre for five Consortium projects implemented in India, viz., developing e-resources for B.Sc.(Ag), establishment and networking for market intelligence, developing value chains for flowers, and industrial agro-forestry and agribusiness planning and development.

TNAU is also the co-operating centre for eight consortium projects viz., value chain in mango and guava, policy analysis and gender, mass media for agro-information, value chain in flowers, biomass based decentralized power generation, wild honey and milling industry, soil organic carbon dynamics and risk assessment

and insurance products. These projects are operated in consortium mode and farmers and agri-business participate.

3.11. Tamil Nadu Irrigated Agriculture Modernization and Water Bodies Restoration and Management Project:

It is a Multidisciplinary Project funded by the World Bank. The project has been implemented in the 63 selected sub basins of Tamil Nadu to cover an *ayacut* area of 6.83 lakh ha. Under this project, technology demonstrations have been taken up by TNAU for SRI technology of rice and for cultivation of low water requiring crops such as; garden land pulses, maize, groundnut, sunflower, sesame and cotton.

3.12. Food Processing:

The Post Harvest Technology Centre at TNAU is involved in developing food processing technologies and also providing training to rural men and women for working in processing units. The PHTC has trained 1780 people in the last four years.

3.13. Seed Centre:

The Seed Centre takes up production and distribution of quality seeds for all crop varieties of TNAU. Seed production is taken up in 32 centers for 175 varieties of different crops and has supplied breeder and certified seeds of various crops. The centre is producing Breeder seeds, Foundation seeds and certified seeds. It is sufficient to change the seeds once in three years. Hence, it is proposed to produce 33% of the certified seeds during 2012-13 and will be raised to 50% before the terminal year of 12th FYP. Priority will be given to pulses and oilseed crops.

3.14. Automatic Weather Stations (AWS):

Automatic Weather Stations were installed in 224 blocks in Tamil Nadu, one in each block. With the funds received from NADP second phase, 161 additional Automatic Weather Stations will be established so as to complete in all the 385 blocks in Tamil Nadu.

To take decision on farming, based on weather parameters, medium term forecasts (for the next 4 days) at block level are made using the data acquired on 10 parameters at hourly intervals from the Automatic Weather Stations. The forecast products will be made available through TNAU Agriportal <http://agritech.tnau.ac.in> and in the website <http://tawn.tnau.ac.in> for the use of all block level officers.

The block level officers will develop suitable weather based agro-advisories to the farmers of their block and pass on to the farmers through their field level functionaries as well as mass media. The university will impart three days training to all the block level officers in developing the weather based agro advisories.

Training has been imparted to 766 agricultural extension officers. Weather forecasts are used in day-to-day planning and execution of farm operations, saving of inputs viz., fertilizer, plant protection chemicals, irrigation water, and efficient labour usage. Yield increase in different crops ranged between 8 - 15 % and farm income by 10 – 18 % by practicing weather based farming.

3.15. Trade and Intellectual Property:

The Department of Trade and Intellectual Property was established on 1st April 2010. As on date, 7 inventions of TNAU have received patent, 21 inventions have been filed and more than 18 inventions have been identified for filing.

3.16. Agribusiness Development

Agribusiness Incubator has so far commercialized 12 technologies including Coconut Tonic, Panchagavya, Egg removing device, SRI power weeder, *Pseudomonas* and *Trichoderma*.

3.17. Market information and intelligence:

Tamil Nadu Agricultural University operates the Domestic and Export Market Intelligence (DEMIC) unit (www.tnagmark.tn.nic.in) and provides forecasts of prices of agricultural produces before sowing and also prior to harvest.

Daily Market Intelligence:

e-Extension centre of TNAU in Collaboration with Centre for Development of Advanced Computing (C-DAC) is providing Daily Market Information to the farmers in time through internet and mobile phone. It is being also published in Tamil and English in daily news papers. The news is broadcasted through radio and television. About two lakh farmers were benefitted. The predicted price has about 95% accuracy. The registered farmers receive daily market information through SMS over mobile apart from wholesale and retail prices of 160 commodities, details of 1,500 wholesalers with address and phone numbers.

Agri Market Intelligence & Business Promotion Cell:

TNAU will associate in effective functioning of the Agri market Intelligence & Business Promotion Cell, Trichirappalli for providing market information to farmers.

For effective extension along with all the stakeholders, focused effort will be taken to have intensive contact with the farmers.

10. SEED CERTIFICATION AND ORGANIC CERTIFICATION

1. Introduction

Seed is a critical input for long-term sustained growth of agriculture. Timely availability of certified quality seeds with good yield potential continues to be a decisive factor in agricultural production. Farmers in Tamilnadu state are well aware of the benefits of using quality seeds which include foundation, certified and truthfully labeled seeds. In our State, the seed replacement rate is being adopted as per the guidelines of Government of India. In order to achieve the target of doubling the income of farmers, timely availability of quality seeds is given utmost importance.

Concerted efforts are essential in ensuring timely availability of seeds as well as increasing the Seed Replacement Rate (SRR). The National Mission on Seeds has been formulated with a view to upgrade the quality of farm saved seeds and also to enhance Seed Replacement Rate. The Department of Seed Certification & Organic Certification plays the supporting role in the enhancement of Seed Replacement Rate by certifying quality seeds in an increasing trend over the years.

There is also a need to look for synergies with the private sector so that goals set out in the twelfth Five Year Plan mission are achieved. The share of private sector in certified seed production in the state has increased from 34% in the year 1998-99 to 76% during 2011-12. To achieve higher yields and for maximum monetary returns, use of quality seeds is to be encouraged.

The Department of Seed Certification and Organic Certification regulates the quality seed production and distribution in the State, under the provisions of various seed legislations. In order to fulfill these objectives, this

department implements Seed Certification, Seed Quality Control, Seed Testing, Training and Organic Certification schemes.

2. Seed Certification

The functions of the seed certification agency are being carried out by this Department in accordance with the provisions of The Seeds Act 1966 and The Seeds Rules 1968, to maintain the quality of seeds produced in the state. Seed certification is a regulatory process to secure, maintain and make available seed qualities such as germination, physical purity, genetic purity and seed health as prescribed under the Indian Minimum Seed Certification Standards (IMSCS).

During the year 2011-2012, the quantity of certified seeds produced was 1.02 LMT, of which 24% was contributed by Government, 2% by Quasi Government and 74 % by private seed producers.

The requirement for quality certified seeds is growing over the years. The contribution by the private agencies in certified seed production is distinctly higher compared to the production by the Government and Quasi Government agencies.

In order to perform the task of seed certification in an effective manner, all the Assistant Directors of Seed Certification have been provided with computers along with internet facilities under the AGRISNET programme during the year 2011-2012.

During the year 2011-2012, 1.02 LMT were certified, as against the annual target of 0.95 LMT of seeds. It is proposed to certify 1.05 LMT of various crop seeds during 2012-2013.

3. Seed Inspection

Seed Quality Control programme is responsible for ensuring compliance with the various Seed Legislations. To ensure the quality of the seeds distributed to farmers in the state, the seed quality control wing regulates the sale of seeds in accordance with the provisions of The Seeds Act 1966, The Seeds Rules 1968, The Seeds (Control) Order 1983 and The Environment (Protection) Act 1986.

The seed quality control activities involve inspection of the seed selling points at regular intervals and drawing of seed samples for quality check from seed lots kept for sale. The samples are analyzed in the notified seed testing laboratories. Based on the results of the analytical reports, legal actions are initiated against defaulters. Apart from this, contraventions of seed legislations are dealt with legal actions.

The Seed Inspection wing is issuing licenses for seed dealers under provisions of The Seeds (Control) Order, 1983. There are 9412 licensed seed selling points in the state. In order to perform the seed quality control functions in an effective manner, all the Deputy Directors of Seed Inspections have been provided with computers along with internet facilities under the AGRISNET programme during the year 2011-2012.

During the year 2011-2012, 64647 seed selling point inspections were conducted as against the annual target of 67500 inspections and 55744 seed samples were drawn for quality check as against the annual target of 65000 seed samples. The quality control wing has unearthed spurious and sub standard seeds of 1356 seed lots, weighing 1165 M.T worth ₹ 553 lakhs. Stop sale orders issued for this lots. Under contravention of seed legislations, 501 cases were filed in the court of law of which 419 cases

were disposed off by various courts in favour of the Government. During the year 2012-2013, it is proposed to make 68000 seed selling point inspections and to draw 65500 seed samples for quality check.

4. Seed Testing

The seed testing laboratories function as confirmation centers for seed quality control and seed certification programmes. For the effective implementation of seed quality control and seed certification programmes, it is necessary to have a well equipped seed testing laboratory. Seed testing is conducted to analyze the various seed standards as fixed by Government of India. The seeds are being tested for germination, physical purity, moisture, seed health and for admixture of other distinguishable varieties. The certified seed samples received from the seed certification wing, the official samples received from the seed quality control wing, and the service samples sent by the farmers, seed dealers and seed producers are tested in the notified seed testing laboratories. At present, there are 29 notified seed testing laboratories functioning in the State.

The genetic purity of a given seed lot is ascertained by conducting grow out tests. Genetic purity tests are conducted for crop seeds where it is a pre requisite for seed certification and also for the samples received from the seed inspection wing. Genetic purity tests are conducted at the grow out test farm of this Directorate, functioning at Kannampalayam (Coimbatore) besides a Bt testing Laboratory for analyzing Bt toxin. A DNA finger print Laboratory functioning in this Directorate carries out tests to obtain quick genetic confirmation of crop varieties. The Seed Testing Laboratory at Coimbatore is a member with ISTA (International Seed Testing Association) and is participating in the proficiency tests conducted which is prerequisite for ISTA accreditation.

During the 2011-2012, all the 29 seed testing laboratories have been provided with computer facilities under NADP at a cost of ₹ 21.58 Lakhs. Further, seven existing seed testing laboratories, the DNA finger print laboratory and the Bt toxin testing laboratory have been provided with latest and advanced equipments under this scheme at a cost of ₹ 90.95 Lakhs. The genetic purity testing farm at Kannampalayam, Coimbatore has been provided with a storage godown, the inner wall of the open well has been constructed and the existing irrigation facilities have been strengthened at a cost of ₹ 26.00 Lakhs under NADP scheme. It is proposed to further strengthen the existing seed testing laboratories by purchase of equipments under NADP scheme at a cost of ₹ 113.17 Lakhs during the year 2012-2013.

During the year 2011-2012, a total number of 88017 seed samples were analyzed as against the annual target of 86000 seed samples. It is proposed to analyze 86500 seed samples during the year 2012-2013.

5. Training

The field level functionaries in this department are being suitably trained and oriented to perform the different functions such as field inspections, seed processing, seed sampling, seed testing, and in seed legislations. To promote quality seed production and distribution, the following training programmes are organized by the training wing of this Department.

5.1 Orientation Training: Training is given to the newly recruited technical officers of this Department on seed certification procedures, field inspections, identification of crop varieties, processing, sampling, tagging, and procedures involved in seed testing and seed quality control.

5.2 Refresher Training: The already positioned technical officers of this department are trained on the latest techniques on seed production, seed testing and seed inspection.

5.3 Training to Seed Producers: Training is given to seed producers on seed production to improve quality seed production.

5.4 Training to Seed Dealers: Training is given to the seed dealers on sale of quality seeds, seed storage and on the regulatory aspects of seed legislation.

Under ATMA scheme, training programmes are proposed to be conducted to the seed producers and seed dealers at a cost of ₹ 57.25 Lakhs to improve their technical competence in seed production and distribution.

During the year 2011-2012, as against the annual target of 41800 persons to be trained, a total number of 43970 persons were trained. It is proposed to train 44000 persons during the year 2012-2013.

6. Organic Certification

Organic farming system rely upon crop rotation, crop residues, animal manures, off- farm organic wastes, mineral bearing rocks and aspects of biological pest control to maintain soil productivity and tilth, to supply plant nutrients and to control pest and diseases.

Organic Certification is a labeling term with written assurance that denotes products that have been produced in accordance with organic production standards and certified by a duly constituted certification body or authority.

