

I. AGRICULTURE

1. Introduction

Agriculture is the growth engine of economic development in Tamil Nadu and sets in motion the wheels of the secondary and tertiary sectors. In Tamil Nadu, this sector is in transformation phase undergoing a paradigm shift from subsistence to commercial agriculture as a result of reforms introduced by the Government to reinvigorate this sector. Agriculture and allied sectors are facing greater challenges in the wake of emerging opportunities due to liberalization and globalisation. To overcome these challenges, it is imperative to strive hard for introducing new initiatives to increase the factor productivity.

In these circumstances, infusion of good agricultural practices such as diversified farming system with regional specialisation, sustainable management of natural resources, farm mechanization, agro processing linkage of production systems with marketing and other value added activities at farm level as well as use of Information and Communication Technology (ICT) based systems for information and knowledge management has paid rich dividend as the state received **Krishi Karman award** from Government of India for its best performance in food grain production during 2011-12.

To set a precedence, the Government planned various new approaches such as enrichment of soil fertility, whole village concept for paddy and pulses, intensification of millets and red gram (through transplantation), sustainable sugarcane initiatives, precision farming, micro irrigation, group extension, cluster approach, integrated farming, solar energized pumpsets under farm mechanization, IT based farm level interventions etc., and meticulously executed

these approaches under various crop oriented schemes during 2012-13.

Although the Government, with a serious concern to place the agriculture sector on a high growth trajectory, resorted to several measures, the efforts were marred by various extraneous factors such as Nilam cyclone, poor storage position in all major reservoirs, failure of South West as well as North east Monsoon, non release of Cauvery water by Karnataka etc., which resulted in lesser coverage of area in major crops as well as damage to the standing crops.

In order to safeguard the livelihood of the farmers of Cauvery delta districts and to mitigate the impact of these extraneous factors, the state government provided 12 hours daily power supply to increase the coverage during Kuruvai season, special assistance under **Samba special package** besides extending additional premium subsidy to meet the farmers' share of insurance premium so as to achieve **universal coverage of Samba and Thaladi crops** in Cauvery delta districts viz., Thanjavur, Nagapattinam, Tiruvarur and parts of Cuddalore and Trichy under crop insurance.

2. Season

2.1. Rainfall

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

(in mm)

Season	2011			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	128.00	86.20	-33
South West Monsoon (June – Sep)	321.20	300.50	-6.40	321.30	245.90	-24
North East Monsoon (Oct.– Dec)	441.20	540.80	22.60	440.40	370.50	-16
Total	921.50	1016.10	10.28	921.00	712.10	-23

During 2012-13, the rainfall received during winter was scanty by (-) 70%, deficient by (-) 33% during summer season and deficient by (-) 24% during South West monsoon. The cumulative rainfall received during the North East Monsoon was 370.50 mm against the normal rainfall of 440.40 mm with a deviation of (-)16 %, which is normal as per IMD parlance. However, the distribution of rainfall during 2012 was highly skewed as most of this rainfall was received in a short spell towards the end of October, 2012.

2.2. Crop Status in Delta districts

2.2.1. Kuruvai paddy crop

Farmers in Cauvery delta depend mainly on Cauvery water for raising paddy crop. Due to non availability of water in Mettur Dam during 2012-13, the water was released for irrigation on 17.9.2012 instead of the scheduled date of 12.6.2012 due to which canal irrigated Kuruvai paddy could not be raised. However, due to the timely gesture of the Hon'ble Chief Minister in extending 12 hour daily power supply to the farmers in delta areas, kuruvai paddy could be raised in 1.604 Lakh acres using the available ground water near filter points.

2.2.2. Samba Special Package For Delta Districts

Hon'ble Chief Minister reviewed the status of the Mettur reservoir on 23.8.2012 and announced a Samba Special Package for an amount of ₹68.10 crores for the Delta districts viz., Thanjavur, Nagapattinam, Tiruvarur and parts of Cuddalore and Trichy to help the farmers in raising samba paddy crop with available resources and thus protecting the livelihood of the farmers and agricultural labourers. This motivated the farmers to take up Samba paddy in a big way and as a result 11.250 Lakh acres were brought under cultivation in Samba season with an additional coverage of 1.905 lakh acres compared to the normal area of 9.345 lakh acres.

The special package envisaged strategies such as direct sowing with proper weed management techniques, proper field preparation, mechanization to conserve soil moisture & maintaining optimum plant population, raising community nursery by using ground water & to facilitate timely planting, basal application of fertilizers at the time of

transplantation, enhancing productivity through use of Micro nutrient mixture, Bio-fertilizers, Zinc Sulphate and Gypsum, capacity building & awareness creation among the farmers.

The components implemented under this special package were distribution of Zinc Sulphate, Gypsum, Micro Nutrient Mixture and Bio-fertilizer @ 75% subsidy, organizing Community Nursery @ ₹47500/- per hectare of nursery, supply of chemical fertilizers @ 25% subsidy upto ₹1125/- per ha for basal application, distribution of weedicides @ 50% subsidy worth ₹400/- per acre in directly sown paddy, back ended subsidy for ploughing in direct seeded fields @ ₹480/- per acre, awareness creation, capacity building and publicity, subsidy to the farmers on hire charges and purchase of agricultural machineries.

2.2.2.1. Additional Components Under Special Package for Delta Districts

a. Protection of Samba/ Thaladi crop from withering

Enthused by the sanction of special package and good rainfall received in second fortnight of October, the farmers took up paddy cultivation in an area of 12.565 lakh acres (11.250 lakh acres during samba and 1.315 lakh acres during Thaladi). Though the initial phase of North East monsoon resulted in very good rainfall in second fortnight of October 2012, it failed in November 2012 in delta region as well as in the catchment of Mettur dam. The poor rains during North East monsoon coupled with non availability of water in Mettur dam created distress situation in the delta districts and the standing paddy crop faced danger of withering. Further the farmers had also invested heavily in raising Samba crop. Under these circumstances, with an aim to save the standing crop, Hon'ble Chief Minister sanctioned additional components under Special Package for Delta districts at an outlay of ₹39.88 crores.

The strategies envisaged for **effective use of available water from ground and other sources** were uninterrupted 3 phase power supply for 12 hours daily, diesel subsidy for operating diesel pump-sets to pump the water from available surface/ground water sources @ ₹600/- per acre, supply of 6000 HDPE (high density poly ethylene) pipes and flexible hose pipes for water conveyance from source to field and use of mini portable sprinklers for irrigation.

Further to **protect the standing crop from withering**, measures such as spraying of water, Muriate of Potash (MOP) and Pink Pigmented Facultative Methylotriph (PPFM) using Multi-purpose boom sprayers were implemented through Krishi Vigyan Kendras of Tamil Nadu Agricultural University. Awareness campaign on various strategies were also organised to mitigate water stress and ensure optimum utilization of available water.

b. Payment of farmers' share of premium cost and to achieve universal coverage under Crop Insurance :

Government also sanctioned ₹30.00 crores for providing premium subsidy to the farmers in Cauvery Delta districts viz., Thanjavur, Nagapattinam, Tiruvarur and parts of Cuddalore and Trichy to ensure 100% coverage of standing samba and Thaladi paddy crop under crop insurance. Around 5.32 lakh farmers were covered under this crop insurance in Delta districts.

In spite of all these efforts taken by the Government, the situation in delta districts was grim due to natural calamities. This scuttled the prospects of Kuruvai, Samba and Thaladi crops, which would otherwise have been a good crop due to the measures taken by the Government.

2.3. Crop damage during 2012-13

2.3.1. Crop Damage due to Nilam Cyclone

The Nilam cyclone that crossed the East coast near Mamallapuram on 31.10.12 caused crop damage above 50 percent in an extent of nearly 41449 acres of paddy crop cultivated in coastal and other districts viz., Nagapattinam, Thiruvarur, Cuddalore, Pudukottai, Thanjavur, Kanyakumari, Ariyalur and Vellore. Government extended relief assistance of ₹4,000/- per acre under calamity relief fund and a sum of ₹16.77 crores was sanctioned to 22024 number of affected farmers.

2.3.2 Crop Damage due to failure of Monsoons

As far as delta districts are concerned, an area of 12.48 lakh acres under paddy have been covered against the normal area of 13.84 lakh acres during Samba and Thaladi seasons of 2012-13 of which 3.61 lakh acres of 1.75 lakh farmers have been damaged more than 50%. Government constituted a high level Committee for assessing the drought situation and providing necessary relief measures to the drought affected areas in Tamil Nadu. Based on the report of High Level Committee, all districts except Chennai were declared as drought affected and a relief assistance of ₹542.04 crores was sanctioned to the affected farmers @ ₹15000/- per acre (₹5000/- under calamity relief fund and ₹10000/- as special Cauvery relief inclusive of insurance amount)

3. Area and Production during 2011-12 & 2012-13

The estimate of area and production for 2011-12 is as follows:-

Crop	Area (L.ha.)		Production (L.MT)	
	Target	Achmt. (Final estimate)	Target	Achmt. (Final estimate)
Rice	22.00	19.04	85.50	74.59
Millets	10.00	6.38	23.50	23.24
Pulses	10.00	6.69	6.00	3.69
Total food grains	42.00	32.11	115.00	101.52
Oilseeds	6.50	4.49	14.62	11.14
Cotton (L.Bales)	1.50	1.35	4.00	3.82
Sugarcane (cane)	3.50	3.46	472.50	385.76
Total	53.50	41.41		

Tamil Nadu state, which is surging ahead in all fronts, has created a history in the annals of agriculture of the state by obtaining the highest food grain production of 101.52 L.MT during 2011-12, which is all time high in the last ten years. Nevertheless to say, the state has also achieved the highest production in rice, millets and pulses.