Organic agriculture is based on minimizing the use of external inputs, totally avoiding the use of synthetic fertilizers and pesticides. Organic agricultural methods are

used to minimize pollution of air, soil and water. Organic food handlers, processors and traders adhere to standards to maintain the integrity of organic agricultural products. The primary objective of organic agriculture is to optimize the health and productivity of interdependent communities of soil life, plants, animals and people.

Tamil Nadu Organic Certification Department (TNOCD) was established in the year 2007-2008 to carry out inspection and certification of organic production system in accordance with NPOP (National Programme for Organic Production) norms. Tamil Nadu Organic Certification Department is accredited by Agricultural and Processed Food Products Exports Development Authority (APEDA), New Delhi, Ministry of Commerce and Industry, Government of India. The accreditation number allotted to Tamil Nadu Organic Certification Department is NPOP/NAB/0019.

Organic certification carried out by this department is on par with standards of European Union. Tamil Nadu Organic Certification Department also imparts free training to registered organic farmers on National Standards for Organic Production, and Tamil Nadu Organic Certification Department standards.

During the year 2011-2012, 29062 acres of land have been registered, under organic certification as against the annual target of 30000 acres. This includes 209 individual farmers possessing 7972 acres of land, 26 groups containing 6127 farmers holding 20392 acres and 27 corporate farms holding 698 acres. During 2012-2013, it is proposed to register an area of 30500 acres under organic certification.

11. DEPARTMENT OF AGRICULTURAL MARKETING AND AGRI BUSINESS

1. Introduction

The Agricultural Marketing and Agri-Business activities coupled with post harvest management are assuming greater importance in the wake of new emerging challenges in agriculture sector, increasing food demand and improving the standard of living of farming community to achieve sustainable agricultural development. Though the demand is increasing continuously, the supply fluctuates causing glut and shortages alternatively, both of which hit hard the earning of farming community. Losses in agriculture sector are high due to high perishable nature of the produce and poor post harvest handling. This calls for an efficient post harvest management on part of the farmers backed by strong infrastructure facilities for proper storage. Unlike marketing of industrial products, the marketing of agricultural products is not well organized. This fundamental difference necessitates the creation of special systems, institutions and infrastructure in the marketing of agricultural products.

The Department of Agricultural Marketing, which functioned separately since 1977, with the main objective of “Regulation of Agricultural Marketing”, through Regulated markets was renamed in the year 2001 as “Department of Agricultural Marketing and Agri Business” to focus on creation and strengthening of post harvest management infrastructure for value addition of agricultural commodities, food processing and export.

During 11th five year plan, the Department had focused on various activities like creation of direct marketing facilities, strengthening of infrastructure in Regulated

markets for ensuring fair price to farmers' produce through Regulated markets, construction of drying yards and cold storages for minimizing the post harvest losses, formation of commodity groups and forward linkages for direct purchase of agricultural produce from farmers by the traders/ buyers, establishment of infrastructure facilities for promoting export of agricultural produce through Agri Export Zones and assuring quality foodstuff to consumer under Agmark grading.

Minimizing post harvest losses by proper handling and management through sufficient cold storages and modern warehousing facilities, Creation of food processing industries with farmers' participation, providing farmers with sufficient market information and intelligence to take up cropping programme to suit the market demand, in a nutshell paving way for market led agriculture are emphasized to uplift the standard of living of farmers. Hence, the 12th Five Year Plan mainly focuses on;

- Formation of crop based commodity groups
- Promoting the establishment of Agro Processing units with farmers' participation to minimize the wastage of agricultural produce.
- Imparting skills to the farmers on the techniques of scientific storage, value addition, processing and preservation of food grains by providing massive training programmes.
- Forward linkages for direct purchase of agricultural produce from farmers by the traders/ entrepreneurs.
- Enhancing the shelf-life of Agricultural commodities by providing necessary modern infrastructural facilities.

- Enabling the farmers to realize remunerative price to their produce through alternative markets like Terminal Market, Mega market and specialized market complex.
- Encouraging private sector participation in the creation of value addition and processing infrastructure facilities under PPP (Public Private Partnership) mode.
- Disseminating commodity price, arrival information in Regulated markets and Farmers' markets and price forecast for important agricultural commodities through media, SMS and internet on a daily basis for the benefit of farmers.
- Capacity building and knowledge sharing among the farmers on market intelligence, price forecast and providing crop advisory, market led extension and IEC&CB activities through Agri Marketing Intelligence and Business Promotion Center (AMI & BPC).
- Market driven production approach by utilizing the infrastructure and market intelligence service available in Agri Business Centre and Rural Business Hub.

2. Agri Marketing Activities :

2.1. Market Committees and Regulated markets

Eliminating intermediaries, providing a conducive trading platform to farmers and traders for marketing agriculture produce are done through a common forum *i.e.* Regulated Markets which are governed by Tamilnadu Agricultural Produce Marketing (Regulation) Act- 1987 and rules 1991. There are 21 Market Committees under which 277 Regulated Markets are functioning.

No fee is collected from farmers for the services rendered. One percent of the sale value of the produce is collected as market fee from Traders. Besides, license fee is also collected from traders and weighmen.

2.1.1 Facilities provided in the Regulated Markets

- Godown, transaction shed
- Farmers rest room
- Cattle shed
- Rural Business Hub, input shop
- Automatic weighing and bagging machine
- Weigh bridge, weighing balance
- Display of daily price information, free medical aid etc.,

Through Regulated Markets, about 18.96 L.Mt of agricultural produce were sold by farmers and ₹ 7705.84 lakh have been collected as revenue from traders during 2011-12.

2.2. Modern godowns in Regulated Markets

Modern godowns with durable scientific equipments are essential to protect agricultural goods from loss or damage due to heat, dust, wind, moisture and from rodents. Farmers can store their agricultural produce in the godowns and get credit facilities in the form of pledge loan.

Construction of 50 modern godowns in Regulated Markets with various capacities of 2,000 MT (37 Nos), 5,000 MT (8 Nos) and 10,000 MT., (5 Nos) with 95% financial assistance from NABARD under RIDF Scheme and 5% from Market Committee fund covering 15 Districts at a total cost of ₹ 8200 lakh is in progress. Hon'ble Chief Minister has laid foundation stone for 21 modern godowns on 03.03.2012.

2.3. Strengthening of Regulated Markets

The Regulated markets play a vital role in improving the economic viability of agriculture and sustainable agriculture development. Under NADP, 20 rural godowns and 150 drying yards were constructed in regulated markets during last year at a cost of ₹ 770 lakh to

facilitate farmers to store their produce during distress sale period, avail pledge loan facility and reduce post harvest losses.

To facilitate easy disposal and correct weighment to farmer's produce, automatic weighing and bagging machines at four regulated markets have been installed at a cost of ₹ 33.75 lakh and are being utilized by the farmers.

Further, Automization of Regulated Markets in 4 places by providing the facilities like hand held devices for data collection and digital display boards at a cost of ₹ 163.10 lakh is being done for the farmers to know the prevailing price trend. Creation of 60 traders' shops in 6 Regulated markets for more commodity arrivals at a total cost of ₹ 480 lakh is under progress.

Hon'ble Chief Minister laid foundation stone for 50 traders' shops in 5 regulated markets viz, Cuddalore, Vadakipalayam, Virudhunagar, Arani and Pavorchatram on 03.03.2012.

2.4. Rural Business Hub (RBH) in Regulated Markets

Rural Business Hubs have been established in 10 Regulated Markets at a cost of ₹150 lakh. Rural Business Hubs created under NADP, envisages development of opportunities through which farmers have increased access to markets through forward linkages. These centres aim to achieve higher income for farmers by aggregating products enabling large buyers and processors to make direct purchase from farmers. Infrastructure facilities such as input shops, storage shed, packing facilities and services like trade facilitation, market information and intelligence, farm advisory, extension and training facilities were created. So far, 120 commodity groups have been formed and 245 farmers are benefitted from 10 RBHs.

2.5. Construction of own building for Regulated Markets

Among 277 Regulated Markets, 97 Regulated Markets are functioning in the rented buildings. In order to get better price to farmers' produce and more revenue to the Market Committees by inviting more farmers and attracting more arrivals, it is necessary to construct own building with adequate infrastructure facilities.

Hon'ble Chief Minister laid foundation stone for construction of own building for Attur and Bhavani Regulated Markets on 3.3.2012.

2.6. Pledge Loan

Pledge loan facility helps the farmers to avoid distress sale of agricultural produce during harvest season and store their produce in the godowns of regulated markets. Small and marginal farmers can avail pledge loan upto 75% of value of the produce and other farmers can avail upto 50% of value of the produce upto 6 months period.

During 2011-12, pledge loan amount is increased from ₹ 1 Lakh to ₹ 2 Lakh with 5% rate of interest for farmers to enable them to meet their immediate requirements and preparations for next cropping season. During 2011-12, 2246 farmers availed pledge loan to the tune of ₹ 1859.59 Lakh.

Traders can avail pledge loan upto 50% of value of the produce limited to the maximum of ₹ 1 Lakh with 9% rate of interest upto 3 months period. During 2011-12, 122 traders have availed pledge loan of ₹ 125.82 lakh.

2.7. Uniform Notification

Market Committees levy market fee for any notified agricultural produce bought or sold in the notified market

area. Each Market Committee has its own notified area and notified crops. At present 40 agricultural produce have been notified. But these 40 agricultural produce are not evenly notified in the Districts of Tamil Nadu. Implementation of uniform notification removes the price disparities between notified and non-notified areas. Preliminary notification has been issued for enforcing uniform notification of 40 agricultural commodities.

2.8. Dissemination of Market price information

Market price information and market intelligence plays a vital role in marketing of agricultural produce. If the information on commodity prices prevailing in various markets is made available to the farmers, it would be able to get better price by moving their produce to the market which pays higher.

Under the Central Government scheme of Marketing Research and Information Network (MRIN) 205 computers were provided to 21 Market Committees and 184 regulated markets. These regulated markets upload the prevailing agricultural produce price and commodity arrival information to web portal www.agmarknet.nic.in on daily basis.

Computerization of 20 Regulated Markets at a cost of ₹ 250 lakh under NADP scheme during 2011-12 has been taken up for purchase of hand held machines, computers, software for e-auctioning, marketing and administration, on time marketing activities and transparent transaction.

In addition, an exclusive software has been developed for disseminating the prevailing price of fruits and vegetables of the Farmers' Markets, which facilitate direct marketing support. At present the fruits and vegetables

prices that prevail in 179 Farmers' markets are being uploaded in the website www.tnsamb.gov.in.

2.9. Drying yards at villages.

Drying yards are constructed to avoid the post harvest losses, it accounts for 5-10 % in the total production of cereals and pulses. To reduce the loss of agricultural produce it should be stored at optimum moisture content. For this so far 1311 village level drying yards at a total cost of ₹ 2625 lakh have been constructed since 1997 and are being beneficially utilized by the farmers.

2.10. Market Complex for Paddy

Paddy Market Complex has been established in an area of 9.85 acres at Mattuthavani in Madurai district at a total cost of ₹1706 lakh from Madurai Market committee fund with facilities such as 314 shops for traders of paddy, flowers and agricultural inputs. In this complex, regulated market office, rural godown, auction shed, canteen, bank, post office, fire fighting equipments and telephone exchange facilities are also available.

During the year, 2011-12 arrivals of agricultural produce in paddy market complex accounted for 1,07,139 MT and ₹94.24 lakh revenue have been obtained as market fee.

2.11. Velan Vilaiporul Perangadi (Mega Market)

A mega market for fruits and vegetables has been established with facilities such as 50 shops, 216 floor space shops, grading hall and transaction shed in Oddanchatram, Dindigul District in an area of 15.50 acres at a total cost of ₹ 308 lakh.

2.12. Flower Auction Centre

A Flower Auction Centre at Kavalkinaru in Tirunelveli district has been established at a cost of ₹ 163.40 Lakh for the benefit of flower growers. On an average, 300 Kg of flowers worth about ₹0.55 lakh are being transacted per day.

2.13. Agmark grading

Agmark is the expansion of "Agricultural Marking". As per the Agricultural Produce (Grading and Marking) Act 1937, the Agmark Grading scheme is being implemented in Tamil Nadu. Most of the Agricultural, Horticultural, Forest Products and Animal Husbandry by-products are covered under Agmark Grading Scheme.