This had been possible only due to the following proactive steps implemented by the government besides implementing multitude of crop-oriented schemes for the welfare of farming community.

- ❖ **1880 SRI villages** were organized as a **whole village concept** throughout the State and better adoption of this technology in 10.01 L.Ha of the area under paddy was the most important reason for increase in rice production to 75 L.MT during 2011-12.
- ❖ Promotion of high end technologies such as **Precision Farming and micro irrigation**, contributed to increase

in production of millets through increased yield, quality and input use efficiency.

- ❖ To bridge the production - demand gap in pulses, improved pulses production technologies with more focus on application of **Pulse Wonder** were advocated **in 1695 Pulses villages** covering an area of 0.95 L.ha.
- ❖ For the first time, the State Government sanctioned a sum of ₹10.48 crores towards Micro irrigation exclusively for pulses in an area of 5000 hectares out of which, a sum of ₹10.25 crores was spent covering an area of 4931 hectares.

As a special gesture, the Hon'ble Chief Minister rewarded the farmer with a special award and cash prize of **₹5 lakhs** for obtaining the highest yield in paddy by adopting System of Rice Intensification technology during 2011-12.

It is also noteworthy to mention that Tamil Nadu Government has bagged the **Krishi Karman Award of Government of India for the year 2011-12** for the best performance in food grain production. Besides, two farmers of this state who cultivated Rice and contributed maximum to the food basket of the State were awarded **Krishi Karman Award for progressive farmers**. The farmers were given an award of ₹1 lakh each along with a PRASHASTHI PATRA.

Inspite of the best efforts taken by the Government, the production during 2012-13 is likely to be less when compared to 2011-12 due to occurrence of natural calamities. The anticipated area and production as per **second advance estimate (21-01-2013) is given below.**

Crop	Area (L.ha.)		Production (L.MT)	
	Target	Anticipated Achmt.	Target	Anticipated Achmt.
Rice	22.00	17.36	86.50	54.84
Millets	11.00	7.54	26.95	25.11
Pulses	10.40	8.07	6.55	3.56
Total Food grains	43.40	32.97	120.00	83.51
Oilseeds	6.60	5.02	15.00	11.62
Cotton (L.Bales)	1.55	1.39	4.20	3.48
Sugarcane (cane)	3.60	3.95	493.50	422.21
Total	55.15	43.33		

However, due to severe drought throughout the state, the area and production are likely to come down further in subsequent estimates.

Area and Production Programme for 2013-14

Crop	Area (L.ha)	Production (L.MT)	Productivity (Kg/ha)
Rice	20.00	78.50	3925
Millets	11.00	26.95	2450
Pulses	10.40	6.55	629
Total food grains	41.40	112.00	
Oilseeds	6.60	15.00	2273
Cotton (L.Bales)	1.55	4.20	461
Sugarcane (cane in MT)	3.60	396.00	110
Total	53.15		

4. Stepping Stones to Second Green Revolution in Tamil Nadu.

The Government which had set itself to bring in **Second Green Revolution** in Tamil Nadu brought reforms in agriculture through various innovative approaches such as whole village concept, crop specific strategies, Soil health management, Water resources management, input supply management, farm based interventions and Integrated Farming System approach with extensive use of Information Technology and Capacity building for excellence resulting in exemplary performance of the State in food grain production which was widely acclaimed across the country. Not complacent with these efforts, the Government framed following strategies to further step up the momentum towards Second Green Revolution:

- Appropriate Land use system
- Soil nutri-care
- Increased Water Use Efficiency
- Integrated Input Supply Network
- Crop based interventions
- Integrated farming
- Dryland farming
- Organic farming
- Group farming / Cluster approach
- Crop diversification
- Rebuilding agriculture infrastructure
- IT based Extension deliverance
- Capacity building for excellence
- Disaster Risk Reduction

Thrust Areas

- Rejuvenation of soil health to increase the productivity
- Conjunctive use of water
- Supply and management of quality inputs

- Effective and economic utilization of inputs
- Increasing the net cultivable area
- Improving the Farmers Development Index
- Investment for increased capacity utilization of agriculture infrastructure
- Rainfed cultivation

4.1. Appropriate Land Use System

The purpose of appropriate land use system is to help in introducing a well defined and sustainable pattern of utilization of our land resources to meet the consumption needs of the growing population by increasing the productivity of the available agricultural lands. The existing land use pattern will be evaluated based on a resource survey of production potential of land in a given agro climatic zone in order to plan for effective use . Cropping pattern will be suitably defined at farm level so as to increase the economic profitability of farmers. In view of this, Government is focusing on promotion of farm specific cropping pattern so as to exploit the land use potential to its maximum. Government is giving thrust to preserve the prime agricultural lands and control its diversion for non-agricultural purposes by recommending suitable and profitable cropping system, reclamation of problem soils, identification and conversion of fallow lands for agriculture, increasing the productivity of agricultural lands by village-based Integrated Nutrient Management through stratified soil sampling and analysis, promotion of organic farming, Integrated Farming, diversified farming, Rainfed Area Development and appropriate market linkages to enable the farmers to take up agriculture as a lucrative profession.

4.2. Soil - Nutri Care

Land degradation refers to changes in quality of soil, water, terrain, biotic resources and physio-chemical characteristics that result in loss in productivity of the land. Continuous cropping, mono cropping, insufficient usage of organic manures and indiscriminate use of fertilizers have adversely affected the soil health of the state in general. Hence restoring the soil health through need based application of macro and micro nutrients is the need of the hour.

Government is exploring all avenues to rejuvenate the soil health and fertility through detailed soil survey, soil sample collection and analysis, distribution of a comprehensive record called **Farmers Integrated Handbook (FIHB)** containing personal information of farmers, soil test results, season wise, crop wise nutrient recommendation and scheme benefits valid for three years to help the farmers in planning their cropping programme and estimating the input requirement, encouraging organic farming through cultivation of green manure crops, application of organic manures, biofertilizers etc., and correcting micro nutrient deficiencies.

A sum of ₹7.57 crores has been allocated towards distribution of Farmers integrated Hand book. Further, during 2012-13, steps have been taken to purchase 13 new Mobile Soil Testing Laboratories fitted with sophisticated analytical instruments at a cost of ₹5.25 crores to analyse soil samples at farm level by directly visiting the villages and to expedite the soil analysis work.

4.3. Increased Water Use Efficiency

Agricultural productivity is water centric as water plays a vital role in a crop cycle. Water has become one of the precious resources for agriculture as the state has utilized 97.5% of surface water. Even though water is a limiting factor, the state has harnessed the available surface water potential. The state is equally reliant on surface and ground water resources for irrigation although its reliance on ground water sources has been steadily increasing.

Efforts are being taken by the Government to disseminate various initiatives to improve the Water Use Efficiency and enhance crop productivity by adoption of System of Rice Intensification and Improved Pulses production technologies as a whole village concept in a larger extent, popularization of Sustainable Sugarcane Initiatives, promotion of Precision Farming and Micro Irrigation, adoption of Integrated Farming System, promotion of alternative crops, improving water holding capacity of the sub-basins, de-silting of tanks and ponds to increase their capacity, construction of water harvesting structures such as check dams, farm ponds, percolation ponds for recharging ground water.

4.4. Integrated Input Supply Network

Agricultural production is highly influenced by timely availability of quality inputs. Government is taking necessary measures for adequate production / procurement, stocking and distribution of inputs such as seeds, micro nutrient mixtures, bio-fertilizers, bio-pesticides and plant protection chemicals through the block Agricultural Extension Centres besides private entrepreneurs, Women Self Help Groups, Commodity Interest Groups etc., to make these inputs

available to the farmers before the commencement of cropping season. The availability of other critical inputs such as fertilizers and credit is ensured through Primary Agricultural Cooperative Credit Societies. Further the information on availability of inputs is made available in the web portal of Agriculture Department for easy access by the farmers and other stake holders.

4.5. Crop Based Interventions

The Government which is steadfast in achieving second green revolution is taking series of initiatives and crop oriented approach is one among them. The following crop oriented approaches have been specifically designed for increasing the production and productivity of a crop.

i. Whole Village Concept: This concept envisages adoption of a package of all innovative technologies in a village as a whole to become a model and convince the farmers of the efficacy of improved technologies in improving the productivity and minimising the cost of cultivation by timely application and management of key inputs such as water, seed, nutrients and machinery besides bulk production helps the farmers in clusters to market their produce in a better way.