In Tamil Nadu, 30 state Agmark grading laboratories and one principal Agmark grading laboratory at Chennai are functioning to provide unadulterated food products to the consumers and to ensure quality. Agmark Grading is done for centralized and decentralized commodities. In Tamil Nadu Rice, Pulses, Edible Vegetable Oils, Ghee, Honey, Ground Spices, Whole Spices, Wheat Products, Sago, Desiccated Coconut Powder, Tamarind, Compounded Asafoetida etc., are being graded under Agmark.

Agmark labelling is done to the authorized packers under direct supervision of the staff to certify the quality and purity of food products. During 2011-12, 16.20 lakh quintals of food products have been graded by State Agmark grading laboratories.

During 2011-12, Laboratory equipments such as U.V. Visible Spectrophotometer, Digital Moisture Meter, Digital Muffle Furnace, Digital Refractometer and Digital Hot Air Oven were purchased for ₹ 38.49 lakh under Part II scheme for State Agmark Grading Laboratories.

For the year 2012-13, U.V. Visible Spectrophotometer 5 Nos and 18 Nos of Digital Moisture Meter will be purchased to the tune of ₹ 30.40 lakh under Part II scheme.

2.14. Farmers' markets

Farmers' markets are functioning with the objective of ensuring fair price to the farmer's produce without middlemen intervention and fresh fruits and vegetables to the consumers at a nominal price. In farmers' market, shop and electronic weighing balance are allotted to farmers on priority basis. At present, 179 Farmers' markets are functioning in Tamil Nadu. The expenses of Farmers Markets are being met out from the Market Committee funds.

3. AGRI BUSINESS ACTIVITIES:

Reduction in post harvest losses and value addition of agricultural produce fetches remunerative price to farmers' produce. This requires infrastructure like storage godowns, grading and sorting yard, pack house, drying yards, transaction sheds, auction halls, pre-cooling room, cold storage, ripening chambers etc. Various specialized commodity markets have been developed with above facilities.

3.1. Market Complex with Cold Storage facilities for Mango

A Market complex with cold storage facility has been established at a cost of ₹ 100 lakh for Mango at Krishnagiri Regulated Market in Krishnagiri District under Tamil Nadu State Agricultural Marketing Board and State Government funds for the welfare of small and marginal farmers.

3.2. Market Complex with Cold Storage facilities for Tomato

A Market complex with cold storage facility has been established at a cost of ₹100 lakh for Tomato at Palacode Regulated Market in Dharmapuri District under Tamil Nadu State Agricultural Marketing Board and State Government funds.

A cold storage unit with 100 MT capacity has been established at Mecheri in Salem district at a cost of ₹100 lakh under NADP. So far 28 numbers of tomato commodity groups with 420 farmers are utilizing the facility. During 2011-12, 49.80 MT of tomato has been stored in the cold storage.

3.3. Market Complex with Cold Storage Facilities for Grapes

A Market complex with cold storage facility has been established at a project cost of ₹100 lakh for Grapes at Odaipatti in Theni District for the welfare of small and marginal farmers under Tamil Nadu State Agricultural Marketing Board and State Government funds. Grapes commodity groups are being formed for effective utilization of the market complex.

3.4. Market Complex with Cold Storage Facilities for Onion

Market complex with cold storage facility at a project cost of ₹100 lakh for Onion at Pongalur in Tiruppur District has been established for the welfare of small and marginal farmers under Tamil Nadu state Agricultural Marketing Board and State Government funds. About 120 farmers have transacted 29 MT of onion in cold storage.

3.5. Market Complex for Coconut

In Thanjavur district a Coconut Market Complex has been created at Ponnavarayankottai, Ukkadai village at a cost of ₹400 lakh under Market Committee and State Government funds. The Market complex is provided with rural godown, transaction sheds, godowns, drying yards and solar drier for copra, grading and sorting hall, input shops, traders shops, coconut de-shelling hall, electronic weighing balances and coconut oil mill unit with automatic oil packing facility for the benefit of coconut growers.

In addition to that, a coconut market complex has been established at Pethappampatti in Tiruppur District at a cost of ₹100 lakh. So far, 170 coconut growers transacted 22 MT and stored 10 MT of copra in the godown.

3.6. Storage facilities for Onion and Cold storage for other vegetables

To get good price for onion and to preserve other vegetables construction of storage facilities and cold storage structure under NADP at a cost of ₹114.90 lakh at Chekkikulam village in Perambalur District is under progress.

3.7. Market Complex with cold storage for Hilly vegetables

Market Complex with Cold Storage for Hilly Vegetables at Karamadai Regulated Market in Coimbatore District has been created at a cost of ₹ 100 lakh under NADP. So far, 15 Hilly vegetable commodity groups are formed and 225 farmers were benefitted.

3.8. Cold storage for Chillies

In Ramanathapuram district, establishment of cold storage facility with a capacity of 100 MT for Chillies at

Paramakudi Regulated Market is in progress at a cost of ₹ 99.50 lakh under NADP.

3.9. Banana Ripening Chamber

Banana is predominantly consumed as fresh fruit and requires high degree of post harvest management. About 30-40 per cent of the produce is lost before it is consumed. Hardly 2-3% of the total produce is processed due to lack of storage techniques. The banana, after cleaning, packing and quality checking need to be ripened uniformly before being purchased by the consumers. Hence ripening chamber has been established at Trichy, Srivaikundam, Chinnamanur and Mohanur at a total cost of ₹ 200 lakh under NADP. 10 banana commodity groups each at Trichy, Srivaikundam and Mohanur and 17 banana commodity groups in Chinnamanur have been formed for better utilization of these infrastructure facilities and for better price realization.

3.10. Additional Market Infrastructure and Cold Storages-

During the year 2011-12, creation of following infrastructure facilities at a total cost of ₹1920 lakh under NADP have been taken-up.

- Market complex for Banana and 1000 MT capacity cold storage unit for vegetables at Thiruchendurai village in Trichy District.
- Market complex with 1000 MT capacity cold storage unit for vegetables and fruits at Alukuli village in Erode District.
- Market complex with 200 MT capacity cold storage unit for lemon at Kadaiyanallur Regulated Market in Tirunelveli District.

- 100 MT capacity Cold storage units for fruits and vegetables in 5 Regulated Markets.
- 1000 MT capacity Cold storage unit for Tamarind at Dharmapuri Regulated Market in Dharmapuri District.
- 1000 MT capacity Cold storage unit for Chillies at Pavorchatram Regulated Market in Tirunelveli District.

Hon'ble Chief Minister laid foundation stone for Market complex with cold storages in Erode and Tirunelveli and cold storage units in Dharmapuri and Tirunelveli on 03.03.2012.

3.11. Establishment of Terminal Market Complexes

Terminal Market Complexes (TMC) are being developed to reduce the post harvest losses in perishables like fruits, vegetables and other agricultural commodities, under Public Private Partnership (PPP) near metropolitan areas of Chennai, Madurai and Coimbatore as per the revised guidelines of the Government of India for the benefit of farmers and traders.

The TMC will act as a 'Hub and Spoke' Model. In the 'Hub' common infrastructure facilities like the State-of-Art modernized Grading and Packing facilities, Cold storage, Ripening chamber, Quality control lab, Electronic auction centre etc., will be developed. 'Spoke' means Collection centers - which are located at various places in the production area with modern infrastructure facilities. A minimum of 20 collection center has to be developed in the catchment area of each TMC. The Industrial and Technical Consultancy Organization of Tamil Nadu Ltd., (ITCOT) has been appointed as consultant for the above projects.

3.11.1. Perundurai Terminal Market Complex

In an area of 47.90 acres at SIPCOT Industrial Growth Centre at Perundurai, Erode District Terminal Market Complex at a cost of ₹12063 lakh is under construction. M/s.SPAC Tapioca Products (India) Ltd has been selected for establishment of Terminal Market Complex with a subsidy of ₹ 2899 lakh sanctioned by the Government of India. The Operation, Management and Development Agreement (OMDA) were signed between the Department and M/s.SPAC Terminal Market Complex Ltd, Erode, on 27.2.2011. Hon'ble Chief Minister laid foundation stone for Terminal Market Complex on 03.03.2012.

The TMC can handle an average of 1500 MT per day of perishables and other agro commodities. The collection centers are expected to handle an average of 75 MT/day. It is expected to serve a minimum of one lakh small and marginal farmers in 7 districts. More than 500 traders will be actively participating in direct purchase of agro commodities. It will also generate direct employment to 200 people and indirect employment to more than 800 people in the locality. Detailed Project Report and Master Plan submitted by the bidder was evaluated by ITCOT consultancy.

3.11.2. Chennai Terminal Market Complex

Chennai Terminal Market complex is being established in an area of 35 acres at Navalur Village of Sriperumputhur Taluk, Kancheepuram District at a cost of ₹11385 lakh. Global Tender Notification has been floated for inviting entrepreneurs. The Request For Qualification (RFQ) documents received from the entrepreneur was evaluated and Request for Proposal (RFP) was issued to the selected entrepreneurs.

3.11.3. Madurai Terminal Market Complex

Madurai Terminal Market Complex is being established in an area of 50 acres at Mukkampatti (35 acres) and Thiruvathavur (15 acres) at a cost of ₹10505 lakh. Global Tender Notification has been floated for inviting entrepreneurs. The Request For Qualification (RFQ) documents received from the entrepreneur was evaluated and Request for Proposal (RFP) was issued to the selected entrepreneurs.

3.12. Agri Export Zones

With Globalization and Liberalization of Indian economy, international trade started playing a significant role in the growth of Nation's and State's economy. To minimize wastage of agricultural produce and increase the share of exports from Tamil Nadu, Agri Export Zones is being promoted. Export zones facilitate value addition of products, as it ensure steady and increased better price realization to the farming community as well as availability of commodities in processed form to the consumer throughout the year.

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

The anchor promoters of these Agri Export Zones have created modern nursery and necessary processing and storage infrastructures in their respective zones and started commercial production.

3.12.1. Agri Export Zone for Cut flowers

Agri export zone for cut flowers has been established by M/s. Tanflora as joint venture mode with TIDCO at Hosur in Krishnagiri district at a cost of ₹ 2485 Lakh. Infrastructure facilities like Central Packing House comprising of sorting, grading, packaging, cold storage and marketing facilities were established. During 2011-12 the firm M/s.Tanflora has done a turnover of ₹ 125 lakh worth cut-flowers.

3.12.2. Agri Export Zone for Flowers

An Agri Export Zone for flowers at Ooty in the Nilgiris district has been established with the participation by private promoter M/s.Nilflora at a project cost of ₹1589 lakh. Infrastructure facilities such as auction centre, nursery, pre-cooling, cold storage; reefer vans, Hi-tech training centre, common marketing facility etc. are provided in the zone. The Department of Horticulture and Plantation crops is conducting Hi-tech floriculture training and providing planting materials at 50% subsidized cost and also giving subsidy for green houses and shade nets. Besides, information centre was also established at Ooty for providing technical consultancy and other horticultural information to the growers.

An electronic Flower Auction centre at a cost of ₹11 lakh has been opened in Ooty and it is utilized by the farmers to sell their flowers. During 2011-12, M/s.Nilflora has done a turnover of ₹114 lakh worth flowers.

3.12.3. Agri Export Zone for Mango

An Agri Export Zone for Mango has been established by the anchor promoter M/s. Maagrita Export Ltd at Nilakkotai in Dindigul District for the benefit of mango growers in Theni, Madurai, Virudhunagar, Tirunelveli, Dindigul and Kaniyakumari districts at a cost of ₹2100 lakh.

The firm M/s. Maagrita Exports Ltd., has established infrastructure facilities such as pack house, collection centre, processing units, grading halls, etc. During 2011-12, M/s. Maagrita Exports Ltd has done a turnover of ₹101 lakh worth mango and mango pulp.

3.12.4. Agri Export Zone for Cashew

Agri Export Zone for Cashew at a project cost of ₹ 1700 lakh at Cuddalore district has been developed by the anchor promoter M/s.Sattva Agro Exports Ltd with TIDCO (a joint venture unit), covering the Districts of Cuddalore, Thanjavur, Perambalur, Pudukottai and Sivagangai. M/s.Sattva Agro Exports Ltd., has developed a grading, processing center and pack house for cashew. The company has formed 6 organic farming Self Help Group (SHG) at five villages with the close co-ordination of Gandhi Rural Education and Development Society (GREDS). During 2011-12 M/s.Sattva Agro Export Pvt. Ltd., has done a turnover of ₹ 24 lakh worth of cashew.

3.13. Food Processing Industries

To ensure steady and better price to the farming community as well as availability of commodities in processed form to the consumer throughout the year, Food processing is promoted which reduces the wastage of agricultural produce to a great extent.

Department of Agricultural Marketing and Agri Business is the State Nodal Agency for the Ministry of Food Processing Industries, Government of India. Ministry of Food Processing Industries has decentralized the implementation of the scheme for technology upgradation, establishment/ modernization of Food Processing Industries with effect from April 2007 through Banks/Financial institutions.

Being a State Nodal Agency, different project proposals under Entrepreneur development programmes, contract farming, Food processing training centre, Seminars and Exhibition on food processing, infrastructure development, setting up of Food testing laboratory and Food park etc., are being received, scrutinized and forwarded to the Ministry of Food Processing Industries, Government of India.

So far ₹ 4406.91 Lakh has been received as a grant by Government of India for 218 projects. Government of India has proposed to implement the schemes of Ministry of Food Processing Industries from 01.04.2012 through State Government.

3.13.1. National Mission on Food Processing

Ministry of Food Processing Industries (MFPI) proposed to launch a new Centrally Sponsored Scheme (CSS) – National Mission on Food Processing (NMFP) during 12th Five Year Plan to be implemented through States. The basic objective of NMFP is decentralization of implementation of Ministry's schemes, which will lead to substantial participation of State Governments. The proposed NMFP contemplates establishment of a National Mission as well as corresponding Missions in the State and District level. The proposed NMFP is likely to improve significantly to the Ministry's outreach in terms of planning, supervision and monitoring of assistance through this Scheme.

This scheme is proposed to be implemented as a new centrally sponsored scheme in the ratio of 75:25 by Government of India and State Government.

Objectives of NMFP

1. To augment the capacity of food processors working in unorganized sector and upscale their operations through capital infusion, technology transfer, skill up-gradation and handholding support.
2. To support established self help groups working in food processing sector and facilitate them to emerge as SME status.
3. Capacity development and skill upgradation through institutional training to ensure sustainable employment opportunities and also to reduce the gap in requirement and availability of skilled manpower in food processing sector.
4. To ensure the standards of food safety and hygiene to the globally accepted norms.
5. To facilitate food processing industries to adopt HACCP and ISO certification norms.
6. To augment farm gate infrastructure, supply chain logistic, storage and processing capacity.
7. To provide better support system to the organized food processing sector.

The proposed structure would be a three tier structure at National, State and District level.

In the **National Level**, Minister of Food Processing Industries is the Chairman. An Executive Committee under the Chairmanship of Secretary of the Ministry will be formed and the Committee would be the link between the Ministry and State Governments. Joint Secretary would be the Mission Director.

At the **State Level**, it will be headed by Hon'ble Chief Minister. An Executive Committee under Chief Secretary and Agricultural Production Commissioner will be

responsible for implementing the Schemes. A Senior Officer, at level of Director, would be designated as the Mission Director at State Level.

At the **District Level**, Deputy Director (AB) would be the nodal officer for Food Processing. All the three tiers of the Food Processing Mission would work in close co-ordination with each other.

Major Programmes / Schemes to be covered under NMFP

1. Scheme for Technology Up-gradation / Setting up / Modernization / Expansion of Food Processing Industries.
2. Scheme for Supporting Cold Chain Facilities and Reefer Vehicles for other than Horticultural Products.
3. Scheme for Human Resource Development (HRD)
 - a) Creation of Infrastructure Facilities for Running Degree / Diploma / Certificate Courses in Food Processing technology.
 - b) Entrepreneurship Development Programme (EDP)
 - c) Food Processing Training Centre (FPTC)
4. Scheme for Promotional Activities
 - a) Organizing Seminar /Workshops
 - b) Conducting Studies / Surveys
 - c) Support to Exhibitions / Fairs
 - d) Advertisement & Publicity.

3.14. Agro Processing Units with farmers' participation

His Excellency, the Governor of Tamil Nadu during Governor's address 2011-12 has announced in the assembly that, "Agro Processing Units with farmers and private participation will be established at 5 places" viz., Pulses in Pudukottai District, Tomato in Dharmapuri District, Banana in Theni District, Copra in Coimbatore District and

Groundnut in Villupuram District at a total cost of ₹2000 lakh. On behalf of farmers, 25% of the share capital contribution will be borne by the Government through the Department of Agricultural Marketing and Agri Business and the remaining 75% of the share will be borne by the private entrepreneurs. Selection of entrepreneurs is under progress.

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

The main objective of World Bank assisted TN-IAMWARM Project under Agri marketing component is supporting sub-basin farmers in strengthening their market orientation.

The Project is being implemented in 61 sub basins of Tamil Nadu in phased manner over a period of 6 years from 2007-08 to 2012-13 at a total estimate of ₹3417 lakh . An amount of ₹2686 lakh have been utilized for 4 phases of sub basins up to 2011-12.

For executing the marketing activities, Infrastructure facilities are essential. So far 21 Agri Business Centers, 94-storage sheds, 155-drying yards, 18-collection centers and one pack house were created under TN-IAMWARM Project. The supporting equipments such as 52-moisture meters, 118-electronic weighing scales, 522- tarpaulins, 1985-dunnages, 19-computers with internet connection, 575-plastic crates, 8- goods auto and one mini lorry for logistics were provided and are being utilized by Commodity group farmers.

3.15.1. Role of Commodity groups in increasing the farm income

The main objective of promoting the farmers commodity groups at the village / block level is to create a mechanism to empower them for their own problem solving. This would also help in providing techno-economic support to the groups, enhance scale of operation, improve performance, promote infrastructure, improve access to resources, technology and markets, capacity building of farmers, bank credit facility and ultimately improve the economy of the farmers. In the sub basin area, formation of commodity groups and Memorandum of Understanding (MoU) between farmers and traders are the major activity for the realization of additional income by farmers.

Interface workshop is considered to be a platform for linking the farmers directly to the traders with face to face market orientation. So far 1,657 commodity groups covering 14 major commodities have been formed and 1,179 MoU have been made between farmers and traders.

Under Information, Education, Communication and Capacity Building (IEC&CB) activities 772 trainings were conducted viz., 195 exposure visits inside the state and 99-exposure visits outside the state, 265-technical trainings and 213-interface workshops. By utilizing the infrastructure facilities and capacity building activities, 47,227 commodity group farmers earned an additional income of ₹1, 247 lakhs with the Commodity transaction of 1,22,613 MT.

Hon'ble Chief Minister inaugurated Marketing infrastructure facilities such as 2 Agri Business Centers, 7 storage godowns, 4 collection centers and 22 drying yard on 03.03.2012 for the utilization of farming community.

During 2012-13, the project will be implemented in phase IV regular activities, Phase I to IV additional DPR activities and Amaravathy sub basin activities with the financial outlay of ₹549.09 Lakh for creation of various market infrastructure including 69 civil infrastructure such as one Agri Business Centre, 22 storage sheds, 45 drying yards and one ABC fencing work, 2180 goods and equipments which includes 591 Tarpaulins, 786 Dunnages, 36 Moisture meters, 42 Electronic weighing scales, 720 Plastic crates, 2 copra dryers, 2 coconut de-fibering units and one computer. Under Capacity building activities, 25 technical trainings, 3 exposure visits within the state and 30 Interface Workshops, 5 Awareness Campaigns are proposed.

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

Providing both forward and backward linkages to Small farmers through assured purchase at reasonable price for their produce by making formal / informal market arrangements besides linking Small farmers to technologies as well as to markets are the objectives of Small Farmers Agri-business Consortium. It is functioning in association with Government, Private, Co-Operative, Nationalized Banks and Service Sectors to fulfill the above objectives.

Eligibility criteria for funding:

- Value addition projects should be in agriculture or allied sectors like Horticulture, Agriculture, Medicinal and Aromatic Plants, Spices, Cashew nut, Coconuts and Fish culture etc., excluding Poultry and Dairy projects.

- Project should provide assured market to farmers/producer groups.
- Projects must encourage farmers to diversify into high value crops, to increase farm income.
- Project should be accepted by Banks for grant of term loan.

Agri Business development in Tamil Nadu is achieved by sanctioning Venture Capital Assistance and providing project development facilities. So far, Venture Capital Assistance of ₹1530.43 Lakh for 43 Agri-Business projects has been sanctioned by Tamil Nadu Small Farmers Agri-business Consortium.

3.17. Establishment of Agri Marketing Intelligence and Business Promotion Center at Trichy

Protecting farmers from fluctuating agricultural commodity prices is to be focused now with high priority. For this the farmers are to be empowered with knowledge on price forecasting, high price period, best market price, quality parameters, pre and post harvest technologies for different agricultural commodities, export opportunities etc.,. This would help the farmers to achieve crop diversification for better returns and adopt "**Market-led Agriculture**", apart from identifying the gaps in marketing infrastructure and farmers' capacity building needs for post harvest management. In this regard, during 2012-13 Agri Marketing Intelligence and Business Promotion Center (AMI & BPC) is proposed to be established at Trichy under PART II scheme at a cost of ₹43 lakh.

Departmental coordination for data collection will be done by Agriculture, Horticulture, Agri Marketing and Agri

Business and Tamil Nadu Agricultural University staff to this AMI&BPC on deputation basis. Four IT consultants will be engaged on contractual basis for data collection, analysis, compilation and documentation. Two Subject Matter Specialists will be engaged on contractual basis for data analysis, interpretation and price forecasting. The AMI&BPC officials will be trained by TNAU. The Crop and Market Advisory Service will be rendered through SMS to the staff of the Departments and farmers and other stakeholders who have registered with.

Through this centre, Crop and Market Advisory services will be rendered as “**One Stop Shop Service**” which includes technical and input services, pledge loan, post harvest processing, value addition besides suggesting ways to tap the market potential, future market alert, crops that gives best returns during current / next season etc.

3.18. Infrastructure facilities proposed for the year 2012-13.

Under *National Agriculture Development Programme*, *NABARD* Assistance, Market committee fund and Tamil Nadu state Agricultural Marketing board fund the following infrastructure facilities are proposed to be established during 2012-13.

It is proposed to establish market complexes with cold storage facilities to enhance the shelf life of perishables like flowers, fruits and vegetables pertaining to the crops of commercial importance in the districts. In this context one Market complex with cold storage facilities for flowers, two for fruits and vegetables, one cold storage each for fruits and vegetables and chillies, construction of 10 transaction shed in Regulated Market and 25 traders shops, 20 godowns, own building for 9 Agmark labs, 10 touch screen kiosk for providing market information to farmers at

various regulated markets and 10 food court in 10 Regulated Markets at various districts are also to be created.

3.19. Farmers’ Hand Book

The Department has prepared and released a technical guide for farmers, covering various valuable information on trading, storage, grade specifications, value addition, processing techniques, post harvest technologies, market intelligence, training, details of processing industries and cold storages, etc.,

12. TAMIL NADU STATE AGRICULTURAL MARKETING BOARD

The Tamil Nadu State Agricultural Marketing Board (TNSAMB) was constituted by an executive order of the State Government in G.O. Ms. No.2852 Agriculture Department, dated: 24.10.1970 and functioning since 24.10.1970, with the objective to regulate the activities of Market Committees and to act as an advisory body.

1. Constitution:

The Board consisting of a President nominated by Government and of the following members. [Section 36 of "*The Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987*"]:

1. Director/Commissioner of Agricultural Marketing and Agri Business
2. Agricultural Marketing Advisor, Government of India
3. Managing Director, Tamil Nadu State Warehousing Corporation
4. Registrar of Co operative Societies
5. President, Tamil Nadu Cooperative Marketing Federation
6. An Officer of the Agriculture Department in the Secretariat not below the rank of Deputy Secretary to Government dealing with the subject of Agricultural Marketing.
7. 21 Non-Official Members (Chairman / Special officers of 21 Market Committee).