System of Rice Intensification technology and System of Pulses Intensification are being implemented as whole village concept from 2011-12.

a. System of Rice Intensification (SRI)

System of Rice Intensification technology comprising 12 critical steps is capable of substantially increasing the rice productivity, increasing water use efficiency, minimizing

inputs and labour requirement thus saving cost of cultivation by 25 to 30%.

During 2012-13, System of Rice Intensification has been adopted as whole village concept in 1719 villages covering an area of 1,68,120 hectares. An amount of ₹15 crores has been allocated to organize 50,000 Demonstrations in SRI under NADP and a sum of ₹14.92 crores has been spent so far. During 2013-14, this scheme will be implemented in 12 lakh hectares.

b. System of Pulses Intensification (SPI)

Government is giving due focus for pulses production to achieve dietary protein self sufficiency to ensure nutritional security to the people. In Tamil Nadu, pulses crop is mainly grown as rice fallow, rainfed, intercrop and bund crop. Thrust is being given to bring more area under pulses as pure crop under irrigated condition. A mission mode approach is being adopted with intensive implementation of all production technologies in seven critical steps as a package called '**SYSTEM OF PULSES INTENSIFICATION**' besides promotion of transplanted red gram cultivation, distribution of rain-gun/ mobile sprinklers and use of PULSE WONDER to boost the yield.

During 2012-13, System of Pulses Intensification has been adopted as whole village concept in 1695 villages covering an area of 74,000 hectares. Under NADP, activities such as cultivation of Redgram through transplantation, distribution of Rainguns, Mobile Sprinklers and Pipes, Tarpaulin, DAP Foliar spray etc have been taken up under Pulses Mission at a cost of ₹17.61 crores. This scheme will be implemented during 2013-14 also.

Further, Integrated Development of Pulses Villages has been taken up in an area of 8000 ha at a cost of ₹3.95 crores during 2012-13. This scheme will be implemented during 2013-14 also

ii. System of Millets Intensification

Millets, which are traditionally cultivated over years suffered a setback. Changing food habits of the people, high nutritional content and adaptability to adverse soil and climatic conditions have necessitated the promotion of millets in a large scale. The millets provide multiple securities such as food security, fodder security, health and nutritional security and livelihood security. To demonstrate the improved production and post harvest technology in an integrated manner with visible impact to catalyze increased production of millets, Government has evolved result oriented strategies such as distribution of certified seeds, distribution of improved varieties / hybrids as minikit, seed production and sensitizing the farmers on various local and indigenous technologies, supply of critical inputs, generating consumers' demand for millet based food products through awareness creation and processing & value addition techniques which will be implemented in a massive way under various ongoing / new programmes.

During 2012-13, Initiatives for Nutritional security through Intensive Millets promotion (INSIMP) was implemented at a cost of ₹9.87 crores under National Agricultural Development Programme. This scheme will be implemented during 2013-14 also.

iii. Sustainable Sugarcane Initiatives (SSI)

The Government has set a goal to achieve 1000 L.MT of sugarcane production in a period of 5 years. Considering the pressure on cultivable land within the

cropped area and lands for other use, productivity enhancement is the only way to attain the said target for which SSI, a comprehensive production technology is being promoted to augment the productivity besides reducing the input requirement especially planting material & water and increasing fertiliser use efficiency by adoption of precision farming and mechanised harvesting.

The Sustainable Sugarcane initiatives was implemented in 2648 hectares at a cost of ₹4.67 crores during 2012-13 under National Agricultural Development Programme. The scheme will be continued during 2013-14 also.

iv. Precision Farming

Precision Farming is being promoted on cluster basis wherein farmers are being provided with critical inputs such as seeds, water soluble fertilizers at 50% subsidy besides conducting adequate training programme.

The Precision Farming is implemented in 2000 hectares at an allocation of ₹5.22 crores during 2012-13 under National Agricultural Development Programme and the scheme will be continued during 2013-14.

v. Micro Irrigation

Micro irrigation, as a part of measures in increasing the Water & Fertilizer Use Efficiency is promoted in a larger extent as it helps reduce weed menace, maintain optimum plant population and increase the productivity & quality of agricultural produce.

During 2012-13, Micro irrigation has been adopted in 7807 hectares under various crops such as Sugarcane, Cotton, Maize and Coconut. The scheme will be continued during 2013-14 also.

4.6. Integrated farming

Integrated farming is a broad based agriculture which focuses on a few selected, inter dependant, inter-related production systems based on crops, animals and subsidiary profession. Integrated farming represents an appropriate combination of farm enterprises viz., agriculture, horticulture, livestock, fisheries, forestry and poultry based on farmers' priorities, resources and marketing. It ensures maximum utilization of resources in terms of time and space, making all the enterprises mutually complementing each other. This type of farming has several advantages such as increasing economic yield, profitability round the year, sustainability and balanced nutrition, pollution free environment and provide opportunity for recycling the byproduct, enhance employment generation, increased input use efficiency and ultimately improves the economic status of the farming community.

During 2012- 2013, 94 villages have been identified in 94 blocks to organize 1422 Integrated Farming models suitable for wetland, garden land and dryland @ one model per block under National Agricultural Development Programme and a sum of ₹8.79 crores has been spent. The scheme will be continued during 2013-14.

4.7. Dry land farming

Tamil Nadu has a gross cropped area of 57.53 L.ha. of which 33.48 L.ha. is under irrigated area. The rest is under rain fed/ dry land culture. The limited cultivable area of the state is also under severe strain due to competing demands of various land uses, threatening the future food security of the State. Already about 50 per cent of the area is threatened by soil erosion, salinity, water logging, nutrient deficiency, depletion of soil organic matter content leading to decline in productivity. Hence, to bridge the yield gap and to increase the farmer's income, the following approaches

shall be focussed to upscale the productivity of crops in rain fed areas:

- Improvement of soil health
- Farmers participation in selection of variety
- Soil test-based INM practices
- Improving the seed production mechanism
- Farm mechanization
- Rain water management

These approaches are being promoted effectively at farm level by evolving suitable soil and water conservation measures (erosion control and increased water use efficiency), overcoming productivity constraints by identifying suitable cropping patterns and strategies, bringing fallow land under cultivation to increase area under crop cultivation and identifying efficient cropping zones for high value crops and farming system models without affecting food grain production and oil seeds production.

During 2012-13, Rainfed Area Development Programme under National Agricultural Development Programme was implemented at a cost of ₹9.62 crores towards implementation of components such as organizing cropping system based demonstrations, establishment of vermicompost units and distribution of mobile sprinklers & rainguns. The scheme will be continued during 2013-14 also.

4.8. Organic farming

Organic farming is a unique production management system which primarily aims at cultivating the land and raising crops in a way that keeps the soil alive and in good health by use of organic wastes (crop, animals, aquatic and farm wastes), and other biological materials along with beneficial microbes to release nutrients to crops for

increased sustainable production in an eco friendly pollution free environment. For increasing the soil productivity, Government is promoting use of organic materials through various schemes such as Composting of Farm Wastes using Pleurotus, Vermicomposting, application of Bio-fertilizers, Green Manures, Enriched Farm yard Manure, etc., to motivate the farmers in a massive scale.

During 2012-13, components such as procurement and distribution of 1060 MT of green manure seeds, establishment of 1300 vermi compost units and formation of 4500 pits for production of enriched Farm Yard Manure were implemented as an integrated scheme for enrichment of soil fertility under National Agricultural Development Programme at a cost of ₹ 5.39 crores.

4.9. Group Farming & Cluster approach

Group farming is one of the good agricultural practices wherein the agricultural activities at one place are integrated and developed by allocating & sharing available resources and utilizing to the best possible extent. The group farming & Cluster approach help in advance planning, adoption of new technologies, uniform variety cultivation, managing labour shortage, ensuring timely operations, reducing seed requirement, Soil test based nutrient management, effective irrigation and water management, reducing cost of cultivation, exchanging scientific information on conservation & utilization of resources, efficient marketing and profitability of farming.

The Government successfully implemented this approach by motivating the farmers of delta districts to take up **community nursery** to bring in more area under Samba paddy in the wake of water shortage due to poor monsoon

during 2012-13. The **community nursery** approach not only saved lot of investment, but also ensured uniform crop stage, variety, cultural practices and overall reduction in total cost of production. The Government will carry forward this concept as well as cluster approach to demonstrate the effects of good agricultural practices of major crops across the state.

Under National Food Security Mission, Cluster demonstrations on SRI / direct seeded Rice/ Line transplanting and Hybrid Rice Technology in paddy and Cluster Demonstrations on inter cropping, improved varieties and farm implements in pulses have been organized at a cost of ₹7.15 crores. Further Accelerated Pulses Production Programme was also implemented on a cluster basis at a cost of ₹3.17 crores.

Under NADP, schemes such as integrated farming, precision farming, Sustainable Sugarcane Initiatives, distribution of agricultural machineries to SC/ST farmer groups and Integrated Development of Pulses villages are being implemented on a cluster approach.

4.10. Crop diversification

Crop diversification has been conceptualized as a measure of optimal utilization of water with emphasis on growing less water intensive, high remunerative crops. A farming system approach not only considers the farm, the farm household and off-farm activities in a holistic way but also aspects of nutrition, food security, sustainability, risk minimization and compensation, income and employment generation which ultimately helps in raising the economic status of the farming community. Hence the Government is very conscious in taking serious efforts in promoting Crop diversification that envisages formulation of location / farm

specific cropping strategies and cropping pattern to mitigate the stress situations faced due to the vagaries of monsoon, uncertainty in availability of irrigation water in canal irrigated areas and declining ground water table during normal, moderate drought and severe drought period.

4.11. Rebuilding Agriculture Infrastructure

Investment in rebuilding Infrastructure helps in adequate availability of all critical inputs by increasing the production capacity of Agriculture Infrastructure besides strengthening the extension delivery system. Government with an aim to ensure soil test based Nutrient management, provide adequate quantity of quality inputs such as seeds, biopesticides, micro nutrient mixture, biofertilizers besides transfer of technologies from lab to land is in the process of establishing new mobile soil testing laboratories, seed processing units, seed godowns, bio-fertilizer production units, Micronutrient mixture unit, farmers hub, agricultural extension centres besides modernization of existing infrastructure.

As a part of augmenting quality seed production, a sum of ₹14.98 crores was allotted during 2011-12 towards modernization of seed processing units in selected 10 districts. During 2012-13, a sum of ₹11.93 crores has been allocated for improving infrastructure to seed processing units, ₹15.24 crores for strengthening quality seed production in State Seed Farms and ₹0.23 crores for infrastructure improvement of 4 State Coconut Nurseries under NADP and the works are in progress.

Further, a sum of ₹2.75 crores has been allotted to strengthen the infrastructure facilities of 5 Bio Fertilizer Production Units (BFPU) for production of liquid biofertilizers besides ₹5.99 crores for NABL accreditation to 2 Pesticide Testing Laboratories and construction of 6 State

Pesticide Testing Laboratories under NADP and the work is under progress.

Farmers' Hub is being established at 10 places at a total cost of ₹15.00 crores for information dissemination on innovative technologies and also for solving all field oriented problems related to Agriculture and sister departments at one spot.

4.12. Information Technology based Extension deliverance

The success of agriculture lies in proper dissemination of information about new agricultural technologies in right time, at right place and by right means to the farmers. Information is an important resource, which is required for effective mobilization and utilization of resources, policy formulation & implementation and other activities involved in agricultural development. Relevant information has to be made readily available to various users including policy makers, researchers, extension workers, farmers and others engaged in the agricultural sector. The quality of information has to be of high fidelity for which inter-personal communication is necessary. The farmers should have wide knowledge in Agriculture to sustain their livelihood and to enhance the economic status for which they have to be abreast of the latest changes in agriculture around the world besides enriching themselves on various innovative technologies.

As the expanding science and the ICT have brought the world to our doorsteps, it is high time that the ICT is properly put in use to disseminate information to the end users effectively and this has to be of two way communication by eliciting the response of the farmers concurrently. Government of Tamilnadu, which is keen in making farmers aware of the latest know-how in agriculture, is rendering multidisciplinary farm advisory services through

single window delivery system. To provide better e-governance in Agriculture so as to keep the farming community abreast on latest farm crop technologies and other cultivation approaches, Hon'ble Chief Minister has launched series of new initiatives such as **Farm Crop Management System (FCMS) and Farmers Integrated Handbook, 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.

4.13. Capacity Building For Excellence

Modern Agriculture has become technology propelled with lot of scientific innovations and practices emerging to increase the production and productivity of crops. However holistic adoption of these technologies by the farmers can alone make agriculture a profitable venture. In these circumstances, the farmers' skills and knowledge should be honed to overcome the challenges faced in day to day agriculture ultimately to help them in practising agriculture successfully. Hence Government is giving thrust to bridge the knowledge gap and enhance the technical and managerial competence of the farmers, extension functionaries and other stake holders by assessing their needs to satiate their requirements by organizing demonstrations, agrofairs, field trips & exposure visits, workshops, technical seminars and trainings to get acquainted with various crop production technologies including integrated agriculture, organic farming, farm mechanization, post harvest management, value addition etc.

4.14. Disaster Risk Reduction:

Tamil Nadu agriculture is highly riddled with natural calamities such as flood, drought, cyclone which frequently disturb the crop cycle. This has a high impact on production and productivity of crops inspite of the combined efforts of farmers, Government and other stake holders to make profitable returns in agriculture. In the circumstances stated above, Government is extending helping hands by implementation of crop insurance schemes, extending enhanced relief assistance to compensate the crop losses at distress times and protect the livelihood of the farmers by infusing confidence to adopt frontier technologies to increase the crop yields.

5. Schemes

The Government is implementing various crop oriented subsidy schemes such as State Sponsored Schemes, Centre-State Shared Schemes, Centrally Sponsored Schemes and Externally Aided Projects for the holistic development of farming community.

5.1. State Sponsored Schemes

The Government, which is on the anvil of developing agriculture at farm level, is implementing farm centric schemes 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

The farm level productivity can be increased only if farm specific cropping system is adopted based on the suitability of the soil. Hence Reconnaissance soil survey at taluk level and detailed soil survey at village level are done

to demarcate the area into soil order & series, study the characteristics of the soil, nutrient status, Land irrigability, Land capability, Crop suitability etc. The soil profile is studied through field studies, laboratory analysis and classified according to the internationally recognized system of United States Department of Agriculture (USDA). The extent of soil is mapped on standard topographic base maps and finally interpreted to grow more suitable, location specific crops adopting improved scientific technologies to attain higher productivity at farm level besides site specific recommendations and survey number wise crop management strategies. The detailed soil survey is conducted through four Soil Survey Units at Coimbatore, Thanjavur, Vellore and Tirunelveli and inventory on soil resources is prepared. The detailed soil survey will be conducted in an area of 0.99 L.ha. during 2013-14.

5.1.2. Soil Health Management

The crux of Agriculture lies with Soil health and if not properly managed will lead to poor farm productivity. The management has to be done within the natural or managed ecosystem boundaries to sustain crop productivity besides enhancing the utility of other resources especially water. The organic matter content which was 1.26% in 1980s has come down to 0.68% in 2010-11 due to rigorous cultivation, mono cropping and indiscriminate use of chemical fertilizers.

The organic matter is not only a basic source of nutrient but also retains soil moisture and improves the microbial activities in the soil. Hence restoration of soil health requires initiatives for continuous monitoring of soil health, measures to arrest decline of soil health, creating adequate facilities for soil testing, fertiliser testing, developing and upgrading testing protocols, ensuring judicious and efficient use of fertilisers and pesticides.

Measures of soil health improvement need to be comprehensively centered on addition of soil organic matter in substantial quantities over a period. Government is taking adequate efforts for production and use of available biological sources of nutrients like bio-fertilisers, liquid biofertilisers, organic manure, bio-compost for sustained soil health, fertility, improving soil organic carbon and so on as alternative inputs.

Government has taken series of initiatives to rejuvenate soil health besides preserving the soil fertility, which are as follows.

- Distribution of **Farmers Integrated Handbook (FIHB)** to all 82 lakh farm holdings in the State to advise the farmers in adopting farm specific crop plan based on the soil test results, recommending crop specific inputs and nutrients and to apprise the farmers on the scheme benefits. This handbook, valid for three years is being distributed to farmers to help them in judicious use of fertilizers and also to keep a record of farm wise, season wise production and productivity. 16.90 lakh soil samples have been analysed and 8.19 lakh Nos. of FIHB have been distributed after detailed soil analysis.
- Strengthening of 13 new Mobile soil testing laboratories by providing fully equipped mobile vans during 2012-13 at a cost of ₹5.25 crores to expedite soil analysis.
- The Central Control Laboratory located at Kudumianmalai, is the Apex Organization which provides widespread awareness on soil-test-based fertiliser use, technical competence through training to the laboratory personnel and ensures the precision and accuracy of analysis in the laboratories.