2. Sources of Income

The Market Committees contribute fifteen percent of their receipts to the Tamil Nadu State Agricultural Marketing 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 being met. The remaining fifty percent of the amount is being spent for employees' salary and other expenses.

Functions of Tamil Nadu State Agricultural Marketing Board

3. Training Programmes for Farmers and Marketing

Personnel:

3.1. Post Harvest Training to farmers

The Publicity and Propaganda wing of the Board, having Headquarters at Chennai, Coimbatore, Trichy and Madurai are conducting training programmes highlighting the infrastructure facilities provided in the Regulated Markets, benefits of selling the produce in the Regulated Market, post harvest technology, value addition of Agricultural produce, market prices of agricultural commodities and Agricultural Marketing schemes to the farmers. Objectives of the training are- to create awareness among the farmers about services rendered in Regulated markets and facilitate them to transact their agricultural commodities through Regulated Markets so as to get remunerative price, and to impart skill on the techniques of food processing, packaging and value addition etc., to the farmers. The post harvest technology training programmes are conducted every year as two days programme covering 96 batches (20 farmers/batch) benefiting 1920 farmers. During 2011-2012, about 1400 farmers were benefitted by this technical training.

In addition During 2011-2012, to impart skills to the farmers on the techniques of scientific storage and preservation of food grains and to train the farmers on market intelligence, a massive training programme was

given for 7000 farmers covering all the districts of Tamil Nadu utilizing the Market Development Fund.

It is also proposed to conduct this training programme for 30,000 farmers during the year 2012-13.

3.2. Salem Training Centre

The training centre of Tamil Nadu State Agricultural Marketing Board functioning at Salem focuses on capacity building to the staff of Department of Agricultural Marketing and Agri Business. The training centre organizes various training programmes like Graders training, Refresher training, Kharif and Rabi training, Market intelligence training and Food grain storage training.

4. Tamil Nadu Farmers Development and Welfare Scheme

To provide security to the farming community the state government is implementing the Tamil Nadu Farmers Welfare Development scheme from 02.11.1995 onwards.

Farmers or tenants who sell one or more than one MT of agricultural produce every year through Regulated markets are enrolled in this scheme and are eligible for a grant of one lakh rupees in case of death/ death due to snake bite. In case the eligible farmer or tenant loses both the hands / legs / eyes due to accident is eligible for a grant of ₹75,000/-. In case of losing one hand / leg /eye or permanent hip disability due to accident, the farmer or tenant is eligible for a grant of ₹ 50,000/-.

Farmers need not pay any premium to avail this facility in the scheme. The Market Committee concerned and the Tamil Nadu State Agricultural Marketing Board bear the premium amount of ₹10/- per individual per year equally.

5. Marketing Endowment Chair at Tamil Nadu Agricultural University

Tamil Nadu State Agricultural Marketing Board has created an Endowment Chair at the Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore with a corpus fund of ₹50 lakh. So far, thirty research projects relating to Agricultural Marketing and 27 training programmes were organized to the Department officials by utilizing the interest accrued from corpus fund deposit.

It is also proposed to conduct two research project and 3 training programmes during the year 2012-13.

6. Construction works

Civil works such as construction of office buildings, rural godowns, auction platform, agricultural input shops, payment counters, rest sheds, water supply, toilet facilities, internal roads, office-cum-godowns, compound wall in Regulated Markets, Market Complexes and Farmers market are carried out by the Engineering wing of Tamil Nadu State Agricultural Marketing Board.

The Engineering wing also executes Agricultural Marketing Infrastructure Facilities under TN-IAMWARM project, National Agricultural Development Programme and NABARD schemes.

7. Domestic and Export Market Intelligence Cell (DEMIC)

To provide day today local and international market information to the farming community, Domestic and Export Intelligence Cell has been established in the Tamil Nadu Agricultural University at a cost of ₹44 lakh from the Tamil Nadu State Agricultural Marketing Board.

The Cell would collect details on prices of major commodities at domestic and International markets, analyze and forecast future domestic and export prices. The Cell will forecast prices in the forthcoming months to the farmers through regulated markets. The Cell by providing this information will help the farmers to plan the cropping pattern at right time and to sell their produce at appropriate markets, which fetches higher price. The Domestic and Market Intelligence Export Cell (DEMIC) collects the prevailing rates of agricultural produce from local and international markets and disseminates through websites, Short Messaging Services (SMS) for the benefit of farmers and traders.

At present, 2200 Water Users Associations (WUA), 9600 Farmers, 4200 Agricultural Marketing and Agri Business Officials, 2 lakh IFFCO Green card farmers are utilizing the services of Domestic and Export Market Intelligence Cell.

AGRICULTURE DEPARTMENT
TABLE – 1
Details of Agricultural Extension Centres

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

**TABLE – 2
State Seed Farms (34)**

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

State Oilseed Farms (6)

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

State Pulses Multiplication Farm (1)

1	Vamban	Pudukkottai
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**TABLE – 3
SEED PROCESSING UNITS**

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

**TABLE – 4
Laboratories and Production Centers**

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

TABLE – 4 Cont...
Laboratories and Production Centers

Sl. No	District	Pesticide Testing Laboratory	Bio Fertiliser Production Centre	Bio Control Laboratory / IPM Centre	Micro Nutrient Mixture Production Centre
1	Kancheepuram	1 Kancheepuram	1 Chengleput	1 Panjupettai (IPM)	
2	Cuddalore	2 Cuddalore	2 Cuddalore		
3	Villupuram			2 Villupuram	
4	Tiruvannamalai		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 Pappalapatti	
9	Coimbatore	6 Coimbatore		6 Coimbatore	
10	Tiruppur		6 Avinashi		
11	Erode	7 Erode	7 Bhavani	7 Bhavani	
12	Tiruchirapalli	8 Tiruchirapalli	8 Tiruchirapalli	8 Tiruchirapalli	
13	Pudukkottai		9 Kudumianmalai		1 Kudumianmalai
14	Thanjavur	9 Aduthurai	10 Sakkottai	9 Kattuthottam	
15	Tiruvarur		11 Needamangalam		
16	Nagapattinam	10 Nagapattinam			
17	Madurai	11 Madurai		10 Vinayagapuram 11 Vinayagapuram (IPM)	
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 – 5
Farmers Training Centre & Coconut Nursery Centres

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

TABLE – 6
Parasite Breeding Centres

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 4 5	Villupuram Kallakurichi Tindivanam		
5	Vellore	6 7 8	Ambur Gudiyatham Thiruppathur	4 5 6	Melalathur Vaniyambadi Natrampalli (Thiruppathur)
6	Tiruvannamalai	9	Tiruvannmalai		
7	Salem			7	Sukkampatti
8	Namakkal	10	Mohanur	8	Paramathivelur
9	Dharmapuri	11	Papparapatti	9	Dharmapuri
10	Krishnagiri				
11	Coimbatore			10	Aliyar Nagar
12	Tiruppur	12	Udumalaipettai		
13	Erode	13	Gobi	11	Gobi
14	Tiruchirapalli	14	Lalgudi	12	Tiruchirapalli
15	Perambalur	15	Perambalur		
16	Karur	16 17	Karur Kulithalai		
17	Pudukkottai				
18	Thanjavur	18	Thanjavur	13	Kattuthottam
19	Nagapattinam	19	Mayiladuthurai		
20	Tiruvarur				
21	Madurai	20	Melur	14	Melur
22	Theni				
23	Dindigul	21	Nilakottai		
24	Ramanathapuram			15	Uchipuli
25	Sivagangai			16	Sathurvetha Mangalam
26	Virudhunagar			17	Devadhanam
27	Tirunelveli			18	Senkottai
28	Thoothukudi			19	Udhankudi
29	Kanyakumari			20	Boodhapandi

Table – 7
List of State Horticulture Farms

Sl. No.	District	Name	Location	Area (Ha.)
1.	Coimbatore	SHF	Anaikatty	12.000
2.	Coimbatore	SHF	Kannampalayam	11.200
3.	Cuddalore	SHF	Neyveli	39.530
4.	Cuddalore	SHF	Virudhachalam	10.430
5.	Krishnagiri	SHF	Thimmapuram	9.510
6.	Krishnagiri	SHF	Jeenur	121.960
7.	Dindigul	SHF	Kodaikanal	5.740
8.	Dindigul	Bryant Park	Kodaikanal	8.200
9.	Dindigul	SHF	Thandikudi	5.450
10.	Dindigul	SHF	Reddiarchatram	5.330
11.	Dindigul	SHF	Sirumalai	200.040
12.	Kancheepuram	SHF	Attur	12.240
13.	Kancheepuram	SHF	Vichanthangal	22.960
14.	Kancheepuram	SHF	Melkadirpur	42.630
15.	Kancheepuram	SHF	Melottivakkam	20.600
16.	Kancheepuram	SHF	Pichivakkam	34.000
17.	Kanyakumari	SHF	Kanyakumari	12.670
18.	Kanyakumari	SHF	Pechiparai	6.000
19.	Karur	SHF	Mudalaipatti	23.960
20.	Namakkal	SHF	Semmedu	11.600
21.	Namakkal	SHF	Padasolai	22.670
22.	Pudukkottai	SHF	Kudumianmalai	118.680

Sl. No.	District	Name	Location	Area (Ha.)
23.	Pudukkottai	Giant Orchard	Vallathirakottai	521.20
24.	Pudukkottai	SHF	Nattumangalam	53.020
25.	Salem	SHF	Yercaud	10.120
26.	Salem	Giant Orchard	Karumandurai	419.770
26A.	Salem	VSPC	Karumandurai	4.000
27.	Salem	SHF	Maniyarkundram	100.000
28.	Salem	SHF	Karumandurai	39.350
29.	Salem	SHF	Mulluvadi	47.800
30.	Salem	SHF	Sirumalai (Arunuthumalai)	8.000
31.	Sivagangai	SHF	Devakottai	81.200
32.	Sivagangai	SHF	Nemam	38.770
33.	Thanjavur	SHF	Aduthurai	8.80
34.	Thanjavur	SHF	Marungulam	10.700
35.	The Nilgiris	SHF	Burliar	6.250
36.	The Nilgiris	SHF	Kallar	8.920
37.	The Nilgiris	SHF	Katteri	18.960
38.	The Nilgiris	FPU	Coonoor	4.050
39.	The Nilgiris	Pomological Station	Coonoor	6.920
40.	The Nilgiris	Sims Park	Coonoor	12.140
41.	The Nilgiris	SHF	Doddabetta	4.080
42.	The Nilgiris	SHF	Thummanatty	9.800
43.	The Nilgiris	SHF	Rose Garden	14.400

Sl. No.	District	Name	Location	Area (Ha.)
44.	The Nilgiris	Govt. Botanical Garden	Uthagai	22.000
45.	The Nilgiris	SHF	Nanjanad	64.000
46.	The Nilgiris	SHF	Devala	80.000
47.	The Nilgiris	SHF	Colegraine	20.400
48.	Theni	SHF	Periyakulam	9.320
49.	Tiruvallur	SHF	Madhavaram	4.380
50.	Chennai	Semmozhi Poonga	Chennai	3.170
51.	Tirunelveli	SHF	Courtallam	14.890
52.	Vellore	SHF	Thagarakuppam	34.400
53.	Vellore	SHF	Kudapattu	9.960
54.	Vellore	SHF	Navlock	84.420
55.	Virudhunagar	SHF	Poovani	9.460
56.	Virudhunagar	Giant Orchard	Srivilliputhur	46.280
Total				2588.330
SHF - State Horticulture Farm				
VSPC - Vegetable Seeds Production Centre				

Table – 8
District wise details of Land Development Machinery
available for custom hiring

Sl. No	District	Bull dozer	Tractor	Paddy Combine Harvester	Hydraulic Excavator
1	Kancheepuram	7	11	3	
2	Tiruvallur	4	8	2	
3	Cuddalore	5	9	2	
4	Villupuram	4	7	2	
5	Vellore	3	7	2	
6	Thiruvannamalai	2	3	1	
7	Dharmapuri	3	4	0	
8	Krishnagiri	3	4	1	
9	Salem	5	8	2	
10	Namakkal	4	6	2	
11	Coimbatore	6	5	1	1
12	Erode	2	5	2	
13	Tiruppur	5	3	2	
14	Trichy	4	7	2	
15	Ariyalur	2	3	1	
16	Perambalur	1	2	0	
17	Karur	2	3	2	
18	Pudukkottai	2	5	1	
19	Thiruvarur	2	18	5	
20	Thanjavur	4	16	2	1

Sl. No	District	Bull dozer	Tractor	Paddy Combine Harvester	Hydraulic Excavator
21	Nagappattinam	-	18	4	
22	Dindigul	6	5	2	
23	Madurai	3	5	2	
24	Theni	2	4	1	
25	Sivagangai	2	4	1	
26	Ramanathapuram	2	3	1	
27	Virudhunagar	2	4	1	
28	Thoothukudi	3	4	1	
29	Tirunelveli	3	8	3	
30	The Nilgiris	1	1	0	
Total		94	190	51	2
Hire charges / hr. including diesel.		₹ 755.00	₹ 300.00	₹ 1275.00 (Track Type) ₹ 825.00 (Wheel Type)	₹ 675.00

Note: The hire charges are subject to change based on the market rate of the diesel.
Land Development scheme is not implemented in Chennai and Kanyakumari Districts.