- 30 Soil Testing Laboratories functioning in the state have been computerized for uploading the details of soil samples analyzed in the **AGRISNET**, the web portal of Agriculture Department.
- Government with an aim to stabilize agricultural production and to increase it further in a sustainable manner is promoting **Organic farming** so as to keep the soil in good health by use of biofertilizers and composted organic wastes (crop, animal, aquatic and farm wastes). The beneficial microbes in these eco-friendly organic materials will release the nutrients to crops and keep the environment pollution free. Government to offset the excessive mining of nutrients of the soil due to indiscriminate use of inorganic fertilizers, is implementing schemes such as composting of farm wastes with *Pleurotus*, Vermicomposting of farm wastes, production and distribution of Bio-Fertilizers and procurement & distribution of green manure seeds.
 - Kits containing 1 Kg of *Pleurotus*, 5 Kg of Urea with pamphlet are distributed every year to the farmers at free of cost to produce **compost from farm waste using *Pleurotus***.
 - The farmers are motivated to produce and use organic manures in their own fields through implementation of scheme viz., **Vermicomposting of agricultural waste**. During 2012-13, 250 demonstrations cum training to benefit 12500 farmers have been conducted at a cost of ₹9.63 lakhs. The scheme will be continued during 2013-14.
 - Bio-fertilizers, an eco friendly organic agro-input are produced in Government owned 15 Bio-Fertilizer Production Units functioning with an annual production capacity of 3850 MT (192.50 lakh packets of 200 gram each). Three strains viz., *Azospirillum*,

Rhizobium and *Phosphobacteria* are produced and distributed at a cost of ₹6/-per packet and tested for quality by Bio-fertilizer Quality Control Laboratory functioning at Tiruchirapalli. The government has programmed to produce and supply 3850 MT during 2013-14.

- As announced by the Government during 2012-13, efforts have been taken to strengthen 5 existing Bio-Fertilizer Production Units to produce 2.5 lakh litres of liquid biofertilizers per annum. Liquid Bio-fertilizers are having longer shelf life (12 – 24 months) than the solid biofertilizers (6 months).
- As Blue Green Algae and Azolla help in fixing atmospheric Nitrogen in the paddy field, annually 525 MT of **Blue Green Algae** and 500 MT of **Azolla** are produced and distributed to farmers. This scheme will be continued during 2013-14 also.
- **Green manure crops** like Sunhemp, Daincha, Kolinji and Sesbania are capable of fixing atmospheric nitrogen by symbiosis that improves soil nutrient status. Daincha and Kolinji are also capable of reducing salinity and alkalinity of the soil. During 2012-13, 250 MT of Green Manure Seeds were procured and distributed to the farmers at an enhanced subsidy of 50%. The scheme will be taken up during 2013-14 also.
- Government had announced an Integrated scheme on improving soil fertility during 2012-13 under which 1060 MT of green manure seeds were procured & distributed and 1300 Vermicompost centres were established at a cost of ₹4.39 crores besides formation of 4500 manure pits for production of Enriched Farm Yard Manure at a cost of ₹1.00 crore.

5.1.3. Macro Nutrients

Inorganic fertilizers are indispensable for increasing the production and productivity of crops. These fertilizers

supply essential macro elements for a crop at its different growth stages. The Department of Agriculture is taking concerted efforts to create awareness on nutrient deficiencies resulting from excessive or unbalanced fertilizer use. Nevertheless, balanced and judicious application of these fertilizers in appropriate combination with organic matter and required micronutrients would ensure good soil and water quality, besides lesser cost of cultivation and high-grade produce. The fertilizer recommendations are given based on soil testing and season-wise, cropwise, farm wise fertilizer requirement plans are formulated every year. The Government is also taking sincere efforts to get allocation of fertilizers from Government of India in time and a supply plan is prepared seasonwise to ensure adequate availability of fertilizers to the farmers through fertilizer companies.

Fertilizer distribution during 2012-13 and requirement for 2013-14 are furnished below:-

Fertilizer	(L.MT)		
	Allocation 2012-13	Distribution 2012-13	Requirement 2013-14
Urea	14.62	9.15	11.70
DAP	4.59	2.15	4.30
MOP	5.15	2.06	6.13
Complex	7.99	4.41	7.00

The introduction of Nutrient Based Subsidy (NBS) policy from 01.04.2010 by Government of India (GOI), had repercussion as the variable subsidy and fixed MRP system hitherto followed was changed to fixed subsidy. The Fertilizer Manufacturers / Importers were at liberty to fix MRP based on the cost of production / import due to which prices of chemical fertilizers except Urea have substantially increased. This has resulted in excess use of Urea in lieu of

DAP and MOP causing imbalance in the nutrient application. In the long run this would adversely affect the fertility, soil health and productivity of crops.

Hence, Government of Tamil Nadu to overcome the consequences of implementing present NBS policy and safeguard the welfare of the farming community has taken exemplary initiatives such as exempting 4% VAT on Fertilizers, providing enhanced interest free loan of ₹150.00 crores to TANFED for prepositioning adequate quantity of DAP for timely supply to farmers at a reasonable cost besides planning to purchase urea and MOP through TANFED / Government agencies and maintain Buffer stock to meet the demand without any shortfall.

5.1.3.1. Quality Control

The Government is determined to distribute quality inputs to farmers for which concrete measures such as collection of samples from wholesale /retail outlets & manufacturing units, analysis of samples through notified Government Fertilizer Control Laboratories and initiation of legal action against the distributors who sell non-standard fertilizers are taken. The Government is strictly enforcing Fertilizer Control Order, 1985 through periodical sampling and analysing in 14 notified Fertilizer Control Laboratories functioning in the State. During 2012-13, 16434 samples were tested of which 435 samples were found non-standard and suitable departmental and legal action have been taken up against the defaulters. During 2013-14, it is programmed to analyze 17500 fertilizer samples.

5.1.4. Micro Nutrients

Micro nutrients play an important role in sustaining soil health and soil fertility, the deficiency of which will not only affect the production and productivity of a crop but also

the quality of a produce. In view of its essentiality in crop growth, the Government has installed Atomic Absorption Spectro Photometers in 26 Soil Testing Laboratories and 10 Mobile Soil Testing Laboratories to analyze the Micro Nutrient status. Micro Nutrient Mixture Production Centre at Kudumianmalai produces 1400 MT of 14 types of notified Micro Nutrient Mixtures annually. The Mixtures are tested for quality at 6 Fertilizer Control Laboratories and distributed to the farmers through the Agricultural Extension Centres. As a part of strengthening these activities, an amount of ₹60 lakhs has been sanctioned for modernization of Micro Nutrient Mixture Unit besides ₹130 lakhs for the construction of MN mixture godown under NADP. During 2012-13, it was programmed to produce 1400 MT of Micro Nutrient Mixtures and 1570 MT of Micronutrient mixtures were produced. The scheme will be continued in 2013-14 also.

5.1.5. Seeds

Quality seed is the determinant factor for realizing potential productivity. A Quality seed is the one that satiates the standards of germination, physical purity, genetic purity and seed moisture content. The Government is aiming to ensure availability of true-to-type seeds and curb the sale of spurious seeds by resorting to the following initiatives a) supply of region specific varietal seeds and ensuring adequate stocks and timely supply of quality seeds to farmers, b) seed system for rainfed areas capable of providing seeds of contingency or alternative crops during prolonged dry spells, c) sensitizing the farmers on production and usage of indigenous and certified seeds, d) encouraging the private entrepreneurs in quality seed production, e) involving farmers, women SHGs, TANWABE groups and NGOs in seed production and processing activities, f) Identification of potential seed production areas,

declaring as seed valley, g) improving the infrastructure facilities for seed production, processing and storage.

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. During 2012-13, 17001 MT of paddy seeds, 349 MT of millet seeds, 2563 MT of pulses seeds, 3288 MT of oilseeds and 40 MT of cotton seeds were distributed through Agricultural Extension centres.

The seeds produced in the seed farms are processed in the 16 major, 2 medium and 63 mini Seed Processing Units with an annual capacity of 29,600 MT.

The details of quality seed distribution and the Seed Replacement Rate (SRR) programmed for 2013-14 are as follows:-

Crop	Seed Distribution Plan for 2013-14 (in MT)			
	Total Annual Requirement	Department Certified Seeds	Private Certified / Truthfully labelled Seeds	SRR (%)
Paddy	95000	18700	46850	69
Millets	8603	480	6065	75
Pulses	17760	3910	1950	33
Oilseeds	94165	5650	8475	15
Cotton	555	100	455	100

5.1.6. Plant Protection

5.1.6.1. Pest & Disease Surveillance

Availability and judicious use of safe and efficacious pesticides are critical for sustained increase in production and productivity of a crop. However, consumption of

pesticides has an adverse impact on the crop eco-system as it would pave the way for development of resistance, resurgence of crop pests and decline in population of the natural enemies. Hence Tamil Nadu is focusing on increased adoption of cost effective and eco-friendly cultivation practices. The strategies contemplated are: a) Creating awareness on the indiscriminate usage of chemical pesticides, b) Promoting knowledge on local production of bio-pesticides, c) Promoting farmer's field based Non Pesticidal Management (NPM) awareness programmes and d) Providing subsidies for technologies that are part of IPM and NPM practices.

Fixed plot surveys and roving surveys are conducted at weekly intervals and daily basis respectively besides monitoring and forewarning on pest and diseases outbreak. Crop and pest specific control measures are recommended to the farmers through radio, television, pamphlets, campaigns, etc., Moreover the farmers are sensitized on seed borne diseases for which they are advised to take up appropriate seed treatment measures through massive seed treatment campaigns.

5.1.6.2. Integrated Pest Management

Integrated Pest Management is a broad based approach that encompasses a wide range of practices for economic control of pests to manage the pest population below the Economic Threshold Level (ETL) with the least possible disruption to agro-ecosystems. The IPM technologies from seed to seed are popularized among the farmers through Farmers' Field School. Effective implementation of this programme has helped to reduce the consumption of pesticides from 10926 MT of technical grade in 1984-1985 to 2180 MT in 2012-13, thus preventing pest resurgence and reducing the ill effects of pesticide residues in crops and soil. This scheme will be continued during 2013-14.

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

The Government of Tamilnadu, which is keen on safeguarding the environmental health from the residual effects of excessive use of pesticides is producing Bio-control agents through Government owned 10 Bio-control labs & 2 Integrated Pest Management Centres. As a part of Organic Farming Concept, the Bio-control agents are distributed to the farmers at subsidized cost through Agriculture Extension Centres for eco-friendly pest management.

Following bio control agents are being produced and distributed to the farmers.

Bio-control agents	Production centres (Nos.)	Pests / Diseases controlled	Area (Ha.)	
			Achmt. 2012-13	Programme for 2013-14
<i>Trichogramma chilonis</i> (egg parasitoid)	21	Sugarcane Internode borer	10025	11000
Bethylid, Braconid [larval parasites] and Eulophid [prepupal Parasites]	20	Coconut Black headed caterpillar	9300	10500
Green Muscardine fungus [<i>Metarhizium sp.</i>]	2	Coconut Rhinoceros beetle	40000 vials	45000 vials
Nuclear Polyhedrosis Virus	4	Groundnut Red hairy caterpillar, Prodenia and cotton boll worm	4250	4250
Bio pesticides - <i>Pseudomonas</i> , <i>Trichoderma viridi</i>	12	Diseases in cotton, pulses and paddy	10000	10000

5.1.6.4. Pesticide Testing Laboratories

Quality of pesticides has to be ensured for effective control of pests and diseases besides distribution of standard pesticides to the farming community. Therefore Government with an aim to regulate the quality control mechanism has come up with a series of initiatives such as regular quality control of pesticides to increase agricultural productivity, facilitate safe & efficient use, protect the farmers, consumers and environment. The Insecticide Act, 1968 and Insecticide Rules, 1971 are enforced to ensure supply of quality plant protection chemicals to the farmers by drawing samples from 147 Pesticide Manufacturing Units and 13,321 private sale outlets.

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 and 21126 samples have been analysed during 2012-13.

It is programmed to analyze 21850 pesticide samples during 2013-14.

5.1.7. Farmers Training Centre

The prime mandate of the **Farmers Training Centre** is to impart training to the farmers, farm women, rural youth 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., Dissemination

of scientific know-how to augment income generating activities and improve the standard of living of the farmers with a view to reduce the time lag between technology generation and adoption is ensured by following “Learning by doing” and “Teaching by doing” concept. The 22 Farmers Training Centres functioning in the State conduct Village based training, Convenors training, method demonstration and sensitization training.

5.1.8. Water Management Training Centre

The Water Management Training Centre at Vinayagapuram, Madurai district is functioning from 1985 to ensure that the farmers and field functionaries learn the techniques on saving irrigation water, adaptation to rapid changes in cropping pattern due to erratic rains or failure of monsoon, overcome farm labour shortage, sensitize on seed farm management techniques, soil problem and reclamation, soil and water relationship, summer ploughing, land levelling, crop specific innovative technologies and cultivation methods, surface irrigation, weed and fertilizer management, integrated pest management, farm mechanization, rotational water supply and market led agriculture.

5.1.9. State Agricultural Extension Management Institute (STAMIN)

The State Agricultural Extension Management Institute at Kudumianmalai, Pudukottai is a pioneer, innovative, farmer-focussed Agricultural Management Institute commissioned in the year 1975 which facilitates the acquisition of managerial and technical skills by Agricultural Extension Officers through training to enable them to provide most effective support and service to farmers for profitable agriculture.

The details of training given in 2012-13 are furnished below.

Sl. No	Details of training	No. of officers trained
1	Office Management training	120
2	Computer training	120
3	Induction training to AAOs	1020
4	Office administration training	80
	Total	1340
	Finance (Rs. in lakhs)	15.408

As announced by the Government, a State Agricultural Management and Extension Training Institute (SAMETI) is being established at a cost of ₹99.75 lakhs in the premises of STAMIN, Kudumianmalai, Pudukottai district. A Diploma in agriculture was started in STAMIN during last year to educate and retain the rural youths in agriculture and to make self employment in agriculture and allied activities.

5.1.10. Crop Yield Competition

Crop Yield Competitions are conducted to motivate farming community to adopt hi-tech farm technologies to boost their farm productivity. Crop Yield Competitions are conducted in Paddy, Groundnut, Cholan, Cumbu, Greengram and Blackgram both at District and State level.

An enrolment fee of ₹100/- for Paddy and Groundnut and ₹50/- for other crops for State Level entry and ₹50/- for Paddy and Groundnut and ₹25/- for other crops for district level entry is collected. Totally, 62 District Level Competitions and 6 State Level Competitions will be conducted in the crops like paddy, maize, irrigated groundnut, cholam, cumbu, blackgram and greengram. The following prize amount is awarded to the farmers who get the highest productivity at State and District level.

(in Rupees)

Crop	State Level		District Level	
	1st Place	2 nd Place	1st Place	2 nd Place
Paddy & 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 2013-14 also.

As a special gesture, the farmer who obtained the highest yield at state level during 2011-12 under System of Rice Intensification was awarded a cash prize of ₹5.00 lakhs and a medal worth of ₹3,500/- by Hon'ble Chief Minister on the Republic Day function during 2013. The scheme will be continued during 2013-14 also and the farmers may enroll under SRI Crop Yield Competition by paying a registration fee of ₹150/-.

5.1.11. Special Initiatives by the Government

It is to be appreciated that due to various initiatives taken by the Government of Tamil nadu , the state has surpassed 100 lakh metric tonnes of food grain production and has attained 101.52 L.MT during 2011-12 which is unprecedented in the history. Cueing on the same, the Government had fixed a target of 120 L.MT of food grain production during 2012-13 for which the following initiatives were set in:

- ❖ **Uzhavar peruvizha** (Farmers Mass Contact Programme), which was launched by **Hon'ble Chief Minister, is a multidisciplinary awareness campaign involving** Agriculture, Allied and Line Departments, ultimately with an aim to bridge the

knowledge gap of the farming community in all the 16564 villages in 385 blocks . Around 38 lakh farmers participated in this campaign. During this period, 15838 revenue villages were covered, 5.60 lakh soil samples were collected, 2.98 lakh Farmers Integrated Hand books were distributed, ₹24.70 crores worth inputs were distributed to 5.64 lakh farmers. This programme will be continued during 2013-14 also.

- ❖ Crop specific technologies such as System of Rice intensification and System of Pulses Intensification as a **whole village concept** were taken up in 1719 SRI villages covering an area of 1,68,120 Ha and 1695 pulses villages covering an area of 74,000 Ha.
- ❖ An innovative concept viz., Intensive Redgram cultivation through transplanted was taken up in 30000 Ha across the state at a cost of ₹11.07 crores to organize free demonstrations, provide inputs with subsidy and grant production incentives so as to increase the production of pulses by this integrated approach.

5.2. Centre – State Shared Schemes

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

This scheme is implemented from 2004-05 with an objective to increase the productivity of Oilseeds, Pulses, Oilpalm and Maize by formulating region specific strategies. The expenditure is shared between Government of India and State on 75:25 basis. From 2010-11, the scheme for pulses was integrated with NFSM pulses and ISOPOM scheme is implemented only for Oilseeds, Oilpalm and Maize. This scheme is implemented with a total allocation of

₹20.07 crores during 2012-13. During 2013-14, the scheme will be continued.

5.2.1.1. Oilseeds

The programme on Oilseeds is under implementation in all the districts except Kanyakumari & The Nilgiris. The activities such as production of Foundation and Certified seeds, distribution of certified seeds, Block demonstration in Groundnut, Gingelly, Sunflower crops, demonstrations on IPM, distribution of Micronutrients, Bio-fertilizers, Weedicides, Bio-pesticides, Nuclear Polyhedrosis virus, Sprinkler sets, Hand and Power operated Sprayers and pipelines to carry water from source to field are carried out besides training farmers on latest technologies. Innovative components viz., Supply of Light traps, Pheromone traps, Popularisation of technologies through mass media and combined nutrient spray for groundnut are also implemented.

5.2.1.2. Oilpalm

Programme on Oilpalm under ISOPOM is under implementation in 11 selected districts viz., Trichy, Perambalur, Karur, Thanjavur, Tiruvarur, Nagapattinam, Villupuram, Cuddalore, Vellore, Tirunelveli and Theni districts. Under this scheme, subsidy is extended for cultivation maintenance, assistance for Drip irrigation, Diesel pumpsets, training of farmers / extension officers, wasteland development and innovative components such as Production incentive, supply of pheromone traps, Harvesting tools and IEC activities. M/s. Godrej Agrovet Ltd., (Tiruchirapalli, Thanjavur, Tiruvarur, Nagapattinam, Karur, Perambalur, Cuddalore, Villupuram & Tirunelveli), M/s. Vaidegi palm 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

This scheme is implemented with an objective to increase the productivity of maize for which components like production and distribution of certified seeds, Block demonstration, Integrated Pest Management, training to farmers and distribution of pipelines to carry water from source to field are being implemented with an allocation of ₹1.09 crores during 2012-13.