Table - 9
District wise details of Minor Irrigation Machinery
available for custom hiring

Sl. No	District	Rotary Drill	Percussion Drill	Mini Drill	Hand Boring Set	Long Hole Equipment	Rock Blasting Unit	Resistivity meter	Electrical logger
1	Kancheepuram	1	1		4		1	1	
2	Tiruvallur		7		9			1	
3	Cuddalore	12		1	25			1	1
4	Villupuram		3		5		2	1	
5	Vellore						5	1	
6	Thiruvannamalai						1	1	
7	Dharmapuri						2		
8	Salem					4	4	1	
9	Namakkal					3	1		
10	Coimbatore						3	1	
11	Erode						2	1	
12	Tiruppur						2		
13	Trichy				3			2	1
14	Ariyalur				5			1	
15	Perambalur				1		1		

Sl. No	District	Rotary Drill	Percussion Drill	Mini Drill	Hand Boring Set	Long Hole Equipment	Rock Blasting Unit	Resistivity meter	Electrical logger
16	Karur				3		2		
17	Pudukkottai	4			1		1	1	
18	Thiruvarur	8		3	1				
19	Thanjavur	10		14	9			2	1
20	Nagappattinam			3	7				
21	Madurai				1			1	
22	Theni		1		1			1	
23	Sivagangai						1		
24	Ramanathapuram				3				
25	Virudhunagar						4		
26	Thoothukudi						1		
27	Tirunelveli						4	1	
Total		35	12	21	78	7	37	18	3
Hire Charges		₹ 130 / Metre	₹ 300 / day	₹ 70 / Metre	₹ 30 / Metre	₹ 250 / day	₹ 250 / Blasting	₹ 500 / Point	₹ 1000 / Tube Well

Note: Minor Irrigation scheme is not implemented in Chennai, Krishnagiri, Dindigul, Nilgiris and Kanyakumari Districts.

Table - 10

List of blocks wherein the Drought Prone Areas Programme is under implementation

S. No.	Districts	Blocks
1	Coimbatore	Annur, Avinashi, Palladam, Tirupur, Suler
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, Pudukathiram
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	Virudhunagar	Kariapatti, Narikudi, Sattur, Sivakasi, Vembakottai, Virudhunagar, Aruppukottai

Table - 11

List of blocks wherein the Integrated Wasteland Development Programme is under implementation

S. 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, Perundururai, Sathyamanglam
6	Kancheepuram	Kancheepuram, Walajahbad, Mathuranthagam
7	Karur	Kadavur, Thogamalai, Krishnarayapuram (I,II)
8	Krishnagiri	Krishnagiri (I & II), Kaveripattinam
9	Madurai	Alanganallur, Melur, Chellampatti, Usilampatti, Kallikudi
10	Namakkal	Sendamangalem, Kolli Hills, Namagiripettai, Pallipalayam, Rasipuram
11	Perambalur	Perambalur, Ariyalur, Sendurai, Thirumanur, T. Pazhur, Veppanthettai(I & II)
12	Pudukkottai	Aranthangai, Avudaiyarkoil, Tirumayam
13	Ramanathapuram	Nainarkoil, R.S. Managalam (I & II)

Table – 11 contd....

Sl. No.	Districts	Blocks
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	Virudhunagar	Vembakottai, Sivakasi, Virudhunagar, Rajapalayam, Srivilliputhur, Thiruchuli

Table - 12

List of blocks wherein the National Watershed Development projects for Rainfed Areas is under implementation

S. No	Districts	Blocks
1	Villupuram	Kanai, Vikravandi
2	Vellore	Gudiyatham
3	Tiruvannamalai	Chepet & Polur
4	Salem	Veerapandi & Thalaivasal
5	Namakkal	Tiruchengode
6	Dharmapuri	Nallampalli, Kariyamangalam, Pennagaram & Morappur
7	Erode	Nambiyur
8	Trichy	Manachanallur, Musiri.
9	Karur	Krishnarayapuram, Kulithalai & Kadavur
10	Pudukottai	Thirumayam, Arimalam
11	Madurai	T.Kallupatti & Kallikudi
12	Theni	Uthamapalayam, Andipatti, Cumbum & Periyakulam
13	Dindigul	Oddanchathram, Nilakottai & Thoppampatti
14	Ramanathapuram	Kadaladi, Paramakudi, Mudukulathur, Kamuthi & Thiruvadana
15	Sivagangai	Singampunari, Thiruppathur & S.Pudur
16	Virudhunagar	Thiruchuli
17	Tirunelveli	Sankarankoil, Manur & Keelappavur
18	Thoothukudi	Kovilpatti, Ottapidaram Sathankulam & Udankudi

Table - 13

List of blocks wherein the Integrated Watershed Management Programme is under implementation

Sl. No	Districts	Blocks
1	Coimbatore	Pollachi (N), Kinathukadavu, Sultanpet,
2	Cuddalore	Mangalore, Panruti, Kurinjipadi, Virudhachalam, Nallur
3	Dharmapuri	Nallampalli, Pennagaram, Harur, Morapur, Pappireddipatty
4	Dindigul	Dindigul, Vadamadurai, Sanarpatti, Nilakkottai, Vedasandur, Guziliamparai, Natham, Thoppampatti
5	Erode	Thalavadi, Ammapettai, Dharapuram, Moolanur
6	Kancheepuram	Acharapakkam, Uthiramerur, Lathur, Maduranthagam, Chithamoor
7	Karur	K.Paramathi, Thogamalai, Aravakurichi,
8	Krishnagiri	Kelamangalam, Uthangarai, Bargur, Veppanapalli, Shoolagiri, Thally, Mathur
9	Madurai	Sedapatti, Usilampatti, Kottampatti, Chellampatti.
10	Namakkal	Vennandur, Namagiripet, Erumapatty, Mohanur, Paramathi, Kabilarmalai
11	Perambalur	Perambalur, Thirumanur, Veppanthattai, Alathur, T. Palur
12	Pudukkottai	Gandarvakottai, Pudukkottai, Thiruvarankulam, Karambakudi, Arimalam
13	Ramanathapuram	Kadaladai, Kamuthi, Mudukulathur, R.S. Mangalam, Nainarkoil
14	Salem	Sangakiri, Panamarathupatti, Valappadi, Ayothiappattanam, Mecheri, Kadayampatti, Pethanaickenpalayam, Tharamangalam

Table – 13 contd....

Sl. No	Districts	Blocks
15	Sivagangai	Kallal, Devakottai, Ilayangudi, Manamadurai, Kalaiyarkovil, Sivagangai, Thiruppuvanam
16	Theni	Chinnamanur, Periyakulam, Uthamapallayam, Theni, K. Myladumparai, Andipatty
17	Thoothukudi	Kayathar, Ottapidaram, Kovilpatti, Karunkulam, Pudur, Vilathikulam
18	Tiruchirappalli	Pullampadi, Thuraiyur, Marungapuri, Thottiyam, Vaiyampatty
19	Tirunelveli	Kadayam, Papakudi, Sankarankoil, Vasudevanallur
20	Tiruvallur	Tiruttani, Tiruvalangadu, R.K. Pet, Ellapuram
21	Tiruvannamalai	Puthupalayam, Thandarampattu, Kalasapakkam, Chengam, Cheyyar
22	Vellore	Kandhili, Kaveripakkam, Thimiri, Peranampet, Anaicut, Gudiyatham, K.V.Kuppam
23	Villupuram	Melmalayanur, Ulunthurpettai, Thirunavalur, Kallakurichi, Thiyagadurgam
24	Virudhunagar	Sivakasi, Srivilliputhur, Rajapalayam, Vembakottai, Sathur, Kariyapatti, Virudhunagar

Table – 14
List of blocks wherein the Watershed Development Fund is under implementation

Sl. No	Districts	Blocks
1	Coimbatore	Thondamuthur
2	Cuddalore	Mangalur, Cuddalore, Panruti
3	Dharmapuri	Palacode, Pennagaram, Dharmapuri, Nallampalli
4	Dindigul	Ottanchatram, Sanarpatti, Athur, Vedachandur, Nilakottai, Dindigul, Palani, Reddiyarchathiram, Vathalagundu, Thoppampatti.
5	Kancheepuram	Acharapakkam, Uthiramerur, Madhuranthagam, Chithamur
6	Karur	Aravakuruchi.
7	Krishnagiri	Kelamangalam, Krishnagiri, Hosur, Thali
8	Madurai	Peraiyur, Melur, Tirumangalam, Sedappatti, Usilampatti
9	Namakkal	Puduchatram, Namakkal, Rasipuram
10	Perambalur	Alathur, Veppanthattai, Perambalur
11	Pudukottai	Viralimalai, Kunnandar kovil, Annavasal
12	Ramanathapuram	Thiruvadanai, Mudhukulathur, Paramakudi, Ramanathapuram, Nainarkovil
13	Salem	Gangavalli, Panamarathupatti.
14	Sivagangai	Sivagangai, Tiruppathur
15	Theni	Cumbum, Andipatti, Periyakulam, Chinnamanur, Uthamapalayam, Bodinayakanur
16	Tiruvallur	Tiruvallur, Oothukottai, Thiruthani, Ellapuram, Poondi
17	Tiruvannamalai	Polur, Sengam, Sethupattu
18	Tirunelveli	Alangulam, Sangarankovil, Kadayanallur, Vasudevanallur
19	Trichy	Musiri
20	Thoothukudi	Tiruchendur, Sathankulam, Vilathikulam, Srivaigundam, Ottapidaram
21	Vellore	Nattrampalli
22	Villupuram	Ulundhurpettai
23	Virudhunagar	Kariyapatti

Table – 15

CONSTITUENT 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
11. Horticultural College and Research Institute for women, Tiruchirapalli

Table – 16

Affiliated Colleges

- 1 Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal
- 2 Adhi Parasakthi Agricultural College, Kalavai
- 3 Vanavarayar Institute of Agriculture, Pollachi
- 4 College of Agriculture Technology, Theni
- 5 Thanthai Roever Institute of Agriculture and Rural Development, Perambalur
- 6 Indian Institute of Crop Processing Technology, Thanjavur

**Table - 17
Research Stations**

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

**Table – 18
Diploma Institutes**

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

**Table - 19
Krishi Vigyan Kendras (KVK)**

1. Krishi Vigyan Kendra, Madurai - 625 104
2. Krishi Vigyan Kendra, Virudhachalam - 606 001
Cuddalore District
3. Krishi Vigyan Kendra, Needamangalam - 614 407
Tiruvarur District
4. Krishi Vigyan Kendra, Sikkal - 611 008 Nagapattinam District
5. Krishi Vigyan Kendra, Sirugamani - 639 115 Tiruhirapalli Dist
6. Krishi Vigyan Kendra, Ramanathapuram - 623 501
7. Krishi Vigyan Kendra, Sandhiyur - 636 203 Salem District
8. Krishi Vigyan Kendra, Vamban - 622 303 Pudukkottai District
9. Krishi Vigyan Kendra, Tindivanam 604 002
Villupuram District
10. Krishi Vigyan Kendra, Viringipuram - 632 104 Vellore District
11. Rice Research Station, Thirur - 602 025 Tiruvallur District
12. Krishi Vigyan Kendra, Papaparapatti - 636 809,
Dharmapuri District
13. Krishi Vigyan Kendra, Pechiparai – 629 161,
Kanyakumari District
14. Krishi Vigyan Kendra, Aruppukkottai - 626 107,
Virudhunagar District

SEED CERTIFICATION
TABLE - 20
Quantity of Seeds Certified in M.T.