5.2.2. Technology Mission on Cotton – Mini Mission-II

Cotton is an important cash crop that plays a pivotal role in promotion of textile industries and ensures better income to the growers. In order to increase the production of cotton, the Intensive Cotton Development Programme is under implementation with Centre and state Government financial assistance. on 75:25 basis. This scheme is implemented in all the districts of Tamil Nadu. A sum of ₹47.39 lakhs was spent towards distribution of Pheromone traps, Cotton Picking machine, Cotton Plus besides training the farmers through farmers' field school during 2012-13.

5.2.3. Revised Macro Management of Agriculture

Macro Management of Agriculture scheme is implemented from the year 2000 onwards with the financial assistance of Government of India and State Government in the ratio of 90:10.

Under Revised Macro Management of Agriculture, Integrated **Cereal Development Programme** was implemented at a cost of ₹6.72 crores with an objective to increase the production and productivity of rice in all the districts except 5 districts viz., Pudukkottai, Tiruvarur, Nagapattinam, Ramanathapuram and Sivagangai where National Food Security Mission is implemented. Components such as distribution of certified paddy seeds, Power Weeder, Seed drum, Zero till seed drill, Sprayers, Pumpsets, Rotavators and Power tillers were taken up during 2012-13.

5.2.4. Agricultural Technology Management Agency (ATMA)

ATMA scheme is implemented in all the districts of Tamil Nadu with the financial assistance of Central and State Government in the ratio of 90:10 with coordinated efforts of Agriculture, Horticulture, Animal Husbandry, Sericulture, Fisheries, Forestry, Agricultural Engineering, Agricultural Marketing and Agri Business, Co-operative departments and Tamil Nadu Agricultural University. This scheme aims to decentralize the decision making to the block level, increase the farmers' participation in programme planning and resource allocation and 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. 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. 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 1322 Block Technology Managers, Subject Matter Specialists, supporting staff and 8054 Farmer Friends (one progressive farmer as Farmer Friend (FF) at village level for every two revenue villages) on contract basis at an outlay of ₹24.94 crores. 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 was implemented at a cost of ₹31.11 crores during 2012-13. This scheme will be continued during 2013-14.

5.2.5. Coconut Development Board Assisted Schemes

Coconut is a commercial cash crop which earns more income for the growers. Government has resolved to make the state numero uno in coconut cultivation for which focus is given on increasing the area, production and productivity by advocating various location specific technologies. 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.

Demonstration cum Coconut Seedling Production Farm will be established through Coconut Development Board (CDB) to demonstrate improved production technology in Coconut to the Coconut growers besides ensuring production of adequate quality high yielding Coconut seedlings for distribution to the farmers. For this purpose, an extent of 82.66 acres of land has been identified in Jallipatty village in Udumalpet taluk of Tirupur district and action has been initiated to lease this land to the Coconut Development Board.

Every year, around 3.50 lakh coconut seedlings are distributed. During 2012-13, an amount of ₹1.71 crores was spent towards the distribution of coconut seedlings, strengthening of coconut nurseries and laying out of demonstration plots. Further activities related to strengthening of Coconut development in Tamil Nadu were also taken up under NADP at a total cost of ₹1.08 crores during 2012-13.

5.2.6. Agriculture Insurance Schemes

Agriculture is a high risk economic activity which is exacerbated by a variety of factors - diverse agro-climatic attributes, weather variability, frequent natural disasters, uncertainties in yields and prices, imperfect markets and inadequate and untimely financial services. These factors not only endanger the livelihoods and income of small farmers but also undermine the viability of the agriculture sector and its potential to alleviate the poverty of the farmers. This is where Crop Insurance comes as handy to the poor farmers who are entangled by various risk factors for which the State Government is implementing Crop Insurance schemes viz., National Agricultural Insurance Scheme, Modified National Agricultural Insurance scheme, Weather Based Crop Insurance Scheme and Coconut Palm Insurance Scheme. Further a Pilot Scheme on Individual Based Farmer Crop Insurance Scheme has been mooted

for implementation in Vellore and Virudunagar districts for which approval by Government of India is awaited.

5.2.6.1. National Agricultural Insurance Scheme

National Agricultural Insurance Scheme is being implemented in Tamil Nadu since Kharif 2000, with an aim to provide insurance coverage to the farmers for notified crops, financial support in the event of crop damage due to natural calamities and pest and diseases, stabilize their farm income particularly in disaster years and to continue their farm operations without any financial hurdles and encourage them to adopt progressive farming practices and use high value inputs. Under this scheme, all food crops (Cereals, Millets and Pulses), Oilseeds, Sugarcane, Cotton, Annual Commercial / Annual Horticultural Crops are covered. All farmers including share croppers, tenant farmers growing the notified crops in the notified areas are eligible. 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:-

Details of Beneficiaries		(Percentage)		
		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

Since 2006-07, the farmers are being provided with 50% subsidy on premium payment for enrollment under NAIS scheme. As the participation of farmers in this scheme is very encouraging, the Government has increased the premium subsidy. During 2012-13, a sum of ₹39.42 crores was extended as premium subsidy by the State Government towards enrollment of 10.09 lakh farmers including the allocation for universal coverage of samba and Thaladi crops in the delta districts. This scheme will be continued during 2013-14.

5.2.6.1.1. Compensation under National Agricultural Insurance Scheme

Government is taking special efforts to compensate the farmers in time in the event of crop loss due to natural calamities. The compensation claims are equally shared by the Central and state government if the claim exceeds the premium amount. 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. During 2012-13, a sum of ₹78.64 crores was disbursed as compensation to 2.47 lakh farmers by the State Government.

5.2.6.2. Modified National Agricultural Insurance Scheme

To remove the bottlenecks in implementation of National Agricultural Insurance Scheme, Modified National Agricultural Insurance scheme was introduced in 2011. 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 2013-14.

5.2.6.3. Weather Based Crop Insurance Scheme

The Weather Based Crop Insurance Scheme is being operated since kharif 2008 to account the crop loss due to seasonal changes. It is 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 for Paddy, Millets, Pulses, Oilseeds and Commercial / Horticultural Crops. The scheme is compulsory for loanee farmers. Non-loanee farmers can opt for either NAIS or WBCIS.

During 2012–13, the scheme is being implemented in 11 districts viz., Theni, Tirunelveli, Tirupur, Salem, Dharmapuri, Virudhunagar, Perambalur, Ariyalur, Villupuram, Dindigul and Coimbatore. This scheme is being implemented by AIC, ICICI-Lombard GIC, IFFCO-TOKIO GIC, Cholamandalam GIC, and HDFC ERGO GIC. An amount of ₹1.70 crores has been spent towards enrollment of 27173 farmers. This scheme will be continued during 2013-14.

5.2.6.4. Coconut Palm Insurance Scheme

Coconut, a perennial crop which earns more income for the growers is cultivated in all the districts of Tamil Nadu in an extent of 4.10 lakh ha with a production of 59,656 lakh nuts and productivity of 14,545 nuts/ha. Tamil Nadu stands second in productivity at all India level. There are better prospects to bring more area and increase the production besides value addition. However, coconut is largely affected by natural calamities. In view of this, the Coconut Palm Insurance Scheme, which was introduced on a pilot basis in 11 districts during 2011-12 is now being implemented in all the districts 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 for premium

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

* Coconut Development Board

This scheme will be implemented during 2013-14 also.

5.3. Centrally Sponsored Schemes

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

Information and Communication Technology (ICT) has become a prominent tool to foster social and economic development. Excellent e-governance is touted to save costs while improving the quality, response time & access to services, efficiency and effectiveness of administration and increasing transparency of services. In view of this, a comprehensive online knowledge portal viz., Agriculture Resources Information System Network (AGRISNET) has been developed by Department of Agriculture to disseminate relevant information to farmers. This mission mode project funded by the Ministry of Agriculture, Government of India is an internet based information network for 82 lakh farm families in the state that 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.

Government, to provide better e-governance to face the challenges of information and communication and focus on inclusive growth in Agriculture has introduced ICT initiatives such as **Farm Crop Management System (FCMS), Touch Screen Kiosks**, new software modules for effective individual farm planning, management of inputs and speedy transfer of extension activities under AGRISNET platform to precisely formulate farm level plans and to keep the farming community abreast on knowledge updation of latest farm crop technologies and other cultivation approaches.

Government of India sanctioned a sum of ₹4.62 crores 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 ₹3.31 crores 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

National Agricultural Development Programme, a special additional Central Assistance Scheme is being implemented from 2007-08 with 100% assistance of Government of India aiming to achieve 4% annual growth in agriculture, by ensuring holistic development of Agriculture and allied sectors. States have been given greater flexibility and autonomy to develop and implement projects on the basis of priorities by formulating district and state agricultural plans.