S. No.	Crop	2011-12		2012-13
		Target	Achievement	Target
1	Paddy	87650	94543	97030
2	Variety millets	250	268	270
3	Hybrid millets	10	5	10
4	Variety cotton	300	252	300
5	Pulses	3500	4105	3800
6	Oilseeds	3200	3163	3500
7	Vegetables	90	47	90
	Total	95000	102383	105000
SEED INSPECTION (Numbers)				
S. No.	Details	2011-12		2012-13
		Target	Achievement	Target
1	Seed selling point inspections	67500	64647	68000
2	Seed samples taken	65000	55744	65500
SEED TESTING (Numbers)				
S. No.	Details	2011-12		2012-13
		Target	Achievement	Target
1	Samples tested	86000	88017	86500
TRAINING (Numbers)				
S. No.	Details	2011-12		2012-13
		Target	Achievement	Target
1	Persons trained	41800	43970	44000
ORGANIC CERTIFICATION (Acres)				
S. No.	Details	2011-12		2012-13
		Target	Achievement	Target
1	Area Registered	30000	29062	30500

TABLE - 21
SEED CERTIFICATION UNITS

S. No.	Location	Jurisdiction (Districts)	Area registered under Seed Certification (in Hectares)
1	Coimbatore	Coimbatore and Nilgiris	3431.00
2	Cuddalore	Cuddalore	1721.00
3	Dharmapuri	Dharmapuri	1133.00
4	Dindigul	Dindigul	1901.00
5	Erode	Erode	7313.00
6	Karur	Karur	496.00
7	Kancheepuram	Kancheepuram	859.00
8	Kanyakumari	Kanyakumari	149.00
9	Krishnagiri	Krishnagiri	1109.00
10	Madurai	Madurai	2411.00
11	Namakkal	Namakkal	837.00
12	Nagapattinam	Nagapattinam	2332.00
13	Perambalur	Perambalur	763.00
14	Pudukkottai	Pudukkottai	1046.00
15	Ramanathapuram	Ramanathapuram	454.00

Table - 21 Contd....

S. No.	Location	Jurisdiction (Districts)	Area registered under Seed Certification (in Hectares)
16	Salem	Salem	1498.00
17	Sivagangai	Sivagangai	387.00
18	Tiruvallur	Tiruvallur and Chennai	1255.00
19	Thoothukudi	Thoothukudi	1052.00
20	Thiruvarur	Thiruvarur	4713.00
21	Thanjavur	Thanjavur	4968.00
22	Tirunelveli	Tirunelveli	2411.00
23	Tiruvannamalai	Tiruvannamalai	1569.00
24	Theni	Theni	786.00
25	Trichy	Trichy	2461.00
26	Vellore	Vellore	1373.00
27	Villupuram	Villupuram	2958.00
28	Virudhunagar	Virudhunagar	1026.00
	Total		52412.00

TABLE - 22
SEED INSPECTION UNITS

S. No	Location	Jurisdiction (Districts)	No. of inspections made (Numbers)	No. of samples taken (Numbers)
1	Coimbatore	Coimbatore and Nilgiris	6640	6832
2	Erode	Erode	4128	3589
3	Salem	Salem and Namakkal	6275	6049
4	Dharmapuri	Dharmapuri and Krishnagiri	3643	3706
5	Karur	Karur and Dindugal	5000	3616
6	Madurai	Madurai and Theni	4361	4497
7	Thanjavur	Thanjavur and Pudukkottai	3135	3338
8	Trichy	Trichy and Perambalur	4315	3863
9	Chennai	Chennai, Tiruvallur and Kancheepuram	4606	3146
10	Tirunelveli	Tirunelveli and Kanyakumari	4903	3709
11	Virudunagar	Virudunagar and Thoothukudi	4500	4619
12	Ramanathapuram	Ramanathapuram and Sivagangai	2514	1340
13	Vellore	Vellore and Tiruvannamalai	3856	2416
14	Villupuram	Villupuram and Cuddalore	3521	3201
15	Nagapattinam	Nagapattinam and Tiruvarur	3250	1823
	Total		64647	55744

**TABLE - 23
SEED TESTING LABORATORIES**

S. No	Location	Jurisdiction (Districts)	No. of seed samples analyzed
1	Coimbatore	Coimbatore	7764
2	The Nilgiris	The Nilgiris	846
3	Erode	Erode	6861
4	Dharmapuri	Dharmapuri	3456
5	Salem	Salem	3404
6	Krishnagiri	Krishnagiri	1704
7	Namakkal	Namakkal	1612
8	Trichy	Trichy	4364
9	Villupuram	Villupuram	3921
10	Pudukkottai,	Pudukkottai	1036
11	Perambalur	Perambalur and Ariyalur	1477
12	Karur	Karur	525
13	Thanjavur	Thanjavur	3671
14	Nagapattinam	Nagapattinam	1064
15	Thiruvarur	Thiruvarur	1128
16	Madurai	Madurai	5886
17	Theni	Theni	2125
18	Dindigul	Dindigul	3209
19	Virudhunagar	Virudhunagar	2531
20	Ramanathapuram	Ramanathapuram	972
21	Sivagangai	Sivagangai	750
22	Tirunelveli	Tirunelveli	5442
23	Thoothukudi	Thoothukudi	1828
24	Kanyakumari	Kanyakumari	304
25	Kancheepuram	Kancheepuram	3823
26	Vellore	Vellore	2054
27	Tiruvannamalai	Tiruvannamalai	1703
28	Tiruvallur	Tiruvallur & Chennai	1746
29	Cuddalore	Cuddalore	1201
30	Bt testing and Grow out test	Whole of state	11610
Total			88017

**TABLE - 24
Organic Certification - Operational Jurisdiction (Districts)**

S No.	Organic Certification Unit	Jurisdiction (Districts)	Area Registered (in Acres)
1	Organic Certification Inspector 1 (Training)	Whole of State	Nil
2	Organic Certification Inspector 2 (Evaluation & e – Supporting Cell)	Whole of State	Nil
3	Organic Certification Inspector- Coimbatore.	Coimbatore, Tiruppur, Nilgiris, Erode, Salem, Namakkal, Dharmapuri, Krishnagiri Districts.	8771.95
4	Organic Certification Inspector-Trichy.	Trichy, Karur, Perambalur, Ariyalur, Pudukkottai, Thanjavur, Thiruvarur, Nagapattinam Districts.	1909.02
5	Organic Certification Inspector- Madurai.	Madurai, Virudunagar, Tirunelveli, Sivagangai, Ramanathapuram, Theni, Dindugal, Thoothukudi, Kanyakumari Districts.	5244.22
6	Organic Certification Inspector-Vellore.	Vellore, Tiruvannamalai, Villupuram, Kancheepuram, Tiruvallur, Cuddalore Districts.	13136.81
Total			29062.00

TABLE - 25

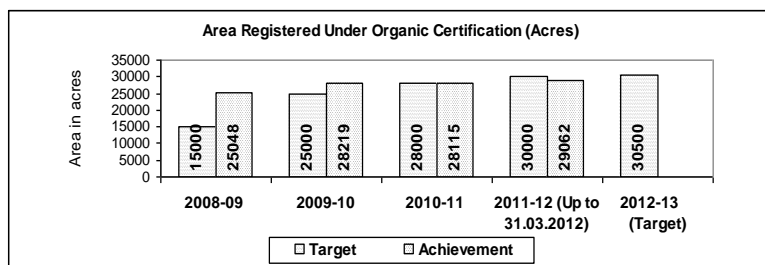
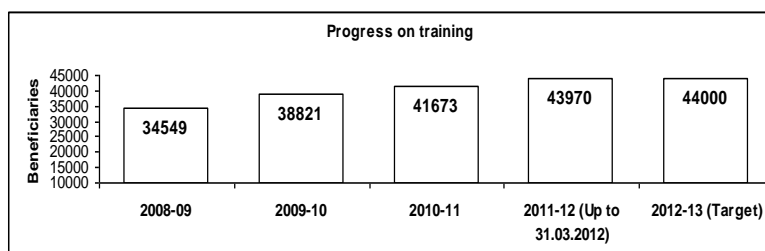
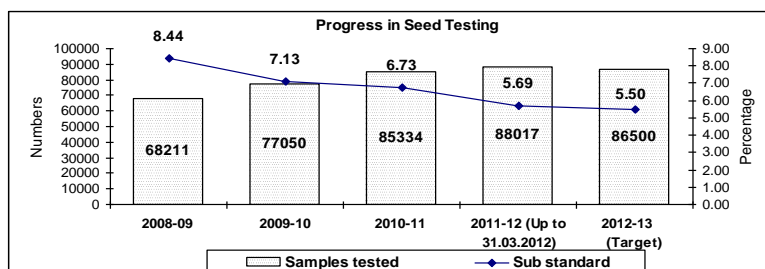
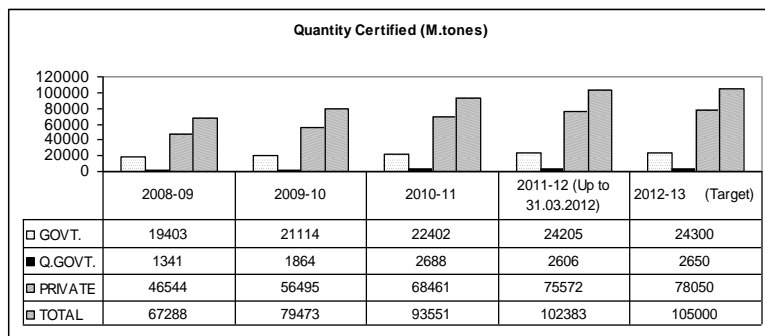


TABLE- 26
MARKET COMMITTEE WISE REGULATED MARKETS

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

TABLE- 26 Contd....

MARKET COMMITTEE WISE REGULATED MARKETS

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

TABLE- 26 Contd...

MARKET COMMITTEE WISE REGULATED MARKETS

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

TABLE- 26 Contd....

MARKET COMMITTEE WISE REGULATED MARKETS

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

TABLE- 26 Contd....

MARKET COMMITTEE WISE REGULATED MARKETS

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

TABLE- 26 Contd....
MARKET COMMITTEE WISE REGULATED MARKETS

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

TABLE- 27
INFRASTRUCTURE FACILITIES AVAILABLE IN THE
REGULATED MARKETS (Nos.)

Sl. No	Market Committees	Own Land	Go-down	Rural Go-down	Transaction Shed	Rural Business Hub
1	Kancheepuram	8	5	8	7	--
2	Vellore	11	16	10	10	1
3	Tiruvannamalai	14	19	11	26	--
4	Cuddalore	5	--	6	13	1
5	Villupuram	13	6	14	47	1
6	Salem	7	3	10	10	1
7	Dharmapuri	7	--	5	7	1
8	Coimbatore	18	71	14	31	1
9	Erode	18	18	11	53	1
10	Tiruchirapalli	14	12	11	20	--
11	Thanjavur	7	7	6	13	--
12	Pudukkottai	2	1	2	2	--
13	Madurai	4	--	5	3	--
14	Ramanathapuram	13	10	12	12	1
15	Tirunelveli	16	7	13	14	1
16	Kanyakumari	5	2	5	5	--
17	Theni	5	--	6	4	--
18	Dindigul	6	4	5	5	1
19	Nagapattinam	3	5	5	2	--
20	Tiruvarur	4	2	5	4	--
21	Nilgiris	--	--	--	--	--
Total		180	188	164	288	10

TABLE- 27 Contd.....