Objectives

- To increase public investment in agriculture and allied sectors
- To ensure the preparation of agriculture plans for the districts and the states based on agro-climatic conditions, availability of technology and natural resources
- To ensure that the local needs/crops/priorities are better reflected in the agricultural plans of the states
- To reduce yield gap in key crops through focused interventions

- To maximize returns to the farmers in Agriculture and allied sectors
- 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 spiraling 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), Groundnut Mission, Gypsum application for groundnut, Production subsidy for Pulses, Oil Palm Area Expansion and Rainfed Area Development Programme besides various other schemes such as Increasing Cotton Production & Productivity, Distribution of Copra driers etc. during 2012-13.

Government of India has sanctioned ₹260.00 crores to implement National Agricultural Development Programme during 2012-13. Government to improve the economic status of farmers especially small, marginal and SC/ST farmers announced certain schemes during 2012-13. These special schemes were implemented under NADP. They are as follows:

- 94 villages have been identified in 94 blocks to organize 1422 Integrated Farming models suitable for wetland, garden land and dryland @ one model per block.
- Tamil Nadu Agricultural University is taking up a study on identification of crops suitable to various locations so as to demarcate the entire state into crop specific regions and encourage the farmers to form clusters with complete technical backstopping for speedy delivery of

crop specific technologies, timely pooling of resources, increasing the input efficiency, obtain increased yield and provide better marketing prospects leading to increased production and returns to farmers.

- Farm Machineries were distributed in 385 blocks at free of cost to SC&ST farmer groups for custom hiring creating employment opportunities besides uplifting the economic status of the farmers with preference to the youths.

5.3.3. National Food Security Mission

To ensure food and nutritional security through increase in area, production and productivity of rice and pulses on mission mode approach, National Food Security Mission is under implementation. 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 for pulses it is implemented in all the districts (except Chennai and the Nilgiris).

Under National Food Security Mission – Rice, activities viz., Cluster demonstrations on SRI / direct seeded Rice/ Line transplanting and Hybrid Rice Technology, raising of community nursery, subsidized distribution of quality seeds of High Yielding varieties & hybrids, micro nutrients, conoweeders / other farm implements, plant protection chemicals, bio inputs, pumpsets, rotavators, sprayers, power weeders, nursery raising machine and trays besides cropping system based trainings were taken up at a cost of

₹21.20 crores during 2012-13. This scheme will be implemented during 2013-14 also.

Under National Food Security Mission – Pulses, activities such as Cluster Demonstrations on inter cropping , improved varieties and farm implements, subsidized distribution of Certified Seeds, gypsum, Micronutrient mixture, Rhizobium, plant protection chemicals, weedicides, plant protection equipments, sprinklers / mobile sprinklers/ rainguns, pumpsets, rotavators besides cropping system based trainings were taken up at a cost of ₹8.91 crores during 2012-13. This scheme will be implemented during 2013-14 also.

5.3.3.1. Accelerated Pulses Production Programme (A3P)

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

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

A sum of ₹5400/- for Redgram and ₹4800/- for Blackgram / Greengram are being extended as 100% subsidy for distribution of INM and IPM inputs, minikits and e-pest surveillance for an area of one hectare. During 2012-13, this scheme was implemented in a compact area of 1000 hectares per unit in 8 blocks of Vellore, Krishnagiri, Tiruvannamalai, Dharmapuri, Salem, Tirupur, Dindigul and Tirunelveli districts with one block in each district at a cost of

₹3.95 crores under NADP and in 120 units of 100 hectares each under NFSM- Pulses at a cost of ₹3.17 crores.

5.3.4. Seed Village Scheme

Ensuring the availability of quality seeds in adequate quantities at right time is an influential factor, which reflects on the production and productivity of crops. Hence, the Government is taking all efforts to supply required quantity of seeds through Public Private Partnership mode. As a part of this initiative, Seed Village scheme is implemented from 2006-07 under which Foundation/Certified seeds of paddy, millets, oilseeds, pulses are distributed to the farmers at 50% subsidy for an acre, besides training them on scientific methods of quality seed production to meet their own requirement and increase their farm income. This scheme was implemented at a cost of ₹18.10 crores. This scheme will be continued during 2013-14.

During 2012-13, the processing capacity of 10 existing Seed Processing Units has been augmented by modernizing the Seed Processing Units at Pudurpalayam (Tiruchirappalli), Bhavani (Erode), Kattuthotam (Thanjavur), Annapannai (Pudukottai), Thirumanoor (Ariyalur), Inungur (Karur), Kallakurichi (Villupuram), Karaiyiruppu (Tirunelveli), Rasipuram (Namakkal) & Anaimalai (Coimbatore) .

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 spread over a period of six years (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 departments of Agriculture, Horticulture, Agricultural Engineering, Agriculture Marketing & Agri Business, Animal Husbandry, Fisheries and Tamil Nadu Agricultural University.

An amount of ₹98.00 Crores (US \$21.79 Million) was allotted to Agriculture Department for implementation of the following Project activities.

- **Crop Demonstrations:** Crop demonstrations viz. Greenmanure-SRI-Rice Fallow Pulses, SRI-Rice Fallow Pulses, Modified SRI, Semi Dry Rice, Semi Dry Rice-Rice Fallow Pulses, Maize, Ragi, Pulses, Groundnut, Coconut, INM demonstration, Vermicompost (Silpaulin) are being implemented.
- **Agriculture Implements:** SRI implements such as Conoweeder & Marker and Pulses Line Marker are distributed at 100% subsidy for demonstrations; Hand operated sprayer 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 1 or 2 villages / block in the project area. The Seed Village programme envisages the formation of farmers interest groups for pulses, groundnut and green manure crops, training to group members and also providing revolving fund to the groups for the group upliftment.
- **IEC / CB activities:** It includes farmers training, agricultural labourers training, exposure visits, capacity building and publicity propaganda activities.

During 2012-13, IAMWARM Project is implemented in 61 selected Sub-basins:

Regular and additional activities-2012-13

Sl. No	Phase & Year of Implementation	Amount sanctioned (₹ in Crore)
1.	Regular – Phase III (3 rd Year)	8.144
2.	Regular – Phase – IV (2 nd Year)	7.813
3.	Regular Phase – IV (2) Amaravathy (1 st year)	3.923
4.	Additional Activities – 1- Phase-I,II & III (2 nd year)	9.989
5.	Additional Activities – 2 - Phase-I, II, III & IV	3.532
6.	Additional Activities – 3	1.750
	Total	35.151

Regular Activities - 2012-13 (Phase III , Phase IV & Phase IV-2)

Sl. No	Component of Activities	Physical (Ha.)	Financial (₹ in Lakhs)
1	Crop Demonstrations	18504	1247.015
2	Other Demonstrations	3043	188.660
3	Agriculture Implements (Nos)	17920	293.382
4	Information / Education and Communication		239.291
5	IAMWARM Cell		3.000
	Grand Total		1971.348

Additional Activities - 2012-13 (Phase I,II, III & IV)

Sl. No	Component of Activities	Physical (Ha.)	Financial (₹ in Lakhs)
1	Crop Focus Technology Demonstrations in 5Ha. Cluster (with 50% subsidy)	2078	268.563
2	Rice Fallow Pulses Demonstration in 2Villages / Block. (@ Cluster of 50Ha in each Village	6000	120.000
3	Other Demonstrations	10560	459.85
4	Awards for Best Farmers	122	12.300
5	Agri. Implements & Equipments (Nos)	23427	352.539
6	Seed Village Programme	272	147.968
7	Capacity Building Activities	15390	127.200
8	IAMWARM Cell Procurement of IEC equipments , hiring of I&T van etc.,		38.750
	Grand Total		1527.170

During 2013-14, it is proposed to implement the Regular Activities in Phase IV – 2 Amaravathy sub basins and Additional Activities -3 in Phase I, II, III & IV of 61 sub basins as detailed below:

Activities	Phase	₹ in Lakhs
Regular Activities	Phase IV - 2 Amaravathy Second year	375.070
	Sub Total	375.070
	Phase I (9 Sub basins)	78.400
	Phase II (16 sub basins)	26.870
	Phase III (30 sub basins)	63.720
	Phase IV (5 sub basins)	6.010
	Sub Total	175.000
	IAMWARM CELL	3.000
	Grand Total	553.070

The Cumulative financial progress of the project from 2007-08 to 2012-13 is as follows:

(₹ in lakhs)

Details	DPR cost	Achievement
Phase – I (9 sub-basins)	1570.200	1553.200
Phase – II (16 sub-basins)	663.600	660.300
Phase – III (30 sub-basins)	2599.100	2411.659
Phase – IV (5 sub-basins)	1205.300	903.075
Phase – IV – 2 (Amaravathy Sub-basin)	767.300	253.254
Additional Activities – 1	2037.100	1753.702
Additional Activities – 2	706.500	588.272
Additional Activities – 3	350.000	3.250
Total	9899.100	8126.712