Sl. No	Market Committees	Drying yard	Automatic weighing and bagging machine	Farmers Rest Shed	Sanitary Facilities	Drinking water Facilities
1	Kancheepuram	14	-	4	7	6
2	Vellore	13	-	4	8	7
3	Tiruvannamalai	27	1	10	10	13
4	Cuddalore	13	-	5	9	5
5	Villupuram	25	1	1	21	18
6	Salem	18	-	2	11	12
7	Dharmapuri	21	-	3	3	7
8	Coimbatore	51	-	13	18	14
9	Erode	46	-	8	20	14
10	Tiruchirapalli	18	-	5	14	14
11	Thanjavur	20	-	4	5	3
12	Pudukkottai	5	-	--	--	1
13	Madurai	7	-	3	6	6
14	Ramanathapuram	18	-	11	13	11
15	Tirunelveli	19	-	8	15	15
16	Kanyakumari	8	-	4	5	5
17	Theni	7	-	1	3	--
18	Dindigul	8	-	1	6	6
19	Nagapattinam	6	-	--	5	7
20	Tiruvarur	9	-	2	4	2
21	Nilgiris	--	-	--	--	--
Total		353	2	89	183	166

TABLE – 28
District Wise Village Level Drying Yards

Sl. No	District	No. of Drying Yards
1	Kancheepuram	31
2	Tiruvallur	15
3	Vellore	54
4	Tiruvannamalai	74
5	Cuddalore	67
6	Villupuram	95
7	Salem	56
8	Namakkal	27
9	Dharmapuri	36
10	Krishnagiri	16
11	Coimbatore	52
12	Nilgiris	-
13	Erode	73
14	Tiruchirapalli	21
15	Perambalur	23
16	Karur	17
17	Thanjavur	82
18	Nagapattinam	95
19	Tiruvarur	97
20	Pudukkottai	38
21	Madurai	40
22	Dindigul	44
23	Theni	47
24	Sivagangai	26
25	Ramanathapuram	86
26	Virudhunagar	41
27	Tirunelveli	32
28	Tuticorin	10
29	Kanyakumari	16
30	Ariyalur	-
Total		1311

TABLE – 29
List of notified Commodities

S. No.	Commodity
	Cereals:
1	Paddy
2	Cholam (Jowar) in all forms
3	Cumbu (Bajra) in all forms
4	Ragi in all forms
5	Maize in all forms
6	Thinai
7	Varagu
8	Samai
	Pluses:
9	Redgram (Thuvarai) in all forms
10	Black gram (Ulundu) in all forms
11	Greengram (Pachaippairu) in all forms
12	Lab (Mochai) in all forms
13	Cowpea (Karamani) in all forms
14	Horsegram (Kollu) in all forms
	Oil seeds:
15	Groundnut (Pods and kernels,) (whole or split)
16	Gingelly or sesamum seeds or Ellu
17	Castor (Pods or seeds)
18	Sunflower seeds or kernels
19	Coconut (in all forms except tender coconut)
20	Cotton seed
21	Neem seeds.
	Fibres:
22	Cotton (Kapas, lint, waste).
	Vegetables .:
23	Potato
24	Onion
25	Tomato

TABLE- 29 Contd.....

	Fruits :
26	Banana).
27	Mango
28	Grapes (Kodimundhari)
	Drugs and Narcotics :
29	Tobacco in all forms.
	Tubers :
30	Tapioca chips, Tapioca flour, Tapioca starch, Tapioca tubers
	Condiments and Spices :
31	Chillies or red chillies
32	Turmeric in all forms (bulb or finger)
33	Coriander (Dhania seeds)
34	Arecanut (whole or splits)
35	Tamarind in all forms
36	Cashew nuts in all forms
	Miscellaneous :
37	Sugarcane jaggery in all forms (jaggery powder, brown sugar etc)
38	Palm gur, jaggery in all forms
39	Raw Rubber in all forms, Pale Latex crepe, sole crepe and centrifuged latex rubber manufacturer's association grades on rubber sheets and estates brown crepe grades.
40	Silk-cotton in all forms

TABLE- 30
District-wise Agmark Grading Laboratories

Sl. No.	Name of the District	Agmark Grading Laboratories
1	Chennai	Principal Laboratory
2	Kancheepuram	Chennai (North)
		Chennai (South)
3	Vellore	Vellore
4	Cuddalore	Panruti
5	Thanjavur	Thanjavur
6	Tiruchirapalli	Tiruchirapalli- I
		Tiruchirapalli- II
7	Karur	Karur
8	Madurai	Madurai (North)
		Madurai (South)
9	Theni	Theni
10	Dindigul	Dindigul
11	Virudhunagar	Virudhunagar
12	Thirunelveli	Thirunelveli
		Thenkasi
13	Thoothukudi	Thoothukudi
14	Kanyakumari	Nagercoil
		Marthandam
15	Salem	Salem
16	Dharmapuri	Dharmapuri
17	Coimbatore	Coimbatore
18	Erode	Perundurai
		Erode - I
		Erode - II
		Chithode
19	Tiruppur	Thiruppur
		Palladam
		Kangeyam - I
		Kangeyam - II
		Vellakkoil

TABLE - 31
DISTRICT WISE FARMER'S MARKETS

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

**TABLE – 31 Cont...
DISTRICT WISE FARMER'S MARKETS**

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

**TABLE – 31 Cont...
DISTRICT WISE FARMER'S MARKETS**

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

DEMAND NO.5 AGRICULTURE DEPARTMENT

Estimate of the Amounts Required for Expenditure in 2012-2013

BUDGET ESTIMATE 2012-2013

(Rupees in Thousands)

	Revenue	Capital	Loan	Total
DEMAND FOR GRANT – Voted	3,575,96,22	78,70,15	150,30,00	3,804,96,37
Appropriation Charged	2	...	...	2

Net Expenditure Rupees in Thousands

Head of Account		2010-11	2011-12	2011-12	2012-13
		Accounts	Budget Estimate	Revised Estimate	Budget Estimate
2059	PUBLIC WORKS	2,00,62	2,49,35	2,49,35	2,62,00
2202	GENERAL EDUCATION	...	2	2	...
2401	CROP HUSBANDRY	1,333,51,48	1,689,05,06	1,915,18,42	2,998,08,32
2402	SOIL AND WATER CONSERVATION	116,15,81	156,69,95	137,22,83	138,78,64
2408	FOOD STORAGE AND WAREHOUSING	...	...	...	1
2415	AGRICULTURAL RESEARCH AND EDUCATION	236,40,15	258,45,61	270,81,43	249,51,90
2435	OTHER AGRICULTURAL PROGRAMMES	87,18,19	99,57,33	98,09,55	114,96,67

2501	SPECIAL PROGRAMMES FOR RURAL DEVELOPMENT	18,48,05	12,00,00	23,57,72	26,47,00
2551	HILL AREAS	3,82,03	4,00,39	4,08,68	4,18,11
2702	MINOR IRRIGATION	8,23,49	9,06,81	9,88,61	11,32,31
2705	COMMAND AREA DEVELOPMENT	19,35,17	20,48,18	19,15,63	19,46,99
2852	INDUSTRIES	...	77	77	...
3451	SECRETARIAT – ECONOMIC SERVICES	7,12,83	8,69,92	7,24,91	8,17,86
4401	CAPITAL OUTLAY ON CROP HUSBANDRY	13,78,97	46,23,48	42,14,35	24,71,95
4402	CAPITAL OUTLAY ON SOIL AND WATER CONSERVATION	48,44,48	55,04,01	63,07,64	19,31,90
4435	CAPITAL OUTLAY ON OTHER AGRICULTURAL PROGRAMMES	25,68,79	106,82,02	49,16,02	22,55,18
4551	CAPITAL OUTLAY ON HILL AREAS	9,68,04	4,15,82	5,15,78	7,86,69
4702	CAPITAL OUTLAY ON MINOR IRRIGATION	59,36	8,00,00	8,00,00	3,27,78
4705	CAPITAL OUTLAY ON COMMAND AREA DEVELOPMENT	33,09,70	53,66,60	51,93,00	96,65
6401	LOANS FOR CROP HUSBANDRY	106,44,48	150,00,00	130,50,00	150,00,00
7610	LOANS TO GOVERNMENT SERVERNTS ETC.	...	1	1	30,00

**DEMAND NO.5 AGRICULTURE DEPARTMENT
BUDGET ESTIMATE 2012-2013**

(Rupees in Thousands (Gross))

Head of Department			Revenue	Capital	Loan	Total
05 01	Secretariat	Voted	8,17,86	...	30,00	8,47,86
05 02	Directorate of Agriculture	Voted	2,306,05,51	22,11,41	150,00,00	2,478,16,92
05 03	Directorate of Agricultural Marketing and Agri. Business	Voted	77,43,27	22,55,18	...	99,98,45
05 04	Directorate of Seed Certification	Voted	31,61,03	...	...	31,61,03
05 05	Directorate of Horticulture and Plantation Crops	Charged	1	...	...	1
		Voted	561,23,75	3,66,53	...	564,90,28
05 06	Agricultural Engineering Department	Charged	1	...	...	1
		Voted	346,71,01	30,37,03	...	377,08,04
05 07	Agro Engineering Services	Voted	21,87	...	...	21,87
05 08	Tamil Nadu Agricultural University, Coimbatore	Voted	243,82,63	...	...	243,82,63
05 09	Directorate of Organic Certification	Voted	69,29	...	...	69,29
	Total	Charged	2	...	...	2
		Voted	3,575,96,22	78,70,15	150,30,00	3,804,96,37

PART-II SCHEMES 2012-2013

(Rupees in Lakhs)

SL. No.	Description of the Scheme	Total
	SECRETARIAT	
1	Purchase of 60 Computers, 3 Heavy duty Laser Printers and 1 Photo Copier Machine.	25.07
	AGRICULTURE DEPARTMENT	
2	Farm literature production unit for upscaling the publicity and propaganda	5.00
3	Provision of GPRS enabled Hand Held Billing Machines to 185 Agricultural Extension Centres along with customized software on pilot basis to Trichy, Erode, Vellore, Virudhunagar, Coimbatore and Tiruvarur Districts.	24.00
4	Providing 180 Nos. of Hand Held Machines and 24 Nos. of Mini Projector (@ one per block) to Block Assistant Directors of Agriculture, Agricultural Officers / Deputy Agricultural Officers and Assistant Agricultural Officers of all 13 blocks of Cuddalore District and 11 blocks in Ramanathapuram District	40.95

5	Construction of integrated office complex for Agriculture, Horticulture, Agriculture Marketing and Agri Business, Seed Certification and Agricultural Engineering Departments at Nagapattinam and Tiruvarur districts.	150.00
	HORTICULTURE AND PLANTATION CROPS DEPARTMENT	
6	Establishment of District Horticulture Extension and Training Centre at Dharmapuri.	30.00
7	Construction of Input Storage Godown along with Horticulture Extension Centre in Thondamuthur Block of Coimbatore District	25.00
8	Allotment of additional funds for the Extension and Training Centres at Erode and Trichy districts being established under PART II Scheme 2011-12.	20.00
	AGRICULTURAL MARKETING AND AGRI BUSINESS DEPARTMENT	
9	Establishment of Agro Marketing Intelligence and Business Promotion Center at Trichy.	43.00
10	Strengthening of State Agmark Grading Laboratories by providing UV visible Spectrophotometer and Digital Moisture Meter	30.40

	AGRICULTURAL ENGINEERING DEPARTMENT	
11	Purchase of Computers and Accessories for 52 Sub-divisions of Agricultural Engineering Department	15.60
12	Construction of a new building for the Agricultural Engineering Training Centre at Trichy (AETC).	70.00
	TAMIL NADU AGRICULTURAL UNIVERSITY	
13	Construction of Ladies Hostel at Forest College and Research Institute, Mettupalayam	48.39
	Grand Total	527.41

S.Damodaran
Minister for Agriculture